

Mining Management Plan Exploration Activities

Northern Territory of Australia – Mining Management Act

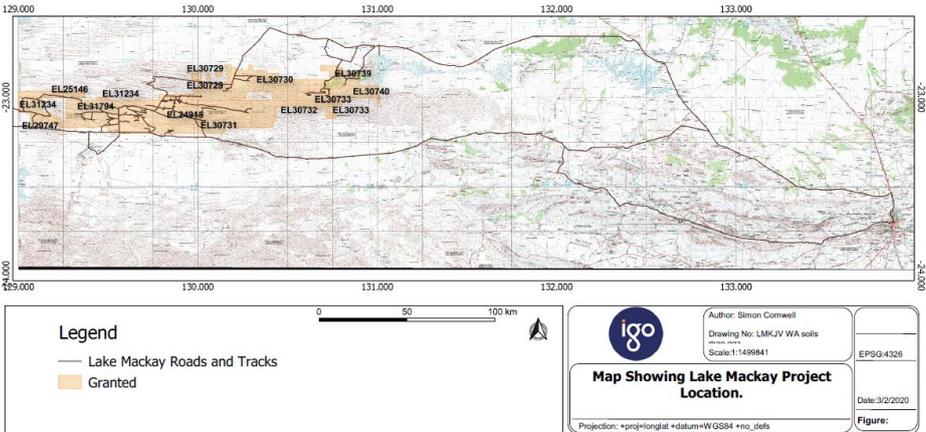
It is recommended that the Mining Management Plan is completed in conjunction with the user guide, available on the [Northern Territory Government website](http://www.nt.gov.au/mining).

Section 1 – Project Details

Project Name Provide new or existing project name	Lake Mackay Project
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Authorisation Number Insert existing authorisation number, where applicable	0815-01
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Operator Name Use ASIC-ABR registered name (if a company), or	IGO Ltd (ABN 46 092 786 304)
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<p>Location and Access Details Include brief description of the location, access details, and distance to nearest town or community</p>	<p>The Lake Mackay Project is 400km West North West of Alice Springs and extends from the West Australian Border directly Eastwards to the Newhaven Wildlife Sanctuary. It is accessible from Alice Springs either via the Namatjira Drive on to the Kintore Road, or the Tanami road on to the Newhaven sanctuary access road, through to Nyrripi. The Kalipimbut road is used for access to central areas of the project. The project is close to several Aboriginal Communities, including; Kintore, Nyrripi in the West Papunya and Mount Liebig in the East. Kintore is the closest community to most of the projects operations and is only 25km from Sandy Blight Junction.</p> <p>Temporary access tracks exist to provide access to specific prospects within the project and more will be created this year across the wider project area.</p> 
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<p>Target Commodity Details Include target commodities (i.e. gold, copper etc)</p>	Gold, Copper, Nickel, Cobalt.
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<p>Mining Activities Summarise the mining activities (exploration) to be the subject of the proposed Authorisation or Variation</p>	<p>Exploration activities will occur on the project between March and November governed by the weather conditions.</p> <p>It is anticipated that both Reverse Circulation (RC) and diamond drilling will be required to test multiple targets across specific parts of the project tenure. A Diamond drilling program will run from Late March to mid to late June, with the possibility of some shallow RC drilling to test shallow geochemical anomalies with the same rig. This will require the clearance of some temporary access tracks and drill pads, as well as sumps to catch/contain any water.</p> <p>Later in the year a stand-alone 200x200m spaced RC program may be initiated to pattern drill prospects, considered to potentially host significant laterite mineralisation. This would run through the month of August and possibly into September dependent on generation of targets near the WA border.</p> <p>Possible soil sampling on ATV's will be required in some areas to help define geochemical anomalism and thus undercover mineralisation.</p> <p>Temporary camps consisting of tents and caravans, will be established in clear areas and will be deconstructed at the end of an exploration campaign</p>
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<p>Proposed Schedule Include start and finish dates of ground disturbing work</p>	<p>17th-23rd March: temporary track and drill pad clearance for drill rig to access EL30740 and EL30733 drill targets.</p> <p>9th April-17th April: Environmental baseline study for Grimlock, Swoop and Phreaker. On site visits by Environmental consultants.</p> <p>28th March-10th May: Diamond drilling moving loop EM plates at the Phreaker prospect in EL 30731 and to the East in EL30740 and EL30733. Shallow RC drilling on EL30740 with the same rig.</p> <p>9th-19th May: Pad Clearance for shallow RC drill program at Grimlock (EL24915) and Swoop (EL30730).</p> <p>1st July-31st July: Shallow RC drilling of laterite prospects at Swoop and Grimlock and any new targets close to the WA border with slimline RC rig.</p> <p>31st Jul – 5th Aug: Rehab of all remaining pads and drill access lines.</p>
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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	Property Name or Land Holder
EL24915	Prodigy Gold NL	22/09/2019	Haasts Bluff Aboriginal Land Trust
EL25146	Prodigy Gold NL	12/10/2023	Lake Mackay Aboriginal Land Trust
EL29747	Castile Resources Pty Ltd	12/10/2023	Haasts Bluff Aboriginal Land Trust
EL30729	Prodigy Gold NL	12/10/2023	Lake Mackay Aboriginal Land Trust
EL30730	Prodigy Gold NL	12/10/2023	Lake Mackay Aboriginal Land Trust
EL30731	Prodigy Gold NL	12/10/2023	Haasts Bluff Aboriginal Land Trust
EL30732	Prodigy Gold NL	12/10/2023	Haasts Bluff Aboriginal Land Trust
EL30733	Prodigy Gold NL	12/10/2023	Lake Mackay Aboriginal Land Trust Yunkanjini Aboriginal Land Trust Haasts Bluff Aboriginal Land Trust
EL30739	Prodigy Gold NL	12/10/2023	Yunkanjini Aboriginal Land Trust Lake Mackay Aboriginal Land Trust
EL30740	Prodigy Gold NL	12/10/2023	Haasts Bluff Aboriginal Land Trust Yunkanjini Aboriginal Land Trust
EL31234	Independence Group NL	12/10/2023	Lake Mackay Aboriginal Land Trust Haasts Bluff Aboriginal Land Trust
EL31794	Castile Resources Pty Ltd.	27/02/2024	Haasts Bluff Aboriginal Land Trust

Organisational Structure

Position Title	Name
Managing Director	Peter Bradford
General Manager - Exploration	Ian Sandl
Exploration Project Manager – Northern Australia	Doug Winzar
Project Geologist	Simon Cornwell
HSEC & Logistics Manager - Exploration	Chris Tiemann

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 assessment and cultural considerations

ASSESSMENT ASPECT	YES or NO	ACTIONS REQUIRED (if answered YES)	APPENDED INFORMATION (Evidence of consultation with DENR and/or management plan)
<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>This year IGO has identified potential for increased disturbance at prospects where 200x200m grid Aircore or shallow RC drilling may occur. Whilst drill pads will be small, the level and density of track clearing in a focused area represents an increase in disturbance on what has been completed prior. Using an Environmental impact assessment, IGO has identified the need for an Environmental baseline survey which will take the form of desktop studies and site visits. Any recommendations will be included in future mine management plans. These recommendations will also govern how clearance occurs at advanced prospects in future to minimise the impact on threatened flora and fauna.</p> <p>Correspondence with the DENR has been sought previously and their recommendations have been included in the MMP.</p> <p>The threatened species listed below are from the Protected Matter Search as well as any highlighted in the DENR databases.</p> <p>Birds: Night Parrot (<i>Pezoporus occidentalis</i>) Princess Parrot (<i>Polytelis alexandrae</i>) Red Goshawk (<i>Erythrotriorchis radiatus</i>) Curlew Sandpiper (<i>Calidris ferruginea</i>) Australian Painted Snipe (<i>Rostratula australis</i>) Grey Falcon (<i>Falco hypolecos</i>)</p> <p>Mammals: Greater Bilby (<i>Macrotis Lagotis</i>) Warru, Black-footed Rock-wallaby (<i>Petrogale lateralis</i> MacDonnell Ranges race) Central Rock-rat, Antina (<i>Zyomys pedunculatus</i>)</p>	<p> LMKJV PMST 2020.pdf</p> <p> EIA for Lake Mackay.xlsx</p> <p> Independence Group NL - Lake Mackay Pro</p>

	<p>Bush tailed Mulgara (<i>Dasymercus blythi</i>) Southern Marsupial Mole (<i>Notoryctes typhlops</i>)</p> <p>Reptiles: Great Desert Skink (<i>Liopholis kintorei</i>)</p> <p>The threatened species listed above have a moderate to high likelihood of occurrence across the project area. No threatened flora species have been recorded from the project area. As precise locations for, and the total area of, proposed clearing have not been completely decided it is difficult to accurately assess the potential impacts of the proposed exploration. The DENR provided the following advice and recommendations which have been adopted to reduce the impacts of exploration activities on biodiversity.</p> <p>The Grey Falcon is known from the region and will nest in large trees or telecommunications towers. Nesting Grey Falcons are susceptible to disturbance from the presence of people or vehicles within about 300 m. If a Grey Falcon nest or suspected nest is encountered then a minimum buffer distance of 300 m should be maintained to reduce disturbance and potential impacts.</p> <p>Although there are no recent verified records of the Night Parrot in the Northern Territory, the species is potentially still extant across the large project area, and is most likely to occur in long-unburnt spinifex, particularly near low hills or lake systems. If a suspected Night Parrot is encountered, such as by flushing while clearing access tracks, works will immediately cease in that location and the Department of Environment and Natural Resources and the Night Parrot Recovery Team will be notified.</p> <p>The Princess Parrot is known to travel widely across the project area. The species is known to nest in Marble Gum, River Red Gum and other hollow bearing trees. Any large, hollow bearing trees will be identified and excluded from clearing so as to maintain the nesting habitat for this species.</p> <p>The Brush-tailed Mulgara and Southern Marsupial Mole are widespread in the desert regions of the Northern Territory and as such the relatively small amount of clearing associated with exploration is unlikely to have a significant impact.</p> <p>The Greater Bilby and Great Desert Skink are both known from the project area and live in burrows in the soil. Identification of suspected burrows of these species should be performed by a qualified and experienced ecologist. To reduce impacts to colonies of Greater Bilby and Great Desert Skink, potential burrows will be buffered by 50 m from disturbance,</p>	
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		<p>and access tracks and pads should be aligned or sited to avoid impacts.</p> <p>The Black-footed Rock-wallaby is known from rocky ranges and mountains across the project area. As drill pads and access tracks are unlikely to be cleared in these habitats there is not likely to be an impact to this species.</p> <p>Introduced predators (Red Fox, Feral Cat) may benefit from the increased clearing of tracks and access across the landscape. Roads, tracks, camps and drill pads will be revegetated after clearing and once deemed inactive, to reduce the access for introduced predators and their potential impacts on threatened species. Putrescible waste will either be completely incinerated on site or removed and taken to Kintore or Alice Springs when convenient so as not to attract feral animals.</p>					
<p>Step 2: Are there any known declared weeds within the proposed work area?</p>	<p>Yes</p>	<p>Two weed species were identified as likely to occur in the project area using a protected matters search. These were;</p> <p>Buffel-Grass (<i>Cenchrus ciliaris</i>)</p> <p>Athel Pine (<i>Tamarix aphylla</i>)</p> <p>The introduced environmental weed Buffel Grass (<i>Cenchrus ciliaris</i>) is know from the region and can be easily spread by vehicles, machinery and earthworks. This species causes changes in the landscape through competition and altering fire cycles which is ultimately detrimental to native species. The Athel Pine can occur in the Eastern end of the project. Therefore, IGO ensure all vehicles coming to the project area are suitably washed down before leaving Alice Springs. Contractors are required to provide photographs of vehicles prior to entry on to the project show their vehicles are adequately washed down. The exploration undertaken at this early stage does not present a major risk.</p> <table border="1" data-bbox="432 1839 1177 2002"> <tr> <th colspan="2" data-bbox="432 1839 1177 1917">WEED MANAGEMENT</th> </tr> <tr> <td data-bbox="432 1917 616 2002"><u>OBJECTIVES</u></td> <td data-bbox="616 1917 1177 2002">To prevent spread of established weeds within Project Area and the region.</td> </tr> </table>	WEED MANAGEMENT		<u>OBJECTIVES</u>	To prevent spread of established weeds within Project Area and the region.	
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Step 3: Will you be using water from bores or other sources for the operation?	YES	<p>In 2020 potable water will be supplied from Alice Springs. Some drinking water may be purchased at Kintore, Papunya or Nyirippi. Water bore RN014630 will be used for drilling water if required in the East.</p> <p>Weekly water use projections for 2020 water consumption is;</p> <ol style="list-style-type: none"> 1. Ground geophysics or soil sampling: 1000 L per week. For a 4-man mobile camp which includes kitchen, showers and clothes washing. 2. RC drilling: 5000 L per week. (2500L for camp, 2500L for drilling and dust suppression) 3. Diamond Drilling: (2500L for camp, 15000L for drilling) 									

ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS										
<p>Step 4: Is your project likely to have a significant impact on the environment?</p>	<p>No</p>	<p>This year IGO has identified potential for increased disturbance at prospects where 200x200m grid Aircore or shallow RC drilling will occur. Whilst drill pads will be small, the level and density of track clearing in a focused area represents an increase in disturbance on what has been completed prior. Through the use of an Environmental impact assessment, IGO has identified the need for an Environmental baseline survey which will take the form of desktop studies and site visits. Any recommendations will be included in future mine management plans. These recommendations will also govern how clearance occurs at advanced prospects in future.</p> <p>At the completion of drilling the drill pads are inspected to ensure that no spills are observed, or rubbish is present. Drill collars are temporarily capped until the full rehabilitation is undertaken.</p> <p>If camp sites are established for longer periods a monthly audit is undertaken. At the completion of each phase of work all rubbish is removed from the camp sites and any contaminated soil is removed for disposal at the licensed facility in Alice Springs.</p> <p>Photographs are taken of the camp sites prior to establishment and the drill sites prior to clearing. Once rehabilitation is completed the sites are photographed again.</p> <p>Environmental impacts will be continuously assessed through frequent site inspections by the Project Manager and Project Geologist, ensuring that IGO's expectations are being met by all employees and contractors. Should a site inspection determine that additional control measures are required, they will be put in place in a timely and effective manner.</p> <table border="1" data-bbox="528 1234 1437 2000"> <thead> <tr> <th colspan="2" data-bbox="528 1234 1437 1294">GROUND DISTURBANCE MANAGEMENT</th> </tr> </thead> <tbody> <tr> <td data-bbox="528 1294 759 1417"><u>OBJECTIVES</u></td> <td data-bbox="759 1294 1437 1417">To minimise disturbance to vegetation and soil as far as possible. To avoid disturbance to key vegetation communities that may impact on significant fauna species.</td> </tr> <tr> <td data-bbox="528 1417 759 1541"><u>TARGETS</u></td> <td data-bbox="759 1417 1437 1541">No disturbance to key vegetation communities. No disturbance of areas with higher risk of soil erosion. Avoid damage to mature trees exceeding two metres, as required under Aboriginal Land Access agreements.</td> </tr> <tr> <td data-bbox="528 1541 759 1883"><u>ACTIONS</u></td> <td data-bbox="759 1541 1437 1883">Utilise existing roads, tracks or open cross-country routes to gain access into a tenement or prospect area. Minimise clearing of tracks and ensure that vehicle movements are restricted to cleared access tracks and nominated tracks. Avoid tracks crossing sand dunes. Utilise 'cross-country' tracks as much as possible (i.e. no clearing). Avoid field activities during wet conditions to minimise risk of vehicle/equipment bogging.</td> </tr> <tr> <td data-bbox="528 1883 759 2000"><u>MONITORING</u></td> <td data-bbox="759 1883 1437 2000">Regular inspections of work sites, tracks and camp areas, including photo monitoring. Records in Environmental Observations and Incident Register.</td> </tr> </tbody> </table>	GROUND DISTURBANCE MANAGEMENT		<u>OBJECTIVES</u>	To minimise disturbance to vegetation and soil as far as possible. To avoid disturbance to key vegetation communities that may impact on significant fauna species.	<u>TARGETS</u>	No disturbance to key vegetation communities. No disturbance of areas with higher risk of soil erosion. Avoid damage to mature trees exceeding two metres, as required under Aboriginal Land Access agreements.	<u>ACTIONS</u>	Utilise existing roads, tracks or open cross-country routes to gain access into a tenement or prospect area. Minimise clearing of tracks and ensure that vehicle movements are restricted to cleared access tracks and nominated tracks. Avoid tracks crossing sand dunes. Utilise 'cross-country' tracks as much as possible (i.e. no clearing). Avoid field activities during wet conditions to minimise risk of vehicle/equipment bogging.	<u>MONITORING</u>	Regular inspections of work sites, tracks and camp areas, including photo monitoring. Records in Environmental Observations and Incident Register.
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		<p><u>REVIEW & REPORTING</u></p>	<p>Report any significant disturbance to key vegetation communities as an incident to DPIR, in accordance with Section 29 of the Mining Management Act. Review of monitoring data and summary of disturbance activities in annual MMP reporting.</p>
FAUNA MANAGEMENT			
<p><u>OBJECTIVES</u></p>	<p>To minimise disturbance and potential impact on fauna as far as possible. To avoid introduction of non-native fauna species.</p>		
<p><u>TARGETS</u></p>	<p>No impact on native fauna (i.e. injuries or death), especially species of conservation significance. No introductions of non-native fauna species.</p>		
<p><u>ACTIONS</u></p>	<p>Food scraps are to be burnt or regularly removed, standing water is to be avoided and feeding and any other interaction with fauna is not permitted. Field personnel are prohibited from killing or attempting to handle snakes and any other fauna. Field personnel are not permitted to bring any domesticated animals to the Project Area and are prohibited from interacting or interfering with any wild fauna. Personnel trained in identification of all threatened species (Flora and Fauna) listed in the EPBC Protected Matter Search Report. Avoidance of areas known or suspected to contain habitat/signs of threatened species (Flora and Fauna) listed in the EPBC Protected Matter Search Report. Keep vehicle speeds to a minimum and avoid driving during periods of peak fauna activity (e.g. sunrise/sunset, night-time). Vehicles and equipment entering the Project Area from interstate will be washed down in Alice Springs to lower the probability of transporting small species of introduced animals (e.g. rodents, ants). If coming from another mine site in NT they may be washed down at this site.</p>		
<p><u>MONITORING</u></p>	<p>Regular inspections of work sites, tracks and camp areas. GPS coordinates and photographs of suspected evidence of significant fauna, such as scats, tracks, scratchings or burrows, are to be recorded by field personnel. Records in Environmental Observations and Incident Register.</p>		
<p><u>REVIEW & REPORTING</u></p>	<p>Report any significant fauna deaths (i.e. species of conservation significance) as an incident to DPIR, in accordance with requirements of Section 29 of the Mining Management Act. Report any high density populations of feral animals to government authorities. Review of data and summary of fauna injuries/deaths in annual MMP reporting.</p>		
NON-MINERAL WASTE MANAGEMENT			
<p><u>OBJECTIVES</u></p>	<p>To avoid and minimise the production of waste wherever possible. To prevent wastes from contaminating the surrounding environment.</p>		

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			To manage and control disposal of all wastes.
		<u>TARGETS</u>	No contamination of surrounding environment.
		<u>ACTIONS</u>	Employ principles of avoid, reduce, reuse and recycle wherever possible. All non-biodegradable waste (e.g. plastic, steel, aluminium) is removed from site to be relocated at an approved waste disposal site and recycled wherever possible. Certain waste materials (i.e. cardboard, food scraps) will be burnt on site to reduce the risk of attracting fauna. Waste that may cause contamination (e.g. waste oils) is to be stored appropriately (see Hazardous Materials Management) and removed from site for disposal at a suitable facility in Alice Springs. Waste water from the shower and washing machine will be discharged in a manner so that no standing water is present.
		<u>MONITORING</u>	Regular inspections/audits by the Site Manager of camp and operational areas to ensure that waste is being managed appropriately.
		<u>REVIEW & REPORTING</u>	Include summary of inspections/audits and waste management activities (including recycling) in annual MMP update.
		HAZARDOUS MATERIALS MANAGEMENT	
		<u>OBJECTIVES</u>	To ensure that transport, storage and handling of dangerous goods on-site does not cause environmental harm or harm to persons. To minimise potential for land contamination.
		<u>TARGETS</u>	No harm to environment or persons resulting from transport, storage and handling of dangerous goods.
		<u>ACTIONS</u>	Field personnel will respond to an emergency as described in Section 4.7. Hydrocarbons will be stored in appropriately bunded areas according to Australian standards (e.g. AS1940:2004). Bunding will be inspected for damage regularly and repaired as soon as any damage is detected. Hazardous substances will be stored on site in accordance with the relevant legislative requirements and guidelines. Key personnel will be trained in the appropriate handling of the various chemicals to be stored on site. A set of the relevant MSDS for hazardous and dangerous materials will be kept on site.

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			<p>Personnel working with dangerous goods will be aware of handling, storage and disposal requirements and as appropriate, have received relevant training.</p> <p>Spill kits will be available where hazardous materials are used and stored and personnel trained in correct use.</p> <p>Refuelling on site shall utilise auto shut off valves and refuelling shall not be done within 100 metres of a watercourse.</p>
		<u>MONITORING</u>	<p>Storage facilities will be inspected regularly (at least weekly) and any resulting recommendations and corrective actions shall be implemented.</p> <p>Records in Environmental Observations and Incident Register.</p>
		<u>REVIEW & REPORTING</u>	<p>Reporting of any incidents internally and to DPIR in accordance with Section 29 of the Mining Management Act.</p> <p>Summary of inspections to be provided in annual MMP reporting.</p>
FIRE MANAGEMENT			
		<u>OBJECTIVES</u>	<p>Minimise the risk of impact of fires associated with exploration activities.</p>
		<u>TARGETS</u>	<p>No wildfires caused by exploration activities, whether deliberate or accidental.</p>
		<u>ACTIONS</u>	<p>The following guidelines are to be followed by all field personnel:</p> <ul style="list-style-type: none"> • Open fires must be dug into the ground and/or surrounded by a low earthen or rock wall to prevent spreading of hot embers and burning wood; • Open fires must be sited on cleared ground which is barren of vegetation over a radius of at least five metres from the fireplace; • Fires should only be used as needed for cooking; • Fires are not to be lit under windy conditions; • A shovel and/or ready supply of water must be close at hand; and • Only dead wood should be collected for fuel and fire wood should be checked for inhabitants prior to use, e.g. lizards within hollow logs.

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			<p>To minimise risk of vehicle fire, all vehicles must carry fire extinguishers and/or 'on-board' fire suppressant systems.</p> <p>If a wild fire is encountered or is accidentally caused this should be reported to Bushfires NT and seek advice on advising the nearest emergency services provider. Personnel should avoid the area and evacuate any downwind positions. For safety reasons, IGO personnel or contractors are not permitted to try to fight such fires as they can be highly unpredictable.</p>
		<u>MONITORING</u>	<p>Regular inspections of firefighting equipment to ensure that it is serviceable.</p> <p>Regular checks of undercarriage of light vehicles and ATV's and cleaning, to ensure build-up of grass is limited, thus minimising the risk of vehicle fires and trailing spot fires.</p> <p>Records in Environmental Observations and Incident Register.</p>
		<u>REVIEW & REPORTING</u>	<p>Reporting of any incidents internally and to DPIR in accordance with Section 29 of the Mining Management Act.</p> <p>Review of inspections/checks to be provided in annual MMP reporting.</p>
<p>Step 5: Are there Aboriginal sacred sites in the Project area?</p>	<p>Yes</p>	<p>The Aboriginal Traditional Owners for the project area are the Kukatja, Warlpiri and Pintupiliritju people. All of the project falls under Aboriginal Land and is held as inalienable freehold title under the Aboriginal Land Rights Act 1976 (ALRA 1976). Aboriginal rights and interests in land are also recognised under the Commonwealth Native Title Act 1993 (NTA 1993). The NTA 1993 gives Aboriginal people the right to negotiate in regard to 'future acts' on their land and the ALRA 1976 gives Aboriginal people a right of veto for mining projects.</p> <p>IGO recognises and respects the rights of the Traditional Owners and before any activity is carried out on-ground consults with, and submits work programs to, the Central Land Council (CLC) for Sacred Site Clearances and their approval. All versions of this and other IGO Mining Management Plans are sent to the CLC for their overview and instruction. The CLC has been made aware of our intention to carry out the 2020 exploration program.</p> <p>The most recent Sacred Site Clearances Certificate was issued by the CLC on 12th July 2019. Most of the proposed areas in which activities are to be conducted have now undergone a Sacred Site Clearance survey. An additional survey is planned to cover the remaining targets that were recently identified from airborne</p>	

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		<p>geophysics as the Central Land Council (CLC) has requested that the sacred site surveys cannot be released or discussed. IGO is unable to provide the Sacred Site Clearance Certificate survey data. If this information is required, the Department of Mines and Energy needs to consult directly with the CLC. This MMP has been submitted to the CLC for review and comment.</p> <p>IGO has discussed the lack of an Aboriginal Areas Protection Authority (AAPA) certificate with our joint venture partners and the CLC. They are fully aware that this project does not have an authority certificate, however as the CLC are not prepared to release information to the AAPA a certificate issued by the AAPA cannot be gained.</p>
<p>Step 6: Are there archaeological and heritage sites in the Project area?</p>	<p>No</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 clearly identify amendments made.

Section	Amendment
Section 2; Step 1, Step 2	Updated to reflect results of PMST.
Section 2; Step 4	Updated to reflect results of in-house Environmental impact assessment.
Section 4	Updated values in entire table.
Section 5	Updated values in entire table.

Delete or add rows as required

Section 4 – Activities Proposed

Mining Interests (i.e. titles)	EL31794	EL24915	EL25146	EL31234	EL30729	EL30731	EL30739	EL30733	EL30740	EL30730
Number and type of proposed drill holes		110xR C Holes		3x RC holes		4xDD & 25xRC holes		1x DD Hole	1xDD & 4xRC Holes	75x RC Holes
Final number of holes per tenement is reliant on the confirmation of anomalies by Downhole EM geophysics and possible subsurface extensions that will require drilling.										
Maximum depth of proposed holes (m)		50m		150m		620m		350m	550m	50m
Hole depths for much of the drilling are not known and are dependent on the depth of any modelled anomaly generated from geophysics.										
Number and size of drill pads to be cleared (Length: m x Width: m x Width: m)		110 @ 20x15 m		3 @ 15x20 m		4 @ 35x25m And 25 @ 20x15m		1 @ 35x25 m	1 @ 35x25 And 3 @ 20x25m	75 @ 20x15 m
Total area of drill pads to be cleared (ha)		Approx 3.3		Approx 0.09		Approx 1.1		Approx 0.09	Approx 0.238	Approx 2.3
Is drilling likely to encounter groundwater? (Y, N, unsure)		N		Y		Y		Y	Y	N
Significant water is not expected to be intersected in all shallow RC holes in EL24915, EL30731 and EL30730										
Number of costeans (Length: m x Width: m x Depth: m)	0	0	0	0	0	0	0	0	0	0
Number of bulk sample pits	0	0	0	0	0	0	0	0	0	0
Total bulk sample (tonnes) (Length: m x Width: m x Depth: m)	0	0	0	0	0	0	0	0	0	0
Bulk sample pits approved under <i>Mineral Titles Act</i>	N	N	N	N	N	N	N	N	N	N

Mining Management Plan Exploration Activities

Mining Interests (i.e. titles)	EL31794	EL24915	EL25146	EL31234	EL30729	EL30731	EL30739	EL30733	EL30740	EL30730
Length of line/track clearing (km: x Width: m)		21km x3m		2 km x 3m		5km x 3m	7km x 3m	10 km x 3m	4 km x 3m	15.5 km x 3m
All tracks will start off as driven in (by 2xLV's) bush tracks and will only be cleared where required to allow access to the drill rig whilst minimising environmental impact.										
Camp area to be cleared (ha)						0.5			0.5	0.5
Camp Infrastructure (i.e. demountable, tents)	Temporary Camps to be established in locations close to drilling, soil sampling, geophysical activities locations in naturally clear areas. Minor blade up clearing maybe conducted in areas to create a fire break to a maximum of 0.5 Ha. Drilling Camps can consist of 2-3 caravans, 4-8 tents, 2-4 Light vehicles, 2-3 Light trucks. Fly camps will consist of tents and 2 vehicles.									
Previous disturbance yet to be remediated on title (ha) if known	93.1 km of cleared tracks. 1Ha camp	60.2km of cleared tracks. 0.8 Ha camp.	0.6km cleared track	41.5km cleared tracks. 0.4 Ha drill pads. 0.2Ha camp.	38.1km cleared tracks.	26.0km cleared tracks. 0.9Ha drill pads. 0.6Ha Camp	26.8km 4WD tracks (Active)	26.4km of 4WD tracks (Active)	12.0km of 4WD tracks	13km 4WD tracks
Cleared tracks were cleared with a backhoe to allow easy access for the drill rig. 4WD tracks are claimed, however will not need rehabilitative work due to the low disturbance footprint.										
Other	N	N	N	N	N	N	N	N	N	N
Total area disturbed proposed (ha)		9.81		0.69		2.6	2.04	4.17	1.99	6.31

Section 5 – Previous Disturbance (for existing Authorisations only)

Mining Interests (i.e. titles)	EL31794	EL24915	EL25146	EL31234	EL30729	EL30731	EL30739	EL30733	EL30740	EL30730	EL29747
Number/type of holes drilled	26 RC holes	42 RC holes 89 AC holes 10 DD holes 2 WB holes	1 RC Hole	10 RC holes	7 RC holes	14RC holes	0	0	0	0	0
RC- Reverse Circulation, AC- Air Core, DD- Diamond Drilling, WB- Water Bore.											

Mining Management Plan Exploration Activities

Mining Interests (i.e. titles)	EL3179 4	EL2491 5	EL2514 6	EL3123 4	EL30729	EL3073 1	EL30739	EL30733	EL30740	EL30730	EI29747
Maximum depth of holes drilled (m)	360m	639.7 m	268m	346m	300m	398m	0	0	0	0	0
Number of holes remediated (i.e. plugged/capped)	26	142	1	4	7	5	0	0	0	0	0
			EL24915 - RN19124 collar not rehabbed. 25 capped collars below ground not buried to allow further downhole geophysics in future.								
Number and size of drill pads cleared (Length: m x Width: m)	29 @30x25m	144	1 @ 30x25 m	10 @ 30x25 m	10 @ 30x25m	14 @ 30x25 m	0	0	0	0	0
Total area of drill pads cleared (ha)	2.18	38.18	0.07	0.73	0.75	1.05	0	0	0	0	0
Total area of drill pads remediated (ha)	2.18	38.18	0.07	0.3	0.75	0.38	0	0	0	0	0
Was groundwater encountered ? (Y or N)	Y	Y	Y	Y	Y	Y	NA	NA	NA	NA	0
Length of line/track cleared (Length: 1 km x Width: 3 m)	127.7	144.7	0.6	53.4	47.8	82.3	35.9	26.4	12.6	30.5	2.3
Length of line/track remediated (Length: 1 km x Width: 3 m)	34.3	86.6	0	0	11.7	56.2	9.1	2.1	1.2	17.5	2.3
Number of costeans excavated (L: 3 m x W: 0.5 m x)	0	0	0	0	0	0	0	0	0	0	0
Number of costeans remediated	0	0	0	0	0	0	0	0	0	0	0
Total bulk sample pits excavated (Length: x Width: m x m)	0	0	0	0	0	0	0	0	0	0	0
Total bulk sample pits remediated	0	0	0	0	0	0	0	0	0	0	0
Camp area/s cleared (ha)	0	0.8	0	0.2	0	0.6	0	0	0	0	0
Camp area/s remediated (ha)	0	0	0	0	0	0	0	0	0	0	0

Mining Management Plan Exploration Activities

Mining Interests (i.e. titles)	EL3179 4	EL2491 5	EL2514 6	EL3123 4	EL30729	EL3073 1	EL30739	EL30733	EL30740	EL30730	EI29747
Total area disturbed (ha)	41.9	82.4	0.25	14.8	14.8	25.29	10.7	7.8	3.8	8.2	2.3
Total area remediated (ha)	14	64.2	0.07	3.9	3.1	16.2	2.4	0.6	0.4	4.3	0

Section 6 – Environmental Management

By checking these 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	<input checked="" type="checkbox"/>	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil)
6.2	<input checked="" type="checkbox"/>	Significant vegetation will be avoided during clearing (i.e. large trees, specimens providing habitat or food sources, riparian vegetation, and threatened species)
6.3	<input checked="" type="checkbox"/>	Vegetation clearing during, and immediately after rainfall events, will be avoided
6.4	<input checked="" type="checkbox"/>	Vegetation clearing will be kept to the minimum required to safely traverse vehicles and drill rigs along tracks and drill pads
6.5	<input checked="" type="checkbox"/>	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for remediation purposes
6.6	<input checked="" type="checkbox"/>	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	<input type="checkbox"/>	Sumps will be lined or tanks of appropriate size to contain water, sediment and drilling fluids encountered during drilling, will be used
6.8	<input checked="" type="checkbox"/>	Sumps, drill holes, and fuel stores will be located away from environmentally significant areas and water courses
6.9	<input checked="" type="checkbox"/>	Excavations (sumps, costeans and pits) will be appropriately ramped to allow fauna egress
6.10	<input checked="" type="checkbox"/>	Drill holes will be securely capped immediately after drilling
6.11	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian Standards
6.14	<input checked="" type="checkbox"/>	Hydrocarbons will be stored in lined and bunded areas
6.15	<input checked="" type="checkbox"/>	Waste will be stored securely while on-site to minimise windblown rubbish and access by feral animals

6.16	Y	Waste will be removed off-site and disposed of at an appropriate waste management facility
6.17	Y	All environmental incidents will be reported to the Department in accordance with Section 29 of the <i>Mining Management Act</i> .

Justification and alternative management measures:

6.7 for the RC drilling sumps will not be lined. As this is an air drilling technique no drilling fluids are added. The foam products that maybe utilised to assist with maintain the borehole integrity will be biodegradable.

Section 7 – Remediation and Closure

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

7.1	Y	Drill holes plugged below ground level at a minimum depth of 0.4 metres and soil mounded to prevent subsidence, within 6 months of completion of drilling
7.2	Y	Drill samples/spoil returned down drill holes, buried in sumps, or removed from site
7.3	Y	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site
7.4	Y	Re-contouring of cut and fill drill pads will be consistent with the surrounding terrain
7.5	Y	Ripping/scarifying of drill pads, and compacted areas along the contour (on sloping ground) and cross-ripping (zig-zag) along tracks
7.6	Y	Tracks will be remediated, including pushing in all windrows
7.7	Y	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur
7.8	Y	All tracks will be remediated unless otherwise agreed in writing by the land holder or appropriate third party
7.9	Y	Access through watercourses will be removed and banks restored
7.10	Y	No erosion is occurring in disturbed areas, on tracks and in remediated areas
7.11	Y	All excavations backfilled within 6 months of completion of drilling
7.12	Y	All water bores decommissioned unless otherwise agreed in writing by the land holder or appropriate third party. The bore must comply with the Minimum Construction Requirements for Water Bores in Australia and may require permits or licenses under the <i>Water Act</i>
7.13	Y	All rubbish and infrastructure will be removed from site
7.14	Y	Replacement of topsoil and vegetation
7.15	Y	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be remediated or removed from site
7.16	Y	Monitoring will be undertaken following the wet season or a significant rainfall event

Justification and alternative management measures:

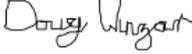
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Section 8 – Required Attachments

8.1	Y	Security Calculation Spreadsheet
8.2	N	Nomination of Operator Form
		<i>As per existing Authorisation.</i>
8.3	Y	Spreadsheet with coordinates of proposed drill holes or polygons of target areas
8.4	Y	Google Earth KML/shape files/track logs of proposed tracks and camp sites
8.5	Y	A map 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. remediated areas 5. camp sites 6. sacred/heritage sites 7. environmental constraints
8.6	Y	Remediation Register (for existing Authorisations)
8.7	NA	Photographs of remediation work
		<i>No Remediation work carried out in the previous year.</i>
8.8	NA	Radiation Management Plan (if applicable)

Section 9 – Declaration

The Mining Management Plan must be endorsed by a senior representative of the company who has the appropriate level of authority to do so.

	Author	Reviewed by	Approved by
Date	17/02/2020	17/02/2020	28/02/2020
Name	Simon Cornwell	Doug Winzar	Doug Winzar
Signature			

I**Doug Winzar**.....(*name of approving person*) Exploration Project Manager.....(*position title*) declare that I have the authority to make the commitments contained in this mining management plan on behalf of the company. To the best of my knowledge the information contained in this plan is true and correct and commit to undertake the works in accordance with the agreed minimum standards and all relevant Northern Territory and Commonwealth Government legislation.

SIGNATURE: 

DATE:17/02/2020