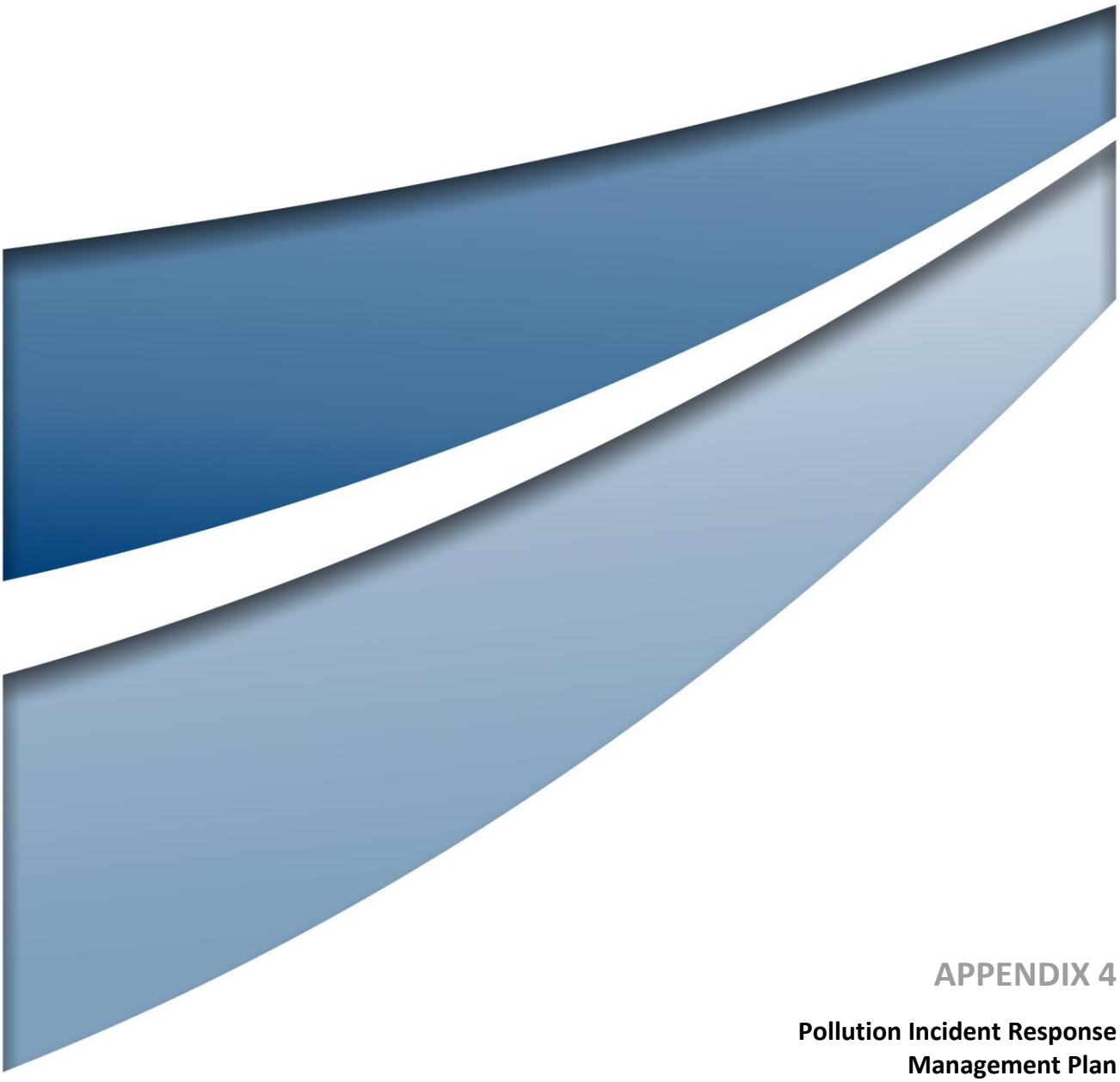


APPENDIX 4

Pollution Incident Response Management Plan

Pollution Incident Response Management Plan

Haerses Road Quarry, Maroota

Version	Revision Date	Revision Details	Prepared by	Approved by
1.0	16/03/18	PIRMP first issued (previously combined with the Old Northern Road Quarry PIRMP)	H.C.	D.D.

Pollution Incident Response Management Plan

Haerses Road Quarry, Maroota

1.0 Purpose

This Pollution Incident Response Management Plan (PIRMP) has been prepared, to address the requirements of the *Protection of the Environment Operations Act 1997*, specifically Part 5.7A of the Act, and to ensure compliance with Dixon Sand Environmental Protection Licence # 12513, Development Consent DA 165-7-2005 and all legal and other requirements.

The purpose of the PIRMP is to ensure that pollution incidents and impacts which have the potential to occur during activities associated with the operation of the Haerses Road Quarry, Maroota, are prevented or minimised so that no significant harm occurs to human health and the environment. This plan provides details of management procedures to be implemented if a pollution incident does occur.

For the purpose of this plan, a pollution incident is defined by the NSW Environmental Protection Authority (EPA) as:

'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.'

If a pollution incident occurs, it is the duty of the premises to notify the incident if it causes or threatens 'Material Harm' to the environment, which is defined under the *POEO Act* as:

a) **Material harm** to the environment is:
   I. the actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
   II. actual or potential **Loss** or property damage of an amount, or amounts in aggregate, exceeding $10,000. **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.

b) **Harm** to the environment includes:
   '*any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution*.'

This Plan also describes how materials shall be handled and stored on site in accordance with applicable Safety and Environmental Legislation.

2.0 Scope

The scope of this management plan is to provide:

- Procedures to be followed by the licence holder or occupier of the premises in notifying pollution incidents to appropriate personnel, authorities, and regulatory bodies
- Detailed description of the action to be taken, immediately after a pollution incident by the licence holder to reduce or control any pollution
- Procedures to be followed for co-ordinating any action taken in combating the pollution caused by the incident (with appropriate personnel, authorities, and regulatory bodies), and the communication pathways that need to be utilised in order to do this

This management plan applies to the employees and contractors operating at Haerses Road Quarry, Maroota.

3.0 Legal and Other Requirements

All activities carried out on site must comply with the following licences, legislation, regulations and guidelines relevant to the notification and management of environmental pollution.

- *Environmental Protection Licence 12513 – Haerses Road Quarry*
- *Development Application DA165-7-2005– Haerses Road Quarry*
- *Protection of the Environment Operations Act, 1997 (POEO Act)*
- *Protection of the Environment Operations (Waste) Regulation, 2005*
- *Protection of the Environment Legislation Amendment, 2011*
- *Environmentally Hazardous Chemicals Act, 1985 (NSW)*
- *Storage and Handling Dangerous Goods Code of Practice (Work Cover 2005)*
- *Storage and Handling Liquids: Environmental Protection – Participant's Manual (DECC 2007)*
- *Soils and Construction: Managing Urban Stormwater (Landcom 2004)*
- *Relevant Australia/New Zealand Standards*
- *Safety Data Sheets applicable to materials stored on site*

By adhering to the requirements set out in the abovementioned legislation, regulations and guidelines, this will aid in preventing or minimising the release of pollution into the environment.

In addition, Dixon Sand has procedures outlined in the Environmental Management Strategy documentation relevant to pollution management and reporting.

4.0 Identification of Potential Pollution Hazards & Risk Assessment

The following risk matrix and table has been developed to:

- Identify site specific hazards that may result in a pollution incident occurring;
- Assess the likelihood of an incident occurring as a result of a particular hazard;
- Assess the likely degree of impact if an incident occurs; and
- Outline preventative management actions to be implemented in order to control, minimise or avoid impacts.
- Monitor implemented controls.

Table 1 contains the Risk Assessment Matrix adopted by Dixon Sand.
Table 2 contains the hazards identified on site and associated risk assessment and proposed actions.

Table 1: Risk Assessment Matrix

RISK ASSESSMENT MATRIX					
Likeli-hood	**Consequence**				
	1	**2**	**3**	**4**	**5**
A	Extreme	Extreme	High	Med	Low
B	Extreme	High	High	Med	Low
C	Extreme	High	Med	Low	Low
D	High	Med	Med	Low	Low
E	High	Med	Low	Low	Low

LIKELIHOOD

A - Almost Certain (*is expected to occur)*

B - Likely (*will probably occur)*

C - Possible (*may occur at some point)*

D - Unlikely (*could occur but doubtful)*

E - Rare (*may occur but highly unlikely)*

CONSEQUENCE

1 - Catastrophic (*critical unmanageable impacts)*

2 - Major (*intense, manageable impacts)*

3 - Moderate (*serious impacts, easily managed)*

4 - Minor (*minor management action required)*

5 - Insignificant (*impacts requiring no treatment)*

RESPONSE TO RISK RANKINGS

Extreme	Work is not to commence until the hazard is managed and the level of risk is reduced. The quarry manager or production manager is to authorise the work.
High	Work can be tolerated if it is not reasonably practicable to reduce the risk further. The activity must not be undertaken without a risk assessment and being supervised.
Medium	Work can be undertaken with the identified controls in place.
Low	Work that is part of the day to day operation of the quarry with known controls, control measures are to be effective, reliable and subject to appropriate monitoring.

HIERARCHY of RISK CONTROL

Eliminate the hazard	Highest level of health and safety protection, most reliability of control measures.
Substitute the hazard with something safer	Change the substance being used to a safer one, use two people to lift items, change from one energy source to another e.g. From air to hydraulics.
Isolate the hazard from people	Putting up barriers, sound walls, acoustic enclosures
Reduce the risk through **engineering controls**	Put in guards or other barriers, use design and engineering solutions.
Reduce exposure by applying **administrative actions**	Procedures, signs, training
Use **personal protective equipment.**	Lowest level of health and safety protection, least reliability of control measures

.

Table 2: Hazard Identification and Risk Assessment

Hazard	Potential Pollution Incident & Condition influencing Likelihood of Occurrence	Likelihood of Incident occurring	Consequence of Incident	Assessed Risk Level	Proposed Actions • **Pre-emptive Actions (avoid impact)** • **Control Actions (minimise impact)**
Chemical Storage (Workshop)	*Polluting Incident* 1. Chemical spill to land/water from fuel tanks/oil & grease drums 2. Chemical spill to land/water from chemical containers *Influencing Conditions* • Chemical not stored correctly • Poor maintenance on site • Impact/damage to tank/bunding releasing chemical • Incorrect use of equipment • Maximum size of any chemical containers is 20 litres	1. E (Rare) 2. D (Unlikely)	1. 4 (Minor) 2. 4 (Minor)	**1. Low** **2. Low**	*Pre-emptive Actions* • EPA approved bunding containment installed for all tanks / containers • Spill kits located on site at vantage points • Regular inspections • Correct refuelling procedures and training • Site induction for all employees/contractors • All maintenance work is generally undertaken on a concrete hard stand *Incident Control Actions* • Stop release at source • Contain release using spill kits or earth bunding • Follow incident response procedure outline in Section 7 • Remove contaminated material from site by licenced contractor/facility
Silt/Tailings ponds Note: majority of ponds are cut into rock	*Polluting Incident* 1. Dam wall collapse releasing sediment laden water off site 2. Silt pond overtopping *Influencing Conditions* • Poor construction / maintenance of dam • Machine impacting dam wall • Poor monitoring of water levels resulting in over topping	1. E (Rare) 2. E (Rare)	1. 3 (Moderate) 2. 3 (Moderate)	**1. Low** **2. Low**	*Pre-emptive Actions* • Daily monitoring, regular inspections • Pond wall maintenance as required and identified in inspections *Incident Control Actions* • Cease pumping of tailing into pond immediately • Control release of silt/water by installing temporary earth bunding downslope of release • Follow incident response procedure outline in Section 7 • Remediate area of sediment release • Repair pond wall when practical to do so
Main water storage dam (storm water) Note: dam is cut into rock	*Polluting Incident* 1. Dam wall collapse releasing sediment laden water off site 2. Sediment laden water released from weir *Influencing Conditions* • Poor construction / maintenance of dam • Machine impacting dam wall • Dam not treated correctly prior to release • Storm event exceeding design capacity	1. E (Rare) 2. E (Rare)	1. 3 (Moderate) 2. 3 (Moderate)	**1. Low** **2. Low**	*Pre-emptive Actions* • Daily monitoring of water level, regular inspections • Dam wall maintenance as required and identified in inspections *Incident Control Actions* • Cease flow of water into dam and repair pond wall when practical to do so • Monitor water quality of discharge as per EPL conditions (daily samples taken during discharge) • Follow incident response procedure outline in Section 7

Hazard	Potential Pollution Incident & Condition influencing Likelihood of Occurrence	Likelihood of Incident occurring	Consequence of Incident	Assessed Risk Level	Proposed Actions • Pre-emptive Actions (avoid impact) • Control Actions (minimise impact)
Waste materials E.g. • Putrescible • Recycle	*Polluting Incident* • Contamination of land/water *Influencing Conditions* • Poor waste management / storage	C (Possible)	4 (Minor)	**Low**	*Pre-emptive Actions* • Regular inspections and segregated bins • All waste removed from site by licenced contractor • Spill kits located on site at vantage points *Incident Control Actions* • Stop release at source • Control release of waste via spill kits/earth bund • Follow incident response procedure outline in Section 7 • Waste materials to be removed from site by licenced contractor • Any contaminated land to be remediated and removed from site by licenced contractor to licenced waste management facility
Mobile plant operating in quarry	*Polluting Incident* • Release of fuel/oil from plant *Influencing Conditions* • Worn hoses • Fuel cart malfunction, break in hose • Poor maintenance	B (Likely)	4 (Minor)	**Medium**	*Pre-emptive Actions* • Regular maintenance • Plant pre-start inspections • Spill kits located on site *Incident Control Actions* • Control release of fuel/oil using spill kit or earth bund • Follow incident response procedure outline in Section 7 • Collect and remove contaminated material from site by licenced contractor
Refuelling plant and equipment	*Polluting Incident* 1. Release of fuel/oil from plant during refuel from mobile fuelling vehicle *Influencing Conditions* • Damage to plant due to collision • Fuel cart malfunction, break in hose • Poor maintenance	D (Unlikely)	4 (Minor)	**Low**	*Pre-emptive Actions* • Plant pre-start inspections • Spill kits located on site • Regular inspections • Correct refuelling procedures and training • Site induction for all employees/contractors *Incident Control Actions* • Stop release at source • Contain release using spill kits or earth bunding • Follow incident response procedure outline in Section 7 • Remove contaminated material from site by licenced contractor/facility
Water pumping equipment	*Polluting Incident* • Release of fuel/oil into the water storage *Influencing Conditions* • Pump malfunction / break in hose • Poor maintenance • Spillage during refuelling	C (Possible)	3 (Minor)	**Low**	*Pre-emptive Actions* • Daily monitoring, regular inspections • Correct refuelling procedure • Regular maintenance *Incident Control Actions* • Cease operation of pump • Control release of sediment/fuel/oil using spill kit or earth bund • Follow incident response procedure outline in Section 7 • Remove contaminated material from site by licenced contractor

Hazard	Potential Pollution Incident & Condition influencing Likelihood of Occurrence	Likelihood of Incident occurring	Consequence of Incident	Assessed Risk Level	Proposed Actions • **Pre-emptive Actions (avoid impact)** • **Control Actions (minimise impact)**
Dust generation	*Polluting Incident* • Significant release of dust from site operations *Influencing Conditions* • Extreme weather conditions • Excessive machinery movements • Poor maintenance of haul roads • Inadequate use of water cart	C (Possible)	4 (Minor)	**Low**	*Pre-emptive Actions* • Monitor weather conditions and cease works or modify operations when significant dust is visible leaving site • Maintain haul roads in good condition • Regular use of water cart and street sweeper *Incident Control Actions* • Following procedure outlined in EPL (condition M2.4) if TEOM alarm is triggered
Excessive noise generation	*Polluting Incident* • Excessive noise generation from quarry activities • Excessive noise generation from trucks *Influencing Conditions* • Staff and contractors not properly inducted. • Poor maintenance of haul roads	C (Possible)	4 (Minor)	**Low**	*Pre-emptive Actions* • Conduct noise assessment at sensitive receivers on 6 monthly basis. • Provide environmental inductions to all staff and contractors • Regular maintenance of machinery and equipment. • Construction of noise bunds • Operating within approved hours of operation • Replacement of old noisy equipment. *Incident Control Actions* • Cease noise generating activity immediately • Follow incident response procedure outline in Section 7
Working outside approved areas	*Polluting Incident* • Working outside the approved areas of extraction • Clearing outside the approved areas *Influencing Conditions* • Staff and contractors not properly inducted. • Unclear boundary marking	E (Unlikely)	3 (Moderate)	**Low**	*Pre-emptive Actions* • Provide environmental inductions to all staff and contractors • Maintain pegs and boundary markers for extraction, clearing and buffer areas in good order. *Incident Control Actions* • Cease activity outside the approved area immediately • Follow incident response procedure outline in Section 7
Herbicide spillage	*Polluting Incident* • Spillage of herbicide onto non-targeted areas *Influencing Conditions* • Mis-handling of herbicide container and application hose • Poor maintenance of equipment • Mis-application of targeted area	E (Unlikely)	3 (Moderate)	**Low**	*Pre-emptive Actions* • Storage of herbicide in bunded containers in the site vehicle. • Spill kit • SDS on site *Incident Control Actions* • Stop release at source and follow SDS's instructions. • Contain release using spill kits or earth bunding • Follow incident response procedure outline in Section 7 • Remove contaminated material from site by licenced contractor/facility if applicable • Engaging competent contractors to undertake the work.

5.0 Pollutant Inventory

Table 3: Pollutants kept on premise

Pollutant	Quantity	Location	Controls (spill kits, bunding etc.)
Diesel (Mobile Fuel Utility Vehicle)	600 L	Mobile fuel tank fitted with a bowser head on a utility vehicle	Shut off valve and Spill kit
Petrol	20 L	Fuel Container	Enclosed storage container and Spill kits x 2
Hydraulic oil	3 x 20L drum	Storage Container	Enclosed storage container and Spill kits x 2
Engine oil	20 L	Storage Container	Enclosed storage container and Spill kits x 2
Gear oil	20 L	Storage Container	Enclosed storage container and Spill kits x 2
LPG Gas Bottle	8.5 kg	Storage Container	In service
Herbicide	2 L Round-up 1 L Enviro-die 1 L Pulse 1 L Fusilade 1 L Garlon 1 L Starane Advance	Bush-It vehicle	Chemicals stored in approved containers in a tub with absorbent material in the base. Spill equipment and MSDS contained in vehicle

6.0 Pollution Incident Response Contact Details

Table 4: Dixon Sand Incident Contact Details

Name	Position	Contact Number
David Dixon	Quarry Manager	[redacted]
Mark McBride	Haerses Road Site Supervisor (Stage 2)	
Mick Munnoch	Quarry Manager	
Ben Grogan	Quarry Manager	
Hunny Churcher	Environmental Officer	
Rowan Russell	Safety Advisor	

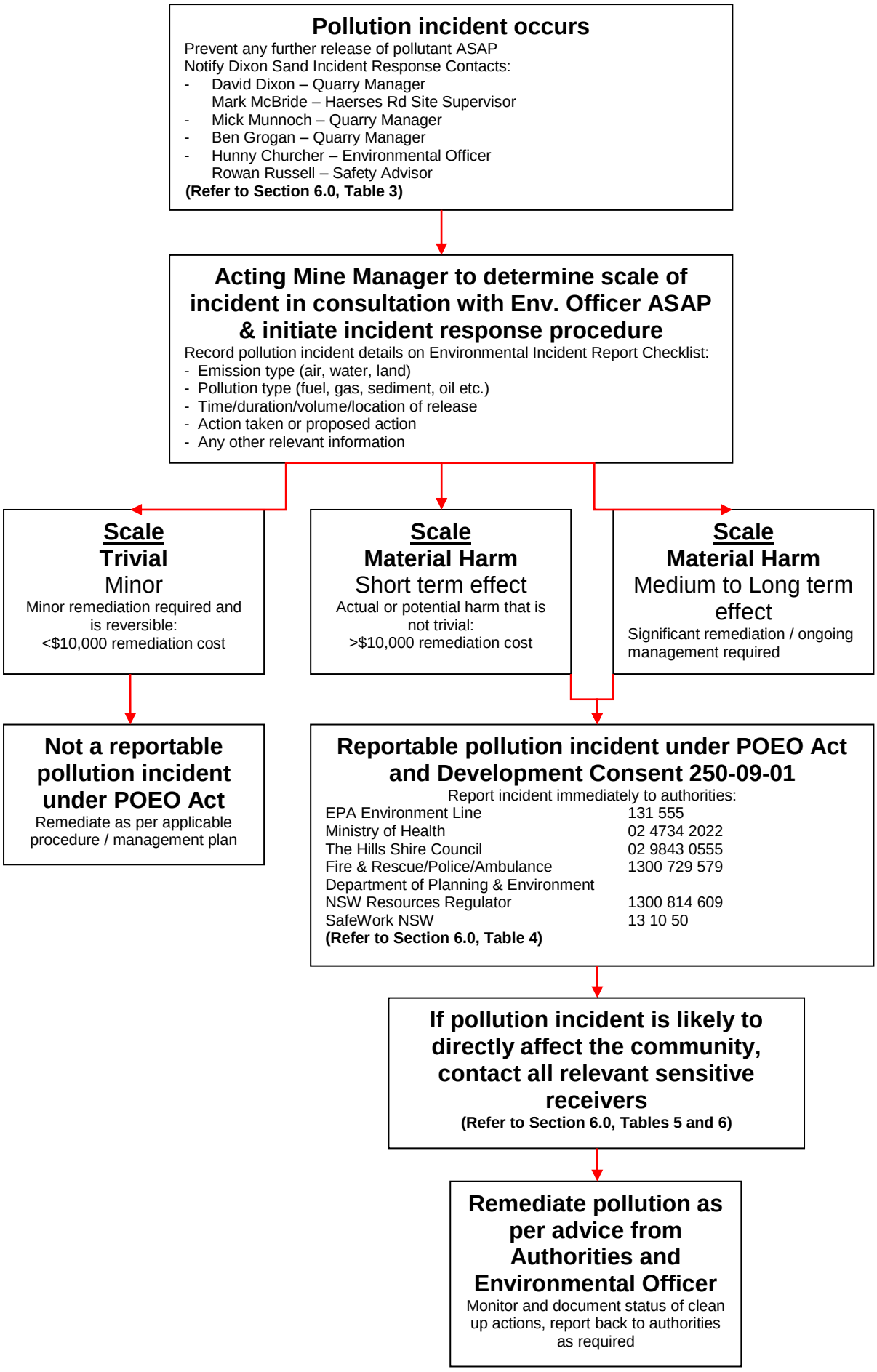
Table 5: Authorities Incident Contact Details

Name	Location	Contact Number
Emergency	-	000 (when incident presents immediate threat to human health and property)
EPA (Environment Line)	-	131 555 (At recorded prompt, press 1 to be connected to 24hr response line)
Fire & Rescue	-	1300 729 579 (No need to dial this number if have previously dialled 000)
Department of Planning and Environment (DPE)	-	@planning.nsw.gov.au (Manager for Mining Projects) Or other delegated case officers
Ministry of Public Health	Nepean Blue Mountains Public Health (Environmental Health Team)	02 4734 2022 (normal hours, report to Environmental Health Team) 02 4734 2000 (after hours switch – ask for Public Health Officer)
NSW Resources Regulator	-	1300 814 609
The Hills Shire Council	Castle Hill	02 9843 0555
Safe Work NSW	-	13 10 50

Table 6: Receivers on EPL 3915 (Old Northern Rd Quarry)

Name	Address
Maroota Public School	4540 Old northern Road, Maroota
Receivers	As identified in Environmental Assessment (Umwelt, Sept 2017)

7.0 Pollution Incident Response Procedure & Actions Flow Chart



7.0 Training, Plan Testing & Review

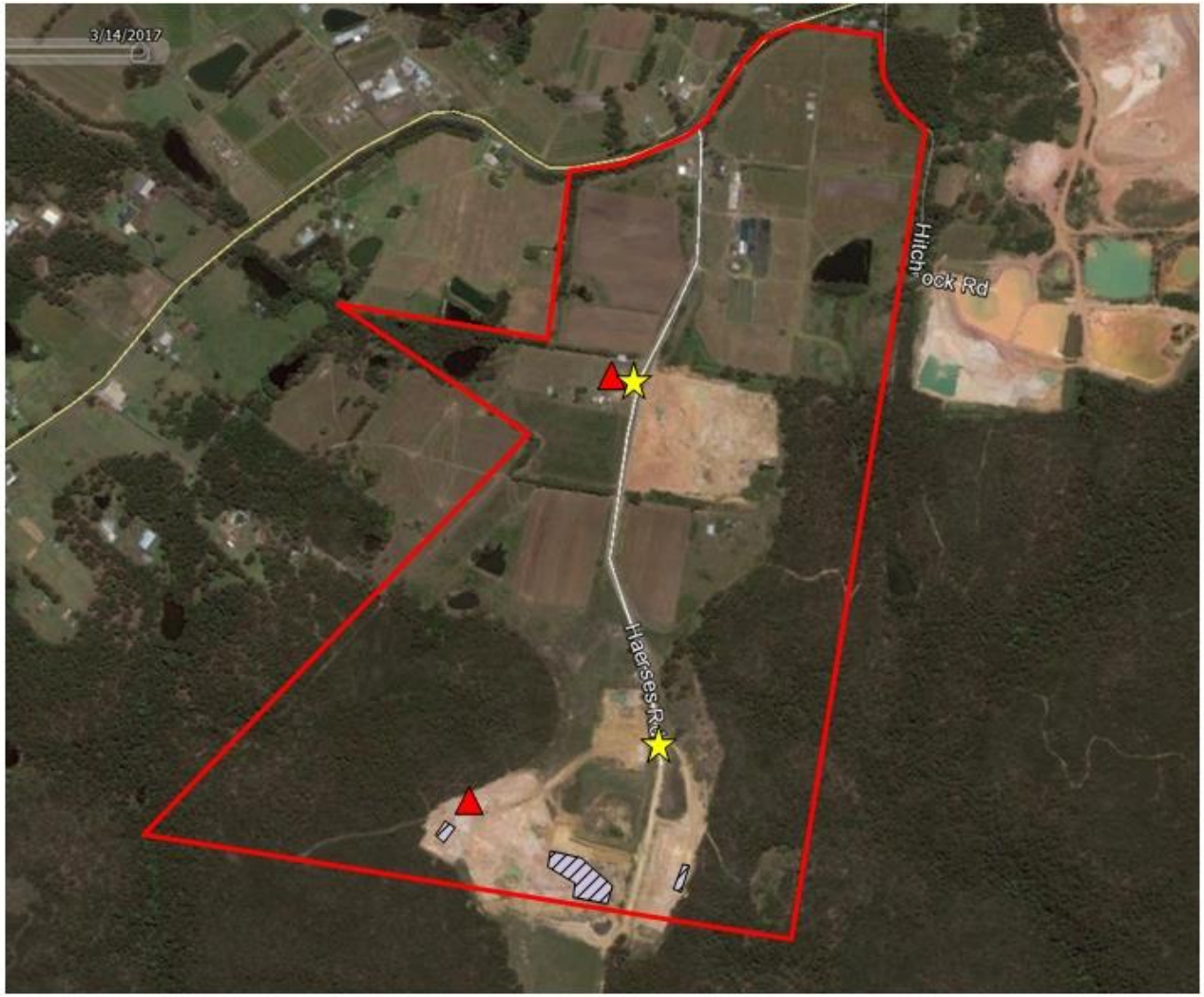
All staff, visitors and contractors coming on to site will be briefed on their responsibilities under this plan as part of site induction requirements, with a copy of this plan being available to all personnel for viewing.

The incident response and action flow chart (Section 7) will also be made available as a notice posted at appropriate locations around the site office and workshop area.

Annual testing and review of this plan is to be undertaken, which would involve two components. The first component will involve a desktop review of the plan components to ensure all details are up to date and still relevant to site operations. The second component will involve a practical exercise with all relevant site staff, in the form of a toolbox training exercise on the implementation of the response procedure (flow chart in Section 7 of this plan).

This plan would be tested and reviewed annually on an on-going basis, within 12 months of the latest approved revision date.

8.0 Site Plans



Legend

- Site Boundary
- Spill Kit
- Emergency Muster Point
- Sediment Pond

Project Environmental Services

Map Source: Google Earth (2016)

Scale
0 100 200 400
(metres)

Dixon Sand (Penrith) Pty Ltd

Figure 1
Pollution Incident Response Management Plan
Haerses Road Site Plan

Plan No: PIRMP Fig 1

Version	Date	Drawn By
1.0	14/03/2017	HC
2.0	16/03/2018	HC

N

Image Source: Google Earth - DigitalGlobe (May 2016)
Data Source: Mc Kinlay Morgan & Associates Pty Ltd (2014)

0 250 500 750m
1:15 000

Legend

- Haerses Road Quarry Site
- Approved Extraction Area
- Noise Receiver Location
- Noise Receiver with Private Agreement

FIGURE 6.11

Haerses Road Quarry
Noise Receiver Location

File Name (A4): R05/3479_071.dgn
20160922 10.49