

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	Benmara Project
Authorisation Number Insert existing authorisation number, where applicable	NA
Operator Name Use ASIC-ABR registered name (if a company), or name of the applicant	Resolution Minerals Limited
Operator ABN and ACN numbers	ABN 99 617 789 732
Location and Access Details Include brief description of the location, access details, and distance to nearest town or community	The project area is located on Benmara Station located approximately 200km north-east of Tennant Creek. Access to the project area is via sealed road north of Tennant Creek to the Tablelands Turn Off, then 186km (route 66) east to Tablelands (Barkly), then north along the unsealed single highway Tablelands Hwy (route 11) for 205km, then north-east along the graded Calvert Road (Route 16) 110km, then head south-east 31.5km to the Benmara homestead. There are numerous station tracks across the relevant stations, which allow for ease of access to the drilling areas.
Target Commodity Details Include target mineral commodities (i.e. gold, copper etc.)	Copper and other base metals
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.	Proposed exploration activities include drilling. Methods may include air core, reverse circulation and diamond drilling pending exploration state and rig availability and may occur over a four-year period. Reverse circulation drilling of 70 collars x 75-400m depth (total 21,000m), diamond drilling of 5 collars x 400-1000m (total 4000m) and ~100km of new tracks to access collars. Note: diamond drilling is subject to successful GDC application.

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Proposed Schedule Include start and finish dates of ground disturbing work	Work to be completed during dry season from as early as April 2023 through to December 2026.
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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
EL32228	Xavier Resources Pty Ltd	28/03/2027	Benmara Station (Luke Evans) and Creswell Downs (Glenn Gamlen).
EL32229	Xavier Resources Pty Ltd	14/09/2027	Benmara Station (Luke Evans)
EL32850	Xavier Resources Pty Ltd	3/04/2028	Benmara Station (Luke Evans), Creswell Downs Station (Glenn Gamlen), Brunette Downs Station (Michael Johnson) and Mittiebah Station (Lachlan Reed)
EL32883	Xavier Resources Pty Ltd	8/05/2028	Benmara Station (Luke Evans) and Creswell Downs Station (Glenn Gamlen)
EL31287	Xavier Resources Pty Ltd	12/12/2022	Benmara Station (Luke Evans)

Note: A Land Access Agreement (LAA) is in place for Benmara Station. The work area (disturbance proposed) falls entirely within Benmara Station. Areas of tenure overlapping adjacent stations are not included in this MMP application.

Organisational Structure

Position Title	Name
Managing Director	Steven Groves
General Manager	N/A
Exploration Manager	Christine Lawley
Senior Geologist	Andrea Hodgson
Environmental Manager	Andrea Hodgson & Christine Lawley
Radiation Safety Officer	Christine Lawley

Delete or add rows for various position titles as required

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?	YES	The Operator must assess the likelihood of threatened species or their habitats occurring at or near the site. If the likelihood is high, then a "Significant Impact Assessment" must be undertaken and appended to this document.	Consulted the EPBC Protected Matters Search Tool and appended it to this document. The search found one Critically Endangered species which could occur within the MMP Area, the Curlew Sandpiper. However, given this species is a coastal shorebird (occasionally found on inland freshwater wetlands) and the drilling area occurs within open low shrubland adjacent black soil plains or within escarpment country, the likelihood of encountering the Curlew Sandpiper near the drilling site is considered extremely low.
Step 2: Are there any known declared weeds within the proposed work area?	YES	Seek advice from DEPWS – Weed Management Branch to determine if weeds are present on site and ensure management measures are appropriate for the level of activity proposed and attach a Weed Management Plan (if required).	Consulted the EPBC Protected Matters Search Tool and appended it to this document. The search found one Invasive Species – <i>Parkinsonia aculeata</i> . Access to the drill area will be via established station tracks which transect the main target. All RML and contractor vehicles will be cleaned for weeds/seeds (including the undercarriage) prior to entry onto any of the listed stations and post program before moving to other project areas in the NT.
Step 3: Will you be using water from bores or other sources for the operation?	YES	Water related matters on mineral titles are no longer exempt from the <i>Water Act 1992</i> . Please consult with DEPWS Water Resources and/or familiarise yourself with the <i>Water Act</i> to ensure compliance under this Act when undertaking exploration activities.	Numerous bores are available to source water on each of the relevant stations to support drilling operations. This meets the NT Water Resources exemption criteria: < 5 ML of groundwater p.a. outside of the Darwin Rural Water Control District, therefore no water extraction licence is required.

Environmental assessment and cultural considerations

ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS
Step 4: Is your project likely to have a significant impact on the environment?	NO	Refer to the NTEPA Environmental Factors and Objectives Guideline.
Step 5: Are there Aboriginal sacred sites in the Project area?	YES	<p>Sacred Sites are protected under the NT <i>Aboriginal Sacred Sites Act 1989</i> and administered by the Aboriginal Areas Protection Authority (AAPA). It is recommended that advice be sought from AAPA in relation to sacred site protection.</p> <p>A search of the AAPA register was undertaken and the findings were as follows:</p> <ul style="list-style-type: none"> i. there are currently no registered sacred sites located on the parcel of land; ii. there are recorded sacred sites located on the parcel of land; iii. there are restricted work areas in the parcel of land which are provided for in a previously issued Authority Certificate; <p>The location of recorded sacred sites relative to the project area is provided in the attachments (AAPA Abstract of Records - Benmara Project). An AAPA survey is being conducted in late September / early October 2022 to determine which areas should be excluded from track building and drilling.</p>
Step 6: Are there archaeological and heritage sites in the Project area?	YES	<p>Heritage and archaeology sites are protected in the NT. NT Department of Territory Families, Housing and Communities (DTFHC) administers the <i>Heritage Act 2011</i>.</p> <p>Seek advice in relation to protection of heritage and archaeological sites.</p> <p>A search was completed on the NT Heritage Register (DTFHC website) and no archaeological and heritage sites are present on Benmara Station or the proposed work area.</p> <p>A Senior Heritage Officer from the Heritage Branch (Heritage, Libraries and Sport) Department of Territory Families, Housing and Communities was contacted who advised of a single site is located on EL32883. This site is not a rock art site or a stone artefact scatter and is recorded as a modified isolated non-stone artefact (made of corrugated iron), which is not technically a prescribed Aboriginal artefact, and so not considered of high archaeological significance (see attachment Location Map - Heritage Sites - Sept 2022).</p>

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
NA	NA

Delete or add rows as required

Section 4 – Activities Proposed for this MMP only

Provide relevant EL numbers

Mining Interests (i.e. titles)	EL32228	EL32229	EL32850	EL32883	EL31287
Number and type of proposed exploration drill holes	38 RC & 1 Diamond	6 RC & 1 Diamond	4 RC & 1 Diamond	2 RC & 1 Diamond	20 RC & 1 Diamond
Maximum depth of proposed holes (m)	400m RC & 1000m Diamond	400m RC & 1000m Diamond	400m RC & 1000m Diamond	400m RC & 1000m Diamond	400m RC & 1000m Diamond
Number and size of drill pads to be cleared (Length: m x Width: m)	39 pads, length 30m, width 30m	7 pads, length 30m, width 30m	5 pads, length 30m, width 30m	3 pads, length 30m, width 30m	21 pads, length 30m, width 30m
Total area of drill pads to be cleared (ha)	3.51ha	0.63ha	0.45ha	0.27ha	1.89ha
Number of proposed water bores	Nil	Nil	Nil	Nil	Nil
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	Yes, there is potential for ground water in all 39 holes	Yes, there is potential for ground water in all 7 holes	Yes, there is potential for ground water in all 5 holes	Yes, there is potential for ground water in all 3 holes	Yes, there is potential for ground water in all 21 holes
Number of costeans	Nil	Nil	Nil	Nil	Nil
Volume to backfill costeans (Length: m x Width: m x Depth: m)	Nil	Nil	Nil	Nil	Nil
Number of bulk sample pits	Nil	Nil	Nil	Nil	Nil
Volume to backfill bulk sample pits (Length: m x Width: m x Depth: m)	Nil	Nil	Nil	Nil	Nil

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Mining Interests (i.e. titles)	EL32228	EL32229	EL32850	EL32883	EL31287
Bulk sample pits approved under <i>Mineral Titles Act?</i> (Y or N). If Yes provide approval	N	N	N	N	N
Line/track clearing: (length m x width m)	50km X 5m	10km X 5m	15km X 5m	5km X 5m	20km X 5m
Area of proposed line/track clearing (ha)	25ha	5ha	7.5ha	2.5ha	10ha
Camp area to be cleared (ha)	0.64	0.64	0.64	0.64	0.64
Camp Infrastructure (i.e. demountable, tents) Please provide a complete list with measurements as required in the security calculation	1 - 4 caravans supporting ~6 tents OR station homestead dependent on travel time to drilling area	1 - 4 caravans supporting ~6 tents OR station homestead dependent on travel time to drilling area	1 - 4 caravans supporting ~6 tents or station homestead dependent on travel time to drilling area	1 - 4 caravans supporting ~6 tents OR station homestead dependent on travel time to drilling area	1 - 4 caravans supporting ~6 tents OR station homestead dependent on travel time to drilling area
Other	NA	NA	NA	NA	NA
Total proposed area of disturbance (ha)	29.15ha	6.27ha	8.59ha	3.41ha	12.53ha

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.

NA – New MMP

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	NA	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil) Constructing permanent station tracks.
6.2	X	Significant vegetation will be avoided during clearing (i.e. large trees, specimens providing habitat or food sources, riparian vegetation, and threatened species)
6.3	X	Vegetation clearing during, and immediately after rainfall events, will be avoided
6.4	X	Vegetation clearing will be kept to the minimum required to safely traverse vehicles and drill rigs along tracks and drill pads
6.5	NA	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for rehabilitation purposes Constructing permanent station tracks.
6.6	X	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	NA	Sumps will be lined or tanks of appropriate size to contain water, sediment and drilling fluids encountered during drilling, will be used. Sumps will not be lined, but allowed to drain and dry out naturally before being back-filled post drilling. Only biodegradable drilling fluids will be utilised.
6.8	X	Sumps, drill holes, and fuel stores will be located away from environmentally significant areas and water courses
6.9	X	Excavations (sumps, costeans and pits) will be appropriately ramped to allow fauna egress
6.10	X	Drill holes will be securely capped immediately after drilling
6.11	X	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	X	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	X	Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian Standards
6.14	X	Hydrocarbons will be stored in lined and bunded areas
6.15	X	Waste will be stored securely while on-site to minimise windblown rubbish and access by feral animals
6.16	X	Waste will be removed off-site and disposed of at an appropriate waste management facility
6.17	X	All environmental incidents will be reported to the Department in accordance with Section 29 of the <i>Mining Management Act</i> .

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6.18	X	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.
6.19	NA	Radioactive/NORM drill cuttings will be managed to avoid radiation related issues on site. Significant concentrations of radioactive minerals have not been previously detected within or proximal to the proposed drilling area.
6.20	X	Dust management will be implemented on site.

Justification and alternative management measures:

6.1 & 6.5 - Construction of permanent station tracks will require blade down. Given the tracks will not be rehabilitated, no stockpiling of top soil or vegetation is required.

6.7 – Sumps will not be lined, but allowed to drain and dry out naturally before being back-filled post drilling. Only biodegradable drilling fluids will be utilised.

6.19 - Significant concentrations of radioactive minerals have not been previously detected within or proximal to the proposed drilling areas. However, RML will monitor radiation levels with a hand held scintillometer as a precaution. If significant radiation levels are detected a Radiation Management Plan will be implemented.

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	X	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	X	Drill holes encountering multiple or confined aquifers will be grouted with concrete.
7.3	X	Drill samples/spoil will be returned down drill holes, buried in sumps, or removed from site.
7.4	X	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site.
7.5	X	Cut and fill drill pads will be re-contoured to be consistent with the surrounding terrain.
7.6	X	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	X	Tracks will be rehabilitated, including pushing in all windrows, unless otherwise agreed in writing by the land holder or appropriate third party. Constructing permanent station tracks. Two-way email correspondence attached.
7.8	X	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur.
7.10	X	Access through watercourses will be removed and banks restored.
7.11	X	All previously disturbed areas will be stable, with no evidence of active soil erosion.
7.12	X	All excavations will be backfilled within 6 months of their completion.
7.13	X	All water bores will be decommissioned unless otherwise agreed in writing by the land holder or appropriate third party.
7.14	X	All rubbish and infrastructure will be removed from site.
7.15	X	Topsoil will be replaced and vegetation re-established.
7.16	X	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be rehabilitated or removed from site.
7.17	X	Monitoring will be undertaken following the wet season or a significant rainfall event.

Justification and alternative management measures:

7.7 - Construction of permanent station tracks, therefore tracks will not be rehabilitated. Written confirmation from the relevant landholder has been provided. Note: the work area falls completely within Benmara Station.

Section 8 – Required Attachments

8.1	NA	Initial Application for Authorisation or variation of Authorisation (only if details on the form have subsequently changed).
8.2	NA	Nomination of Operator Form, where required
8.3	NA	Security Calculation Spreadsheet
8.4	X	Evidence of Land Access Agreement if operating on an Exploration Licence (EL) on Pastoral Lease (e.g. two-ways exchange of email)
8.5	NA*	Disturbance tracking spreadsheet (for existing Authorisations) New Authorisation
8.6	X	Spreadsheet with coordinates of proposed drill holes or polygons of target areas
8.7	X	KML/shape files/track logs of proposed tracks, camp sites and proposed drill holes or polygons of target areas. Proposed camp sites would fall within drill polygons.
8.8	X	Map(s) of the work area(s) showing: <ul 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	NA	Radiation Management Plan (if applicable) Not Applicable
8.12	X	Document(s) being appended in relation to Section 2 (if any): <ul style="list-style-type: none"> - Benmara MMP - Protected Matters - MNES layers - September 14th 2022 - AAPA Abstract of Records - Benmara Project - Location Map - Heritage Sites - Sept 2022

*Resolution are in the process of closing out an existing MMP with no overhanging liabilities. This is a new MMP application.

8.10 - Significant concentrations of radioactive minerals have not been previously detected within or proximal to the proposed drilling areas. However, RML will monitor radiation levels with a hand held scintillometer as a precaution. If significant radiation levels are detected a Radiation Management Plan will be implemented.