



# POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

31 December 2019

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Mt Boppy Gold Mine  
Canbelego NSW

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## FOREWORD

This Pollution Incident Response Management Plan (PIRMP) for the Mt Boppy Gold Mine has been prepared by Manuka Resources Pty Ltd (“the Company” or “Manuka Resources”). Manuka Resources Pty Ltd, is the owner and operator of the Mt Boppy Gold Mine (the ‘Mine’). The Mine is located approximately 275 kilometres (km) west-northwest of Dubbo and 48 km east of Cobar, adjacent to the township of Canbelego in New South Wales (NSW).

The site was historically worked as an underground mine from 1901 to 1923, and in its day was one of the largest gold producers in Australia, having produced around 500,000 ounces (oz.). The 100 years of historical operations resulted in a series of surface tailings storage facilities, a relatively small open-cut void, process plant and other ancillary equipment remaining on the site. The Mt Boppy site was purchased from Epoch Minerals in 1993 by Polymetals Pty Ltd and used for the treatment of silver and gold-bearing supergene tailings transported from the Pasmaico-owned Elura Mine. In 2002, Polymetals were granted the rights to recommence mining works, converting the site from an underground to an open cut operation. Polymetals produced around 70,000 oz. of gold from approximately 500,000t of ore up until 2006 when operations were placed on hold and care and maintenance activities were implemented. Ore processing infrastructure was removed from the site during this time, with the exception of the crusher plant which was refurbished and recommissioned by Black Oak Minerals (BOML, parent of Polymetals) in early 2015. Mining recommenced in mid-2015 under Black Oak Minerals, who extracted ore which was sent to the nearby Manuka Silver Mine for processing until Black Oak Minerals (then owner of Manuka mine) entered receivership in December 2015. The Mine was subsequently sold to Mt Boppy Resources Pty Ltd (a wholly owned subsidiary of Manuka Resources Limited) in June 2019. Since 2016, extensive improvements have been made to the surface water management systems with earthworks improvements as directed by NSW EPA. Additional mine plan studies and reviews were undertaken by the Manuka Resources to recommence operations and processing at the Manuka plant (Manuka Silver Project) south of Cobar. Essentially the mining and processing strategy as started by BOML, will be continued by the current owner albeit at a reduced scale.

This PIRMP has been prepared in accordance with the specific requirements set out in Part 5.7A of the POEO Act and the *Protection of the Environment Operations (General) Regulation 2009* (POEO (G) Regulation).

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## DEFINITIONS

<b>Authority</b>	For this PIRMP authority means a regulatory or other government or public authority.
<b>Alert Phase</b>	Means that stage of a pollution incident that is undertaken once it is established that the incident could escalate to a notifiable incident.
<b>Call Out Phase</b>	Means the stage of a pollution incident that is undertaken once the incident is deemed notifiable under the Protection of the Environment Operations Act 1997.
<b>Clean Up Phase</b>	Means the stage of a pollution incident that is undertaken once the area has been declared safe. This involves clean-up and environmental stabilisation.
<b>Emergency</b>	An emergency is a situation that is developing, or has developed, that poses a threat to Life, the Environment and Property, which necessitates immediate action.
<b>Hazard</b>	Any source, situation or condition of potential damage, harm or adverse health effects on someone, something or the environment under certain conditions.
<b>Hazardous Material</b>	Means anything that, when produced, sourced, moved, used or otherwise dealt with, and without adequate safeguards to prevent it from escaping, may result in / cause injury or death, damage to property or environmental harm.
<b>Material Harm to the Environment</b>	In accordance with the definition provided by Clause 147 of the <i>Protection of the Environment Operations Act 1997</i> , harm to the environment is material if: <ul style="list-style-type: none"> <li>(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or</li> <li>(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations).</li> </ul>
<b>Notifiable Incident</b>	A pollution incident which occurs in the course of an activity so that material harm to the environment is caused or threatened.
<b>Pollution Hazard</b>	Any source, situation or condition from which spillage, leakage or emission of a hazardous material or contaminant may cause material harm to the environment or other adverse effects.
<b>Pollution Incident</b>	An incident resulting in the spillage, leakage or emission of a material which occurs in the course of an activity so that material harm to the environment is threatened.
<b>Response</b>	The process of addressing the effects of an incident and providing immediate relief for affected persons or the environment.
<b>Stand By Phase</b>	Means the stage of a pollution incident that is undertaken once it is established that the incident will more than likely escalate to a notifiable incident.
<b>Stand Down Phase</b>	Means the stage of a pollution incident that is undertaken once it is established that the incident has been controlled and no support services are required.

## 1. INTRODUCTION

This Pollution Incident Response Management Plan (PIRMP) has been prepared by Manuka Resources in accordance with Section 153A of the *Protection of the Environment Operations Act 1997* (POEO Act) for the Mt Bobby Gold Mine (the Mine).

The Mt Boppy Gold Mine ("the mine") is located approximately 275 kilometres (km) west-northwest of Dubbo and 48 km east of Cobar, adjacent to the township of Canbelego in New South Wales (NSW) (refer to **Figure 1**).

The Mine operates under Development Consent DA 2011/LD-00070REV1, which was granted by Cobar Shire Council on 27 July 2015. This consent is for the extension and operation of the mine including mining of approximately 630,000t of ore, management of potentially acid forming waste rock, transportation of ore to the Manuka Mine, construction of temporary mine water storage dams and 24 hour 7 days per week operations.

The site Environmental Protection Licence, EPL 20192, was issued by the NSW EPA under the *Protection of the Environment Operations Act 1997*. The current version of EPL 20192 is dated 20 February 2019. This recent variation was made to reflect the improvements made at site to the surface water management and the site non-operational status. The scheduled activities under this EPL remain unchanged at:

- Crushing, grinding or separating (>100,000t – 500,000t);
- General chemical storage (0-5000kL storage capacity);
- Metal processing (>100,000t – 500,000t);
- Mineral processing (>100,000t – 500,000t); and
- Mining for minerals (>100,000t – 500,000t).

This PIRMP has been developed to ensure compliance with the relevant conditions of EPL 20192 and lists the processes to be adopted to ensure that any potential pollution incidents are managed in accordance with all regulatory requirements.

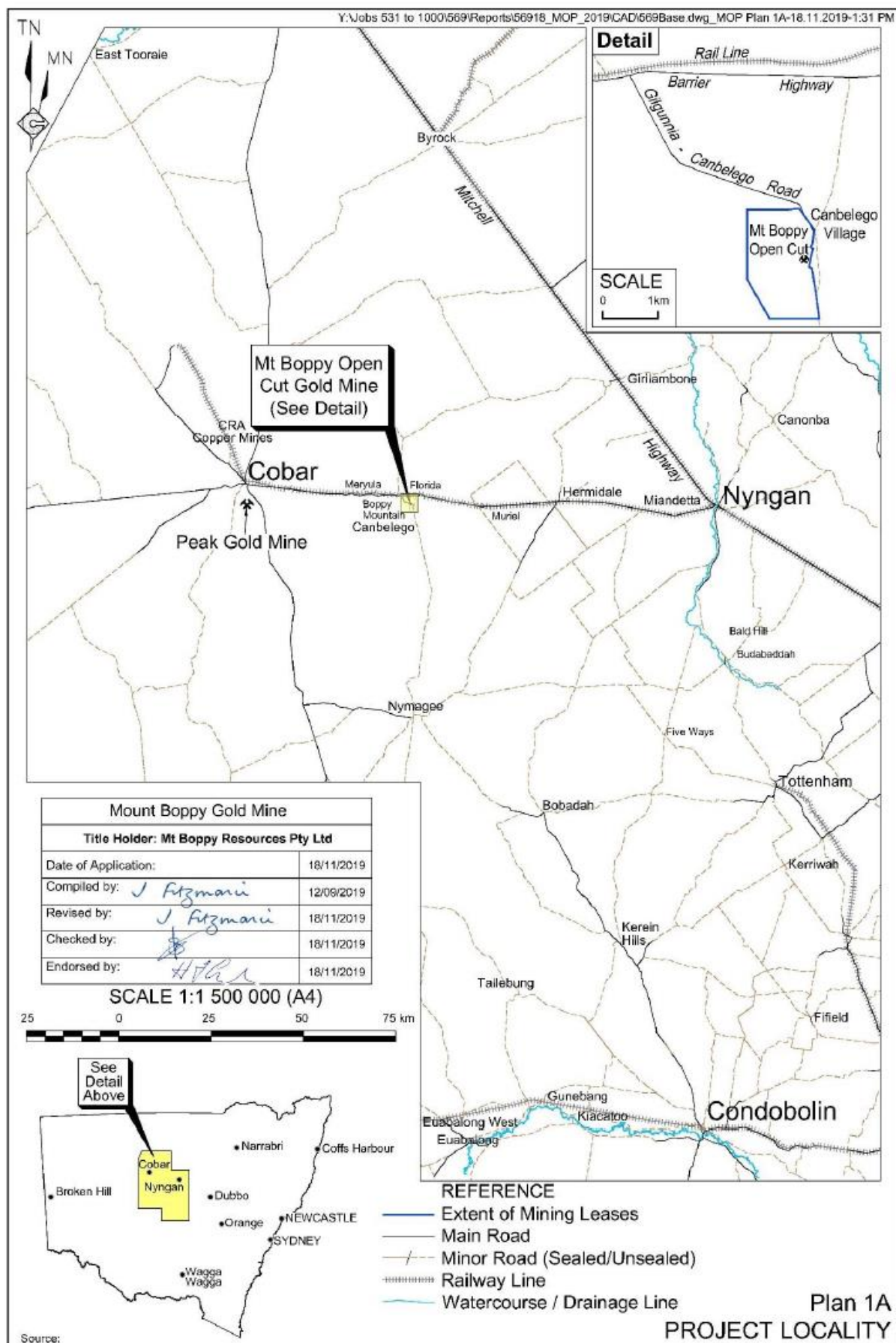


Figure 1: Locality Plan

## 1.1 BACKGROUND AND SCOPE

The *Protection of the Environment Legislation Amendment Act 2018* (PELA) received assent on 16 November 2011 resulting in changes to the *Protection of the Environment Operations Act 1997* (POEO Act). The intent of the PELA is to improve the way pollution incidents are reported and managed. Provisions include a requirement for holders of Environmental Protection Licences (EPLs) to prepare, keep, test and implement a Pollution Incident Response Management Plan (PIRMP). The specific requirements for PIRMPs are set out in Part 5.7A of the POEO Act and the *Protection of the Environment Operations (General) Regulation 2009* (POEO (G) Regulation). In summary, this legislation requires the following:

- holders of EPLs must prepare a pollution incident response management plan (section 153A, POEO Act);
- the plan must include the information detailed in the POEO Act (section 153C) and the POEO(G) Regulation (clause 98C) and be in the form required by the POEO(G) Regulation (clause 98B);
- licensees must keep the plan at the premises to which the EPL relates (section 153D, POEO Act);
- licensees must test the plan at least every 12 months and after a pollution incident in accordance with the POEO(G) Regulation (clause 98E); and
- if a pollution incident occurs in the course of an activity so that material harm to the environment is caused or threatened within the meaning of Part 5.7 of the POEO Act, licensees must immediately implement the plan (section 153F, POEO Act).

As the holder of EPL 20192, Manuka Resources Pty Limited is required to comply with the POEO Act; as such, this document has been developed to satisfy the PIRMP requirements documented above. This document also details the procedures for notification of pollution incidents resulting in or having the potential to cause material harm to the environment. ***The notification of environmental incidents under this PIRMP is only required for those incidents causing or threatening to result in material environmental harm (a material harm incident) as defined in the POEO Act*** (see Section 3.2.2).

## 1.2 REGULATORY REQUIREMENTS

Specific detail is required for inclusion in the PIRMP. **Table 1** lists the information mandated under Section 153C of the POEO Act and clause 98C of the POEO (G) Regulation and details where this information is located in this document.

**Table 1. Compliance reference to information mandated under Section 153C of the POEO Act and clause 98C of the POEO (G) Regulation**

Section 153C	Detail required	Location in document
(a)	The procedures to be followed by the holder of the relevant EPL in notifying a pollution incident to: <ul style="list-style-type: none"> <li>i. The owners or occupiers of premises in the vicinity of the premises to which the EPL relates, and</li> <li>ii. The local authority for the area in which the premises to which the EPL relates are located and any area affected, or potentially affected, by the pollution, and</li> <li>iii. (iii) Any persons or authorities required to be notified by Part 5.7 (of the POEO Act)</li> </ul>	Section 3.3 Section 3.2.3 Section 3.2.3
(b)	A detailed description of the action to be taken, immediately after a pollution incident, by the holder of the relevant EPL to reduce or control any pollution,	Section 3.3



Section 153C	Detail required	Location in document
(c)	The procedures to be followed for co-ordinating, with the authorities or persons that have been notified, any action taken in combating the pollution caused by the incident and the persons through whom all communications are to be made,	Section 3.2.3
(d)	Any other matter required by the Protection of the Environment Operations (General) Regulation 2009 (as set out below):	
98C (1)(a)	<i>A description of the hazards to human health or the environment associated with the activity to which the licence relates (the “relevant activity”).</i>	Section 2.2
98C (1)(b)	<i>The likelihood of any such hazards occurring, including details of any conditions or events that could, or would, increase that likelihood.</i>	Section 2.2
98C (1)(c)	<i>Details of the pre-emptive action to be taken to minimise or prevent any risk of harm to human health or the environment arising out of the relevant activity.</i>	Section 2.3
98C (1)(d)	<i>An inventory of potential pollutants on the premises or used in carrying out the relevant activity.</i>	Section 2.4
98C (1)(e)	<i>The maximum quantity of any pollutant that is likely to be stored or held at particular locations (including underground tanks) at or on the premises to which the licence relates.</i>	Section 2.4
98C (1)(f)	<i>A description of the safety equipment or other devices that are used to minimise the risks to human health or the environment and to contain or control a pollution incident.</i>	Section 3.0
98C (1)(g)	<i>The names, positions and 24-hour contact details of those key individuals who:</i> i. <i>are responsible for activating the plan, and</i> ii. <i>are authorised to notify relevant authorities under section 148 of the POEO Act, and</i> iii. <i>(iii) are responsible for managing the response to a pollution incident.</i>	Section 1.3 Section 3.2.3
98C (1)(h)	<i>The contact details of each relevant authority referred to in section 148 of the POEO Act.</i>	Section 3.2.3
98C (1)(i)	<i>Details of the mechanisms for providing early warnings and regular updates to the owners and occupiers of premises in the vicinity of the premises to which the licence relates or where the scheduled activity is carried on.</i>	Section 3.2.3
98C (1)(j)	<i>The arrangements for minimising the risk of harm to any persons who are on the premises or who are present where the scheduled activity is being carried on.</i>	Section 2.3 Section 3.0
98C (1)(k)	<i>A detailed map (or set of maps) showing the location of the premises to which the licence relates, the surrounding area that is likely to be affected by a pollution incident, the location of potential pollutants on the premises and the location of any stormwater drains on the premises.</i>	Figure 1 Figure 2
98C (1)(l)	<i>A detailed description of how any identified risk of harm to human health will be reduced, including (as a minimum) by means of early warnings, updates and the action to be taken during or immediately after a pollution incident to reduce that risk.</i>	Section 2.3 Section 3.0
98C(1)(m)	<i>The nature and objectives of any staff training program in relation to the plan.</i>	Section 4.1
98C (1)(n)	<i>The dates on which the plan has been tested and the name of the person who carried out the test.</i>	Section 4.4
98C (1)(o)	<i>The dates on which the plan is updated.</i>	Section 4.4
98C (1)(p)	<i>The manner in which the plan is to be tested and maintained.</i>	Section 4.4

This PIRMP has been prepared in accordance with the Environmental Guideline: Preparation of Pollution Incident Response Management Plans issued by the EPA in March 2012.

### 1.3 MINE CONTACTS

Mr Haydn Lynch is appointed Chief Operating Officer of Manuka Resources and is responsible for the overall environmental and operational performance of the mine during its ownership by Manuka Resources.

Mr Craig Fittock is the appointed Site Manager and is responsible for the everyday activities on the mine site and achievement of the nominated and conditioned operational and environmental goals for the mine.

The site supervisor who is based at the Mine Camp is Mr Reginald Pretty.

**Table 2** identifies the names, position titles and 24-hour contact details of those key individuals who are responsible for activating the plans and managing the response, authorising the notification of relevant authorities, and managing the response to a pollution incident.

Name	Position	24 Hour Contact	Role / Responsibility
Craig Fittock	Site Manager	0429 138 345	Distribution and enforcement of the interim PIRMP. Escalation from Stand-by to Call-out Phase. Notification of stakeholders. Implementation of Incident Response Procedures. Management of site evacuation. Review the testing of the PIRMP.
Haydn Lynch	Chief Operating Officer	0421 370 902	Provide assistance to Site Manager and/or Site Supervisor as required. Review the testing of the PIRMP.
Reginald Pretty	Site Supervisor	0419 996 173	Assumes role of Site Manager if Site Manager unavailable. Implementation of Incident Response Procedures. Management of site evacuation. Review the testing of the PIRMP.

## 1.4 PREMISES DETAILS

Mt Boppy Gold Mine ("the mine"), is an open cut gold mine located approximately 275 kilometres (km) west-north-west of Dubbo and 48 km east of Cobar, adjacent to the township of Canbelego in New South Wales (NSW) (see **Figure 1**).

The surrounding area which may potentially be impacted by a pollution incident occurring at Mt Boppy, in addition to the Mine site premises itself may include the following:

- 4 local residents in the Village of Canbelego, adjacent to the mine site;
- Whilst there are no direct neighbours as the site is surrounded by Common Land, there are surrounding land holders who own neighbouring the Common Land around the perimeter of the mine site:
  - 'Rest Down' (Paul Geppert)
  - 'Hillview' (Barry Coath)
  - 'Coonara' (Walter Mitchell)
- Surrounding township and common land of Canbelego (Cobar Shire Council); and
- Community impacts for townships in the Shire (Cobar, Nymagee).

The mine site is located within the Barwon-Darling River catchment. The area surrounding the mine site is characterised by poorly defined ephemeral drainage lines that flow only immediately after times of heavy rainfall. **Figure 2** shows the current layout of the Mt Boppy Mine Site). Mulga Creek lies approximately 9km to the east of the mine site and Yanda Creek approximately 13km to the south east of the site. Both water courses flow to the north.



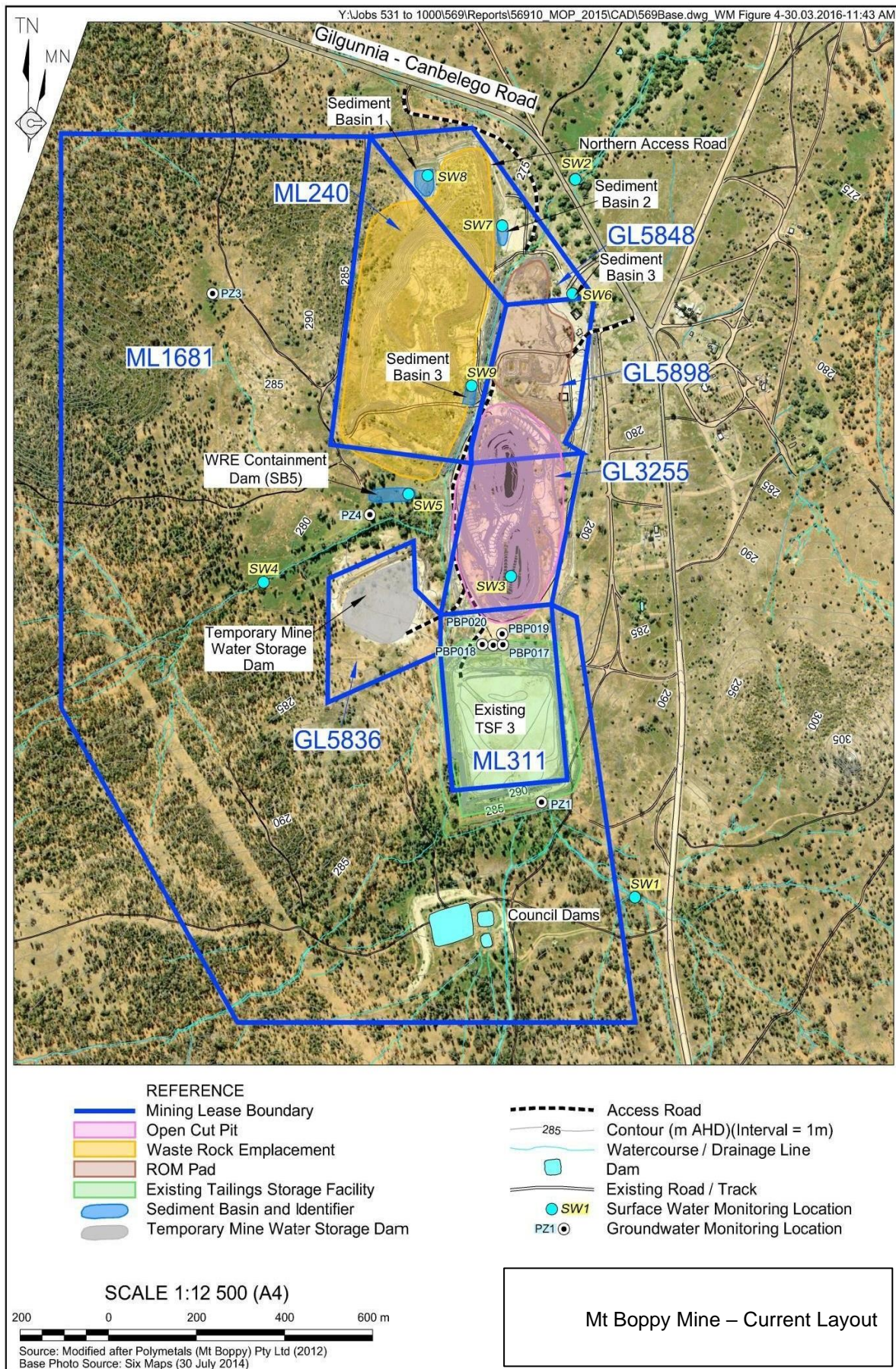


Figure 2: Mt Boppy Mine – Current Layout

## 2. MAJOR HAZARDS

### 2.1 DESCRIPTION OF HAZARDS

A hazard is any source, situation or condition of potential damage, harm or adverse health effects on someone, something or the environment under certain conditions. A Pollution Hazard relates to the source, situation or condition in which spillage, leakage or emission of a hazardous material or other contaminant causes harm or adverse effects (to individuals as health effects, to organisations as property or equipment losses, or to the environment).

In order to develop and implement controls and pre-emptive actions for pollution hazards, the likelihood of occurrence and any circumstances in which the likelihood may be increased should be identified.

**Table 3** provides the definitions used to classify the likelihood of a pollution hazard resulting in a pollution incident.

**Table 3: Qualitative Likelihood Rating**

Level	Descriptor	Description
A	Almost Certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Could occur
D	Unlikely	Could occur but not expected
E	Rare	Occurs only in exceptional circumstances

### 2.2 HAZARD IDENTIFICATION

The potential major hazards which have been identified for Mt Boppy Mine include:

- Spills resulting in land contamination (e.g. hydrocarbons, hazardous chemicals, etc).
- Spills resulting in water contamination (e.g. hydrocarbons, hazardous chemicals, saline or sediment laden water etc) of nearby drainage lines / ephemeral watercourses.
- Major water or tailings discharge (e.g. dam failure).
- Excessive dust emissions (e.g. explosives blasting).

**Table 4** identifies the pollution hazards present at the Mine, the relevant sources, situations or conditions that would result in pollution, the existing controls/pre-emptive actions that are in place to reduce the likelihood of a pollution incident and any circumstances likely to increase the likelihood of occurrence.



Table 4 Identified Pollution Hazards of Mt Boppy Mine site.

Hazard	Source, Situation or Condition Resulting in Pollution	Likelihood	Controls / Pre-emptive actions	Additional Risk Factors
Hydrocarbon and hazardous chemical storage	Spillage of hydrocarbon or hazardous substance (for example, during transfer) resulting in land contamination.	D	<ul style="list-style-type: none"> <li>▪ All Hydrocarbon and hazardous chemical products are stored within self-bunded tanks and/or within an impermeable bund.</li> <li>▪ Hydrocarbon or hazardous substances and materials transfers take place within bunded storage location.</li> <li>▪ Transfers always supervised by appropriately trained and qualified site personnel.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Equipment Malfunction.</li> <li>▪ Operator (human) error.</li> </ul>
	Storage vessel leak / rupture resulting in spillage of hydrocarbon or hazardous substance resulting in land contamination.	E	<ul style="list-style-type: none"> <li>▪ Hydrocarbon or hazardous substances storage containers and contained areas comply with AS 1940:2017 – <i>Storage and handling of flammable and combustible liquids</i>.</li> <li>▪ All Hydrocarbon and hazardous chemical products are stored within self-bunded tanks and/or within an impermeable bund.</li> <li>▪ Hydrocarbon spills kits are maintained at designated storage areas.</li> <li>▪ Storage areas are inspected regularly.</li> </ul>	
Existing Tailings Storage Facility 3	Water overtopping the TSF resulting in release of potentially contaminated water.	E	<ul style="list-style-type: none"> <li>▪ Potential for overtopping reduced through maintenance of freeboard equivalent to a 72hr, 1 in 100 ARI rainfall event. Freeboard is identified by a surveyed marker peg.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Operator (human) error (during any transfers of water to TSF 3 for evaporation).</li> </ul>
	Failure of TSF wall resulting in loss of tailings material (potentially saline / cyanide contaminated material).	E	<ul style="list-style-type: none"> <li>▪ Earthworks and Machinery operators trained, competent and experienced to ensure capping and final landform creation activities do not impact integrity of existing TSF wall.</li> <li>▪ Regular inspections undertaken until final capping completed (includes recording dam integrity checks, any free water present and its level/freeboard, any signs of leakage, etc).</li> <li>▪ Prolonged inactivity of facility.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Seismic event.</li> <li>▪ Operator (human) error during landform creation / earthworks.</li> </ul>
Temporary Mine Water Storage Dam(s)	Overtopping of dam resulting in spillage of contaminated water (saline).	D	<ul style="list-style-type: none"> <li>▪ Potential for overtopping reduced through maintenance of freeboard equivalent to a 72hr, 1 in 100 ARI rainfall event. Freeboard is identified by a surveyed marker peg.</li> <li>▪ Water transfers to the Temporary Mine Water Storage Dam will cease prior to water levels reaching the surveyed marker peg.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Operator (human) error during transfer of water to the dam.</li> </ul>

Hazard	Source, Situation or Condition Resulting in Pollution	Likelihood	Controls / Pre-emptive actions	Additional Risk Factors
			<ul style="list-style-type: none"> <li>If water levels are exceeded due to overlap with pumping and rainfall, water will be transferred back into the open cut pit.</li> <li>Regular inspections undertaken whilst dams remain operational (includes recording dam integrity checks, any free water present and its level/freeboard, any signs of leakage, etc).</li> </ul>	
	Leakage through dam floor resulting in release of contaminated water (saline).	E	<ul style="list-style-type: none"> <li>Compacted clay liner constructed to 500mm depth and <math>1 \times 10^{-8}</math> m/s permeability.</li> <li>Testing of clay liner compaction prior to use.</li> </ul>	-
Sediment Basin 4 (receiving water from PAF encapsulation areas)	Overtopping of dam resulting in spillage of contaminated water (potentially acidic and elevated heavy metals).	D	<ul style="list-style-type: none"> <li>Potential for overtopping reduced through maintenance of freeboard equivalent to a 72hr, 1 in 100 ARI rainfall event. Freeboard is identified by a surveyed marker peg.</li> <li>Regular inspections undertaken whilst dams remain operational (includes recording dam integrity checks, any free water present and its level/freeboard, any signs of leakage, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Operator (human) error resulting in failure to maintain freeboard.</li> </ul>
	Leakage through dam floor resulting in release of contaminated water (potentially acidic and elevated heavy metals).	E	<ul style="list-style-type: none"> <li>Compacted clay liner constructed to 900mm depth and <math>1 \times 10^{-9}</math> m/s permeability.</li> <li>Testing of clay liner compaction prior to use.</li> </ul>	-
Water Transfer pipelines	Rupture of pipeline resulting in spillage of potentially contaminated water.	C	<ul style="list-style-type: none"> <li>Placement of pipeline within protected and bunded locations.</li> <li>Visible markers installed along length of the pipeline.</li> <li>Daily inspections of pipelines whilst in use.</li> <li>Restricted vehicular access around the Mine.</li> <li>Immediate cessation of pumping in the event that any leakage or line damage is identified.</li> </ul>	<ul style="list-style-type: none"> <li>Water pumped at too high pressure.</li> </ul>
Mobile equipment / plant	Leakage / spillage of diesel from vehicle.	C	<ul style="list-style-type: none"> <li>Regular vehicle inspections.</li> <li>Refuelling confined to design locations.</li> <li>Restricted vehicular access around the Mine.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of regular inspections and vehicle maintenance.</li> </ul>
ROM stockpiles	Runoff of water which is potentially acidic and/or contained elevated heavy metal concentration.	C	<ul style="list-style-type: none"> <li>Stockpiles located within ROM pad area.</li> <li>Runoff directed to ROM Pad sump designed to store a 72hr, 1 in 100 ARI rainfall event.</li> <li>If required, water pumped from the sump to the Temporary Mine Water Storage Dam to prevent any overflows.</li> </ul>	<ul style="list-style-type: none"> <li>Periods of high rainfall exceeding design capacity of sump.</li> </ul>

Hazard	Source, Situation or Condition Resulting in Pollution	Likelihood	Controls / Pre-emptive actions	Additional Risk Factors
Exposed surfaces	Runoff containing elevated sediment loads.	C	<ul style="list-style-type: none"> <li>Implementation of the Soil and Water Management Plan and Erosion and Sediment Control Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Periods of high rainfall exceeding design capacity of sediment basins.</li> </ul>
Excessive dust emissions	Blasting and explosives use during active mining periods.	C	<ul style="list-style-type: none"> <li>Limited explosives usage, all contained to the depths of the open pit – high wall protection.</li> <li>Weather monitoring prior to scheduled blast events.</li> </ul>	-
	Increased dust emissions during excessively dry period over exposed surfaces.	E	<ul style="list-style-type: none"> <li>Vehicular movement restricted to approved roadways only. No off-track travel permitted.</li> <li>Restricted vehicular access to the Mine site.</li> <li>Perimeter vegetation surrounding the mine site maintained as supportive wind block and visual screen.</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing drought situation in Western NSW.</li> </ul>

## 2.3 CONTROLS AND PRE-EMPTIVE ACTIONS

The Hazardous Substances Procedure details the control methods to manage the potential risk posed by exposure to hazardous substances and dangerous goods within the workplace, to avoid injury or illness to persons and damage to the environment and equipment/plant.

Manuka Resources implement several pre-emptive actions and controls to manage the Major Hazards as identified in Section 2.2. In addition to those listed in Table 4 to specifically address potential pollution hazards, there are several generic controls implemented on site which include, but are not limited to:

- Spill kits: containing spill socks, pads and pillows (for perimeter containment); coveralls, gloves, safety goggles and glasses (for safe work); and disposable bags (for removing waste). All personnel are provided with training in the correct use of these items.
- Fire control systems, including water carts.
- Fire suppression on relevant mobile and fixed infrastructure.
- Hydrocarbon and chemical storage as per relevant Australian Standards.
- Personal Protective Equipment: requirements are enforced and include the following standard facility PPE when transferring diesel into vehicles or equipment:
  - Eyewear (safety glasses).
  - Gloves.
  - Shoes (Steel-capped and sturdy).
- Training is provided to ensure that all employees receive the education and training required to perform their daily tasks in a safe and productive manner. Training includes pollution incident response management training, emergency preparedness and response and site familiarisation.
- Safety Data Sheets (SDS) are kept with the chemicals. Electronic copies are retained in the site office.

Manuka Resources has limited authority to undertake pollution management activities on private property, or outside the site boundary and in such cases where an incident may require response outside of Mt Boppy Mine land, Manuka Resources will liaise directly and provide appropriate assistance to the relevant authority and emergency services.

## 2.4 INVENTORY OF POTENTIAL POLLUTANTS

**Table 5** provides an inventory of the chemicals and potential pollutants currently or planned to be stored at the Mine, as well as the classification, method of delivery, storage location and maximum quantity of each chemical or potential pollutant.

All chemicals are accompanied by the relevant Safety Data Sheets (SDS) as required by work health and safety regulations.

The facilities that store fuel, oil and hazardous chemicals have been designed in accordance with Australian Standard 1940 – 2017. The system has been designed to incorporate:

- Impervious walls and floors;
- Sufficient capacity to maintain 110% of the volume of the tank (or 110% volume of the largest tank where more than one tank is stored in the bund);
- Walls not less than 250 mm high; and
- Floors graded to a collection sump.



**Table 5 - Inventory of Pollutants**

Chemical / Product Name	Classification	Delivery Method	Storage Location	Maximum Quantity / Capacity
Hydraulic Oil	Dangerous Goods	Road – ad hoc	Bunded Container	1,000L
Grease	Dangerous Goods	Road – ad hoc		20L drums/ tubes x 10
Diesel	Hazardous	Road – under licence	Manuka Storage – Southern end of pit, adjacent RO plant.	6,500 L
			Contractor storage - Bunded Container South of Admin buildings (location of old workshop)	30,000L

Potential pollutants created as part of general operations on the mine site, and thus excluded from chemical type registers, include:

- mine tailings;
- sediment laden surface water runoff from disturbed areas; and
- effluent waste.

The presence and quantity of these materials is dependent on mining operations status. Potential inventories of sediment laden water, saline mine affected water and effluent waste are included in **Table 6**.

**Table 6. Maximum capacity of potential pollutant storage areas**

Pollutant Type	Location	Potential Maximum Capacity
Saline Water	Temporary Mine Water Storage Dam	150 ML
Tailings	TSF 3	70 ML
Sediment laden / Contaminated water (potentially acidic and elevated heavy metals)	Sediment Basin 4 (SW5)	100,000 L

### 3. POLLUTION INCIDENT MANAGEMENT

#### 3.1 GENERAL MANAGEMENT AND ACCOUNTABILITIES

In the event of a pollution incident, the response will be managed in accordance with the following five phases.

1. **Alert Phase:** Monitor any incident with the potential to result in pollution.
2. **Stand By Phase:** Prepare to implement the appropriate Pollution Incident Response Management Plan should the incident escalate and trigger as a notifiable pollution incident.
3. **Call Out Phase:** Activate the relevant notification and incident response procedures.
4. **Clean Up Phase:** Clean-up any residual contamination / stabilisation of soil materials once the area is declared safe.

5. **Stand Down Phase:** Incident response completed. Implement a de-briefing and review of the implementation of the notification and incident response procedures.

Table 7 presents the key responsibilities in the implementation of these five phases.

**Table 7: Key Management Responsibilities**

Position	PHASE	RESPONSIBILITY
<b>Site Manager</b>  Craig Fittock 0429 138 345	<b>General</b>	<ul style="list-style-type: none"> <li>▪ Ensure adequate resources are available to enable implementation of the PIRMP.</li> <li>▪ Ensure the PIRMP evaluation and continual improvement is implemented.</li> <li>▪ Ensure appropriate personnel training and awareness programs are implemented.</li> <li>▪ Ensure that the PIRMP is reviewed and tested every 12 months.</li> <li>▪ Ensure a hard copy of the PIRMP is retained on site.</li> </ul>
	<b>Alert</b>	<ul style="list-style-type: none"> <li>▪ Ensure resources are available to implement the PIRMP, e.g. mobile equipment, water supply, personnel.</li> <li>▪ Maintain communication with the Site Supervisor or delegated supervisor for the incident management to ensure progression between incident phases is appropriate.</li> </ul>
	<b>Stand By</b>	<ul style="list-style-type: none"> <li>▪ Advise appropriate personnel of the incident (or ensure notification is undertaken by delegated personnel).</li> <li>▪ Advise personnel to be on standby for implementation of incident management (notification, response management and/or clean up procedures).</li> </ul>
	<b>Call Out</b>	<ul style="list-style-type: none"> <li>▪ Approve the activation of the relevant notification and response management procedures of the PIRMP.</li> <li>▪ Maintain communication with the Site Supervisor and coordinate activities and resources.</li> <li>▪ Determine the priority of actions of any employees until agencies and emergency services arrive.</li> <li>▪ Approve the implementation of additional or escalated response measures on advisement from the Site Supervisor of the incident.</li> </ul>
	<b>Clean Up</b>	<ul style="list-style-type: none"> <li>▪ Ensure adequate resources are available to undertake clean-up.</li> <li>▪ Inspect and provide confirmation that the affected area is safe.</li> </ul>
	<b>Stand Down</b>	<ul style="list-style-type: none"> <li>▪ Ensure Incident Report Form completed and actioned.</li> <li>▪ Give direction for a de-briefing and review of the notification, response management and evacuation procedures of the PIRMP.</li> </ul>
<b>Site Supervisor</b> Reginald Pretty 0419 996 173	<b>General</b>	<ul style="list-style-type: none"> <li>▪ In the absence of the Site Manager, assume or delegate responsibilities.</li> <li>▪ Ensure that all accidents, incidents and potential incidents are appropriately investigated.</li> </ul>
<b>CEO</b> Haydn Lynch 0421 370 902	<b>General</b>	<ul style="list-style-type: none"> <li>▪ Responsible for authorising the PIRMP and all subsequent updates.</li> <li>▪ Responsible for ensuring adequate resourcing for implementation of the PIRMP.</li> <li>▪ Liaise with the relevant authority as appropriate.</li> </ul>
<b>Delegated Supervisor</b>  As delegated by Site Manager	<b>General</b>	<ul style="list-style-type: none"> <li>▪ Upon advice from the Site Manager assume or delegate responsibilities.</li> <li>▪ Upon advice from the Site Manager ensure that all accidents, incidents and potential incidents are appropriately investigated.</li> </ul>
	<b>Alert</b>	<ul style="list-style-type: none"> <li>▪ Inspect the site of potential pollution incident.</li> </ul>
	<b>Stand By</b>	<ul style="list-style-type: none"> <li>▪ Monitor the identified incident.</li> <li>▪ Under delegation by the Site Manager, advise appropriate site personnel of the incident.</li> <li>▪ Ensure incident reporting has been initiated.</li> </ul>
	<b>Call Out</b>	<ul style="list-style-type: none"> <li>▪ Under delegation by the Site Manager:               <ul style="list-style-type: none"> <li>– approve the activation of the relevant notification and response management procedures of the PIRMP;</li> <li>– ensure that perimeters are established and access to the site is controlled;</li> </ul> </li> </ul>

Position	PHASE	RESPONSIBILITY
		<ul style="list-style-type: none"> <li>– maintain communication with Site Manager and coordinate activities and resources; and</li> <li>– determine the priority of actions of employees until agencies and emergency services arrive.</li> </ul> <ul style="list-style-type: none"> <li>▪ Complete the appropriate notification (of emergency services, regulatory authority, other relevant authorities and landowners).</li> <li>▪ Monitor the response to the incident and provide advice to the Site Manager on the escalation of response as required.</li> <li>▪ Provide owners and occupiers of land updates of any incidents affecting their land as required.</li> </ul>
	<b>Clean Up</b>	<ul style="list-style-type: none"> <li>▪ Direct the clean-up of the incident and assess and identify when the affected area(s) is/are safe.</li> </ul>
	<b>Stand Down</b>	<ul style="list-style-type: none"> <li>▪ Review Incident Report Form and ensure completed correctly.</li> <li>▪ Coordinate and manage de-briefing and review as directed by the Site Manager.</li> </ul>
<b>All Personnel</b>	<b>General</b>	<ul style="list-style-type: none"> <li>▪ Ensure incident training is undertaken and responsibilities understood.</li> </ul>
	<b>Alert</b>	<ul style="list-style-type: none"> <li>▪ As soon as aware, advise the Site Manager or Delegated Supervisor of a pollution incident.</li> </ul>
	<b>Stand By</b>	<ul style="list-style-type: none"> <li>▪ Follow instructions provided by Site Manager or Delegated Supervisor.</li> </ul>
	<b>Call Out / Clean Up</b>	<ul style="list-style-type: none"> <li>▪ Evacuate the site if instructed.</li> <li>▪ Undertake response under instruction from Site Manager or Delegated Supervisor.</li> </ul>
	<b>Stand Down</b>	<ul style="list-style-type: none"> <li>▪ Complete and submit an Incident Report Form.</li> <li>▪ Attend incident de-briefing and review as directed by the Site Manager or Delegated Supervisor.</li> </ul>

### 3.2 DUTY TO NOTIFY

All Manuka workers are responsible for immediately alerting their supervisor to all environmental incidents or hazards which may result in environmental harm, regardless of the nature or scale. Immediately is taken to mean *promptly and without delay*.

Notification responsibilities are detailed in the *POEO Act* (Section 148), which encompasses all site personnel, including contractors and sub-contractors. These can be categorised broadly as:

- the duty of an employee or any person undertaking an activity:
  - Any person engaged as an employee or undertaking an activity (on the mine Site) must, immediately after becoming aware of any potential incident, notify their relevant Supervisor of the incident and all relevant information about it. This is to be undertaken as per Section 3.5; and
- the duty of the employer or occupier of a premises to notify:
  - An employer or occupier of the premises on which the incident occurs, who is notified (or otherwise becomes aware of) of a potential pollution incident, must undertake notification to the appropriate regulatory authority of any “material harm incidents”, including all relevant information.

As per guidance provided by the EPA, the decision on whether to notify the incident in accordance with Part 5.7 of the *POEO Act* should not delay immediate actions to provide the safety of people or contain a pollution incident. However, incident notification will be made as soon as it is safe to do so.

### 3.3 NOTIFICATION CONTACT DETAILS

**Table 8** presents the notification protocol to be followed in the event that a notifiable pollution incident occurs.

**Table 8. Government Agency Notification Protocol**

Trigger	Agency	Timing	Contact Details
An incident that presents an immediate threat to human health or property.	Fire and Rescue NSW NSW Police NSW Ambulance Service	Immediately	Call 000
An incident that does not require an initial combat agency or following initial contact with emergency services.	1. Environment Protection Authority (EPA)	Immediately (or following emergency service contact)	Environment Line 131 555
	2. Ministry of Health (Western NSW Local Health District)		(02) 6841 2222 Ask for Public Health Officer on call
	3. WorkCover Authority		13 10 50
	4. Cobar Shire Council		8:00am - 4:00pm: (02) 6836 5888 After Hours: 0419 281 115
Note: Complying with these notification requirements does not remove the need to comply with any other obligations for incident notification, for example, those that apply under other environment protection legislation or legislation administered by WorkCover.			

**Table 9** identifies the neighbouring land holders and notification protocol to be followed in the event that a notifiable pollution incident occurs.

**Table 9. Landowner Notification Protocol**

Name	Property Address	Contact	Notification Procedures
Reginald Pretty	42 Nallawarra St	0419 996 173	<ol style="list-style-type: none"> <li>1. If pollutant has/has the potential to impact either directly or indirectly on property, call to advise of incident and alert as to any potential hazards or impacts on livestock or water supply.</li> <li>2. Nominate incident response in place and any associated hazards. Nominate schedule for implementation of incident response and clean-up.</li> <li>3. Following completion of incident clean up and stand down phases, contact the landowner to confirm incident over. Request feedback on incident management.</li> <li>4. Provide advice on request as to any procedural improvements relevant to the incident.</li> </ol>
Regena Peacy	1 Nallawarra St	02 6837 3723 0488 106 026	
Brent Winner	Corner Coronga and Mulga St	N/A	
Joyce Plany	35 Nullawarra St	02 6837 3582 0448 754 465	

The specific responsibilities associated with the management and implementation of the PIRMP is outlined

General broader local community notification shall be undertaken at the determination of the CEO.

Updates to affected areas may be via information sheets, Community Consultative Committee meetings, media statements or any other strategy deemed appropriate.

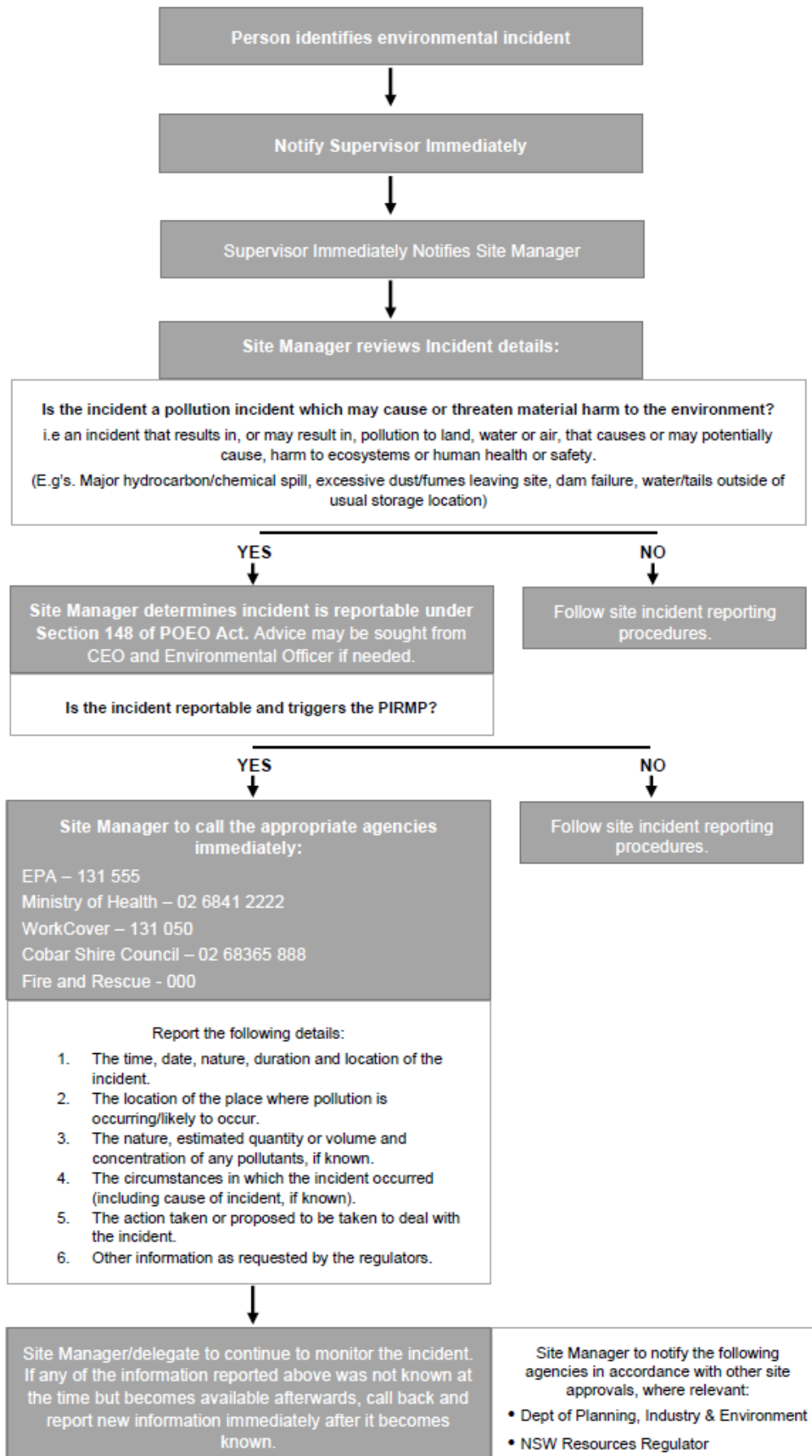
### **3.4 DETERMINATION OF MATERIAL HARM**

Following containment of the incident, immediate action must be taken to determine if the incident can be classified as a 'material harm incident' as described in Section 1.1.

The determination of a material harm incident will be made by the Site Manager in consultation with the CEO and the site environmental officer (or delegated Environmental Consultant).

### **3.5 EXTERNAL NOTIFICATION**

As discussed in Section 3.2, notification of an environmental incident is the responsibility of all site and contractor personnel. In the event of an incident, response and notification must be undertaken as per **Figure 3**.



**Figure 3 - Incident Responses and Notification process.**

In the case of an environmental incident, prior to any other action, the site must contact 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

### **3.6 INCIDENT MANAGEMENT PROCEDURES**

Incident management is to be implemented in compliance with Manuka's Incident and Hazard Management Procedure.

Incident management at Manuka Resources focuses on actions to:

- Secure and assign necessary tactical response resources, including equipment and/or personnel, to minimise the environmental impacts associated with the incident;
- Establish that tactical response operations are carried out in a safe, well-organised, legal and effective fashion;
- Provide for the safety and welfare of all responders, employees, contractors and visitors;
- Continuously assess the incident to determine the adequacy of tactical response operations and the need for assistance from other agencies;
- Manage stakeholders arriving at site;
- Minimise effects on people, the environment, property, production, and company reputation;
- Implement an environmental monitoring program to quantify impacts as a result of the incident as well as to be used as the basis to notify adjacent landholders as to whether avoidance or remediation measures are required; and
- Interact, as appropriate, with external agencies and regulatory personnel.

### **3.7 EVACUATION PLAN**

The Mine evacuation procedure is communicated to all workers as part of the induction site process. In an emergency evacuation situation, the Site Manager or Site Supervisor will sound the evacuation horn. Upon hearing the horn, all personnel will proceed to the nearest Emergency Assembly Point. Once mustered at these points, all personnel are to await the instructions of either the Site Manager, delegated supervisor or safety officer.

## **4. PLAN EVALUATION AND REVIEW**

### **4.1 TRAINING**

Training is to be provided to all personnel as appropriate to their role. Specific training related to this PIRMP and implementation of emergency (incident response) procedures will include the following as a minimum:

- Awareness of all hydrocarbons stored and used on site and how they impact the environment.
- Correct storage and handling of hydrocarbons.
- Refuelling procedures.
- Awareness of dust emission controls and the need for regular review of their effectiveness.
- Awareness of surface water controls and management measures including the operation and maintenance of these.
- Pollution incident management, including roles and responsibilities when responding to an incident.
- Evacuation procedures.
- Incident reporting requirements.

The Site Manager or their delegate will be responsible for ensuring the appropriate training is included in a site induction and revised every 12 months to ensure skills are updated.

## 4.2 EVALUATION

During the “Stand Down” phase or within 14 days of the pollution incident response (including testing of the PIRMP) a de-briefing of all relevant personnel will be undertaken to determine the lessons learned from the operation.

The de-briefing will include a meeting with the relevant personnel involved in the incident to collate any comments, issues and views on any changes that could be implemented to improve emergency and incident response procedures within the PIRMP.

The Site Manager or a delegated supervisor will be responsible for the co-ordination of any de-briefing following a pollution response incident.

## 4.3 CONTINUAL IMPROVEMENT

The PIRMP will be reviewed:

- at the commencement of new construction and/or operational activities;
- after each test or actual incident;
- in the event that deficiencies are identified;
- as roles and responsibilities of personnel change;
- in the event of legislative changes; and/or
- every 12 months.

The Site Manager will be responsible for the PIRMP review.

All information and comments compiled from debriefing sessions (test or actual) will be assessed and reviewed to determine the areas of improvement and the updating and implementation of new procedures to improve the outcomes of any pollution incident response for the Mine.

The Site Manager will be responsible for the approval of the recommended improvements and / or determining any required improvements. All personnel will be responsible for the implementation of the recommended improvement and continual improvement in performance at the Mine.

## 4.4 TESTING OF THE PIRMP

The testing of the PIRMP will be undertaken to check that the information is accurate and current and that the plan is capable of being implemented in a workable and effective manner. Testing will include all components of the plan, including training requirements. Testing shall be undertaken in the following ways:

- Testing is taken to be either a desktop review, or
- A practical environmental emergency drill.

A review of the PIRMP will occur every 12 months, within one month from the date of any pollution incident that occurs in the course of an activity to which the EPL relates and triggers the PIRMP or following a test of the plan.

This PIRMP was last tested on 18<sup>th</sup> December 2020 and was a desktop activity coordinated by Environmental Officer Elliott Higgins. The desktop activity was carried out on site at Mt Boppy with the Site Manager and representatives of the earth moving contractors.



## 4.5 AVAILABILITY OF THIS PLAN

The PIRMP shall be kept in written form at the EPL premises and shall be made available to all personnel responsible for implementing the plan, and to an authorised officer (as defined in the POEO Act) on request.

## 5. DOCUMENT INFORMATION

Relevant legislation, standards and other reference information must be regularly reviewed and monitored for updates. Related documents and reference information in this section provides the linkage and source to develop and maintain site compliance information.

### 5.1 DOCUMENT REFERENCES

Related documents, listed in **Table 10** below, are directly related to or referenced from this document.

**Table 10** Related Documents

Reference	Title
NSW EPA	<i>Protection of the Environment Operations Act 1997</i> (POEO Act)
NSW EPA	<i>Protection of the Environment Operations (General) Regulation 2009</i> (POEO (G) Regulation)
NSW EPA	Environmental Guidelines: Preparation of Pollution Incident Response Management Plans

### 5.2 DOCUMENT UPDATES

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided **Table 11** below.

**Table 11** Change Information

Version	Date	Review team (consultation)	Change Summary
1.0	December 2014	Scott Hollamby (R.W. Corkery & Co. P/L), Troy Lowien	Earliest copy of PIRMP on file from previous owners.
2.0	16 October 2015	Scott Hollamby (R.W. Corkery & Co. P/L), Troy Lowien	Updated to reflect site going into Care and Maintenance status.
3.0	5 March 2019	Haydn Lynch	Update site contact details to reflect new ownership and transfer of EPL 20192.
4.0	31 December 2019	Tanya Gilbert, Haydn Lynch, Craigh Fittock, Reginald Pretty	Update following PIRMP test undertaken 12 <sup>th</sup> December 2019.

## 6. ATTACHMENTS: PIRMP NOTIFICATION FORMS

### 6.1 DETAILS OF THE INCIDENT

Detail Required	Detail provided
A. The time, date, nature, duration and location of the incident;	
B. The location of the place where pollution is occurring or is likely to occur;	
C. The nature, the estimated quantity or volume and the concentration of any pollutants if known;	
D. The circumstances in which the incident occurred (including the cause of the incident, if known);	
E. The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution if known;	
F. Other information prescribed by the regulations.	

## 6.2 AGENCY NOTIFICATIONS

Agency	Date	Time	Agency Contact Person	Reference Number	Agency comments or further action
Environment Protection Authority (EPA)  Immediately (or following emergency service contact)  Environment Line 131 555					
Ministry of Health – Western NSW Local Health District (02) 6841 2222 (ask for Public Health Officer on call) or if unavailable call 1300066055					
WorkCover – 131 050					
Cobar Shire Council – 02 68365 888  After Hours: 0419 281 115					
Fire and Rescue – 000					

**6.3 LANDHOLDER NOTIFICATIONS**

Landholder	Date	Time	Agency Contact Person	Reference Number	Agency comments or further action