BENEDICT
COWRA QUARTZ

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN (PIRMP)

COWRA QUARTZ

PIRMP - Cowra

1 TESTING & REVISION LOG

PIRMP Testing Log			
Date Tested	**Method of Testing (Desktop or practical drill)**	**Tested by**	**Position**
25/07/2015	Desktop	Wayne Kelly	Quarry Manager
25/05/2016	Desktop	Mark Morris	Quarry Manager
19/05/2017	Desktop	Mark Morris	Quarry Manager
14/12/2018	Desktop	Mark Morris	Quarry Manager
10/01/2020	Desktop	Mark Morris	Quarry Manager
14/12/2020	Desktop	Mark Morris	Quarry Manager
1/12/2021	Desktop	Mark Morris	Quarry Manager
13/07/2022	Desktop	Mark Morris	Quarry Manager
1/12/2023	Desktop	Mark Morris	Quarry Manager
06/12/2024	Desktop	Mark Morris	Quarry Manager

Environmental Management Plan Revision Log				
Rev No	**Date**	**Revision Details**	**Author**	**Reviewer**
01	30/05/2016	Draft new document	Mark Hutcheson	Mark Morris
02	24/05/2017	Add Risk Register	Mark Hutcheson	Mark Morris
03	09/05/2018	Review – Update Org Chart	Mark Hutcheson	Mark Morris
04	14/12/2018	Review Introduction content	Alycia Campbell	Mark Morris
05	10/01/2020	Review – Update Org Chart	Alycia Campbell	Mark Morris
06	14/12/2020	Review	Alycia Campbell	Mark Morris
07	01/12/2021	Annual review	Alycia Campbell	Mark Morris
08	13/07/2022	Annual review	Alycia O'Brien	Mark Morris
09	1/12/2023	Annual review	Ewen McKenzie	Mark Morris
10	06/12/2024	Annual review	Alycia O'Brien	Mark Morris

2 INTRODUCTION

This Pollution Incident Response Management Plan (PIRMP) has been developed in accordance with the requirements in Part 5.7A of the Protection of the Environment Operations Act 1997 (the POEO Act) and the POEO Regulations.

The elements of the plan that relate to risk and hazard identification as well as the development, maintenance and review of protocols and controls have been addressed by the Operations Manager and WHS Advisor. These PIRMP elements are now embedded in the company's Quality, Environmental and Safety Management systems.

Benedict system of consultation, being predominantly site toolbox meetings, is the principal forum to implement further practical refinement, testing and clarification of these plans in response to the requirement of the legislation.

One of the most important elements introduced by the legislation is the requirement to report pollution incidents to appropriate authorities and the community. This legislation was enacted in response to Orica chemical plant incidents at Kooragang Island where chemical and gas leaks occurred in 2011 and impacted residential areas.

3 OBJECTIVES

The objectives of this plan are to:

- Ensure comprehensive and timely communication about a pollution incident to:
    - Staff at the premises
    - Environment Protection Authority (EPA)
    - Local council
    - NSW Ministry of Health
    - WorkCover NSW
    - Fire and Rescue NSW)
    - People outside the facility who may be affected by the impacts of the pollution incident
- Minimise and control the risk of a pollution incident at the facility by requiring identification of risks and the development of planned actions to minimise and manage those risks
- Ensure that the plan is properly implemented by trained staff, identifying persons responsible, or implementing and ensuring that the plan is regularly tested for accuracy, currency and suitability.

The definition of 'pollution incident' is:
Pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act as:

a) harm to the environment is material if:
    (i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
    (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), and
b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

So what needs to be reported?

Based on the legislative definitions, staff are advised, the following pollution incidents must be reported:

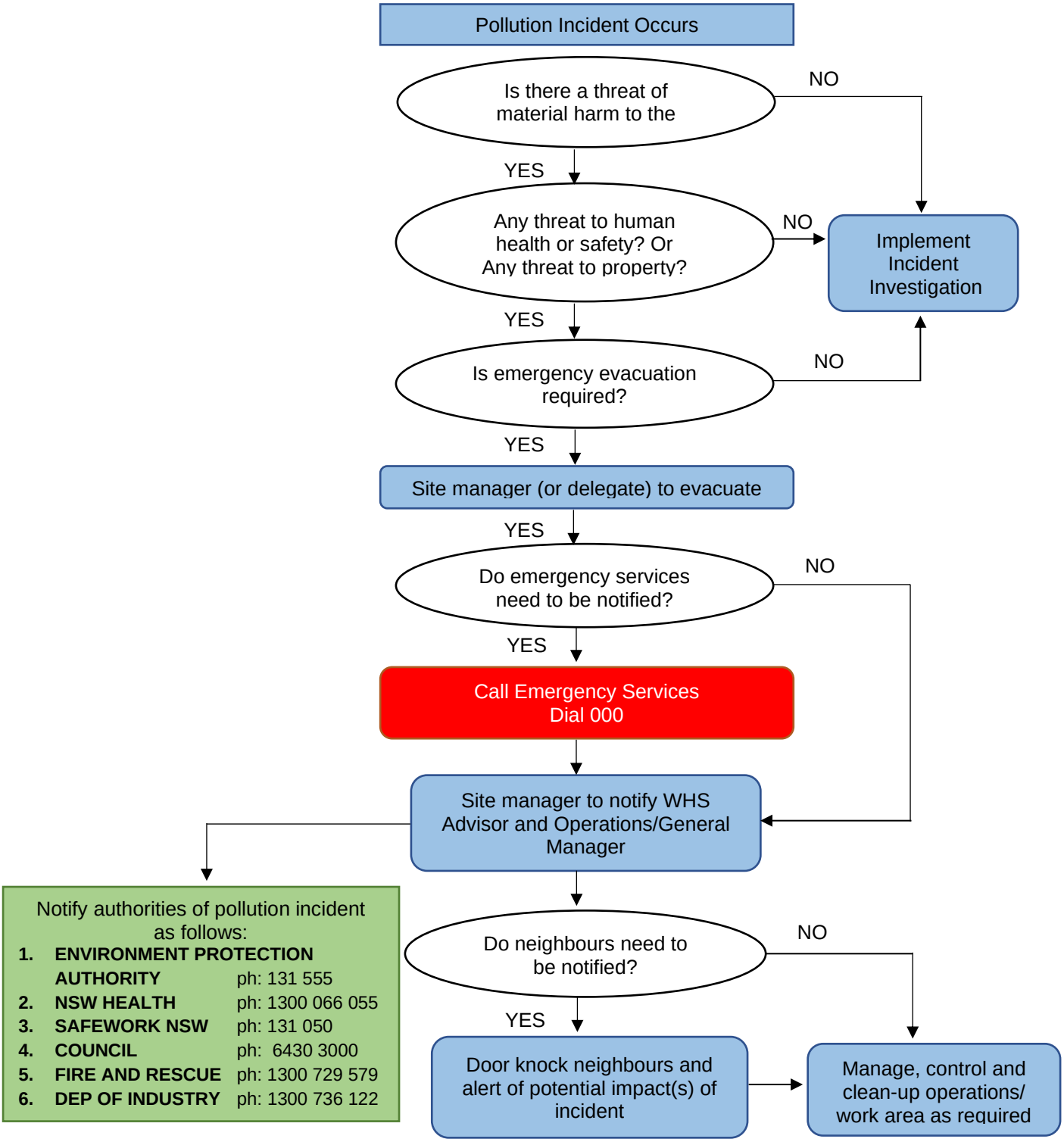
> A leak, spill, or emission (say gas or fumes from a fire) which is not trivial (i.e. not of small value or importance – must be over $10,000) and involves actual potential harm to the environment or human health.

In relation to our operations, these pollution incidents are most likely to result from large fuel spills or acts of vandalism/arson to our equipment. If there is doubt, contact your site manager immediately. Immediately means immediately, promptly and without delay.

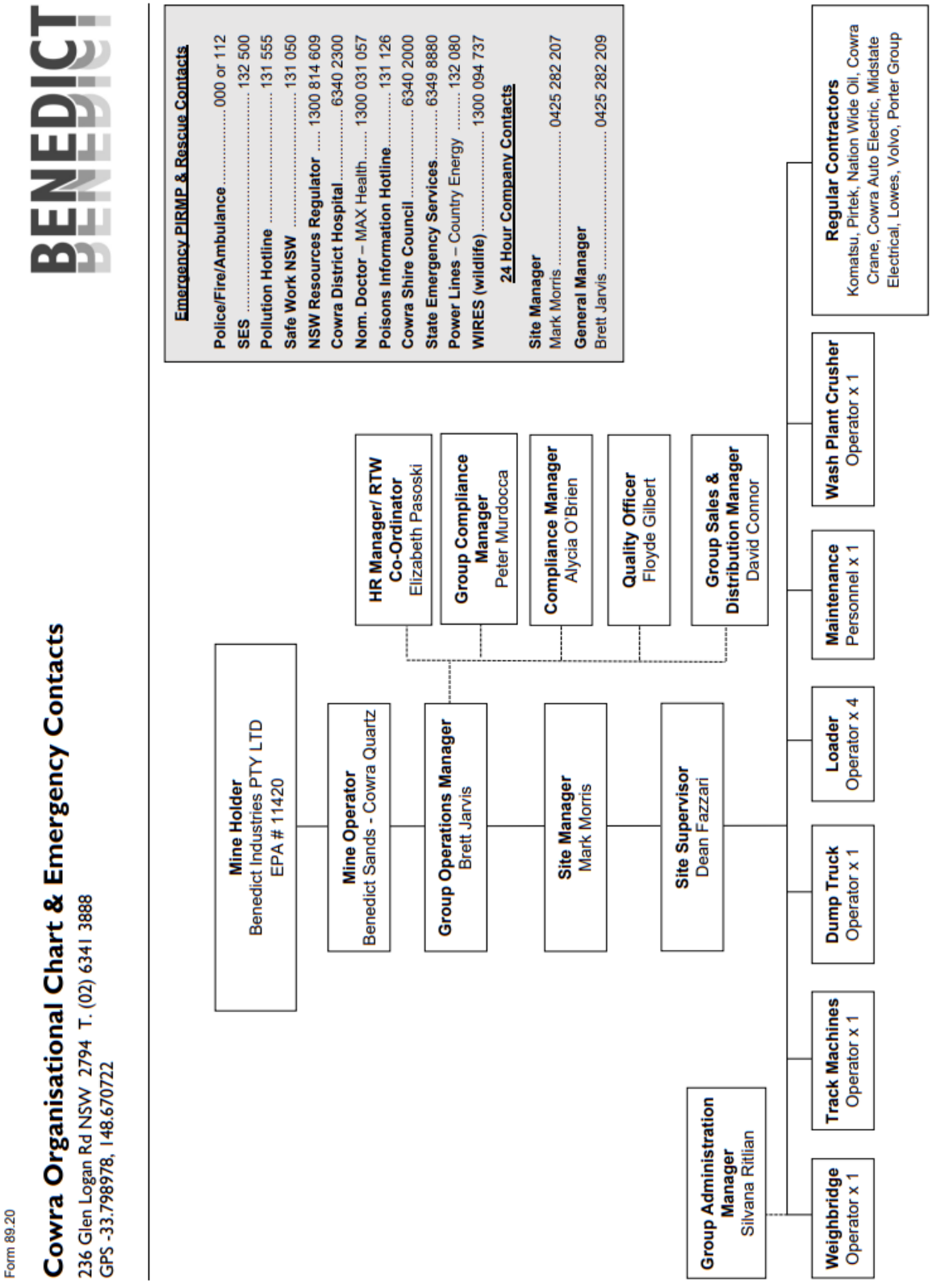
These examples are provided as a guide:

Scenario	**Likely Status**
Jerry can of fuel spilling	Not reportable
Jerry can of fuel spilling and starting large fire	Reportable – assuming that fire causes damage in excess of $10,000 e.g. destroys a piece of plant
5,000 litre diesel fuel spill from storage tank that is contained within safety	Not reportable provided no discharge from bund and spill is contained
5,000 litre diesel fuel spill from storage tank that is NOT contained within safety bund	Reportable, damage is in excess of $10,000 and clean-up costs need to also be included.
Vehicle hydraulic hose leak or failure resulting in small spill	Not reportable provided there is no escape to waterways

4 INITIAL RESPONSE PROCEDURE FLOWCHART



5 SITE CONTACT/ORGANISATIONAL CHART



6 DESCRIPTION AND LIKELIHOOD OF ENVIRONMENTAL HAZARDS

Identifying the key environmental management issues relating to the operation of the facility is critical to the preservation of human health and the protection of the environment.

There are four (4) key sources of potential environmental hazards where risk associated with activities being undertaken at the premises must be managed (see below):

- Water Contamination
- Noise Pollution
- Air Pollution
- Fire potential

6.1 LIKELIHOOD

Site personnel must be aware there are certain circumstances or events that could or would increase the likelihood of a hazard occurring. When the following conditions arise extra precautions may be necessary on site.

Water contamination:

- Periods of prolonged wet weather may increase the likelihood of water contamination of the surrounding local amenities

Air Pollution/Dust emissions:

- Hot, dry, windy conditions
- Disturbance of fine, dry material
- High levels of traffic on unsealed roads or dusty roads with no dust suppression

Fire Potential:

- Hot, prolonged dry, windy conditions with low humidity
- Hot works on site for maintenance activities

The potential environmental hazards above have been risk assessed and are included on the site's Environmental Risk Register which is attached in Appendix A. Figure 1 below shows the site's proximity to sensitive receivers.

6.2 SITE MAPS

It is a requirement of the PIRMP to contain detailed and up to date maps and diagrams which assist proper planning and emergency response.
The PIRMP must include a map (or set of maps) showing the:

- Location of the premises	See Figure 1: Site Location and Proximity to Sensitive Receivers
- Surrounding area likely to be affected by a pollution incident	See Figure 1: Site Location and Proximity to Sensitive Receivers
- Location of potential pollutants on the premises (including underground tanks)	See Appendix B – Bulk fuels and combustibles location map and; Appendix C – Emergency evacuation maps detailing the location of safety equipment, pollution control and pollution response equipment on the premises
- Location of any stormwater drains on the premises	See Figure 2: Site Stormwater Directional Flows

Figure 1: Site Location and Proximity to Sensitive Receivers

6.3 WATER CONTAMINATION

The primary objective of water contamination management at the premises is to ensure that stormwater gathered by the facility shall not adversely affect the site or its surrounds (local amenity).

Stormwater gathered on site shall be managed to ensure it is not contaminated by pollutants or leachate and is free of sediment. The following main hazards exist at the premises in relation to water contamination:

- Storage of chemicals/hydrocarbons

Figure 2 below illustrates the general stormwater flows on site.

Figure 2: Site Surface Stormwater Directional Flows

6.3.1 INVENTORY OF POTENTIAL WATER POLLUTANTS

Table 1 below details chemicals/hydrocarbons with the potential to pollutant which are stored or held at the premises together with their storage capacities:

Pollutant	Maximum Quantity	Storage Method	Location
Diesel Fuel	25000L	Aboveground Bunded tank	Behind Workshop area
Engine Oil Hydraulic Oil	< 3000L	Aboveground Bunded tank	Workshop area

Table 1: Potential Water Pollutants

Appendix B shows the storage locations of the diesel fuel and oils/lubricants throughout the site.

6.4 NOISE POLLUTION

The aim of noise pollution management at the premises is to ensure noise generated by the facility does not adversely affect the site or its surrounds. Potential sources of noise pollution include:

- Operation of mobile plant equipment
- Operation of fixed plant equipment
- Maintenance activities

6.5 AIR POLLUTION

Air pollution management initiatives at the premises are designed to ensure air quality (dust and odour) generated by the facility does not adversely affect the site or its surrounds. Potential sources of air borne dust include product stockpiles, site roadways, processing plant and loading/unloading of trucks.

Dust monitoring points have been specified in the sites Environment Protection License and the location of these are shown in Figure 3. There are no sources of potential odour on site.

6.6 FIRE POTENTIAL

Fire management initiatives at the premises are designed to minimise the risk of fire damage to the facility and its surrounds. The facility is regularly assessed for fire risk levels and preventative/minimisation activities implemented as required.

6.6.1 INVENTORY OF FUELS AND COMBUSTIBLES

Table 2 below list details of the fuels and flammables held on the premises and their storage capacities. The location of these fuels/combustibles is shown in Appendix B:

Fuel/Combustible	Maximum Quantity	Storage Method	Location
Diesel Fuel	34,000 litres	Aboveground Bunded tanks: - 1 x 24,000 litres 1 x 11,000 litres	Behind workshop
Engine/Transmission Oil	< 2,000 litres	Bunded area within workshop: 6 x 205 litre drum	Workshop area
Oxy-Acetylene	< 4,000 litres	- Oxygen tanks (3 x 8.9m^3) (3 x 4.1m^3) - Acetylene tanks (1 x 7m3) (3 x 3.2m^3) - CO_2/Argon tanks (2 x 10.9m^3)	Workshop area

Table 2: Fuels and Combustibles Inventory

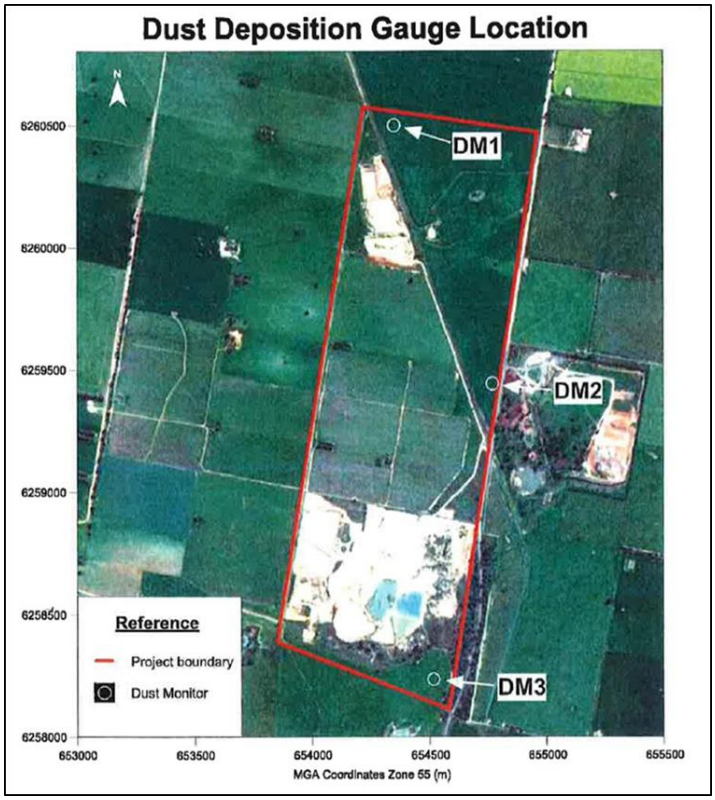


Figure 3: Dust Monitoring Points

7 PRE-EMPTIVE ACTIONS TO MITIGATE ENVIRONMENTAL HAZARDS

There are four (4) key sources of potential environmental hazards where risk associated with activities being undertaken at the premises must be managed (see below):

- Water Contamination
- Noise Pollution
- Air Pollution
- Fire potential

7.1 WATER CONTAMINATION MITIGATION STRATEGIES

All hydrocarbon (fuel) sources that could potentially contaminate the waterways are kept in bunded areas to prevent spillages from reaching discharge points. Bunded areas are inspected regularly to ensure they are free of debris, spills or water to enable maximum capacity to capture any potential spills. The potential for spills will be minimised by:

- Re-fueling operations of plant to be undertaken by suitably trained personnel
- Provision of spill kits and training of personnel in their use

Spill containment kits are maintained in place at each bunded area and at other locations on premises where the potential for chemical spills exists (e.g. workshop area).

Stormwater from the site is directed to the designated discharge points via settlement ponds to enable the settlement of any suspended solids before discharging from the premises (refer Figure 2).

Regular maintenance of all surface water structures including catch drains is carried out to ensure the capacity to capture sedimentation is maximised.

7.2 NOISE POLLUTION MITIGATION STRATEGIES

Noise generated at the premises will be controlled by:

- Limiting the hours and types of operation to that which is approved
- Using stockpiles placed between machinery and boundaries as noise barriers
- Ensuring that plant and equipment are operated such that the noise centre is no higher than the solid boundary fences or stockpiles
- Limiting machinery used to that which meets noise generation guidelines for this type of operation
- The correct operation and maintenance of machinery

7.3 AIR POLLUTION MITIGATION STRATEGIES

The site is monitored for dust generation particularly during busy or windy (dry) days and control activities implemented as required. Dust generated at the premises will be controlled by:

- Restricting stockpile heights in line with licence requirements to reduce the potential for dust generation
- Wetting stockpiled soils to minimise wind erosion
- Ceasing or reducing loading and unloading of stockpiles during strong wind conditions
- Spraying materials during the loading/unloading processes to suppress dust
- Ceasing or reducing processing activities during strong wind conditions
- Spraying of materials during processing activities
- Cleaning hardstand /roads by street sweeper

A network of remotely controlled sprinklers is installed on site which is activated as necessary throughout the working day, to wet down the main site entry/exit road in an effort to minimise the generation of air borne dust on site. Figure 4 below shows the location of the network of sprinklers on site.

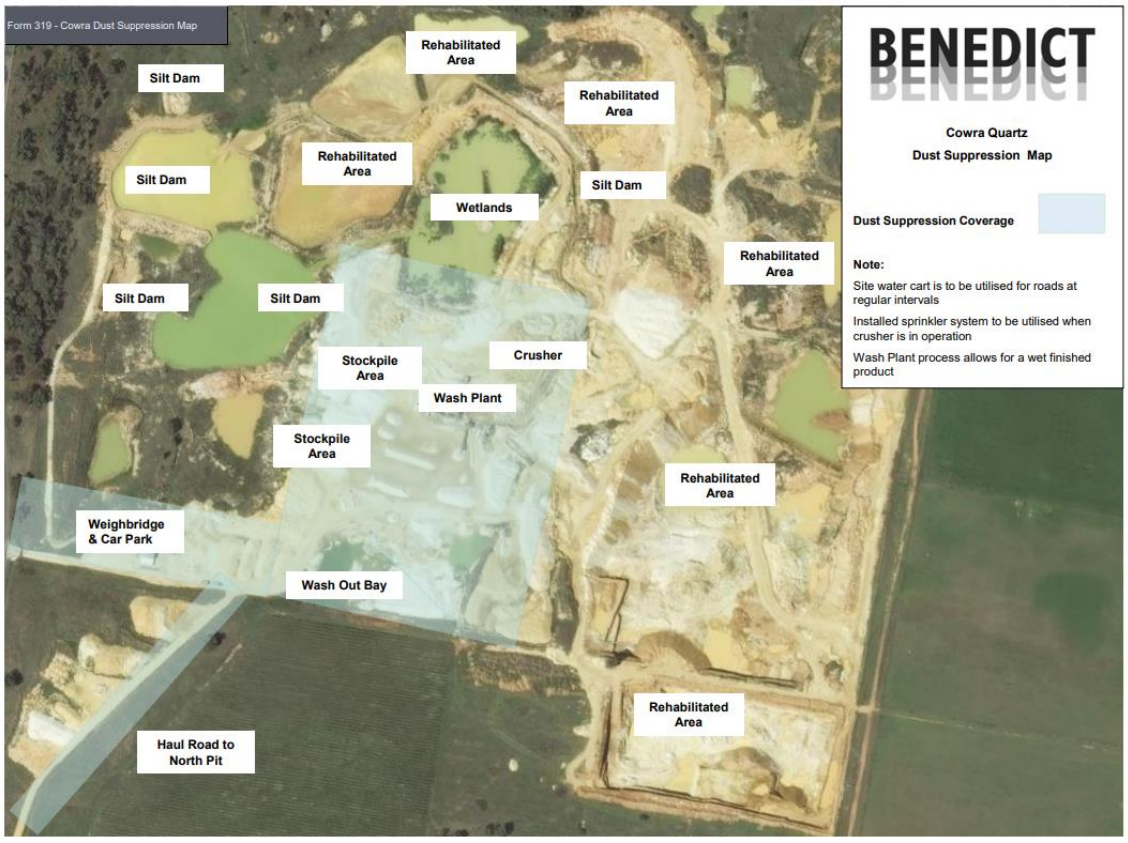


Figure 7 – Dust Suppression Infrastructure

7.4 FIRE MITIGATION STRATEGIES

The potential for fires will be minimised by:

- Maintaining machinery/equipment in good working order to minimise the risk of sparks

Fire fighting shall be undertaken in association with the NSW Fire Brigade. Small fires are to be extinguished utilising the fire hoses and extinguishers provided on site in the first instance by staff that are competent and confident to do so. Fire fighting capability will be maximised by:

- Maintaining appropriate fire fighting equipment/facilities in good working order
- Ensuring adequate water supply for fire fighting
- Train personnel in basic fire fighting and emergency response protocols

Appendix C show the location of fire fighting equipment/devices throughout the premises.

8 COMMUNICATING WITH NEIGHBOURS AND LOCAL COMMUNITY

In the event of an environmental incident occurring at the site, impacts on the neighbouring business and local community will be variable and depend on location, volume of spills or other factors such as wind direction and velocity.

If an environmental incident on site is likely to impact neighbouring businesses or the local community, surrounding neighbours will usually be contacted face to face, by telephone or through information left at the place of residence by a Mittagong Sands representative to notify them of the situation. This notification should include any possible impacts to the neighbour as well as the procedures that have been put in place to rectify the situation.

Communication methods will be used on a case-by-case basis, but in all situations Mittagong Sands will attempt to provide early warnings to those neighbours likely to be directly affected. Early warnings would typically include details of the nature of the incident and how those likely to be affected can best prepare and respond to the incident.

Ongoing communication with the neighbouring businesses/residents will be maintained until such time as the incident is rectified.

9 STAFF TRAINING

All staff undertake a company induction upon commencement of employment and a site-specific induction relevant to their particular place of work (site). In addition to inductions, all persons (employees, contractors and visitors) will receive additional training in some or all of the following as relevant to their function on site:

- Emergency exits and evacuation routes
- Emergency Assembly area
- Emergency lighting and exit signs
- Emergency rescue
- Smoke control and smoke detectors
- Fire fighting devices (hydrants, hose reels and extinguishers)
- First aid
- Shutting down plant and processes
- Hazardous substances
- Traffic flows/management plan
- Evacuation drills and debriefing

Individual staff training requirements are discussed during regular toolbox meetings.

Basic environmental training is provided to all site employees which references the purpose, use and location of this PIRMP document. This training is to be conducted annually upon review and updating of the PIRMP document and more frequently as necessary (e.g. on-boarding of a new employee).

Training material and records of training (refer Training Record Sheet template in Appendix E) can be found filed in the Site Environmental Manual.

Emergency Response Plan (Form 291) for this site can be found on BeneHub (internal intranet), together with records of Emergency Drills conducted.

10 TESTING AND REVIEW OF PIRMP

This PIRMP is scheduled for routine testing and reviewing on an annual basis. The annual site Licence Anniversary Notice serves as the prompt to test and review the PIRMP.

In the event that a pollution incident occurs, this PIRMP must be tested and assessed for capability and effectiveness within one month of the pollution incident occurring.

The usual method of testing this PIRMP is to undertake a desktop simulation and follow-up with a briefing of outcomes at site tool box meetings where findings and recommendations are considered. Alternatively, an environmental incident scenario may form the basis for a site evacuation drill (practical drill) whereby the PIRMP can be tested and its effectiveness/adequacy reviewed.

APPENDIX A

Environmental Risk Register (Page 1)

Environmental Risk Register - Cowra Quarry

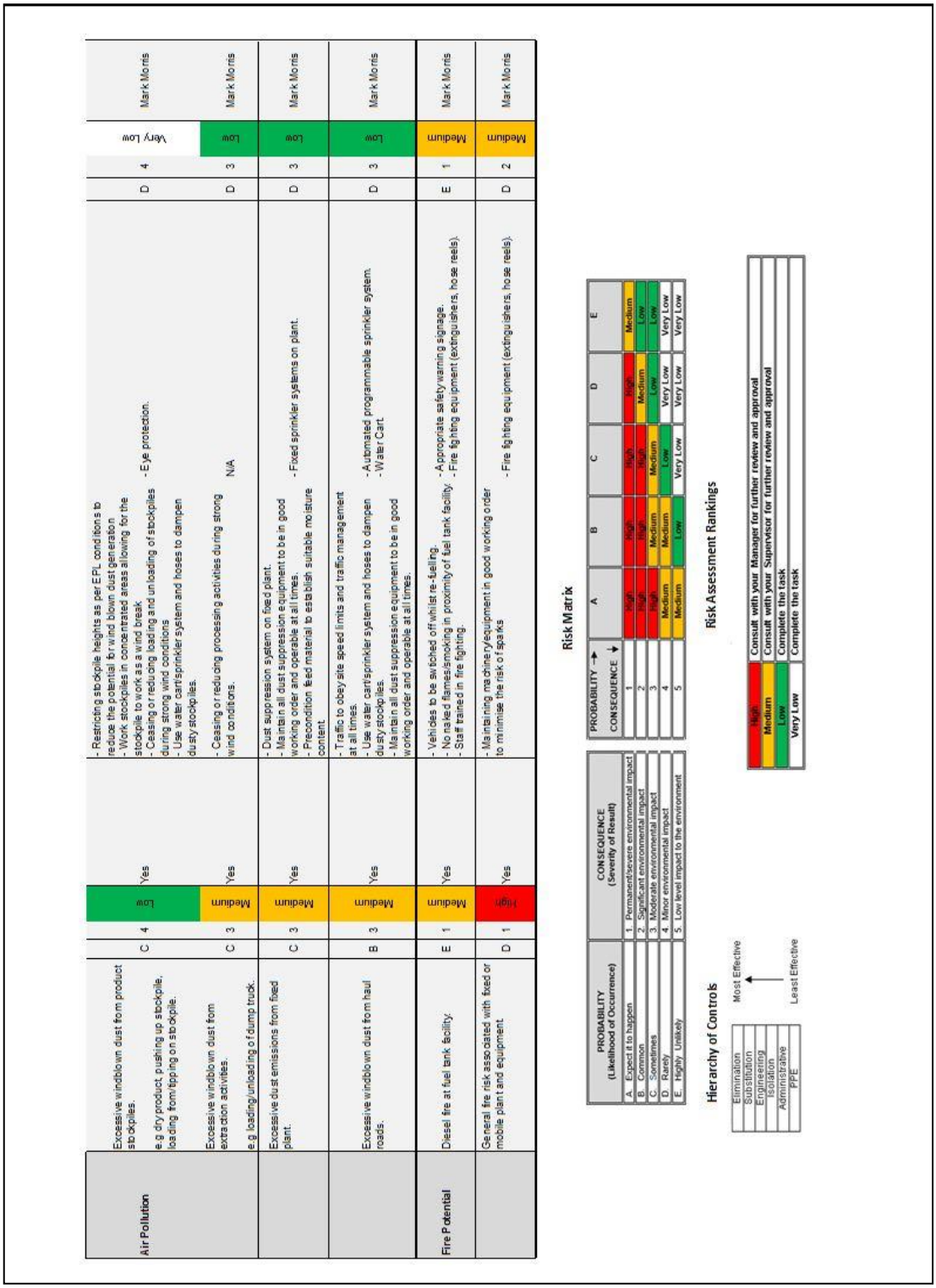
MITTAGONG SANDS pty ltd

Completed by: M. Hutcheson — Date: 26/05/2017
Approved By: M.Morris — Review Date: 26/05/2018

Environmental Hazard	Description of Hazard/Incident	Likelihood	Consequence	Initial Risk Rating	Impact on Neighbours	Control Measures/ Corrective Action	Specific PPE / Equipment / Devices available	Likelihood	Consequence	Residual Risk Rating	Responsible Person
Soil Contamination Incident - Diesel Fuel	Catastrophic failure of diesel fuel storage container/equipment resulting in major spill. e.g punctured tank, valve failure, tank overfilled.	D	2	Medium	N/A	- Fuel storage tank is adequately bunded. - Traffic limitations in Fuel storage tank area of site. - Vehicles filling/refuelling approach tank forward facing parking adjacent to tank. - Regular maintenance checks of valves. - Filling/refuelling procedures in place.	- Tank bunding - Signage	E	2	low	Mark Morris
	Diesel spill outside of bunded area during refilling/fuelling activities.	C	4	low	N/A	- Spill kit in place.	- Spill Kit	D	4	Very Low	Mark Morris
	Diesel spill outside of bunded area from mobile plant fuel tank failure.	C	4	low	N/A	- Site spill kit can be used or else sand/soil stockpiles nearby which can be used to contain the spill in the short term.	- Spill Kit	D	4	Very Low	Mark Morris
	Diesel spill within bunded area due to leaking/open valve.	C	5	Very Low	N/A	- Spill kit in place. - Routine maintenance inspection of pipework/valves.	- Spill Kit	D	5	Very Low	Mark Morris
Soil Contamination Incident - Oils	Catastrophic failure of oil storage container/equipment resulting in major spill. e.g punctured tank, valve failure, tank overfilled	D	3	low	N/A	- Oil storage containers are adequately bunded. - Traffic limitations in oil storage area of site (workshop). - Regular maintenance checks of valves.	- Pallet bunding - Signage	E	3	low	Mark Morris
	Oil spill outside of bunded area during delivery/decanting activities.	C	4	low	N/A	- Spill kit in place.	- Spill Kit	D	4	Very Low	Mark Morris
	Oil spill outside of bunded area from mobile plant, hydraulic hose failure.	C	4	low	N/A	- Site spill kit can be used or else sand/soil stockpiles nearby which can be used to contain the spill in the short term.	- Spill Kit	D	4	Very Low	Mark Morris
	Oil spill within bunded area during delivery/decanting activities.	C	5	Very Low	N/A	- Spill kit in place. - Routine maintenance inspection of pipework/valves.	- Spill Kit	D	5	Very Low	Mark Morris
Noise Pollution	Excessive noise generated by fixed plant and machinery. e.g shredder, wash plant	D	4	Very Low	Yes	- Limiting the hours and types of operation to that which is approved. - Using stockpiles placed between machinery and boundaries as noise barriers. - Limiting machinery used to that which meets noise generation guidelines for this type of operation. - The correct operation and maintenance of machinery.	- Hearing protection for operators	D	5	Very Low	Mark Morris
	Excessive noise generated by mobile plant and machinery. e.g front-end loader, excavator	D	4	Very Low	Yes	- Limiting the hours and types of operation to that which is approved. - The correct operation and maintenance of machinery.	- Soundproofing in cabins of machinery. - Mobile plant fitted with 'squashed duck' reversing alarms.	D	5	Very Low	Mark Morris
	Excessive noise generated by maintenance activities. e.g fabrication activities in workshop, servicing of mobile plant and equipment	C	4	low	Yes	- Conduct maintenance activities only within approved hours.	- Hearing protection.	D	5	Very Low	Mark Morris

APPENDIX A

Environmental Risk Register (Page 2)



Air Pollution	Excessive windblown dust from product stockpiles. e.g dry product pushing up stockpile, loading from/tipping on stockpile.	C	4	Low	Yes	- Restricting stockpile heights as per EPL conditions to reduce the potential for wind blown dust generation - Work stockpiles in concentrated areas allowing for the stockpile to work as a wind break - Ceasing or reducing loading and unloading of stockpiles during strong wind conditions - Use water cart/sprinkler system and hoses to dampen dusty stockpiles. - Eye protection.	D	4	Very Low	Mark Morris
	Excessive windblown dust from extraction activities. e.g loading/unloading of dump truck.	C	3	Medium	Yes	- Ceasing or reducing processing activities during strong wind conditions. N/A	D	3	Low	Mark Morris
	Excessive dust emissions from fixed plant.	C	3	Medium	Yes	- Dust suppression system on fixed plant. - Maintain all dust suppression equipment to be in good working order and operable at all times. - Precondition feed material to establish suitable moisture content - Fixed sprinkler systems on plant.	D	3	Low	Mark Morris
	Excessive windblown dust from haul roads.	B	3	Medium	Yes	- Traffic to obey site speed limits and traffic management at all times. - Use water cart/sprinkler system and hoses to dampen dusty stockpiles. - Maintain all dust suppression equipment to be in good working order and operable at all times. - Automated programmable sprinkler system. - Water Cart	D	3	Low	Mark Morris
Fire Potential	Diesel fire at fuel tank facility.	E	1	Medium	Yes	- Vehicles to be switched off whilst re-fuelling. - No naked flames/smoking in proximity of fuel tank facility. - Staff trained in fire fighting. - Appropriate safety warning signage. - Fire fighting equipment (extinguishers, hose reels).	E	1	Medium	Mark Morris
	General fire risk associated with fixed or mobile plant and equipment.	D	1	High	Yes	- Maintaining machinery/equipment in good working order to minimise the risk of sparks - Fire fighting equipment (extinguishers, hose reels).	D	2	Medium	Mark Morris

Risk Matrix

PROBABILITY (Likelihood of Occurrence)	CONSEQUENCE (Severity of Result)
A Expect it to happen	1 Permanent/severe environmental impact
B Common	2 Significant environmental impact
C Sometimes	3 Moderate environmental impact
D Rarely	4 Minor environmental impact
E Highly Unlikely	5 Low level impact to the environment

PROBABILITY → / CONSEQUENCE ↓	A	B	C	D	E
1	High	High	High	High	Medium
2	High	High	High	Medium	Low
3	High	Medium	Medium	Low	Low
4	Medium	Medium	Low	Very Low	Very Low
5	Medium	Low	Very Low	Very Low	Very Low

Risk Assessment Rankings

High	Consult with your Manager for further review and approval
Medium	Consult with your Supervisor for further review and approval
Low	Complete the task
Very Low	Complete the task

Hierarchy of Controls

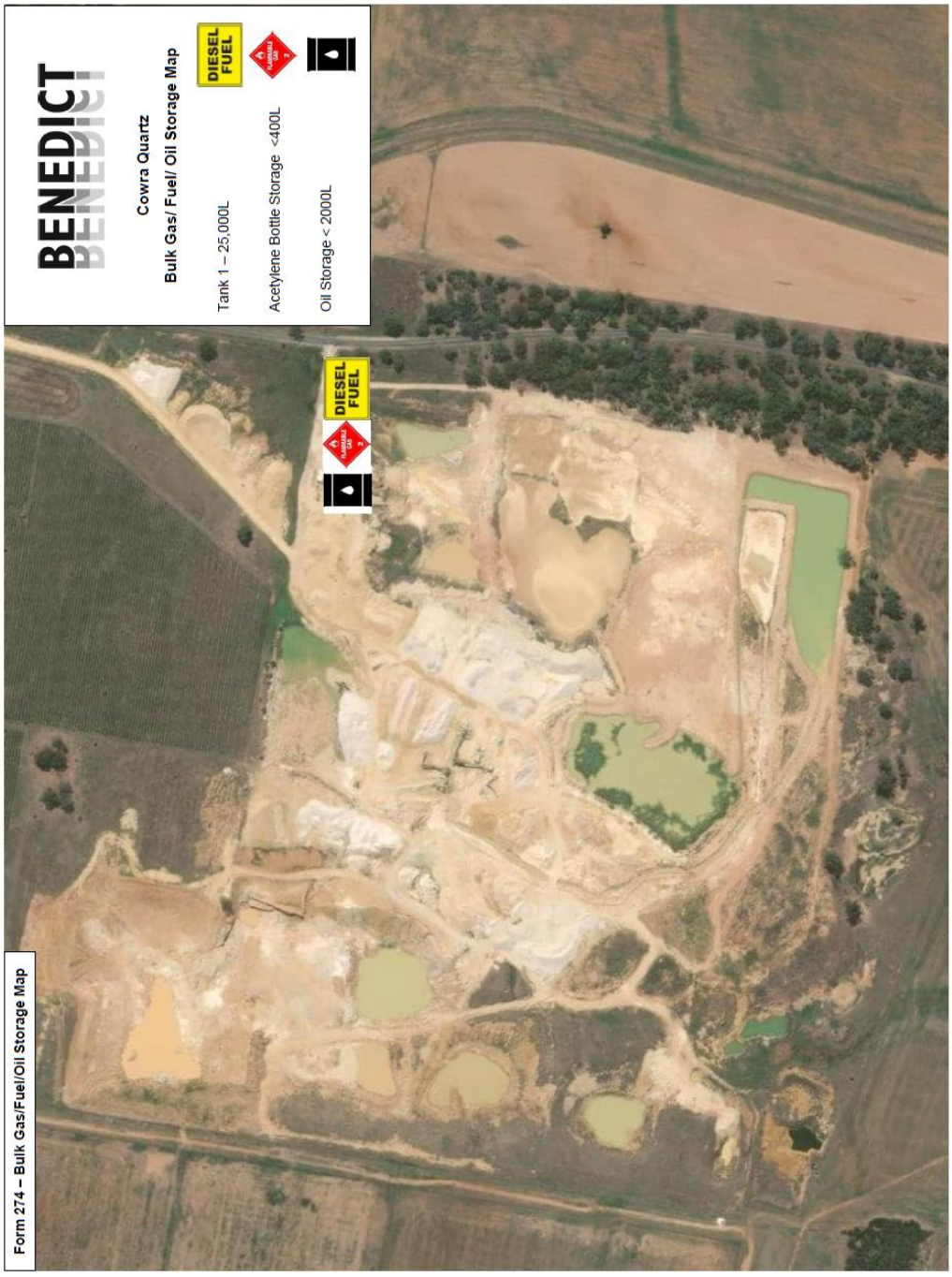
Most Effective

Elimination
Substitution
Engineering
Isolation
Administrative
PPE

Least Effective

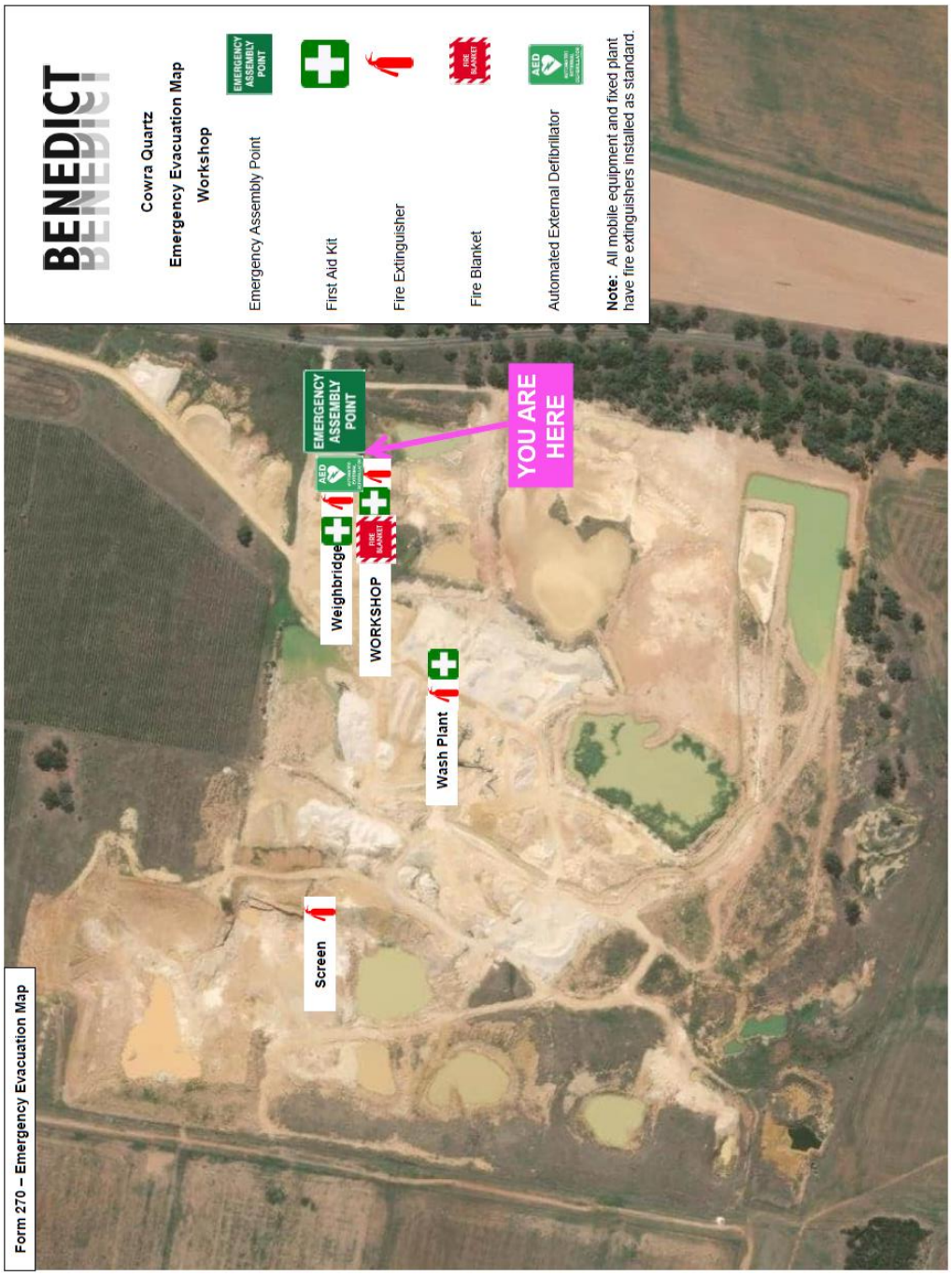
APPENDIX B

Bulk Fuels and Combustibles Location Map



APPENDIX C

Fire Fighting Equipment Location Map



APPENDIX D

Site Training Record Sheet

Form 275

Training Record

Training Scope:	ENVIRONMENTAL AWARENESS TRAINING			
Location:		**Date/s:**		
Trainer:		**Duration:**	*Total Hrs/Mins:*	
Principle Areas Covered in Session/s:	NSW Legal Requirements, Environmental Regulations, Benedict Environmental Policy, Benedict Environmental Responsibilities, Environmental Impacts, Examples of Pollution, Benedict Environmental Procedure, Pollution Incident Response Management Plan (P.I.R.M.P)			
Practical Training Provided:	N/A			
Assessment Undertaken:	**Form Number:**		**Title:**	
Training Material Reference:	**Form Number:**		**Title:**	Environmental Awareness Training (Powerpoint presentation)
Material Provided to Participants:	**Form Number:**		**Title:**	

Trainee/s:	**Name** *(Print)*	**Signature**	**Name** *(Print)*	**Signature**
	1.		11.	
	2.		12.	
	3.		13.	
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