

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	Pine Creek Project
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Authorisation Number Insert existing authorisation number, where applicable	1156
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Operator Name Use ASIC-ABR registered name (if a company), or name of the applicant	Mangusta Minerals Pty Ltd
Operator ABN and ACN numbers	653 950 522 19 653 950 522

Location and Access Details Include brief description of the location, access details, and distance to nearest town or community	Fenton: Located 150km SE of Darwin, 60km W of Pine Creek, on freehold land. Access is via Ooloo Road, approximately 50km south-west of the Stuart Highway turnoff Copperfields: Located 190km SE of Darwin, 10km SW of Pine Creek, within Jindare Station. Access is via the Stuart Highway turnoff
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Target Commodity Details Include target mineral commodities (i.e. gold, copper etc.)	Gold, copper and lithium
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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.	Exploration drilling; reverse circulation (RC), air-core (AC) and diamond (DDH) drilling methods. Fenton: 4- 10 DDH & RC (potential RC with DDH tails) drillholes Copperfields: 10-15 AC & RC drillholes
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Proposed Schedule Include start and finish dates of ground disturbing work	June 2023 to June 2024
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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
EL31356	Mangusta Minerals Pty Ltd	31/05/2023	NT Portions 709; Pastoral properties "JINDARE"
EL32885	Mangusta Minerals Pty Ltd	16/06/2028	NT Portion 5758; Freehold (Private)
EL33615	Mangusta Minerals Pty Ltd	22/10/2029	NT Portion, PPL 5758, 7348 & 7121 Freehold (Private) 891, 2530 & 5758 Crown Lease Perpetual 2047, 3040, 2933 & 3041

Land Access Agreements located at Appendix 10.

Organisational Structure

Position Title	Name
Managing Director	Chris Swallow
Exploration Manager	Bianca Manzi

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).
<p>Step 1: Are there any threatened flora and fauna species or habitats of significance that may occur in the proposed work area?</p>	<p>YES</p>	<p>CDM Smith prepared a Desktop Environmental Likelihood Assessment over the works areas. It was found that eleven mammals, ten birds and one reptile species are listed as threatened and may occur within habitats within the project area. Seven of the species are listed under the Territory Parks and Wildlife Conservation Act 1976 (TPWC Act) and Fifteen species listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).</p> <p>No threatened flora species have been recorded within the project area.</p> <p>In the Environmental Likelihood Assessment prepared by CDM Smith, it is recommended that Inspections conducted where undisturbed vegetation is to be cleared. No clearing of trees is planned, with proposed tracks to be cleared with a raised blade to ensure rig access between trees. As recommended in the Environmental Likelihood Assessment prepared by CDM Smith, Mangusta will cease work in any area where potential threatened species activity is recorded and flag the area with a suitable buffer zone.</p>	<p>Environmental Likelihood Assessment attached as Appendix 9.</p>

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ASSESSMENT ASPECT	YES or NO	ACTIONS REQUIRED (if answered YES)	APPENDED INFORMATION <small>(e.g. evidence of consultation with DEPWS and/or management plan where required).</small>
Step 2: Are there any known declared weeds within the proposed work area?	YES	<p>Twenty-five species of weeds were identified through desktop assessment as potentially occurring within the project area. None of these weeds are classified Weed of National Significance (WONS) and only the Neem Tree is declared as a Class B weed under the NT Weeds Management Act 2001 (growth and spread to be prevented). The NT government weed management plan for Neem will be incorporated in the project areas mining management plan.</p> <p>All employees and contractors will be required to familiarise with the weed management plan during a site induction and implement practical measures on site to prevent and manage weeds.</p>	Environmental Likelihood Assessment with Weed Management Plan attached as Appendix 9.
Step 3: Will you be using water from bores or other sources for the operation?	YES	<p>Less than 5ML/yr of water will be extracted from a bore on site. There is a current exemption from requiring an extraction licence extracting less than 5ML/yr within the Daly Roper Beetaloo Water Control District. Therefore, a Water Extraction Licence is not required.</p>	Confirmation email from Water Resources Division attached at Appendix 11.

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	<p>Small exploration program with minor track clearing (raised blade, no trees) is required, no major tracks or clearing of trees are proposed.</p>

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ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS
<p>Step 5: Are there Aboriginal sacred sites in the Project area?</p>	YES	<p>Abstract of Records were obtained by the AAPA in August 2022 and March 2023. Copies attached in Appendix 1.</p> <p>There are two Restricted Works Areas in EL32885 - the proposed work on EL32885 is not within or near a restricted works area. All employees will be made aware of the location of these sites and will not enter this area.</p> <p>There are eight Recorded Sacred Sites and seven Registered Sacred Sites within EL31356. One Recorded Sacred Site is located near to the proposed work area - all employees will be made aware of the location of these sites and will not enter this area.</p> <p>If any suspected sites are found, works in the area will cease and the AAPA will be notified.</p>
<p>Step 6: Are there archaeological and heritage sites in the Project area?</p>	NO	<p>A search of the Heritage Register was conducted, where nil heritage areas were found within the project area. Details are located in Appendix 2.</p> <p>A search of the project area was conducted by the Heritage Branch from the Department of Territory Families, Housing and Communities, where it was confirmed that there are no declared heritage places or objects located within the subject site.</p> <p>There are also no known Aboriginal or Macassan archaeological places within the subject site. Results provided in Appendix 3.</p>

Section 3 – Amendments

N/A- First MMP.

Section	Amendment
Section 4	Track updates to EL32885
Appendix 5	Updated map for Fenton works.
Appendix 7	Updated security calculation to account for track update
Section 1 Project Details	EL32885 replaced with EL33615 updated, due to amalgamation of licences.
Section 4 – Activities Proposed	EL32885 replaced with EL33615 updated, due to amalgamation of licences.

Section 4 – Activities Proposed for this MMP only

Mining Interests (i.e. titles)	EL31356	EL33615
Number and type of proposed exploration drill holes	10-15 RC/AC holes	4-10 RC precollared diamond
Maximum depth of proposed holes (m)	100m	750m
Number and size of drill pads to be cleared (Length: m x Width: m)	15 pads 20 x 15 (0.03ha)	10 pads 40 x 40 (0.16ha)
Total area of drill pads to be cleared (ha)	0.45ha	1.6ha
Number of proposed water bores	-	-
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	No	Yes – groundwater in Cambrian limestone
Number of costeans	-	-
Volume to backfill costeans (Length: m x Width: m x Depth: m)	-	-
Number of bulk sample pits	-	-
Volume to backfill bulk sample pits (Length: m x Width: m x Depth: m)	-	-
Bulk sample pits approved under <i>Mineral Titles Act</i> ? (Y or N). If Yes provide approval	-	-

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Mining Interests (i.e. titles)	EL31356	EL33615
Line/track clearing: (length m x width m)	1000m x 3m	Cross lines (total) 7680m x 3m wide = 2.30ha Shapefile show approx. track locations and calcs only Using existing firebreak as access.
Area of proposed line/track clearing (ha)	0.3ha	2.30ha
Camp area to be cleared (ha)	-	-
Camp Infrastructure (i.e. demountable, tents) Please provide a complete list with measurements as required in the security calculation	-	-
Other	-	-
Total proposed area of disturbance (ha)	0.75ha	3.9ha

Section 5 – Previous Disturbance (for existing Authorisations only)

The 'Disturbance Tracking' spreadsheet will be updated during exploration and rehabilitation works. An updated copy will be provided in subsequent MMPs.

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	X	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil)
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	X	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for rehabilitation purposes
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		Sumps will be lined or tanks of appropriate size to contain water, sediment and drilling fluids encountered during drilling, will be used
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> .
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.

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

Justification and alternative management measures:

Sump liners will not be used, as the volume of water that will be encountered will cause the liners to block pumps and float, which hinders drilling operations. Mangusta liaised with the Station owner regarding this and he advised that he didn't want the liners to be used, because they will become stuck and hard to remove during rehabilitation. The water in the sumps is from the ground and contains no contaminants, so liners will not be used.

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.
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:

Section 8 – Required Attachments

8.1	X	Initial Application for Authorisation or variation of Authorisation (only if details on the form have subsequently changed).
8.2	X	Nomination of Operator Form, where required
8.3	X	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	X	Disturbance tracking spreadsheet (for existing Authorisations)
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
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	N/A	Radiation Management Plan (if applicable)
8.12		Document(s) being appended in relation to Section 2 (if any): <ul style="list-style-type: none"> - Appendix 1- AAPA Abstract of Records - Appendix 2- Heritage Search - Appendix 3- Historic & Archaeological Results - Appendix 9- Environmental Report Appendix 11- Communication from Water Resources