

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	McCallum Creek
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Authorisation Number Insert existing authorisation number, where applicable	1164-01
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Operator Name Use ASIC-ABR registered name (if a company), or name of the applicant	NT Mining Operations Pty Ltd
Operator ABN and ACN numbers	ABN: 64 136 525 990 ACN: 136 525 990

Location and Access Details Include brief description of the location, access details, and distance to nearest town or community	<p>The project is situated 40km east-southeast of the Adelaide River township and 130km southeast of Darwin in the NT.</p> <p>The preferred access is via the Stuart Highway, 20km North of Adelaide River, turning right onto Mt Ringwood Road. Travel East for 30km to the Mt Ringwood Station homestead, then on tracks and along fence lines South.</p>
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Target Commodity Details Include target mineral commodities (i.e. gold, copper etc.)	Gold
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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.	A soil sampling program consisting of 4,099 sample points, to be collected by an ATV-mounted Auger drill rig.
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Mining Management Exploration Activities

Proposed Schedule Include start and finish dates of ground disturbing work	Work is planned to commence in July 2023 and will take approximately three months to complete.
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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
EL31894	NT Mining Operations Pty Ltd	7 March 2025	Mt Ringwood Station (NT POR 6298) Ban Ban Springs (NT POR 695)
EL31905	NT Mining Operations Pty Ltd	7 March 2025	Mt Ringwood Station (NT POR 6298)
EL31911	NT Mining Operations Pty Ltd	22 Feb 2024	Ban Ban Springs (NT POR 695)
EL31912	NT Mining Operations Pty Ltd	30 Sept 2023	Ban Ban Springs (NT POR 695)
MLN878	NT Mining Operations Pty Ltd	7 March 2025	Mt Ringwood Station (NT POR 6298)
MLN879	NT Mining Operations Pty Ltd	7 March 2025	Mt Ringwood Station (NT POR 6298)

Organisational Structure

Position Title	Name
Senior VP Australia	John Landmark
Project Manager	Sean Church
Superintendent Environment	Sam Yang
Senior Exploration Geologist	Meg Ellis
Senior Health Safety & Training Coordinator	Allan Sinclair

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	One record of a Ghost bat recorded on the EL31911 in 1989. No disturbance is to occur during these activities and no removal of native vegetation therefore no impact is expected. During the program fauna observations will be recorded and recorded within the fauna register to be reported within the next MMP.	NTMO MCCPA Flora and Fauna EMP 2023
Step 2: Are there any known declared weeds within the proposed work area?	YES	Due to the historic disturbance from pastoral activities, weeds would be expected to occur across some areas of McCallum Creek project area. Gamba grass was previously recorded by aerial survey. Monitoring during the program will occur. Regular liaison with the Pastoral Lease Managers and adjacent landowners will be undertaken to update with any weed issues identified onsite. The soil sampling program requires one ATV-mounted auger drill and LV which will undergo weed and seed inspection before commencement of activities at MCCPA.	NTMO MCCPA Weed and Pest EMP 2023
Step 3: Will you be using water from bores or other sources for the operation?	NO	No water is required for the soil sampling program.	

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>	NO	<p>No disturbance is expected as samples are to be collected by an ATV-mounted Auger drill rig with no tracks required for the program. The auger borehole diameter is of minimal diameter, often ranging from 76mm to 100mm with expectation of natural infilling and settling. If area is subject to additional disturbance than expected gypsum will be added leading to improved aggregation and structure of the borehole.</p>
<p>Step 5: Are there Aboriginal sacred sites in the Project area?</p>	NO	<p>There is no sacred sites located within the project area with the nearest known site to be located 5km away from the EL boundary line.</p>
<p>Step 6: Are there archaeological and heritage sites in the Project area?</p>	NO	<p>There are no known archaeological or heritage sites located within the proposed work area. NTMO will implement standard work procedures related to cultural heritage if any archaeological matters are found.</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

Delete or add rows as required

Section 4 – Activities Proposed for this MMP only

Provide relevant EL numbers

Mining Interests (i.e. titles)	EL31894	EL31905	EL31911	EL31912	MLN878	MLN879
Number and type of proposed exploration drill holes	1986 Auger	384 Auger	856 Auger	826 Auger	27 Auger	20 Auger
Maximum depth of proposed holes (m)	4.9m	4.9m	4.9m	4.9m	4.9m	4.9m
Number and size of drill pads to be cleared	0	0	0	0	0	0
Total area of drill pads to be cleared (ha)	0	0	0	0	0	0
Number of proposed water bores	0	0	0	0	0	0
Is drilling likely to encounter groundwater in multiple or confined aquifers? (Y, N, unsure)	N	N	N	N	N	N
Number of costeans	0	0	0	0	0	0
Volume to backfill costeans	0	0	0	0	0	0
Number of bulk sample pits	0	0	0	0	0	0
Volume to backfill bulk sample pits	0	0	0	0	0	0
Bulk sample pits approved under <i>Mineral Titles Act</i> ? (Y or N).	NA	NA	NA	NA	NA	NA
Line/track clearing:	0	0	0	0	0	0

Mining Management Exploration Activities

Mining Interests (i.e. titles)	EL31894	EL31905	EL31911	EL31912	MLN878	MLN879
Area of proposed line/track clearing (ha)	0	0	0	0	0	0
Camp area to be cleared (ha)	0	0	0	0	0	0
Camp Infrastructure (i.e. demountable, tents) Please provide a complete list with measurements as required in the security calculation	Auger crew are anticipating staying in Adelaide River township accommodation however if travel times are prohibitive a fly camp will be set up in an approximate 20m x 20m pre-disturbed area at Great Northern track intersections					
Other	0	0	0	0	0	0
Total proposed area of disturbance (ha)	0	0	0	0	0	0

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	✓	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil)
6.2	✓	Significant vegetation will be avoided during clearing (i.e. large trees, specimens providing habitat or food sources, riparian vegetation, and threatened species)
6.3	✓	Vegetation clearing during, and immediately after rainfall events, will be avoided
6.4	✓	Vegetation clearing will be kept to the minimum required to safely traverse vehicles and drill rigs along tracks and drill pads
6.5	✓	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for rehabilitation purposes
6.6	✓	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	✓	Sumps, drill holes, and fuel stores will be located away from environmentally significant areas and water courses
6.9	✓	Excavations (sumps, costeans and pits) will be appropriately ramped to allow fauna egress
6.10	✓	Drill holes will be securely capped immediately after drilling
6.11	✓	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	✓	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	✓	Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian Standards
6.14	✓	Hydrocarbons will be stored in lined and bunded areas
6.15	✓	Waste will be stored securely while on-site to minimise windblown rubbish and access by feral animals
6.16	✓	Waste will be removed off-site and disposed of at an appropriate waste management facility
6.17	✓	All environmental incidents will be reported to the Department in accordance with Section 29 of the <i>Mining Management Act</i> .
6.18	✓	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.

Mining Management Exploration Activities

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

Justification and alternative management measures:

All environmental considerations were taken into accordance with Section 4 of the NTPS Land Clearing Guidelines
There is no disturbance or clearing expected to occur as part of this soil sampling program. No native vegetation to be removed and no proposed tracks are 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	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	✓	Drill samples/spoil will be returned down drill holes, buried in sumps, or removed from site.
7.4	✓	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site.
7.5	✓	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	✓	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur.
7.10	✓	Access through watercourses will be removed and banks restored.
7.11	✓	All previously disturbed areas will be stable, with no evidence of active soil erosion.
7.12	✓	All excavations will be backfilled within 6 months of their completion.
7.13	✓	All water bores will be decommissioned unless otherwise agreed in writing by the land holder or appropriate third party.
7.14	✓	All rubbish and infrastructure will be removed from site.
7.15	✓	Topsoil will be replaced and vegetation re-established.
7.16	✓	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be rehabilitated or removed from site.
7.17	✓	Monitoring will be undertaken following the wet season or a significant rainfall event.

Justification and alternative management measures:

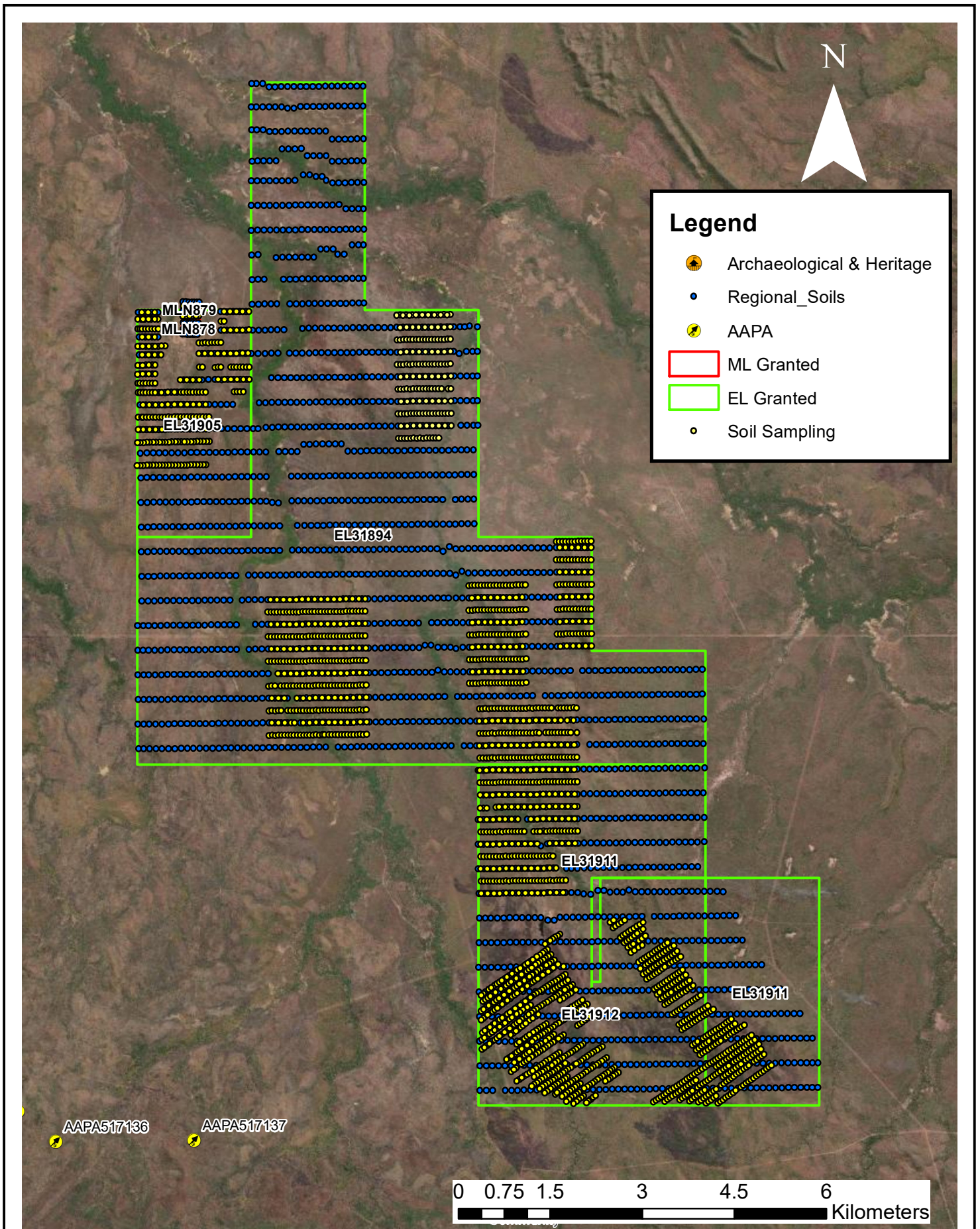
Mining Management Exploration Activities

- 7.1 Drill holes will not be plugged but will be backfilled with cuttings to allow for settlement.
- 7.2 Drill holes are unlikely to intersect aquifers given their shallow depth.
- 7.6 No drill pads required due to shallow depth and use of small diameter auger.
- 7.7 No tracks are being created as part of this program







As no disturbance is expected apart from small diameter auger boreholes without the requirement of clearing of access tracks or pads.

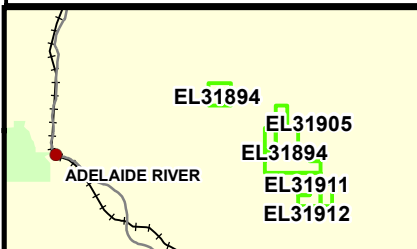
Section 8 – Required Attachments

8.1	✓	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	✓	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	✓	Spreadsheet with coordinates of proposed drill holes or polygons of target areas
8.7	✓	KML/shape files/track logs of proposed tracks, camp sites and proposed drill holes or polygons of target areas
8.8	✓	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	X	Radiation Management Plan (if applicable)
8.12		Document(s) being appended in relation to Section 2 (if any): <ul style="list-style-type: none"> - NTMO MCCPA Flora and Fauna EMP 2023 - NTMO MCCPA Weed and Pest EMP 2023 - NTMO MCCPA Cultural Heritage EMP 2023 - Soil, Erosion and Rehabilitation of Auger Program 2023



Legend

-  Archaeological & Heritage
-  Regional_Soils
-  AAPA
-  ML Granted
-  EL Granted
-  Soil Sampling



McCallum Creek
 Auger Soil Program
 2023





AGNICO EAGLE

**FLORA AND FAUNA
ENVIRONMENTAL MANAGEMENT PLAN
FOR
MCCALLUM CREEK PROJECT AREA**

[2023]

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ABBREVIATIONS

Table 1 Abbreviations

Acronym	Description
AS	Australian Standards
DEPWS	Department of Environment, Parks and Water Security
DITT	Department of Industry, Tourism and Trade
EMP	Environmental Management Plan
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
KPI	Key Performance Indicators
MCCPA	McCallum Creek Project Area
MMP	Mining Management Plan
NTMO	Northern Territory Mining Operations
SOP	Standard Operating Procedure
TPWC Act	<i>Territory Parks and Wildlife Conservation 2001</i>
RACI	Responsible, Accountable, Consulted and Informed
SMART	Specific, Measurable, Achievable, Relevant and Timely

1 SCOPE

This *Flora and Fauna Environmental Management Plan* applies to all personnel and work activities conducted under the direction of Northern Territory Mining Operations (NTMO) at the McCallum Creek site.

The nature and scope of activities conducted at McCallum Creek for 2023 is an auger programme for soil sampling, this plan manages hazards associated at the McCallum Creek Project Area.

2 PURPOSE

The purpose of this plan is to ensure that appropriate controls are developed and implemented to effectively protect flora and fauna at McCallum Creek .

This document provides an overarching plan for the coordination and strategic management of effort.

3 CONTEXT

The NTMO policy requires the undertaking of business in a manner that minimises any potential environmental impacts.

Day-to-day management is implemented through the procedures and plans across each of the NTMO operations. This plan aims to integrate and coordinate existing resources into a coordinated approach.

4 AIM

The intention of this management plan is to provide advice to:

- To minimise disturbance by soil sampling activities and to establish a plan that is specified to the McCallum Creek area soil sampling program.
- Continue to gather information on the flora and fauna that inhabit the area;
- manage areas of disturbance to flora and fauna through the Permit to Clear system; and
- promote awareness of protection of flora and fauna.

A fauna desk top study was conducted with the use NR Maps, one record showed of a Ghost Bat (*Macroderma gigas*) was found on boundary of EL31911 & EL31912.

No disturbance of native vegetation is required for 2023 soil sampling program.

Site specific issues in relation to native flora and fauna may include the potential loss of native species and species of conservation significance from fire, direct vehicular impact and weed and pest introduction and infestation.

5 LEGAL AND OTHER REQUIREMENTS

5.1 Legislation

Applicable legislation to flora and fauna management at the site includes:

- *Mining Management Act;*
- *Aboriginal and Torres Strait Island Heritage Protection Act 1984;*
- *Environment Protection and Biodiversity Conservation Act 1999;*
- *Bushfires Act;*
- *Environmental Offences and Penalties Act;*
- *Heritage Conservation Act;*
- *National Environment Protection Council (Northern Territory) Act;*
- *Territory Parks and Wildlife Conservation Act;* and
- *Weed Management Act.*

5.2 Guidelines

Guidelines For Assessment of Impacts on Terrestrial Biodiversity - Northern Territory Environment Protection Authority

Land Clearing Guidelines – Northern Territory Planning Scheme - Department of Environment, Parks and Water Security

5.3 NTMO Standard Operating Procedures

NTMO Standard Operating Procedures (SOP) applicable to flora and fauna management within the project area includes:

- NTMO ES – SOP 11 Fauna Monitoring;
- NTMO ES – SOP 23 Snake Capture and Relocation;
- NTMO ES – SOP 28 Ground Disturbance (Permit to clear);
- NTMO ES – SOP 31 Incidents and Notification Reporting;
- NTMO ES – SOP 32 Pest and Vector Management;
- NTMO ES – SOP 33 Fauna Injury and Death Management; and
- NTMO ES – SOP 34 Feral Animal Management.

5.4 Approval Conditions

The Environmental Department manage clearing on site with a clearance and ground disturbance permit following the Land Clearing Guidelines – Northern Territory Planning Scheme. This system manages clearing on site and implements particular measures that are specific to each site and environmental conditions. A number of aspects are incorporated into the permit and include short and long term impacts on fauna and flora and include:

- Visible nests
- Sensitive or significant vegetation
- Identified protected species
- Previously disturbed or undisturbed sites
- Planning for rehabilitation i.e. Sump location and stock pile top soil, slopes, erosion.

6 OPERATIONAL STATUS

6.1 Activities

McCallum Creek Project Area has no mining or processing activities undertaken at this site. An auger program for soil sampling will be the only activity commenced on the McCallum Creek Project Area for 2023. There is no disturbance in removal of native vegetation required for this program. Should any activities other than soil sampling occur at the project area which would cause ground disturbance, an NTMO Clearing Permit would be required. From this process items with flora/fauna significance should be identified and an updated Environmental Management Plan would be developed.

7 OBJECTIVES AND TARGETS

The NTMO strategic objectives for managing flora and fauna at the site is to continue to gather information and prevent disturbance.

NTMO have set three key targets to drive and measure performance towards achieving the overarching strategy/objective. These targets are defined in Table 2. As part of continual improvement, NTMO reviews and assesses performance against these targets. A review and status of environmental performance against these targets are provided to Department of Industry, Tourism and Trade in the Mining Management Plan (MMP).

NTMO considers the Specific, Measurable, Achievable, Relevant and Timely (SMART) method when considering annual objectives and targets.

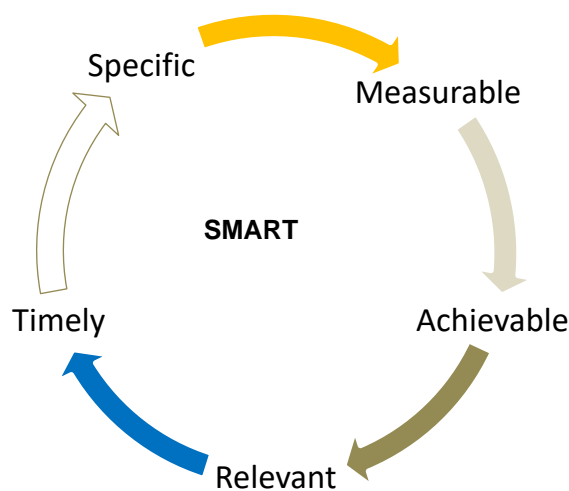


FIGURE 1 SMART METHOD FOR DETERMINING OBJECTIVES

Further detail regarding NTMO objectives and targets for 2023 is provided in Table 2.

8 MEASURING AND MONITORING

The following management strategies presents the objectives and targets for the 2023 period (Table 1).

Table 2 FLORA AND FAUNA MANAGEMENT PROCEDURE

Specific			Measurable		Achievable	Timely	Relevant	
Strategic Objective (What)	Actions (How)	Explanation (Why)	Timeframe (When)	Responsibility (Who)	Target	Target Date	Key Performance Indicators	Non Conformance and Corrective Action
Review the fauna sightings register.	Begin logging and reviewing fauna sightings within project area.	To develop improved management of fauna species and abundance at the site.	Review database Annually. Continued logging of fauna sightings of note for the life of this EMP.	Environmental Officer	Fauna sightings register with log entries.	Annually	Fauna sightings database and entries of fauna sightings (if applicable).	Conduct a retrospective review of fauna sightings register to identify any trends in fauna populations.
Avoid areas of flora and fauna significance.	Obtain Permit to Clear approval prior to any ground disturbance activities and rehabilitate exploration locations in accordance with NTMO SOPs.	To minimise impact to native flora and fauna in the project area.	Permit to Clear Approvals as required.	Environmental Officer	Approved Permits to Clear as required. Photographs taken before and after rehabilitation. Rehabilitate cleared areas as soon as possible.	Annually	Permit to Clear approval obtained No adverse impact to flora and fauna identified.	If areas of flora and fauna significance are impacted an assessment will be undertaken to determine the level of impact and remediation activities undertaken as necessary.
Implement measures to protect and appropriately manage any threatened species observed to inhabit the vicinity of the project area.	To be determined based upon any sightings of threatened species.	Protect threatened species.	Prior to any additional exploration drilling other than currently proposed soil sampling program	Environmental Officer	To be determined based upon any sightings of threatened species.	Annually	Review of fauna sightings register, implementation of protection methods if identified to be a risk of impact from operations.	Review of protection measures or implementation methods. Develop alternative solutions.

9 ROLES AND RESPONSIBILITIES

Roles and responsibilities are set out in the following Responsible, Accountable, Consulted and Informed (RACI) matrix.

Table 3 ACCOUNTABILITY MATRIX

Task Description	Employees & Contractors	Environmental Officers	Environment & Community Manager	Health & Safety Manager	General Manager	All Managers
Understand and apply all required procedures and systems in regards to native flora and fauna management	R		A			
Report any non-compliance with the native flora and fauna management requirements through the event/incident reporting system	R					A
Sign off on ground clearance approvals as required by the system and in accordance with the approved ground clearance		R	A			
Ensure all employees and contractors are aware of all required procedures and systems for native flora and fauna management and are provided with all required resources to implement the requirements effectively;			R		A	
Ensure all employees and contractors are provided with appropriate clearance approvals and on-ground guidance prior to giving any native vegetation clearing instructions;	I	R	A			
Ensure all employees and contractors are provided with appropriate flora and fauna management related training	I		R	C	A	
Undertake annual review of the Flora and Fauna EMP		R	A		I	

Key:

R	Responsible	Person working on activity
A	Accountable	Person with decision authority, ultimately responsible of failure
C	Consult	Key stakeholder who should be including in decision
I	Inform	Person that needs to know of decision/action/outcome

10 DISCUSSION, ANALYSIS AND REPORTING

10.1 Reporting of results & non-compliances

NTMO will provide performance results against the EMPs and MMP commitments/requirements for the 2023 period within the 2024 MMP. Any non-compliance found in this performance report is discussed and analysed, with corrective and preventative actions identified. A copy of the fauna sightings register will be included in the MMP.

10.2 Incident Reporting

Where a flora and fauna related incident, causes or threatens to cause material¹ or serious² environmental harm, on and offsite the Northern Territory DITT will be informed as soon as practicable in accordance with the *Mining Management Act*. As a minimum, NTMO internal policy prescribes reporting within 12 hours and submission of a Section 29 report to DITT within 24 hours. For all environmental incidents offsite the Northern Territory Department of Environment, Parks and Water Security (DEPWS) will be informed as soon as practicable (and in any case within 24 hours after) as per the *Waste Management and Pollution Control Act 1998*.

Reporting of incidents and non-compliances will be undertaken in accordance with the NTMO ES – SOP31 Incidents and Notification Reporting and in the OPR and/or MMP.

The occurrence of new declared weeds in the project area will be reported as per the *Weed Management Act* and to DITT as per the *Mining Management Act*.

¹ Where material environmental harm is defined as 'environmental harm that is not trivial or negligible in nature, consists of an environmental nuisance of a high impact or on a wide scale, results, or is likely to result, in not more than \$50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment or results in actual or potential loss or damage to the value of not more than \$50,000 or the prescribed amount (whichever is greater).

² Where serious environmental harm is defined as 'environmental harm that is more serious than material environmental harm and includes environmental harm that is irreversible or otherwise of a high impact or on a wide scale, damages an aspect of the environment that is of a high conservation value, high cultural value or high community value or is of special significance, results or is likely to result in more than \$50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment or results in actual or potential loss or damage to the value of more than \$50,000 or the prescribed amount (whichever is greater).

11 REVIEW

The Flora and Fauna EMP will be reviewed and updated no later than annually. A review may occur sooner consequent to a material change in risk, legal requirements, or an incident relevant to flora and fauna management.

12 REFERENCES

Waste Management and Pollution Control Act 1998.

Weed Management Act

Mining Management Act

NSR Environmental Consultants Pty Ltd, 1995. Draft Environmental Impact Statement. July 1995. (Supplement August 1995).

Wilson BA, Brocklehurst PS, Clark MJ and Dickinson JJM., 1990. Vegetation of the Northern Territory, Australia. Technical Report No. 49. Conservation Commission of the Northern Territory, Darwin.

Guidelines For Assessment of Impacts on Terrestrial Biodiversity - Northern Territory Environment Protection Authority

Land Clearing Guidelines – Northern Territory Planning Scheme - Department of Environment, Parks and Water Security

NTMO ES – SOP33 Fauna injury and death management

NTMO-ES – SOP11 Fauna monitoring

NTMO ES-SOP23 Snake capture and relocation

NTMO ES – SOP 28 Ground disturbance

NTMO ES – SOP31 Incident & Complaint Notification & Reporting



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**CULTURAL HERITAGE ENVIRONMENTAL
MANAGEMENT PLAN
FOR
MCCALLUM CREEK PROJECT AREA**

[2023]

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ABBREVIATIONS

TABLE 1 ABBREVIATIONS

Acronym	Description
AAPA	Aboriginal Areas Protection Authority
AHC	Australian Heritage Commission
AS	Australian Standards
DEPWS	Department of Environment, Parks and Water Security
DITT	Department of Industry, Tourism and Trade
DLPE	Department of Lands, Planning and Environment
EMP	Environmental Management Plan
MCCPA	McCallum Creek Project Area
MMP	Mining Management Plan
NT	Northern Territory
RACI	Responsible, Accountable, Consulted and Informed
RNE	Register of the National Estate
SMART	Specific, Measurable, Achievable, Relevant and Timely
SOP	Standard Operating Procedure
NTMO	NT Mining Operations Pty Ltd

1. SCOPE

This *Cultural Heritage Environmental Management Plan* applies to all personnel and work activities conducted under the direction of NT Mining Operations (NTMO) at the McCallum Creek Project Area.

2. PURPOSE

The purpose of this plan is to ensure the ongoing protection of known archaeological sites at McCallum Creek for all work undertaken by NTMO and contractors.

NTMO has procedures relating to specific aspects of cultural heritage management and this document provides an overarching plan for the coordination and strategic management of effort embedded in those individual plans.

3. CONTEXT

The NTMO policy commits to understand, encourage and promote eco-cultural and cross-cultural awareness, and wherever able, identify and protect sites of environmental or cultural significance.

Day-to-day management is implemented through the procedures and plans across each of the NTMO operations. This plan aims to integrate and coordinate existing resources into a coordinated approach.

4. AIM

This Environmental Management Plan addresses the management of archaeological and cultural heritage across the McCallum Creek Project Area (MCCPA).

The site specific objective of cultural heritage management for the project area is to protect cultural heritage sites.

- The strategies for cultural heritage management at the site include:
- Conduct heritage surveys in new areas to be disturbed (if not previously surveyed) prior to any disturbance;
- Demarcate sites of moderate or higher significance in the vicinity of operations;
- Regularly inspect conditions of sites; and
- Obtain appropriate approvals prior to disturbance of any heritage sites if disturbance is proposed
- Flag areas of significance in near vicinity of drilling activities
- Establish buffer or exclusion zone around heritage sites if found

5. LEGAL AND OTHER REQUIREMENTS

5.1 Legislation

Applicable legislation to cultural heritage management includes:

- *Mining Management Act;*
- *Aboriginal and Torres Strait Island Heritage Protection Act 1984;*
- *Australian Heritage Council Act 2003;*
- *Environment Protection and Biodiversity Conservation Act 1999;*
- *Environment and Heritage Legislation Amendment Act (No 1) 2003;*
- *Environment and Heritage Legislation Amendment Act (No 1) 2006;*
- *Northern Territory Of Australia Heritage Act 2011*
- *Heritage Conservation Act 1991*
- *Northern Territory Aboriginal Sacred Sites Act; and*
- *Pastoral Land Act 1992*

5.2 Guidelines

No relevant guidelines identified.

5.3 NTMO Standard Operating Procedures

NTMO Standard Operating Procedures (SOP) applicable to cultural heritage management within the project area includes:

- NTMO ES – SOP14 Archaeological Chance Find;
- NTMO ES – SOP28 Ground Disturbance; and
- NTMO ES – SOP31 Incident Reporting and Notification.

5.4 Approval Conditions

The following approval conditions may be applicable:

- Permit to Undertake Work under S29 & 39 (Excavate, collect, disturb, destroy) *Heritage Conservation Act 1991;*

6. OPERATIONAL STATUS

6.1 Activities

MCCPA has no mining or processing activities undertaken at this site. An auger program for soil sampling will be the only activity commenced on the McCallum Creek Project Area for 2023. Should any activities occur at the project area which would cause ground disturbance, an NTMO Clearing Permit would be required. From this process items with heritage or archaeological significance should be identified. There is no disturbance in removal of native vegetation required for this program.

6.2 Heritage Sites

There are no known sacred sites or heritage sites located within the MCCPA.

7. OBJECTIVES AND TARGETS

The objective of cultural heritage management within the project area is to prevent impacts to cultural heritage sites from activities proposed during the MMP period.

NTMO have one key target to drive and measure performance towards achieving the overarching strategy/objective. This target is described in Table 2. As part of continual improvement, NTMO reviews and assesses performance against these targets. A review and status of environmental performance against these targets are provided to the Department of Primary Industry and Resources in the Mining Management Plan (MMP).

NTMO considers the Specific, Measurable, Achievable, Relevant and Timely (SMART) method when considering annual objectives and targets.

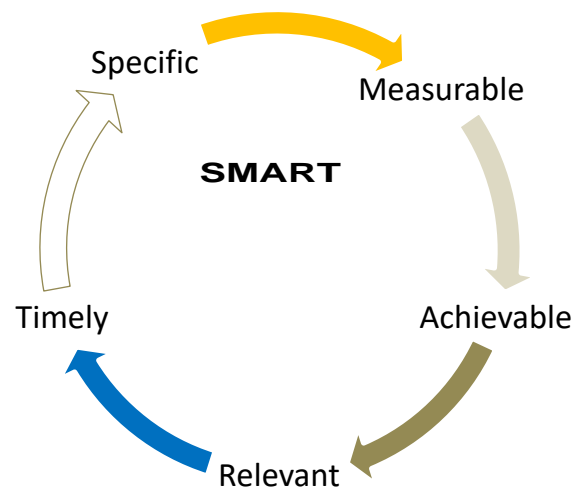


FIGURE 1 SMART METHOD FOR DETERMINING OBJECTIVES

Further detail regarding NTMO objectives and targets for 2023 is provided in Table 2.

8. MEASURING AND MONITORING

The following management strategies table includes the objectives and targets NTMO have proposed for the 2023 period (Table 2).

TABLE 2: CULTURAL HERITAGE MANAGEMENT STRATEGIES

Specific			Measurable		Achievable	Timely	Relevant	
Strategic (Objective)	Actions (How)	Explanation (Why)	Responsibility (Who)	Measurement (Deliverable)	Targets	Target Date	Key Performance Indicators	Non Conformance and Corrective Action
Avoid unauthorised impact to heritage sites.	Obtain Permit to Clear approval prior to any ground disturbance activities in accordance with NTMO SOPs.	To prevent potential for damage to historical sites of significance.	Environmental Officer	Permit to Clear approvals.	Obtain Permit to Clear approval prior to any ground disturbance activities.	When required Approved Permits to Clear prior to clearing.	Permit to Clear approval obtained No unauthorised / adverse impact to cultural heritage sites.	A review of field and reporting systems and process will be undertaken and actions implemented of outcome.
	Vehicles to remain on designated tracks	To prevent potential destruction to cultural and heritage sites	Environmental Officer	Audits and Inspections. Education occurs during site inductions and verbal communication with external contractors.	By maintaining good access within the site to prevent off road driving	Quarterly during site inspections	No impact to sites of significance from NTMO activities	

9. MANAGEMENT AND MITIGATION

The main control for managing the risk to known heritage sites is through the requirement for personnel to seek approval from the NTMO Environment Department for a Clearing Permit. This process forces a check of the known heritage items in relation to the proposed disturbance area and area walkover prior to the issuing of Clearance Permits.

9.1 Additional controls

In addition to the strategies in Table 2, the following mitigation and management measures will be implemented across the project area in relation to archaeological sites.

Appropriate approvals from the Minister for Heritage will be obtained prior to the disturbance of any archaeological site inside the mine footprint; and

In the event of a chance-find, i.e., in the event that archaeological material is uncovered unexpectedly during exploration, the following will be implemented:

- All work in this area will cease or relocate;
- The area will be demarcated with bunting or bunding and signage;
- The Environmental Manager or Environmental Officer will contact Heritage Conservation Services, Darwin (at DTFHC) for advice on how to proceed; and
- Works will not recommence in that area until advice has been received and implemented as required.

10. ROLES AND RESPONSIBILITIES

Roles and responsibilities are set out in the following Responsible, Accountable, Consulted and Informed (RACI) matrix.

TABLE 3 ACCOUNTABILITY MATRIX

Task Description	Employees & Contractors	Environmental Officers	Environment & Community Manager	Health & Safety Manager	General Manager	All Managers
Understand and apply all required procedures and systems in regards to cultural heritage management	R	I	C			A
Undertake inspections		R	A		I	
Review an issue Clearance Permits with appropriate controls prior to any NTMO disturbance of possible heritage sites.		R	A		I	
Report any non-compliance with the cultural heritage management requirements through the event/incident reporting system.	R	R	A			
Ensure all employees and contractors are aware of all required procedures and systems for cultural heritage management and are provided with all required resources to implement the requirements effectively;	I	R	A	R		
Ensure cultural heritage related complaints are addressed in a timely manner and that corrective actions are implemented as required. Any corrective actions implemented should be included in the annual review of the cultural heritage management EMP	R	R	A		I	I
Undertake annual review of the Cultural Heritage EMP		R	A		I	

Key:

R	Responsible	Person working on activity
A	Accountable	Person with decision authority, ultimately responsible of failure
C	Consult	Key stakeholder who should be including in decision
I	Inform	Person that needs to know of decision/action/outcome

11. DISCUSSION, ANALYSIS AND REPORTING

11.1 Reporting of results and non-compliances

NTMO will provide performance results against the EMPs and MMP commitments/requirements for the 2023 period within the 2024 MMP. Any non-compliance found in this performance report is discussed and analysed, with corrective and preventative actions identified.

11.2 Incident Reporting

Where a heritage (Aboriginal or European) incident causes or threatens to cause damage resulting in material¹ or serious² environmental harm, on and offsite, the Northern Territory DITT will be informed as soon as practicable in accordance with the *Mining Management Act*. As a minimum, NTMO internal policy prescribes reporting within 12 hours and submission of a Section 29 report to DITT within 24 hours. For all environmental incidents offsite DITT will be informed as soon as practicable (and in any case within 24 hours after) as per the *Waste Management and Pollution Control Act 1998*.

Additionally, discovery of any European archaeological sites will be reported to the NT Heritage Council, and cultural archaeological sites will be reported to the NT Heritage Branch and AAPA. Reporting of non-compliances and incidents will be report in accordance with the NTMO-ES – SOP31 Incidents and Notification Reporting.

Any cultural heritage/archaeology related complaints will be recorded in the NTMO INX Inform stakeholder register. Complaints will be discussed within the NTMO Environment Department immediately and as a minimum, the aim is to have a strategy for resolution within a week.

¹ Where material environmental harm is defined as 'environmental harm that is not trivial or negligible in nature, consists of an environmental nuisance of a high impact or on a wide scale, results, or is likely to result, in not more than \$50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment or results in actual or potential loss or damage to the value of not more than \$50,000 or the prescribed amount (whichever is greater).

² Where serious environmental harm is defined as 'environmental harm that is more serious than material environmental harm and includes environmental harm that is irreversible or otherwise of a high impact or on a wide scale, damages an aspect of the environment that is of a high conservation value, high cultural value or high community value or is of special significance, results or is likely to result in more than \$50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment or results in actual or potential loss or damage to the value of more than \$50,000 or the prescribed amount (whichever is greater).

12. REVIEW

The Cultural Heritage EMP will be reviewed and updated no later than annually. A review may occur sooner consequent to a material change in risk, legal requirements, or an incident relevant to cultural heritage management.

13. REFERENCES

Aboriginal and Torres Strait Island Heritage Protection Act 1984;

Australian Heritage Council Act 2003;

Crassweller, C. 2007. *Archaeological Survey for the Proposed Access Road From McCallum Creek Project Area to the Stuart Highway, Katherine, NT.* Begnaze Pty Ltd, dated May 2007.

Environment Protection and Biodiversity Conservation Act 1999;

Environment and Heritage Legislation Amendment Act (No 1) 2003;

Environment and Heritage Legislation Amendment Act (No 1) 2006;

Guse, D. and Gregory, R., 1994. *Archaeological Survey of the Proposed McCallum Creek Mining Prospect NT.* NTU Archaeological Service, dated November 1994.

Heritage Conservation Act 1991;

Jung, S. 2011. *McCallum Creek Anomaly, Northern Territory Archaeological Survey Report.* Ellengowan Enterprises, dated December 2011.

Mining Management Act;

Northern Territory Aboriginal Sacred Sites Act.

NTMO ES – SOP14 Archaeological Chance Find;

NTMO ES – SOP28 Ground Disturbance;

NTMO ES – SOP31 Incident Reporting and Notification.

Permit to Undertake Work under S29 & 39 (Excavate, collect, disturb, destroy etc) *Heritage Conservation Act 1991;*

Land Clearing Guidelines – Northern Territory Planning Scheme



AGNICO EAGLE

NT Mining Operations Pty Ltd
ACN 136-525-990

**WEED AND PEST
ENVIRONMENTAL MANAGEMENT PLAN
FOR
MCCALLUM CREEK PROJECT AREA**

[2023]

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Abbreviations

Table 1 Abbreviations

Acronym	Description
AAPA	Aboriginal Areas Protection Authority
AHC	Australian Heritage Commission
ANZECC	Australian and New Zealand Environment and Conservation Council
AS	Australian Standards
DEPWS	Department of Environment, Parks and Water Security
DITT	Department of Industry, Tourism and Trade
EMS	Environmental Management System
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ERT	Emergency Response Team
GBS	GBS Gold Australia Pty Ltd
KPI	Key Performance Indicators
MMP	Mining Management Plan
NAFI	North Australian Fire Information
NT	Northern Territory
NTMO	Northern Territory Mining Operations
OH&S	Occupational Health and Safety
SOP	Standard Operating Procedure
TPWC	Territory Parks and Wildlife Conservation

1. SCOPE

This Environmental Management Plan (EMP) addresses the management and control of weeds and pest fauna species within the McCallum Creek Project Area (MCCPA). Native flora and fauna management across the project area is covered in the MCCPA Flora and Fauna EMP.

The nature and scope of activities conducted at the McCallum Creek Project Area (MCCPA) aims to manage weeds and pest associated with McCallum Creek Soil sampling activities.

This Weed and Pest Environmental Management Plan applies to all personnel and work activities conducted under the direction of NT Mining Operations (NTMO) at the McCallum Creek site.

2. PURPOSE

NTMO has procedures relating to specific aspects of weed and pest management and this document provides an overarching plan for the coordination and strategic management of effort embedded in those individual plans.

3. CONTEXT

The NTMO policy requires the undertaking of business in a manner that minimises any potential environmental impacts.

Day-to-day management is implemented through the procedures and plans across each of the NTMO operations. This plan aims to integrate and coordinate existing resources into a coordinated approach.

4. AIM

The intention of this management plan is to provide management strategies to reduce the potential loss of native species from weed infestation and pest invasion and the increased risk of uncontrolled wildfires from large infestations of weeds.

4.1 Issues

Due to the historic disturbance from pastoral activities, pests and weeds would be expected to occur across some areas of the MCCPA.

The MCCPA soil sampling program requires one ATV- mounted auger drill and LV which will under go weed and seed inspection before commencement of activities at MCCPA.

Evidence or sightings of feral animals will be logged in a MCCPA register by environmental staff. Controls will be implemented if required after discussions with the pastoral lease owners. It is likely that various feral animals common to the Top End of the Northern Territory exist in the MCCPA including Water Buffalo (*Bubalus bubalus*), Feral Pigs and Cane Toads (*Rhinella marina*).

5. LEGAL AND OTHER REQUIREMENTS

5.1 Legislation

NTMO and their contactors are obliged to comply with all relevant environmental legislation. There are a range of legislations that relate to weed management in the Northern Territory although weeds are primarily covered by the *Weeds Management Act 2000*. Applicable legislation to weed and pest management in the project area includes:

- *Mining Management Act*;
- *Environment Protection and Biodiversity Conservation Act*;
- *Weeds Management Act*;
- *Biological Control Act*;
- *Territory Parks and Wildlife Conservation Act*; and
- *Soil Conservation and Land Utilisation Act*;

5.2 Guidelines

Relevant guidelines for weed and pest management include:

- Weeds Management Branch, 2018, *Weed management Handbook*, Northern Territory Government.
- Weed Management Branch, *Preventing weed spread is everybody's business*, Northern Territory Government
- Northern Territory Government, 2017, *Gamba Grass*

5.3 NTMO Standard Operating Procedures

NTMO Standard Operating Procedures (SOP) applicable to weed and pest management within the project area includes:

- NTMO ES – SOP 30 Weed Control;
- NTMO ES – SOP 31 Incident and Notification Reporting;
- NTMO ES – SOP 32 Pest and Vector Management;
- NTMO ES – SOP 34 Feral Animal Management; and
- NTMO ES – SOP 35 Controlled Burning.

6. OPERATIONAL STATUS

6.1 Activities

McCallum Creek Project Area has no mining or processing activities undertaken at this site. An auger program for soil sampling will be the only activity commencing on the McCallum Creek Project Area for 2023.

6.2 Risk Management

NTMO have identified activities which may present an environmental risk from weed & pest infiltration, these have been extracted and summarized below.

Table 2 Risk Assessment

Activity	Potential Impact	Residual Risk Level		
		Consequence	Likelihood	Risk
Unstable landform	Weed infestation and erosion of pads	Minor	Unlikely	Very Low
Failure of rehabilitation	Weed infestation of rehabilitated areas	Minor	Possible	Low
Cattle Farming	Weed infestation and erosion.	Minor	Possible	Low

6.3 Strategies

The strategies for weed and pest management for the site are to:

- carry out baseline weed mapping during the coming reporting period;
- control the potential introduction of weed and pest species;
- minimise the spread of weed species by conducting Weed and Seed Inspections on all vehicles entering the site
- maintain and interpret the register of pest sightings for the MCCPA as a tool for pest management in the area.
- understand numbers and diversity of feral animal populations across the project area and implement effective control programmes annually, if required.
- Regular liaison with the Pastoral Lease Managers and adjacent landowners will be undertaken to inform them of the weed issues onsite

7. OBJECTIVES AND TARGETS

The overarching objectives of weed and pest management within the project area are to limit and reduce the spread of weed and pest populations; to minimise adverse impacts to native flora and fauna; and to manage weed growth to reduce the risk of uncontrolled wildfires.

NTMO have set eleven key targets to drive and measure performance towards achieving the overarching strategy/objective. These targets are defined in Table 2. As part of continual improvement, NTMO reviews and assesses performance against these targets. A review and status of environmental performance against these targets are provided to the Department of Industry, Tourism and Trade in annual Mining Management Plan (MMP).

NTMO considers the Specific, Measurable, Achievable, Relevant and Timely (SMART) method when considering annual objectives and targets.

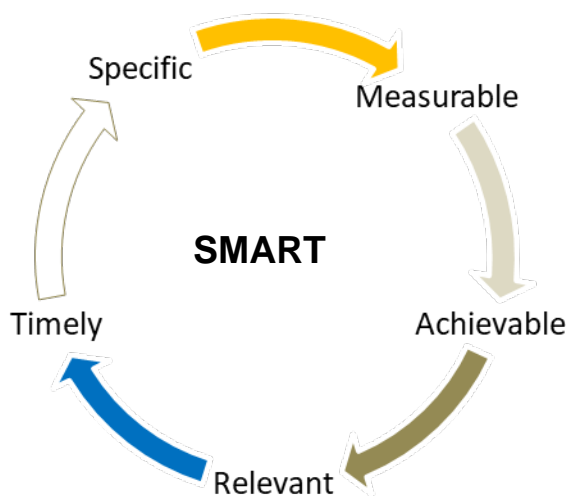


Figure 1 Smart Method for Determining Objectives

8. MEASURING AND MONITORING

The following management strategies table includes the objectives and targets NTMO have proposed for the 2023 period.

Table 3 Weed and Pest Management Strategies

Specific			Measurable		Achievable	Timely	Relevant	
Strategies (What)	Actions (How)	Explanation (Why)	Responsibility (Who)	Measurement (Deliverable)	Targets	Target Dates	Key Performance Indicators	Non Conformance and Corrective Action
Monitor occurrences of weed species.	Map weed infestations by density and spatial surveys.	To establish weed locations to target control strategies.	Environmental Officer	Weed Map and details logged in database.	Undertake annual weed mapping (early in dry season when species can be readily identified/late wet season according to NT weed monitoring standards).	Annually Undertake annual weed mapping by June (early in dry season when species can be readily identified / late wet season) based on NT Weed Management Handbook and Advise from DEPWS Weed Management Branch	documented weed maps and database entries.	<p>Review company resources and operating requirements to determine why action wasn't completed. If a new Class A or Weeds of National Significance (WONS) weed species is identified, an incident report will be logged, root cause investigation undertaken and identification of corrective actions for immediate implementation will be undertaken.</p> <p>Identification of any weed species will be managed as part of weed control program at the site.</p> <p>Corrective actions may include:</p> <ul style="list-style-type: none"> • Implementation of a targeted or broad scale weed control program; • Change in frequency, timing or method of weed control (i.e. chemical or physical control, change in herbicide or slashing, ploughing, grazing etc); • Increased weed mapping; • Review of Weed EMP and/or Weed Control Action Plan; and • Reinforce to personnel appropriate weed management practices.

Specific			Measurable		Achievable	Timely	Relevant	
Strategies (What)	Actions (How)	Explanation (Why)	Responsibility (Who)	Measurement (Deliverable)	Targets	Target Dates	Key Performance Indicators	Non Conformance and Corrective Action
Monitor occurrences of pest species	Record pest observations	Identify any new or increase in pest numbers.	Environmental Officer	Up to date pest sightings register	Log pest sighting details (e.g. species, location etc) and any complaints in a register following a sighting includes inspection of water ponding areas for mosquito presence if applicable.	Ongoing	Up to date pest sightings register	Re-educate personnel through induction process and site awareness posters to advise Environment team of pest sightings.
Prevent accidental introduction of weeds.	Prohibit off-road driving in vegetated areas and in any off-road areas during the wet season.	To prevent seed transfer of seed by vehicles.	Environmental Officer	New species identified during weed mapping and monitoring	Designated vehicle access utilizing up to date maps of roads and tracks	Annual.	Heavy equipment washed prior to site use	Assess the level of weed migration through the weed mapping process and identify priority control areas as a part of a weed action plan. Discuss with other NTMO staff and contractors through inductions and tool box meetings. Only exploration / environmental staff accessing site.
	Mobile equipment entering site will be inspected to ensure it is clean of high-risk indicators such as caked dirt and residual vegetative materials.	To prevent seed transfer by vehicles.	Environmental Officer	NA	Mobile equipment entering site will be inspected to ensure it is clean of high-risk indicators.	As required.	No new weed species or infested areas identified.	Assess the level of weed migration through the weed mapping process and identify priority control areas as a part of a weed action plan.

9. ROLES AND RESPONSIBILITIES

Roles and responsibilities are set out in the following Responsible, Accountable, Consulted and Informed (RACI) matrix.

Table 4 Accountability matrix

Task Description	Employees & Contractors	Environmental Officers	Environment & Community Manager	Health & Safety Manager	General Manager	All Managers
Understand and apply all required procedures and systems in regards to weed and pest management	R				I	A
Report any non-compliance with the weed and pest management requirements through the event/incident reporting system	R	C	C		I	A
<i>Sign off on vehicle inspections as required</i>		R	A		I	
<i>Undertake weed mapping, inspections, reviews and monitoring.</i>		R	A			
<i>Maintain fire, weed mapping & weed spraying Logs and Pest sightings register</i>		R	A			
<i>Ensure all employees and contractors are aware of all required procedures and systems for weed and pest management and are provided with all required resources to implement the requirements effectively</i>	I	C	R			A
<i>Ensure all employees and contractors are provided with appropriate clearance approvals with respect to weed inspections prior to giving any native vegetation clearing instructions</i>	I	C	R		A	
<i>Consultation</i>		R	R, A		I	
<i>Ensure all employees and contractors are provided with appropriate weed and pest management related training</i>	I	C	R		A	
<i>Undertake annual review of the Weed and Pest EMP.</i>		R	A		I	

Key:

R	Responsible	Person working on activity
A	Accountable	Person with decision authority, ultimately responsible of failure
C	Consult	Key stakeholder who should be including in decision
I	Inform	Person that needs to know of decision/action/outcome

10. DISCUSSION, ANALYSIS AND REPORTING

Where a rehabilitation related incident, causes or threatens to cause pollution resulting in material¹ or serious² environmental harm, on and offsite the Northern Territory DITT will be informed as soon as practicable in accordance with the Mining Management Act. As a minimum, NTMO internal policy prescribes reporting within 12 hours and submission of a Section 29 report to DITT within 24 hours. For all environmental incidents offsite the DITT will be informed as soon as practicable (and in any case within 24 hours after) as per the Waste Management and Pollution Control Act 1998.

Additional to the reporting requirements identified in Table 3, reporting of non-compliances and monitoring and measurement results will be included in the annual McCallum Creek Project Area MMP.

¹ Where material environmental harm is defined as 'environmental harm that is not trivial or negligible in nature, consists of an environmental nuisance of a high impact or on a wide scale, results, or is likely to result, in not more than \$50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment or results in actual or potential loss or damage to the value of not more than \$50,000 or the prescribed amount (whichever is greater).

² Where serious environmental harm is defined as 'environmental harm that is more serious than material environmental harm and includes environmental harm that is irreversible or otherwise of a high impact or on a wide scale, damages an aspect of the environment that is of a high conservation value, high cultural value or high community value or is of special significance, results or is likely to result in more than \$50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment or results in actual or potential loss or damage to the value of more than \$50,000 or the prescribed amount (whichever is greater).

11. REFERENCES

Northern Territory 'Weed management Handbook" Department of Land Resource Management, 2014.
www.nt.gov.au/weeds

Department of Land Resource Management (DLRM) (2018), Northern Territory Weed Management Handbook, Weed Management Branch DLRM, Palmerston.

'Weeds of the Wet/Dry Tropics of Australia, A Field Guide', Nicholas Smith, Environment Centre NT.



AGNICO EAGLE

**SOIL EROSION AND REHABILITATION
FOR
MCCALLUM CREEK PROJECT AREA AUGER SAMPLING
PROGRAM 2023**

1 Activities

McCallum Creek Project Area has no mining or processing activities undertaken at this site. An auger program for soil sampling will be the only activity commenced on the McCallum Creek Project Area for 2023. There is no disturbance by removal of native vegetation or tracks required for this program. Should any activities other than soil sampling occur at the project area which would cause ground disturbance, an NTMO Clearing Permit would be required. From this process items with flora/fauna significance should be identified and an updated Environmental Management Plan would be developed.

2 Soil Types

Tb134 Sodosol

Strongly undulating to hilly lands on greywacke, siltstones, and sandstones with rock outcrops, and interspersed with gently sloping to flat-floored valleys of variable size and extent: soil dominance varies markedly between the valleys and the hilly portions. Chief soils of the basal hill slopes and the valleys are hard acidic, and also neutral, yellow mottled soils, sometimes in association with yellow and grey earths. Chief soils of the hill slopes are shallow stony and gravelly loams and sands, in association with variable areas of stony and gravelly soils and yellow earths.

Va73 Hydrosol

Open flat to gently sloping plains traversed by streams flanked by levees and active flood-plain areas. The common soils are hard alkaline, hard neutral, and hard acidic yellow mottled and yellow soils in which A horizon thickness varies from < 150mm. to > 300mm depth; acidic and neutral yellow earths often containing ironstone gravel, and often overlying either cemented ferruginous layers or dense alkaline clays; and yellow and grey leached earths often containing ironstone gravels. Any of the foregoing soils may be dominant on an individual plain; indeed, the plain associated with each stream invariably has features peculiar to itself.

LK22 Tenosol

Hilly to steep hilly ranges and strike ridges mainly on greywacke, siltstones, and some sandstones; a surface stone cover is common; rock outcrops are frequent chief soils of the hill slopes are shallow stony and gravelly loams and sand. Associated are variable areas of stony and gravelly soils Other yellow earths and red earths on dolerite sills and andesites.

Soil Sampling Zone	Australian Soil Classification
Target 1	Sodosol
Target 2	Sodosol, Hydrosol, Tenosol
Target 3	Sodosol
Target 4	Sodosol, Tenosol
Target 5	Hydrosol, Tenosol
Target 6	Tenosol
Target 7	Sodosol
Target 8	Hydrosol

3 Rehabilitation

The auger borehole diameter is of minimal diameter, often ranging from 76mm to 100. Due to the unconsolidated nature of the surrounding soil, the borehole is subject to natural settling and infilling process over time which is a natural progression of the soil returning to its previous state. However, where the area is subject to more disturbances will require gypsum application.

Gypsum can help improve soil structure, particularly in McCallum Creek region sodic soils. Sodic soils are those with a high percentage of sodium ions, which cause the soil particles to disperse, leading to poor structure, compaction, and poor drainage. Gypsum, which is calcium sulfate, can replace sodium on the soil particles, leading to improved aggregation and structure. This would be particularly useful if the surrounding soil is sodic.

Given the three types of the regional soil of the study area, including both hard acidic, and also neutral, yellow mottled soils and alkaline clays. Gypsum shall be used to ameliorate the soil condition by not altering and only improve the soil pH also increase the calcium ions.