



Suite 4, Level 7, 350 Collins St, MELBOURNE VIC 3000

Tel: +61 3 9602 4856

[www.genesisresourcesltd.com.au](http://www.genesisresourcesltd.com.au)

**MINING MANAGEMENT PLAN UPDATE  
(EXPLORATION)**

**FOR**

**EL 25238**

**ARLTUNGA GOLD PROJECT**

Authors: Dayna Healey and James Patterson

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GES Report No: 125

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*Information in this report that relates to exploration activity and results was compiled under the guidance of James Patterson who is a Member of the Australasian Institute of Geoscientists. Mr Patterson has sufficient experience relevant to the styles of mineralization and to the activities which are being reported to qualify as a Competent Person as defined by the JORC code, 2004. Mr Patterson consents to the release of the information compiled in this report in the form and context in which it appears. Mr Patterson joined the Board of Directors of Genesis Resources Ltd as a Non-Executive Director on the 24 October 2016.*

## 1.0. OPERATOR DETAIL

Name of operator: Genesis Resources Limited

Key contacts: James Patterson (Exploration Manager)  
Dayna Healey (Tenement Manager)

Address: Suite 4, Level 7, 350 Collins Street, Melbourne VIC 3000

Phone/Email:

Phone: 03 9602 4856

Mobile: 0408 956 663

Email: dayna.healey@bigpond.com

## 1.1. Organisational Structure

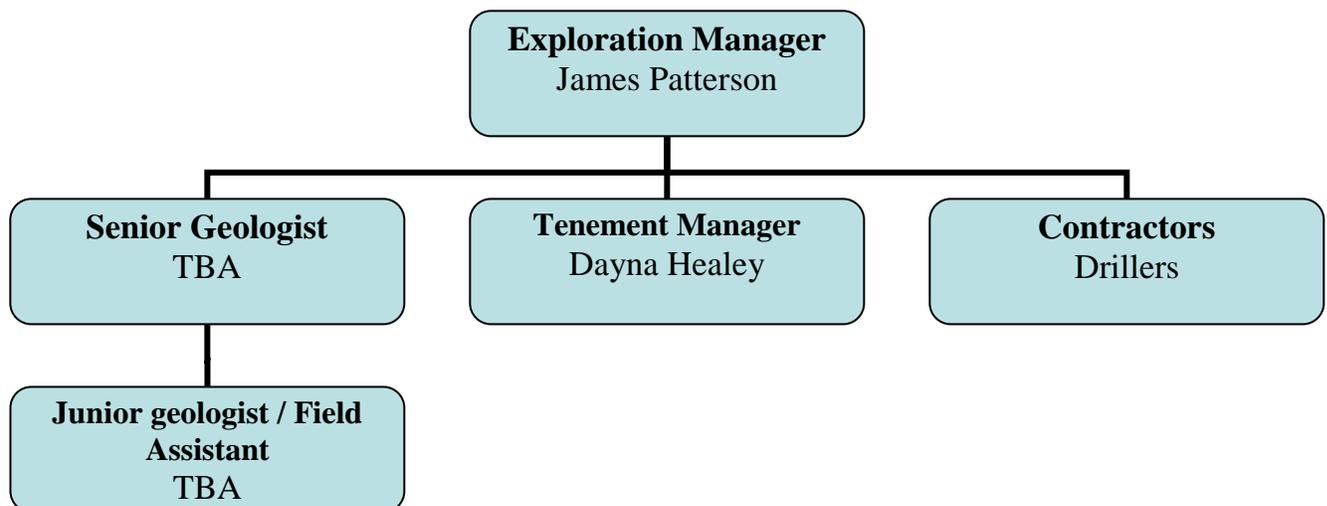


Figure1: Genesis Resources Ltd organisational chart

## 1.2. Workforce

The exploration team will consist of a geologist and technical field assistant for none ground disturbance field work. Geophysical crews contract as appropriate.

Up to five people may be involved in the drilling operation including one geologist (supervisor) one field hand and three RC drill contractors.

## 2.0. PROJECT DETAIL

The Arltunga Gold Project, EL25238, is located approximately 110 kilometres east of Alice Springs (Figure 2). Access to the tenement is via the Arltunga Historic Reserve, which is located north east of Alice Springs about 70 kilometres along the sealed Ross Highway and then 33 kilometres of gravel road. The tenement is immediately to the north of the Reserve boundary and access is possible through the reserve and into the tenement via a formed gravel track which services the local arable and livestock farmsteads.

The Arltunga Gold Project comprises one exploration license (Table 1) with 31 blocks, which covers a total area of 95.2 square kilometers and is prospective for gold and copper mineralisation.

A Renewal Application requesting a further two year period was approved on the 21 March 2017. The new Expiry Date is the 7 November 2018.

**Table 1: Arltunga Gold Project tenement details.**

<b>Title Number</b>	<b>Owner</b>	<b>Grant Date</b>	<b>Current Expire Date</b>	<b>Pastoral Lease</b>	<b>Native Title Claim</b>
EL 25238	Genesis Resources Ltd	8 November 2006	7 November 2018	PPL 1124	N/A

### 2.1. Map of site location and layout

Figure 2: Location and access map of Arltunga Gold Project EL25238.

Figure 3: Arltunga Tenement 2017 Proposed work areas and CLC restricted work areas.

### 2.2. History of Development and Current Status

Arltunga Goldfield has been subject to small scale historical mining activities from the late 1800s to mid 1900s, and again in the 1980s, producing approximately 15,400 oz of gold, primarily from high grade quartz reefs. The Exploration License hosts 33 historical gold mines and prospects with significant gold assays up to 53g/t from rock chip sampling around old mine workings and pyritic-quartz veins.

Geochemical reconnaissance rock chip samples collected recently returned high grade gold mineralisation over a number of areas up to 39 g/t from old workings.

Recent Gradient Array Induced Polarization (GAIP) surveys have delineated nearly 21 target anomalies (Table 2 and Figure 4), which have coincident resistivity and chargeability responses over the existing mines and extensions to old workings. Since gold and pyrite are associated in the quartz veins, the survey results show high prospectivity for gold mineralisation in the area. In two blocks covered, measuring approximately 2 kilometres (N-S) x 1 kilometres (E-W), gradient array data was collected on east-west oriented lines spaced 100 metres apart. Readings of resistivity and chargeability were taken along each line at 50 metre intervals employing 50 metre dipoles.

EM methods appropriate for the definition of massive sulphide were, therefore, considered and the Controlled Source Audio Magneto Telluric (CSAMT) method was chosen. This EM technique will provide profiles suitable for planning accurate drill-hole targets.

Zonge Engineering and Research Organisation was contracted to provide electrical profiles using the CSAMT method according to the work specified on Table 2, which conforms to Howard's recommendations in the Annual Technical Report (2012).

A program of electrical profiling (CSAMT) was carried out during December 2012 guided by previously acquired Genesis electrical survey data (GAIP) over the known gold mineralisation (Figure 4). The survey method was tested at a known occurrence of sulphide mineralisation, which was found by historical prospecting to contain 132g/t gold, and was effective. Subsequently, thirteen lines were surveyed with CSAMT stations at 25m spacing for a total of 5 line kilometres. The lines highlighted significant low resistivity anomalism.

**Table 2: CSAMT Profiles**

AREA	Northing	W start	E finish	Length m	Stations	Projection	Zone	AnID	Gold ppm	Mine
East (block4)	7411000	479025	479475	450	18	GDA94	53	B4-IP13		
East (block4)	7411200	479050	479200	150	6	GDA94	53	B4-IP3	59.2	Magdala
East (block4)	7411450	479075	479600	525	21	GDA94	53	B4-IP15/6	3.09	
East (block4)	7411600	479125	479500	375	15	GDA94	53			Wheal Fortune
East (block4)	7411650	479350	479500	150	6	GDA94	53			Wheal Fortune
East (block4)	7411700	479350	479500	150	6	GDA94	53	B4-IP1	132	Wheal Fortune
East (block4)	7411750	479375	479500	125	5	GDA94	53			Wheal Fortune
East (block4)	7411800	479175	479300	125	5	GDA94	53	B4-IP5		
East (block4)	7412000	479000	479250	250	10	GDA94	53	B4-IP5A		
East (block4)	7412050	479575	479675	100	4	GDA94	53	B4-IP2	4.14	Star Creek
West (block 2)	7411900	473875	474100	225	9	GDA94	53	B2-IP4		
West (block 2)	7412550	474300	474500	200	8	GDA94	53	B2-IP1	34.1	Wipe Out
West (block 2)	7412850	474125	474425	300	12	GDA94	53	B2-IP5		
West (block 2)	7412900	474625	474800	175	7	GDA94	53	B2-IP10	5.16	
West (block 2)	7413000	474700	474825	125	5	GDA94	53	B2-IP10		

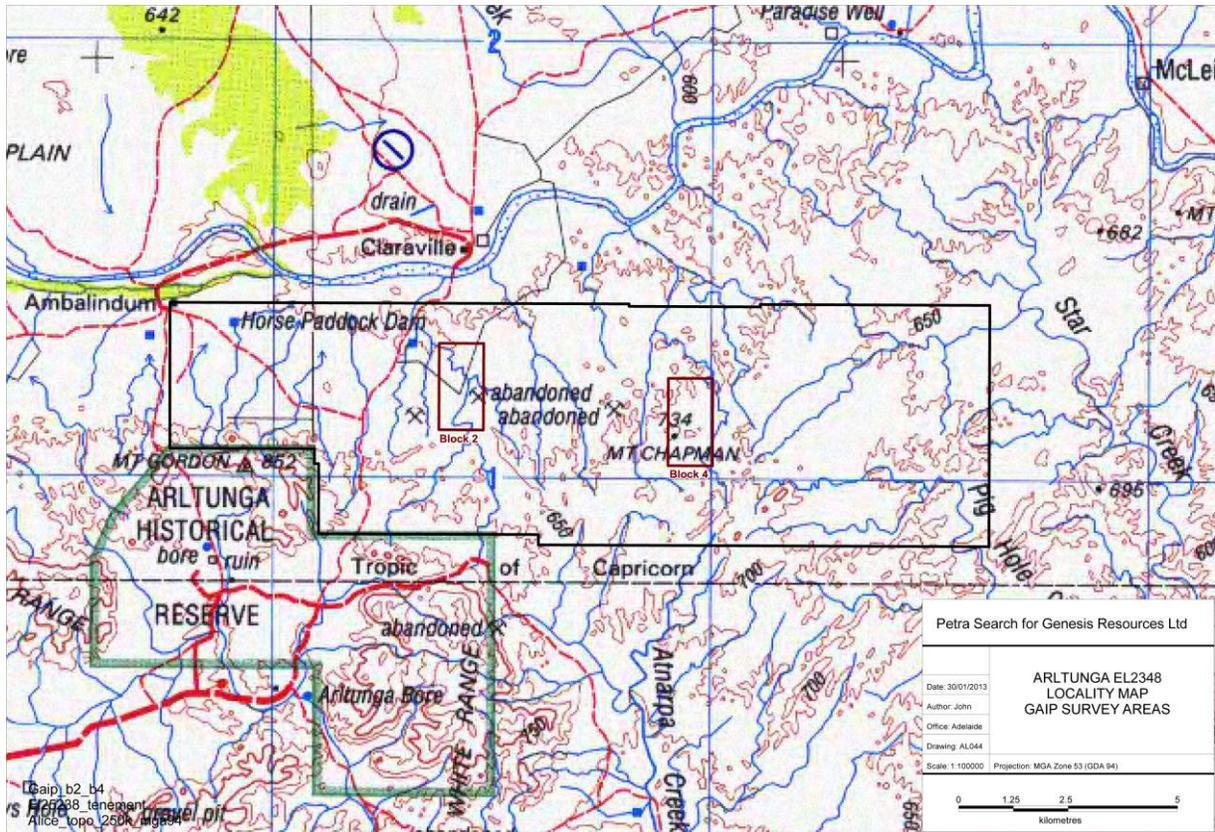


Figure 4: Arlunga location map and GAIP survey areas.

### 2.2.1 CSAMT survey results

The survey team (Zonge Engineering & Research Organisation) reported that the quality of the data received from the survey equipment was very good giving high background resistivity and good contrast for conductivity and low resistivity measurements. The location of each survey line is shown on GAIP resistivity maps (Figures 5 and 6).

Anomalies with significant gold mineralisation potential were found:

- below known gold quartz-reef-type 'veins',
- below newly discovered interpreted 'veins', and
- within wide, long, deep, low electrically resistive zones, possibly caused by alteration.

## 2.2.2 August 2014 Fieldwork and Data Review

Seven days reconnaissance mapping was carried out between 16–22 August 2014. Several prospect areas were mapped including Wipeout, Wipeout north east, Round Hill, Chinaman's, No Name 1 & 2, Wheel Fortune, Magdala, and several airmag and CSAMT anomalies (Refer Figures 7: Arltunga Tenement Wheel Fortune Workings, Figure 8: Arltunga Tenement No Name 1 Mine, Figure 9: Arltunga Tenement No Name 2 Mine, Figure 10: Arltunga Tenement Wipeout Workings, Figure 11: Arltunga Tenement Wipeout Northeast, Figure 12: Arltunga Tenement Round Hill Workings and Figure 13: Arltunga Tenement Chinaman Workings).

Based on this mapping and existing geochemical data the historic workings at Wipeout, Round Hill and Chinaman's warrant drill testing for down dip extensions of the surface mineralisation.

At Wipeout, a sub vertical to steeply west dipping mineralized shear/vein is hosted in tonalite and extends over approximately 120m of strike length. GAIP and CSAMT surveys over the area did not show a response below the workings but did identify a strong parallel anomaly approximately 100m to the east. Field checking indicated that the southern part of this anomaly corresponds to a north – south trending part of a creek. This may represent a north – south trending shear zone and warrants drill testing.

At Wipeout north east the reported mineralised veining could not be located. However the CSAMT anomaly that corresponds to the reported position of the veining will be tested with a fence of short, angled RC holes.

At Chinaman's Mine en echelon shearing/veining hosted in tonalite occurs within a 15m wide zone of approximately 120m strike length. No geophysical data is available. As the mine lies only 100m off a maintained station track the site has easy access and 2 short, angled RC holes would adequately test down dip of the workings.

Shearing at Round Hill has previously been reported to extend over a 1km strike length. The main area of historic workings is located within a saddle in a prominent north south trending ridge. A series of 5-10m deep slots have been dug on en echelon shears/veins over approximately 120m of strike length. The shears/veins occur over a width of approximately 100m. This represents the widest zone of vein development seen to date on the tenement area and is considered a priority target for drill testing.

The No Name workings occur within tonalite close to the western margin of a large, circular magnetic anomaly. Veining extends over a strike length of around 80m.

At Wheel Fortune, within the Mt Chapman Vein Camp, in the eastern half of the tenement collars for 5 of the 8 holes drilled by White Range Gold NL during 1988 were located. The five holes located were MCRC02, 04, 05, 06 and 07. Refer to Table 3: 1988 White Range Gold NL Drillholes at Wheel Fortune for GPS coordinates. No photos were taken, the five holes were open and have not been plugged. There are no sumps visible and no samples left on site. Refer Figure 7. This drilling did not return significant results and is considered to have already tested down dip of the main areas of workings.

Table 3: 1988 White Range Gold NL Drillholes at Wheel Fortune

Hole ID	Date	Local_E	Local_N	Local_Azi	GDA94_E	GDA94_N	RL	Dip	Azi	Depth
MCD01	1987	4935	5119	East	479395	7411767	662	-60	100	139.6
MCRC01	1988	4931	5089	East	479390	7411737	662	-58	120	48
MCRC02	1988	4942	4792	East	479412	7411436	686	-61	110	48
MCRC03	1988	4949	4823	East	479419	7411468	690	-60	110	36
MCRC04	1988	4975	4931	East	479434	7411580	689	-59	290	36
MCRC05	1988	4975	4930	West	479434	7411580	689	-54	110	36
MCRC06	1988	4975	4930	East	479435	7411630	696	-57	110	42
MCRC07	1988	4987	5014	East	479446	7411662	690	-57	110	33

## 2.3. Proposed Exploration Method

### 2.3.1. RC drilling

The drilling program is scheduled to commence during the 3<sup>rd</sup> Quarter of 2017. It is anticipated that the proposed drilling program should take 2 – 3 weeks to complete. This includes preparation of access tracks and drill pads, mobilisation of the rig to site, drilling and rehabilitation of drill sites and access.

A total of 11 drill holes have been proposed for the drilling program. The drill hole locations can be seen in Figures 10 to 13 and their locations are shown in Table 4.

Drilling will involve the use of a 4WD truck mounted Reverse Circulation rig with up to 3 supporting vehicles.

It is estimated that less than 5 km of new access tracks will need to be established to the proposed areas of drilling. Where possible access will be via existing station tracks to dams and along fence lines with new tracks to be established along the shortest possible route from the existing access/fenceline to the drilling area.

Drill pads will be approximately 10m x 15m in size to allow sufficient space for the drill rig, support vehicles and sump. It is estimated that total area required for pads will be approximately 0.15 hectares. Sumps will be 2m x 3m x 2.5m deep.

All personnel involved in the drilling program will be accommodated at Old Ambalindum Station.

When viewed on Google map, one of the drill holes proposed appears to be close to or in a drainage line/creek. Genesis are aware that no activities are to occur within creeks and drainage lines and within 25m from the bank of drainage lines and creeks. The proposed drill hole will be moved slightly.

**Table 4: Arltunga Gold Project Proposed Drill holes.**

Proposed ID	Prospect	GDA94_E	GDA94_N	RL	Dip	Azim	Depth	Target
PARL01	Wipeout	474320	7412465		-50	90	80	Under WO workings
PARL02	Wipeout	474415	7412500		-50	90	120	CSAMT targets AMT03 and AMT01
PARL03	Wipeout	474630	7412500		-50	90	80	CSAMT target AMT02
PARL04	Wipeout NE	474785	7412900		-50	270	80	CSAMT target AMT05 and 5 g/t Au in rock. GAIP anomaly
PARL05	Wipeout NE	474715	7412900		-50	270	80	CSAMT target AMT04
PARL06	Round Hill	474705	7409675		-50	300	80	Below eastern line of workings
PARL07	Round Hill	474650	7409700		-50	300	100	Extension of mineralisation in workings
PARL08	Round Hill	474650	7409700		-50	270	80	Below workings
PARL09	Round Hill	474645	7409745		-50	320	80	Below western line of workings
PARL10	Chinaman's	475190	7409705		-50	100	80	Below workings
PARL11	Chinaman's	475175	7409635		-50	100	80	Below workings

### 3.0. CURRENT PROJECT SITE CONDITIONS

The project area lies within the MacDonnell Ranges Bioregion which made up of two sections, one to the northeast of Alice Springs (East MacDonnell Ranges), and another to the southwest (West MacDonnell Ranges). The West MacDonnell Ranges refer to the ranges west of Alice Springs and include the Chewings, Heavitree, Idirriki and Mereenie Ranges. The East MacDonnell Ranges, where the project area lies, to the east of Alice Springs, include the Fergusson, Cavenaugh, Amarata Harts and Georgina Ranges.

#### 3.1. Geology

The Ranges are dominated by two geological units; sedimentary rocks of the Amadeus Basin and metamorphic rocks characteristic of the Arunta Block.

The Arltunga goldfield occurs within the Alice Springs Arltunga Nappe Complex (~430-300 Ma). The Arltunga Nappe Complex was formed when a south-directed thrusting event resulted in the current structural duplex arrangement of the Amadeus Basin and the Palaeoproterozoic basement.

The deposits are hosted both by the Palaeoproterozoic basement and by the Neoproterozoic Heavitree Quartzite, and are inferred to have an age of ~300-290 Ma (late Alice Springs Orogeny) based on structural relationships of Au-bearing veins and <sup>39</sup>Ar-<sup>40</sup>Ar ages of white micas. Palaeoproterozoic rocks that host the deposits include the Cadney Metamorphics (marble and calc-silicates), the Hillsoak Bore Metamorphics (predominantly metasediments, including calcareous units and rare marbles, and amphibolites), the Cavenagh Metamorphics (mainly

metasediments, including calcareous units, and quartzofeldspathic gneiss with minor iron formation) and the Atnarpa Igneous Complex (retrogressed tonalitic gneiss: Mackie, 1986). Of these units, only the Atnarpa Igneous Complex has been reliably dated at ~1770 Ma.

According to N.T. Land Information System, NRETA maps, Rudosols, shallow soils with little more than some minor organic matter accumulation on the surface and weathered parent material, predominantly occurs in the Project area. Minor occurrences of hydrosols exist by the Hale River.

### **3.2. Hydrology**

The tenement covers the northern flanks of the White Range and Mount Gordon. The topography is generally rugged and undulating before dropping northwards onto the edge of the Hale river valley.

During the wet season a southeast flowing creeks offer significant water flow. Extensive flooding can occur and should be regarded as a potential hazard during this period.

Fine “dry season” conditions prevail throughout the rest of the year. The project area has intermittent internal drainage and the main drainage is Harts River.

### **3.3. Flora and Fauna**

The landscape is quite arid with gumtree-lined creek beds, spinifex and sparse scrub plains and denser, hilly scrub thickets.

A total of 53 threatened species within the MacDonnell Ranges Bioregions are reported. Among them, the species that are listed on Table 5 are potentially occurring with in the Project area.

A detailed report regarding flora and fauna of the MacDonnell Ranges Bioregions is attached in Appendix 1.

A report under the title “Great MacDonnell Ranges-Sites of conservation significance” downloaded from the Northern Territory Government Department of Natural Resources web site is attached as Appendix 2.

EPBC Act Protected Matters Report ( 21 February 2017) shows one new Critically Endangered species has been added to the list that falls within a 10km radius of EL25238.

**Table 5: List of threatened species with potential to occur in a 10km radius of the proposed drill sites. CE=Critically Endangered, VU=Vulnerable, EN = Endangered. Information obtained from the EPBC Act Protected Matters Report, 21/02/2017.**

Group	taxons	Common Name	NT level
Bird	<i>Calidris ferruginea</i>	Curlew Sandpiper [856]	CE
Bird	<i>Erythrotriorchis radiatus</i>	Red Goshawk [942]	VU
Bird	<i>Pezoporos occidentalis</i>	Night Parrot [59359]	EN
Bird	<i>Polytelis alexandrae</i>	Princess Parrot, Alexandra's Parrot [758]	VU
Bird	<i>Rostratula australis</i>	Australian Painted Snipe [77037]	EN
Insects	<i>Croitana aestiva</i>	Desert Sand-Skipper [26238]	EN
Mammal	<i>Macrotis lagotis</i>	Greater Bilby [282]	VU
Mammal	<i>Zygomys pendunculatus</i>	Central rock-rat [68]	EN
Mammal	<i>Petrogale lateralis</i>	Black Footed Rock Wallaby [66649]	VU
Reptile	<i>Liopholis slateri</i>	Slater's Skink [83163]	EN
Reptile	<i>Liopolis kintorei</i>	Great Desert Skink, Tjakura, Warrarna, Mulyamiji [83160]	VU
Plants	<i>Macrozamia macdonnellii</i>	MacDonnell Ranges cycad [11843]	VU
Plants	<i>Minuria tridens</i>	Minnie daisy	VU
Plants	<i>Olearia macdonnellensis</i>	[14180]	VU
Birds	<i>Rostratula benghalensis</i>	Painted snipe [889]	EN

### 3.3.1 Weeds Management

#### Prevention in the Natural Environment

Prevention is the most effective method of dealing with weeds. Early detection and eradication are crucial to reduce its potential environmental and economic impacts. It is much easier to treat weeds when present in small numbers than when they are well established.

Early detection and eradication requires an awareness and understanding of the factors that favour the establishment and spread of weeds, and applying appropriate management practices that can prevent or reduce the risks. The spread of most weeds occurs through similar pathways, such as the movement of goods, animals and vehicles contaminated with weed seeds. It is important to reduce the risk of the environment becoming vulnerable to invasion by exotic species by encouraging beneficial vegetation growth and by avoiding disturbance as much as possible.

Measures for weed prevention in the landscape include:

- Minimise the disturbance of desirable plants along trails, roads, and waterways.
- Maintain desired plant communities through good management.
- Monitor high-risk areas such as transportation corridors and bare ground.
- Revegetate disturbed sites with desired plants.

We need to be aware of new infestations and report potential new weeds or new outbreaks to the local council, or to the Northern Territory weed management agencies.

#### A. Objectives and targets

Implement weed control activities to reduce the chance of weed infestation by washing down vehicles before entering the tenement. The target is to enter the tenement with clean vehicles so as no seeds can contaminate the area.

#### B. Prevent the introduction and spread of weeds

Measures that will be implemented by Genesis Resources employees to prevent the introduction and limit the spread of weeds include:

- appropriate standards of hygiene with the inspection of earthmoving equipment entering site and the provision of adequate vehicle wash down facilities. The wash down area is to be confirmed. We have requested permission from the landowners, Mr Tim and Mrs Emily Edmunds for the wash down site to be located at near the Wipeout Well Bore or the White Range Mine Bore (close to Round Hill and Chinaman's). We are awaiting their response.
- use only established access roads to prevent further spread;
- minimise the introduction and spread of feral animals that may be further spreading weeds on or off site; and education and awareness of weed related matters for employees and contractors.

#### c) Prioritise weed control activities

Weed control activities should be prioritised to maximise the use of the resources allocated and to take advantage of timing in relation to burning, seeding and growth periods of weed species (plant life cycle). Examples of specific factors to consider when prioritising weed control efforts for individual areas of infestation include:

- proximity to roads/tracks (e.g. infestations close to tracks get high priority);
- phase of invasion (e.g. early stages can be controlled more easily, so get high priority);
- size of infestation (e.g. smaller infestations can be controlled more easily);
- proximity to drainage lines/waterways (e.g. infestations close to drainage lines more likely to spread);
- susceptibility to wind dispersal as well as prevailing wind direction (e.g. weeds growing in elevated areas or weeds with light seeds more likely to disperse); and
- proximity to lease boundary (e.g. weeds close to boundary get higher priority).

d) Outline weed control methods – How to manage the situation

Weeds can be controlled by chemical (i.e. herbicide), physical removal (i.e. hand pulling and the use of machinery), biological and/or land management (i.e. use of fire and cattle grazing) methods. Optimal methods vary from one species to another and may change over time with weed research and/or new chemical products.

e) Other considerations

Water for industrial use (e.g. drill hole clearing or dust suppression) will be carried on the drill rig or support vehicles. Industrial water will be sourced from Wipeout Well Bore or the White Range Mine Bore (close to Round Hill and Chinaman's) on the Ambalindum pastoral lease, which is within the boundary of the exploration licence, refer to Table 6. Written approval was received on the 30/03/2015 from the landowners Tim and Emily Edmunds to use this bore, refer Appendix 5.

**Table 6: Location of Bores**

<b>Bore Name</b>	<b>GDA94 East</b>	<b>GDA94 North</b>	<b>Pastoral Lease</b>
Wipeout Well	474420	7412230	Ambalindum

A simple 10m x 5m pad would be established next to Wipeout Well with washdown water channeled into a lined sump that would be temporarily fenced to prevent access to cattle.

After completion of the drilling program the sump will be allowed to dry and then be back filled with a cap of at least 1m of clean compacted soil.

Resources to be dedicated to weed control in the following year amount to approximately \$5,000. The follow up will be undertaken by Genesis on site employees or by contractors depended on staff availability.

One week will be set aside for these activities, involving one geologist and one field hand in a 4WD vehicle. The employees will be staying at the Old Ambalindum Station.

Weed control activities will be undertaken after the wet season has finished (second quarter of the year) when it is the optimal timing of weed control.

Once weeds are controlled in an area, the area will be recolonised by locally sourced native plant stock. This will aid in reducing the degree of re-infestation from adjacent areas. Genesis will undertake active revegetation with native plant species.

**3.4. Current Land Use**

Predominant land uses in the East MacDonnell Ranges are cattle grazing and tourism. The project area occurs within pastoral leases that are primarily used for cattle. The project area is not subject to any native title claims.

### **3.5. Historical, Aboriginal, Heritage Sites**

A search of the AAPA register shows no recorded site of significance in the tenement. An application was made for an Authority Certificate on the 2<sup>nd</sup> November 2011. The Authority Certificate was issued by the Aboriginal Areas Protection Authority on the 29<sup>th</sup> June 2012 (Ref: 2011/15328).

As per the AAPA certificate, custodians Gordon Cavanagh and Stanislaus (Shorty) Mulladad have requested that they be informed of the start of drilling in EL 25238 and be given the opportunity to be present when the drilling is being carried out. Both these men reside in Santa Teresa.

There is no Heritage Site in the tenement.

A CLC sacred site clearance certificate was issued on the 19 September 2014, SSCC No. C2014-38-A. A Site Clearance by the Central Land Council will ensure that there are no sacred sites or sites of significance near the proposed drilling programme.

There are no registered Native Title claims over the area, but this does not mean there are no native title claimants.

Genesis Resources will be careful not to disturb any sacred sites should they be found on the exploration licence.

## **4.0. ENVIRONMENTAL MANAGEMENT SYSTEM PLAN**

### **4.1. Environmental Policy and Responsibilities:**

The company is committed to achieving the highest performance in occupational health and safety with the aim of creating and maintaining a safe and healthy working environment throughout its work sites.

The company has set a target of zero lost time injuries for its officers and contractors engaged in exploration activities at the Arltunga project.

Genesis have set the following targets for environmental performance:

- Avoid any disturbance of sites of cultural significance to traditional owners.
- Have 0% introduction of weed species and pests.
- Have 0% of oil spills.
- 100% of hazardous materials and dangerous goods to be removed from site within 6 months after drilling completed.

- All waste to be removed from the drilling site within 6 months.
- Rehabilitation of drill holes, drill sites and access tracks to be finalised within 6 months after completion of the drilling program to prevent erosion. This will be monitored after the 2015-2016 wet season.
- Ensure damage to native vegetation and fauna habitat is kept to a minimal level.

Genesis Resources Ltd is responsible for all Environmental Management at the site. The persons responsible for implementing safety management at the Project is the company's Exploration Manager, James Patterson.

#### **4.2. Statutory Requirements**

Current applicable legislation permits and conditions under which the project has been operated are:

- Mining Management Act,
  - Mining Management Regulations,
  - Mining Titles Act and Regulations,
  - Weeds Management Act,
  - Bushfires Act,
  - Heritage Act,
  - NT Aboriginal Sacred Sites Act,
  - Native Title Act,
  - Aboriginal Land Rights (Northern Territory) Act,
  - Environment Protection & Biodiversity Conservation Act,
  - Soil Conservation and Land Utilization Act
  - Work Health and Safety (National Uniform Legislation) Act 2011,
  - Radioactive Ores and Concentrates (Packaging and Transport) Act (NT),
  - Code of Practice for Safe Transport of Radioactive Materials 2001,
  - Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing,
  - Reporting requirements such as those for; production statistics; employment/injury and safety statistics; frequency of water quality reporting,
  - Lease conditions
  - Authorisation conditions
- Territory Parks and Wildlife Conservation Act  
& the Dangerous Goods Act.

Genesis Resources Ltd also note that on 1 July 2011, new Plant Health Regulations were introduced into the NT due to the quarantine risk posed to the NT with the movement of machinery and equipment.

### 4.3. Non-Statutory Requirements

Genesis has Exploration Deed agreement with the Central Land Council that was signed on the 27 day of July 2006. Upon the execution of the Deed of Covenant, Genesis will be bound by the term and conditions of the agreement in regard to the exercises of the power granted to Genesis under the provision of Mining Act.

Genesis will fulfil its obligations to follow Environmental Management Plans for the project and maintain communication with relevant stakeholders during the life of the exploration project.

### 4.4. Identified Stakeholders and Consultations

#### 4.4.1. Identified Stakeholders

Genesis Resources Limited, NT WorkSafe, The Department of Mines and Energy, Central Land Council as Native Title Representative under the Native Title Act, and pastoral leases landowner (Table 7).

**Table 7: Pastoral leases landowner details.**

NT Protion / Section No	Property name	Name of owners	Email/Phone
724 / PPL 1124	Ambalindum Station	Hale River Pastoral Company Pty Ltd as trustee for the Edmunds Family Trust of Ambalindum Station Mr Tim and Mrs Emily Edmunds	<a href="mailto:te_edmunds@hotmail.com">te_edmunds@hotmail.com</a> (08) 8956 9714 0427 553 834

#### Land Access Agreement

On the 3 March 2016 Genesis Resources emailed a letter to the Landowners of Ambalindum Station Tim and Emily Edmunds regarding a Land Access Agreement. A copy of this Mining Management Plan was included. We are currently waiting for a response from them.

#### 4.4.2. Consultation

The traditional aboriginal owners and the managers of the effected pastoral leases will be consulted and fully informed of the company's exploration activities and its rehabilitation and environmental process.

Contact will be made via phone or face to face with managers of pastoral leases regularly to update on the program and notify them of any change to circumstances.

At least two days prior to commencing drilling the company will notify NRETAS Water Advisory and Regulatory Officer (wateradvisorysouth@nt.gov.au or ph: 08 8951 9215).

Genesis Resources Ltd are aware that this is not a requirement under the *Mining Management Act*. It is a requirement for water well drilling under the *Water Act*.

No drilling of water bores is planned.

#### **4.5. Induction and Training**

Genesis are aware that as the operator we take full responsibility for all environmental and safety management on site. The company has in place a generic induction process which can be adapted (or altered) to suit specific project needs. For the Project, the initial induction process would focus on remote area safety, vehicle safety and drill rig safety.

Standard operating procedures and inductions are in place for the following:

- Field communication & search and rescue;
- Emergency evacuation procedure and
- Vehicle induction

Various consultants will be employed and the company will ensure that they will provide their safety procedures. An induction to drill rig safety is always conducted at the commencement of a drill program and generally delivered by the rig supervisor or the most senior drill operator. All site personnel are required to participate in an induction before commencing work.

Environmental topics to be covered in induction include but are not limited to: Threatened plants and animals (identification, actions, responsibilities), weeds (identification, responsibilities), erosion minimisation, vegetation clearing minimisation techniques, emergency responses to spills or accidents, hazardous substances, location of first aid, fire extinguishers, bush fire safety, stop work events such as heavy rain, sacred sites, health and safety topics such as heat stress, dehydration and fatigue.

Appropriate manuals and training will be provided where required.

Identification, assessment, management and control of risks will be the subject of daily toolbox meetings between all site personnel. The results of these discussions will be passed to the Operator.

The contractor supervisor, to ensure risk minimisation, will conduct audits of sites of potential hazards daily. All contractors will have to demonstrate they are aware of their company's safety and environmental procedures and all visitors to the site will be escorted and will wear appropriate personal protective equipment. A Standard Operating Procedure (Emergency Evacuation Procedure) is in place for a medical emergency.

#### **4.6. Identification of environmental aspects and impacts**

Refer to Appendix 6 for the Environmental aspects and impacts related to proposed exploration activities at the Arltunga Project.

#### 4.6.1 Erosion and Sediment Control

Clearing of access tracks and drill pads has the potential to damage vegetation and fauna habitats and cause erosion and compaction of soil.

- Drill pads and tracks will be prepared and cleared with a minimum of disturbance to the environment and rehabilitated to promote rapid re-vegetation and prevent erosion.
- The routes of access tracks and locations of drill pads will be chosen to avoid areas of dense vegetation and to minimise tree clearing. Track routes will be chosen after consultation with the landholder.
- Clearing will not occur within 25m of a creek or drainage line
- Wherever possible track routes and drill pads will be sited so as to avoid steep slopes.
- When establishing tracks blade work will be kept to a minimum and as much as possible the “blade up” method used to avoid removal of rootstock and top soil and to promote regrowth.
- Tracks and drill pads will be formed so as not to block natural drainage lines. Creek crossings will maintain the form of the natural bed of the creek. “Gully plug” material will not be used to create crossings.
- Tracks will be kept to the minimum width required for the drill rig. The formation of windrows on the track sides will be avoided as these can channel surface water flow causing serious erosion. Any windrows will be back bladed as part of site rehabilitation.
- In the event of a storm where a large amount of rain falls, vehicle movement and drilling will cease as the area will be very susceptible to compaction and erosion at this time. Drilling will only recommence when the soil has dried sufficiently to support vehicles.
- Drill pads will be sited to avoid the need for excavation if possible. If excavation is required to level a drill pad then top soil will be stockpiled for re-spreading during rehabilitation. Any excavated material will be reformed to as close to the original land surface as possible during rehabilitation.
- Drill collars will be sited so that no drilling occurs within 25m of the bank of a creek or drainage line.
- Drill sumps will be located on the downslope side of drill pads and will be lined. Sumps will be sited at least 25m from creeks or drainage lines and so that no overflow occurs within the 25m buffer zone. Sumps will be sited away from the drip lines of any trees where possible to avoid damage to the root zone. Sumps will be dug with a slope to allow fauna to escape. On completion of drilling sumps will be allowed to dry, the lining removed and disposed of. Sumps will be backfilled and capped with at least 1m of clean, compacted soil.
- During rehabilitation of drill sites, drill samples will be emptied from their plastic bags either into the drill hole or dry sump. Sample bags and any waste material will be removed from site and disposed of at a licensed waste disposal facility after receipt of assay results.
- If drill pads or access tracks become compacted they will be ripped along contour to loosen soil during rehabilitation.

#### **4.6.2 Cultural Heritage Sites**

An Authority Certificate for Exploration Licence EL25238 was issued by the Aboriginal Areas Protection Authority (AAPA) on the 29<sup>th</sup> June 2012.

A Central Land Council (CLC) Clearance Certificate (SSCC No: C2014-38-A) was issued on the 19<sup>th</sup> September 2014 and is valid for 24 months from this date.

No sacred archaeological, cultural or sacred sites were identified in the north western tenement block that is the proposed area of exploration. However if during the course of exploration activity, Genesis Resources identifies any previously unknown archaeological or historical site or object or any unknown sacred site or object, then all work within a 100m radius of that area will cease immediately and the location of the site will be reported to both the CLC and AAPA.

#### **4.6.3 Water Management**

Water for industrial use (e.g. drill hole clearing or dust suppression) will be carried on the drill rig or support vehicles. Industrial water will be sourced from Wipeout Well Bore or the White Range Mine Bore (close to Round Hill and Chinaman's) on the Ambalindum pastoral lease, which is within the boundary of the exploration licence. Written approval was received on the 30/03/2015 from the landowners Tim and Emily Edmunds to use this bore, refer Appendix 5. The site for the washing down area and wash-down water channelled into a lined sump will be next to Wipeout Well, 474420 E – 7412230 N.

Drinking water will be sourced from the Old Ambalindum Station.

Drill holes will be collared with PVC to prevent washout.

If groundwater from a single unconfined aquifer is encountered it will be channelled from the drill collar into the lined sump. Sumps will be sited so that any over flow will remain at least 25m from the banks of creeks or drainage lines.

When rehabilitation the hole, casing will be cut at a minimum depth of 0.4m below ground. If possible drill samples will be backfilled into the hole. A concrete hole plug will be placed above the remaining casing. Compacted soil will be back filled over the hole and mounded to allow for subsidence and to prevent rainwater entering the hole.

If two or more confined aquifers are intersected the hole will be grouted and sealed to prevent water flow between aquifers. Grout plugs will be placed between aquifers and the overlying confining beds. Grout plugs will be of at least 4m thickness with 2m above and below the interface of the aquifers. The hole will then be plugged and backfilled at surface as outlined above.

#### **4.6.4 Radiation Management**

The primary focus of Genesis Resources exploration program for 2015 is copper – gold mineralisation. It is not considered likely that radioactive minerals and elements (uranium and thorium) will be intersected during the proposed RC program. Thorium occurs as a constituent of

rare earth elements, monazite and zircon. There are no known occurrences of radioactive minerals within the Licence area and previous surface geochemical sampling has not returned anomalous results for radioactive minerals or elements.

However to control potential risks from naturally occurring radioactive minerals to people and the environment during drilling the following procedures will be implemented.

- Use of appropriate PPE including safety glasses, dust masks, full length clothing and gloves to minimise contact with samples. Waste PPE will be bagged and disposed of in the Alice Springs landfill.
- Washing of hands before eating or smoking.
- Showering and change of clothing at the end of shift. Clothes to be regularly laundered.
- Use of a dust suppression system on the drill rig.
- Regular cleaning of machinery where significant build-up of mud or dust occurs. This will occur on site and this material to be contained within the lined drill sump. Equipment will also be cleaned prior to demobilisation from the work site. The drill sump will be allowed to dry and covered with at least 1m of compacted, clean soil.
- RC bulk drill samples will be bagged and stored on site until assay results are received. There is no authorised public access to the proposed areas of drilling. After assay results are received the bulk samples will be emptied from their bags into the drill hole or dry sump and covered with at least 1m of compacted clean soil. Empty sample bags will be disposed of in the Alice Springs landfill.
- Any groundwater encountered during drilling will be channelled into and contained within sumps at the drill site. Sumps will be site at least 25m from creeks or drainage lines and also so that any overflow will also be outside the 25m buffer zone. Sumps will be lined, water will be allowed to evaporate and the sump covered with at least 1m of compacted soil. The sump lining will be removed prior to back filling and disposed of in the Alice Springs landfill.

#### 4.6.5 Hazardous Materials and Dangerous Goods

The substances and materials tabled below are those that will be used during the RC drilling program. The hazard and danger rating classifications are those given by the National Occupational Health and Safety Commission (NOHSC) and the Australian Dangerous Goods Code (ADGC). Refer Table 8.

**Table 8: Identified Hazardous Materials and Dangerous Goods**

Substance/Material	NOHSC Hazard Rating	Dangerous Goods Rating	Comments
Diesel	Hazardous	Non dangerous	
Engine oil	Non - hazardous	Non dangerous	
Hydraulic oil	Non - hazardous	Non dangerous	
Liqui-pol	Non - hazardous	Non dangerous	Viscosifier
Superfoam	Non - hazardous	Non dangerous	Bio-degradable surfactant

No hazardous substances will be stored on site.

Diesel for re-fueling the drill rig will be carried in metal tanks or drums on a support vehicle. A manual or electric fuel pump and hose will be used to transfer fuel.

Engine oil, hydraulic oil and drilling fluids (Liqui-pol and Superfoam) will be carried on a support vehicle in 20 litre plastic or metal containers. No hazardous substances will be stored on site. Support vehicles and light vehicles will be refueled from the public fuel stations at Ross River Station or Alice Springs.

#### **4.6.6 Spills Management**

Spillage of hydrocarbons such diesel, engine and hydraulic oils has the potential to contaminate soils and drainages.

To prevent such contamination the following procedures will be used.

- All vehicles to be serviced prior to commencement of the drilling program to minimise risk of hydrocarbon leaks. A high standard of vehicle maintenance will also be enforced during the course of the drilling program with any leaks to be repaired immediately.
- Use of plastic sheeting beneath drill rig and compressor to catch any fuel or oil spillages. This plastic sheeting will be disposed of at the Alice Springs waste facility.
- Any spills of hazardous substances will be cleaned up immediately. Spills will not be cleaned using water or sweeping which may allow contaminants to enter the natural drainage and groundwater.
- Any spills will be contained and absorbed with earth, sand or vermiculite. Contaminated soil will be shovelled into plastic bags or containers which will be sealed and clearly labelled for disposal. Contaminated soil will be disposed of at the Alice Springs waste facility.

#### **4.6.7 Waste Management**

All waste materials will be removed from site including all hydrocarbons, solid waste and food waste. Waste material will not be stored on site.

Solid waste (used PPE, empty plastic bags and containers) and food waste will be contained in plastic bags and removed to the waste facility at Alice Springs on completion of the drilling program.

All plastic sample bags will be emptied and removed from site to be disposed of at the Alice Springs waste facility after completion of the drill program.

All plastic sump linings will also be removed and disposed of at the Alice Springs waste facility at the end of the drilling program.

Hydrocarbon waste including used engine oil and hydraulic oils will be contained in metal or plastic containers and will be removed from site to the Alice Springs waste facility.

#### 4.6.8 Noise and Air Quality Management

All drill pads are situated in areas well removed from dwellings and are not accessible to the public. A dust suppression system will be fitted to the drill rig. If required industrial water sourced from the bore at Wipeout Well or a second bore near White Range Mine (close to Round Hill and Chinaman's) and carried on the rig or support vehicle will be hand sprayed over the drill pad area and sample area for dust suppression.

#### 4.7. Emergency procedure and incident reporting

##### 4.7.1. Emergency Procedures

Part of the induction program will identify the method of contact for the Alice Springs Hospital and the person in charge will ensure that there is a method of contact via phone (satellite if necessary) and any evacuation procedures recommended. Refer Table 9 for Emergency Contacts.

**Table 9: Emergency Contacts**

<b>POLICE STATIONS</b>	<b>ADDRESS</b>	<b>PHONE</b>
Harts Range Police	Plenty Highway, Alice Springs NT 0872	(08) 8956 9772
Alice Springs Police Station	Parsons Street, Alice Springs NT 0870	(08) 8951 8822
Tennant Creek Police Station	Paterson Street, Tennant Creek NT 0860	(08) 8962 4444
<b>EMERGENCY</b>		
Alice Springs Fire Station	Lot 7728 Telegraph Tce	(08) 8951 6688
Alice Springs Hospital	Gap Road, AS 0870	(08) 8951 7777
Alice Springs RFDS	8-10 Stuart Tce, AS NT 8870	(08) 8952 1033

A comprehensive first aid kit will be available onsite and site personnel will be shown its location. A muster point will be identified in the induction program to be used in the event of an emergency. The warden for such emergencies will be the most senior person on site.

A fire extinguisher and water pump and trailer will be available at the site if necessary. The induction program will make all staff aware of responsibilities and procedures in preventing and surviving bush fires.

##### 4.7.2. Incident Reporting

In the case of an environmental incident (an unplanned event) that causes environmental harm, it will be dealt with immediate containment and, if necessary, an environmental consultant will be contacted. All incidents will be reported as soon as practicable after the environmental incident has occurred to the Chief Executive Officer of the Department of Mines and Energy, in accordance with Section 29 of the Mining Management Act. If we give notice orally, we will provide written notice to the Chief Executive Officer no later than 48 hours after the event.

Genesis understands that when assessing an incident and making decisions about reporting on an environmental incident or serious environmental incident, we should have regard to the definition of “environment” in the MMA.

“Environment” is defined under section 4 of the MMA as follows:

*land, air, water, organisms and ecosystems on a mining site and includes:*

- (a) the well-being of humans;*
- (b) structures made or modified by humans;*
- (c) the amenity values of the site; and economic, cultural and social conditions*

Genesis will conduct an appropriate assessment of the incident in order to determine the severity of the incident and whether we are required to report the incident to the Chief Executive Officer of DME. Section 29 reporting is required for all incidents identified as being within severity class 2, 3 or 4. Refer Appendix 4 for the Guide to severity classification and Incident Reporting Flowchart.

Incidents that may require reporting are:

- (a) Escape (by any means such as a spill or leak) of a fuel, chemical, product or residue in solid, liquid or gaseous form including fumes, smoke, vapours, contaminated water, or dust;
- (b) Emissions of noise (beyond reasonable permitted levels);
- (c) Uncontrolled or accidental fire on any land, structure or infrastructure;
- (d) Unauthorised, uncontrolled, or both, discharge of controlled waters to surface or ground waters;
- (e) Damage to a Sacred Site, Aboriginal Protected Area, other protected area, archaeological or heritage site;
- (f) Unauthorised mining, whether the activity is undertaken on or off an authorised mining site;
- (g) Unauthorised clearing of vegetation or disturbance of the ground on or off an authorised mining site; and,
- (h) Harm to human well-being.

All environmental incidents are included within a monthly technical report. These reports also document the nature of any "substantial disturbance" including any rehabilitation works.

#### **4.8. Environmental Audits and Inspections**

No environmental audit or inspection has been undertaken to date as there has been no exploration that has impacted on the environment only rock chip sampling in 2009 and 2011, an GAIP Survey in 2010 and a CSAMT Survey in December 2012.

Environmental audits will be carried out by Genesis Resources. Inspection of access tracks, drill pads, sumps and the weed washdown area will be undertaken within six months and/or at the end of the following wet season to ensure that no erosion, hole failures or weed growth has occurred. Remediation will be undertaken at inspection if necessary.

Photographs of the site will be taken before track and drill site clearance, during the process and after rehabilitation as proof of minimal impact and to monitor the progress of revegetation. If Genesis personnel are unavailable, Low Ecological Services will be engaged to carry out inspections. Low Ecological Services (08) 8955 5222 is a Northern Territory business based in Alice Springs, directed by Bill Low, who has been working in environmental management and research in Central Australia for over 39 years. They have a detailed working knowledge of central Australian flora, fauna, landscape, soils, geology and environmental remediation.

#### **4.9. Environmental performance reporting**

Genesis Resources's goal is to prevent incidents that impact people, wildlife and the environment. When they do occur, we are committed to transparent reporting.

Genesis will, at all times, operate its facilities in compliance with applicable laws and regulations and will adopt and adhere to standards that are protective of both human health and the environment.

The Arltunga Project, in addition to its mineral resources, is an area rich in other natural resources and plant and animal species, and we are committed to conserving and protecting biological diversity and ecosystem service.

Genesis will establish an audit program to systematically evaluate compliance of operating facilities with applicable federal, state, and local rules and regulations.

Each employee (including contractors) will be held accountable for ensuring that those employees, equipment, facilities and resources within his or her area of responsibility are managed to comply with this policy, and to minimize environmental risk.

As above, as no work has commenced to date that affects the environment, there is nothing to report at this time.

Factors for consideration for MMP update in the future:

- ♣ Results of monitoring programs will be presented e.g. water, noise, dust, weeds etc
- ♣ Pollution and waste management and minimisation progress
- ♣ Progress made against environmental targets
- ♣ Progress towards achieving revegetation and closure objectives

##### **4.9.1. Biological Management**

Training of site personnel about threatened flora and fauna at induction prior to drill commencement and track clearance will assist in reducing risk.

Vegetation clearance and soil disturbance will be minimised by using blade up techniques, only clearing tracks to a blade width of approximately 4m, diverting around large trees and driving on established tracks where possible.

Vegetation cleared will be placed into piles and redistributed over cleared areas at the end of the program to encourage seed distribution and regrowth. Fauna will not be harassed during the exploration program. Induction of staff will discuss vulnerable species that potentially occur in the area so that any impact can be avoided. Vulnerable species are only likely to occur during wet periods when fauna are exploring for new country. During these periods staff will be extra vigilant and report any sightings to Parks and Wildlife.

Feral species will not be brought to site. No feeding of wildlife will be permitted on site. Weeds species will not be brought to site. Care will be taken with any wildlife noticed and a record will be kept of the species noted.

Genesis will minimise environmental impacts from weeds in the proposed drill area by cleaning vehicles and machinery in Alice Springs before entering the site and before leaving washing or air hosing vehicles down. Site personnel will endeavour to drive on established tracks as much as possible to minimise soil disturbance where weeds are prone to establish and to avoid weed seed distribution.

Staff and contractors will report any Weeds of National Significance found in the exploration zone to the Department of Land Resource Management (DLRM) immediately. Staff will remove weeds of lower impact during and after drill exploration using appropriate and effective methods which can be found in the Greening Australia Field Guide or from DLRM <http://www.lrm.nt.gov.au/weeds>.

## 5.0. EXPLORATION REHABILITATION

Refer to Table 10 for a summary of exploration rehabilitation plan.

**Table 10: Summary of exploration rehabilitation plan.**

<b>Disturbance</b>	<b>Rehabilitation Activities</b>	<b>Schedule</b>	<b>Closure Objective / Targets</b>	<b>Monitoring and Remediation</b>
<b>Drill holes</b>	Plugging with concrete plug below ground level, backfilling, and mounding	At the completion of each hole	All holes plugged and stable prior to end of program	Monitoring at the end of wet season, Remediation at inspection if necessary
<b>Drill pads</b>	fill with soil and level	After the completion of the drill program	Scarification, cover with top soil	Monitoring at the end of wet season, Remediation at inspection if necessary
<b>Sumps</b>	Refilled with soil	After the completion of the drill program	replace topsoil and scarification	Monitoring at the end of wet season, Remediation at inspection if necessary
<b>Costeans</b>	N/A			
<b>Bulk sample pits</b>	N/A			
<b>Tracks / Gridlines</b>	Rehabilitated	After the completion of the drill program	All tracks will be closed, replace topsoil and scarification	Monitoring at the end of wet season, Remediation at inspection if necessary
<b>Sample bags</b>	Removed from site	At the completion of the program	Remove to approved dump site	
<b>Camp</b>	N/A			

## 5.1. Costing Of Closure Activities

The following assumptions have been for the Security Calculation.

- 5 line kms of new tracks will be constructed to provide safe drill access; and
- 11 holes will be drilled to test targets generated by exploration activities.

The close-out techniques are those recommended in the Department of Resources advisory notes on: *Clearing And Rehabilitation Of Grid Lines And Tracks, Capping And Plugging Of Exploration Drill Holes.*

\$11,072 security was paid on 29/03/2012, Invoice No: 991969.

## 6.0. Performance Objectives

- Establish a successful exploration drilling program at a level which will require a level of infrastructure to support further drilling and geophysical work.
- Complete exploration tests to indicate if any anomalous geochemical targets are present for further investigations.
- To remain injury free.
- Implement and maintain best practice in occupational health and safety.
- Maintain a healthy and safe working environment.
- To have minimal impact on the environment.
- To avoid and not disturb sites of significance to traditional owners.
- To prevent the introduction of weed species
- Advance Genesis Resources staff knowledge-awareness of Indigenous cultural and heritage values through structured programs.
- To protect sacred or significant sites as indicated by traditional owners and/or CLC sacred site clearance certificate.
- To have minimal, preferably zero impact on the environment: Zero impact is expected after wet season growth and will be monitored after the wet season finishes around April 2016.
- Genesis Resources Ltd will take photos of creek crossings before, during and after disturbance. These will be provided in future MMPs to demonstrate that erosion issues are being appropriately managed.

## 7.0 REFERENCES

Howard, J.P., 2012. *Sixth Annual Technical Report on EL25238, Arltunga Goldfields Project, Northern Territory, for the period ending 7<sup>th</sup> November, 2012*. Genesis Report 71.