Pollution Incident Response Management Plan (PIRMP)

Austen Quarry

Revision:	Date:	Status:	Prepared/Reviewed by:
10	06.02.2023	Issued for use	D. Thiedeke

Pollution Incident Response Management Plan (PIRMP)

Contents

21. ENVIRONMENTAL INCIDENT RESPONSE–POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

21.1 PURPOSE

C&A Hy-Tec Quarries have systems in place to ensure all environmental/pollution incidents and hazards are controlled and monitored in line with the relevant state legislation.

21.2 SCOPE

This element applies to all C&A Hy-Tec Quarry employees, contractors, sub-contractors and visitors to ensure that all individuals are aware of requirements with regards to environmental incident issues. This element is used in conjunction with ABL-HSE-GSS-11 for reporting. If a pollution incident occurs in the course of an activity, so that material harm to the environment (within the meaning of **Part 5.7 – Duty to notify pollution incidents -** section 147 – NSW POEO Act) is caused or threatened, the person carrying on the activity must immediately implement the site's pollution incident response management plan in relation to the activity required by this Part and report any incident / incidents that cause or threaten material harm **Immediately** after becoming aware of the incident.

21.3 PROCEDURE

All hazards relating to human health or the environment will be described in the Environmental Hazard Management Matrix (Appendix 8G). The details of the pre-emptive action to be taken to minimize or prevent any risk of harm to human health or the environment arising out of the relevant activity will be recorded in a JHA (Appendix 7C) and/or a Risk Assessment (Appendix 7D). Risks will be minimised using the Risk Management Process (Appendix 7K).

An inventory of potential pollutants on the premises will be recorded in a Hazardous Substance Register (Appendix 17B). This register will also include the quantity and location of the pollutant.

A description of the safety equipment or other devices that are used to minimize the risks to human health or the environment and to contain or control a pollution incident are listed in the PPE Equipment Matrix (Appendix 19B) and Hazard Register (Appendix 7F).

The names, positions and contact details of key individuals at the quarry are kept in the Management Structure Register (Appendix 4B).

The contact details of each relevant authority are required to be available and displayed. Examples of required authorities are below:

(a) EPA/OEH
(b) Local Council
(c) Local DPI office
(d) Safe Work
(e) Fire and Rescue
(f) Water Catchment Authority
(g) Ministry of Health
(h) Department of Agriculture, Water and the Environment

A neighbourhood contact list will be maintained at the site. In an emergency incident, the appropriate neighbours will be contacted by the Quarry Manager or delegate and will be updated as required by the Quarry Manager / delegate. Constant communication such as 2-way radios, mobile phones and Business Communication (Toolbox) Meetings etc. (Appendix 6B) will be used as early warning mechanisms to communicate with site staff and management throughout the incident or other times.

An Environmental Incident Definition and Response Flow Chart (Appendix 21A) has been produced for guidance on the process of dealing with a pollution incident. "Pollution" means:

(a) water pollution, or
(b) air pollution, or
(c) noise pollution, or
(d) land pollution.

Definition - "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.

The mine plan (Appendix 3B) will show the location of the premises with the property boundary and any other relevant detail.
The qualifications and training competencies of all employees will be recorded as required in the Training Register (Appendix 11F).

It is a legislative requirement for this plan to be tested and updated on an annual basis and within one month of an incident. To complete this requirement a Pollution Incident Response Drill Report (Appendix 21B) has been prepared. The checklist includes the major elements of the plan that require testing. This PIRMP is to be reviewed and updated as required at least annually to ensure that incident response systems are fully functioning and are ready to be implemented if an incident occurs. This requirement shall be listed as an action item and scheduled on the environmental compliance planner. Training records should be stored on site and in the Hy-Tec Intranet data base.
The plan will be controlled and reviewed in accordance with Element 5. Any changes will be recorded along with the date in the SMS Amendment Sheet (Appendix 1A).

21.4 References

- *Environmental Protection Act 1994*
- *Protection of the Environment Operations Act 1997*
- *Protection of the Environment Operations (General) Amendment (Pollution Incident Response Management Plans) Regulation 2012*

"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.

Meaning of material harm to the environment

(1) For the purposes of this Part:

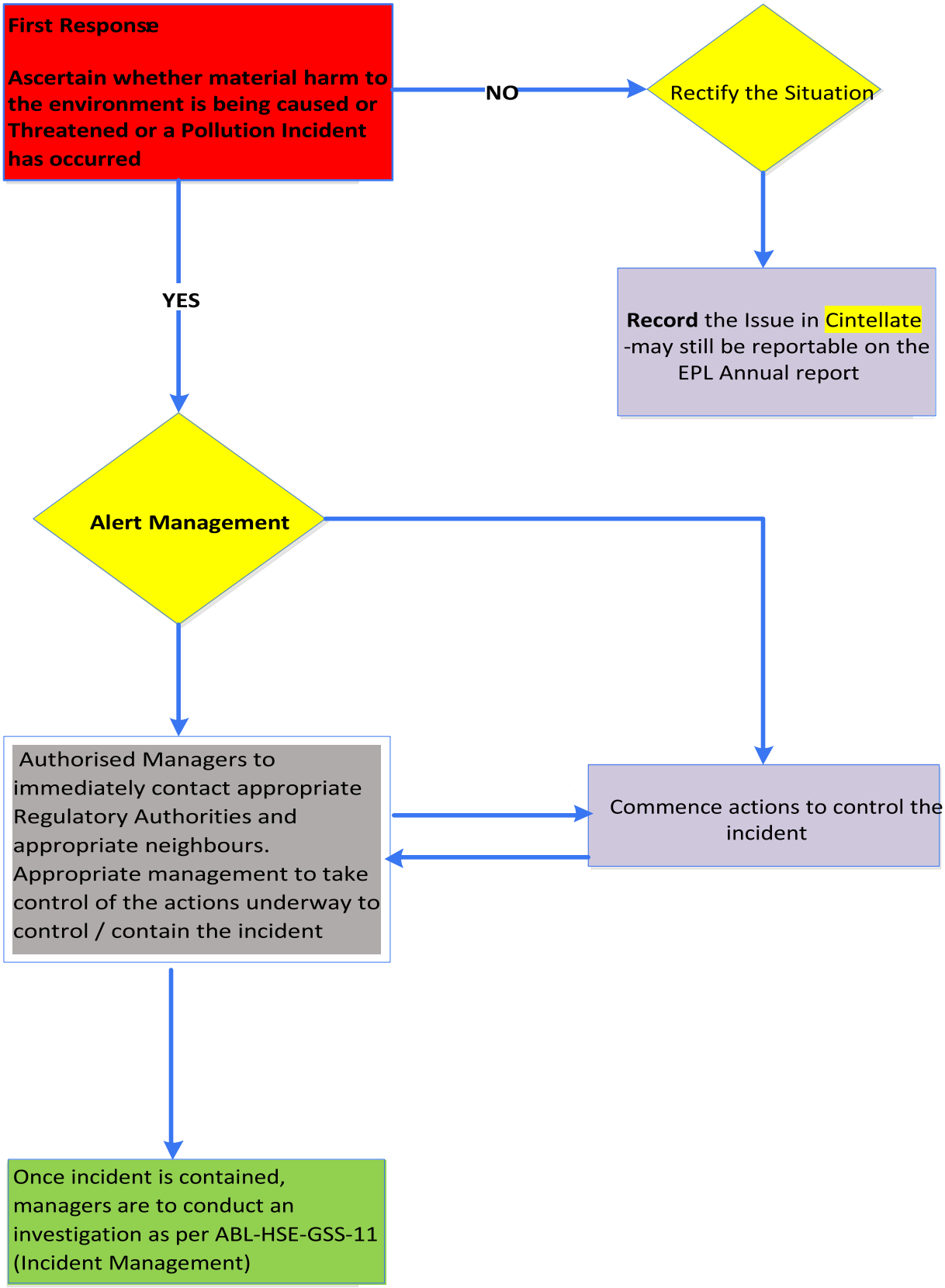
(a) harm to the environment is material if:

(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.

(2) For the purposes of this Part, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.


First Response
Ascertain whether material harm to the environment is being caused or Threatened or a Pollution Incident has occurred
NO
Rectify the Situation
Record the Issue in Cintellate -may still be reportable on the EPL Annual report
YES
Alert Management
Authorised Managers to immediately contact appropriate Regulatory Authorities and appropriate neighbours. Appropriate management to take control of the actions underway to control / contain the incident
Commence actions to control the incident
Once incident is contained, managers are to conduct an investigation as per ABL-HSE-GSS-11 (Incident Management)

Appendix 21B

Environmental Response Plan Drill Report

Site/Location:		**Date of Drill / Environmental Issue**	
Method Used for initiating response:			
Time of Environmental incident:		**Was Management contacted?**	
Was Incident contained?		**Method/equipment used?**	
Was regulatory Authority notified?		**Name of reporting person?**	
Name of regulatory authority reported to		**Contact person at Reg. Authority?**	
Was incident adequately cleaned up?		**Was waste disposed of correctly?**	

Comments on the Drill / Environmental Emergency:

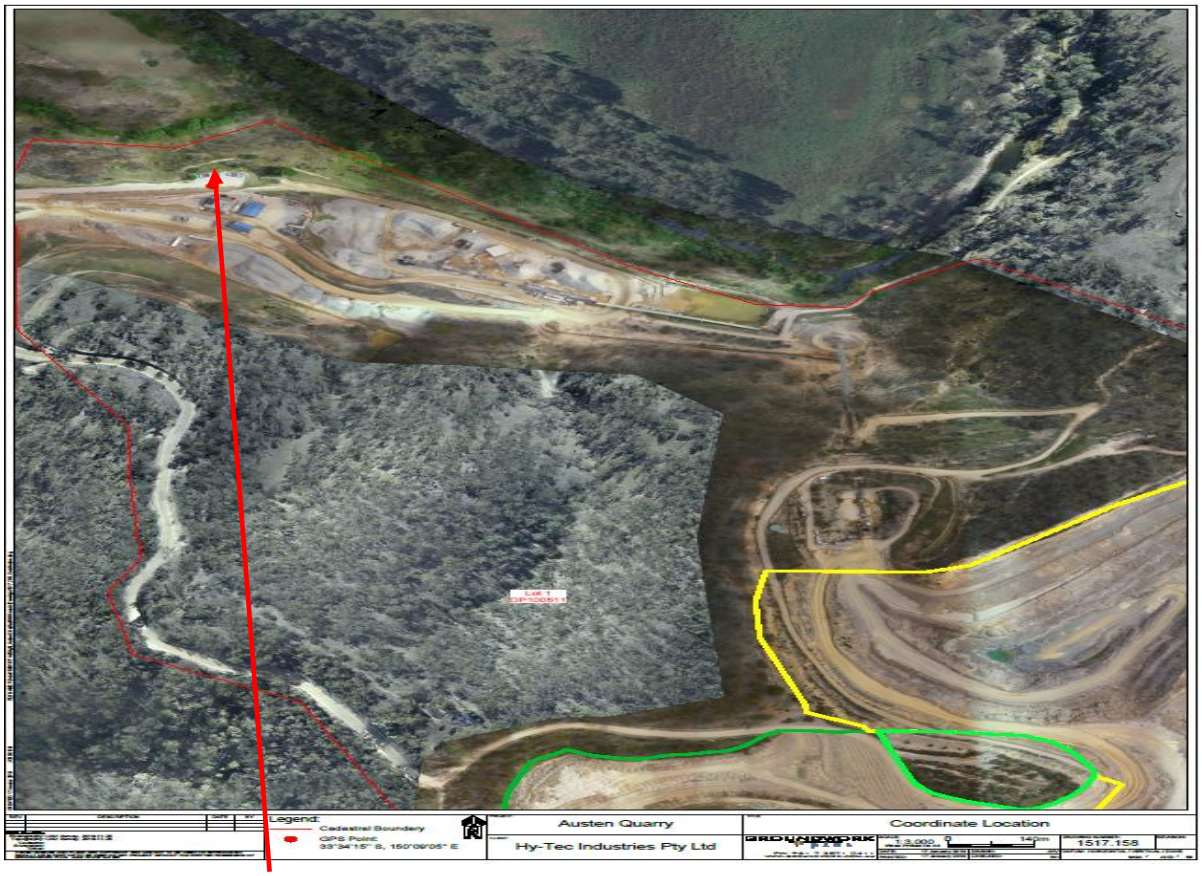
Corrective actions to be adopted as a result of this Drill / Environmental Emergency	By whom	By Date

Report Compiled by		**Date**	

EXTERNAL EMERGENCY RESPONSE ORGANISATIONS			
Service	Emergency Contact	General Enquiry	Address
Ambulance	**000**		21/15 Railway Pde, Lithgow
Department of Industry – **Water**	**02 9338 6600**	02 9338 6600	www.industry.nsw.gov.au/water
Department Planning & Environment	**1300 305 695**		www.planning.nsw.gov.au
Depart. P & E – Resources Regulator	**1300 814 609**		www.resourcesregulator.nsw.gov.au
Doctor – Coal Services	N/A	02 6350 1050	3 Proto Ave, Lithgow
E.P.A	**131 555**		
Fire Brigade	**000**	02 6353 1862	58 Cook St Lithgow
Lithgow Hospital	**000**	02 6350 2300	Great Western Hwy Lithgow.
Lithgow Council		02 6354 9999	180 Mort St, Lithgow
Poisons Information Centre	N/A	13 11 26	www.poisonsinfo.nsw.gov.au
Police	**000**	02 6352 8399	244 Mort St Lithgow
Ministry of Health		02 9391 9000	www.health.nsw.gov.au
SafeWork NSW	**13 10 50**	13 10 50	contact@safework.nsw.gov.au
State Emergency Service	**13 25 00**	N/A	Lithgow

If any emergency service (**Police, Fire or Ambulance**) is called to site, a nominated employee must meet the response team at the front gate (391 Jenolan Caves Road) to the Quarry and escort them to the required location.

List of Neighbourhood contacts to be maintained at the Quarry – **For privacy reasons, this list is not to be published.**



Helicopter Directions For emergency purposes

Latitude & Longitude 33˚34'15'' South 150˚09'05'' East – Carpark opposite Quarry Office

Being 33 degrees, 34 minutes and 15 seconds south / 150 degrees, 9 minutes and 5 seconds East

Appendix 4B Register of persons occupying positions in the Management Structure

Position	Name	Start Date	Responsible for activating Incident Response Plan (Y/N)	Authority to Notify (Y/N)	Responsible to Manage Pollution Incident (Y/N)	Finish Date
Chief Operating Officer – Concrete, Aggregates & Masonry	Andrew Dell (02) 9751 7115 / 0417 607 450	N/A	N	Y	N	
National Planning & Development Manager	Darryl Thiedeke (02) 9751 7130 / 0409 652 022	N/A	N	Y	N	
Group Manager – Health, Safety & Environment	Steven De Musso 0439 740 293	N/A	N	Y	N	
General Manager NSW	David Cilento (02) 9751 7143 / 0418 162 498	N/A	N	Y	N	
Business Partner Health and Safety – CAM (NSW)	Joe Perulero 0479 188 381	N/A	N	Y	N	
Manager – Quarry Operations NSW	Ethan Pettiford 0437 147 778	March 2013	Y	Y	N	
Quarry Manager	Craig McDonald 0405 123 700	June 2006	Y	Y	Y	
Quarry Supervisor	Michael Greenwood 0418 678 323	April 2021	Y	N	Y	
Quarry Supervisor	Luke McNamara 0429394197	May 2022	Y	N	Y	
Lab Technician	Michael Fry 0451146306	August 2022	Y	N	N	
Administration	Lisa Cullen 0408 279 462	March 2020	Y	N	N	

Appendix 4B Register of persons occupying positions in the Management Structure

Primary Plant Operator	Brett Barker	August 2022	Y	N	N	
Quarry Worker	John Ray	September 2022	Y	N	N	
Quarry Worker	Bob Rowlandson	November 2007	Y	N	N	
Quarry Worker	Alan Eckford	Jan 2008	Y	N	N	
Quarry Worker	Peter Ray	May 2008	Y	N	N	
Quarry Worker	Duncan Stanfield	June 2021	Y	N	N	
Quarry Worker	Chris O'Malley	August 2010	Y	N	N	
Quarry Worker	Dylan Holland	June 2021	Y	N	N	
Quarry Worker	Sean Markwick	December 2022	Y	N	N	
Quarry Worker	Mark Cullen	Jan 2017	Y	N	N	
Quarry Worker	Neil Gearside	August 2022	y	N	N	
Quarry Worker	Robert Sheather	Jan 2023	Y	N	N	
Quarry Worker	Brendan Neaves	Sept 2017	Y	N	N	
Quarry Worker	Shannon Rhodes	Jul 2018	Y	N	N	
Quarry Worker	Craig Silcock	Aug 2018	Y	N	N	
Sales Representative	Anna Antonis (0439103570)	N/A	Y	N	N	
Sales Representative	Peter Mckee (0417 452 098)	N/A	Y	N	N	
Electrician	Paul Taylor (0409 514 993)	N/A	Y	N	N	
Plant Maintenance	Mark Gracey (0417727227)	N/A	Y	N	N	

Appendix 3B – MINE PLAN / EQUIPMENT LOCATION and EMERGENCY RESPONSE

Haul Road Design
Gradient 1:10
Width 5.0m
Bunding 1.5m

Normal Working Design:
Face Height <15m

Average production
450TPH

Annual Production Limit
1,600,000 tonnes sold

Austen Quarry Address;
391 Jenolan Caves Road,
Hartley , NSW, 2790

Contact Number;
02 6355 0268

NSW Quarry Operations Manager;
Ethan Pettiford

Austen Quarry Production Manager – Craig McDonald
Supervisor – Michael Greenwood

Drawn by:
Ethan Pettiford

Updated March 2021

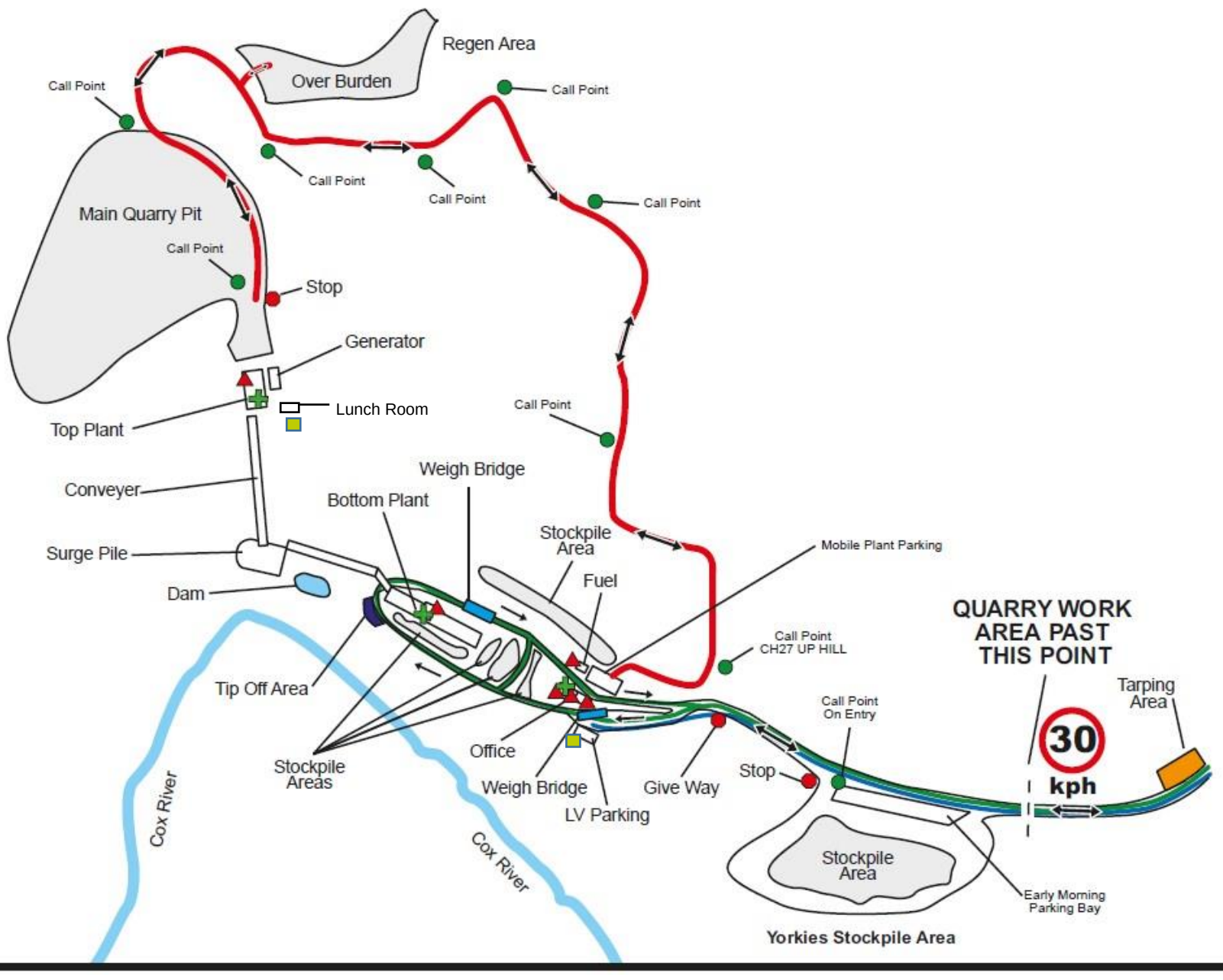
Approved by: Darryl Thiedeke

LEGEND

- FIRE EXTINGUISHER
- FIRST AID KIT
- STOP/ GIVE-WAY
- CALL POINT
- NO ENTRY
- GENERAL TRAFFIC DIRECTION
- TIP OFF AREA
- TARPING AREA
- DUMP TRUCKS QUARRY ACCESS/LOAD/ EXIT
- HAUL TRUCKS QUARRY ACCESS/LOAD/ EXIT
- LV/Pedestrian Access road
- EMERGENCY EVACUATION AREA

AUSTEN QUARRY

391 JENOLAN CAVES ROAD



STOP THINK ACT SAFELY

EMERGENCY CONTACT DETAILS:
Plant Manager - 0418 292 843 or Dial 000

AUSTEN QUARRY
391 JENOLAN CAVES ROAD, HARTLEY
P 02 6355 0268

EMERGENCY RESPONSE

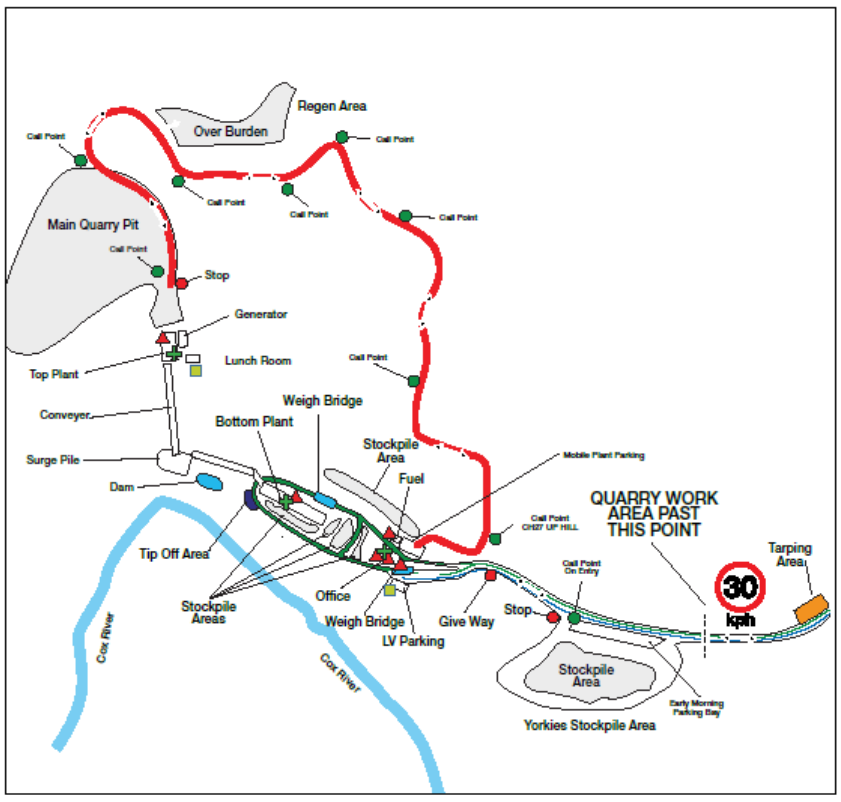
KEEP CALM FOLLOW THE PLANT SUPERVISOR'S INSTRUCTIONS

- ALL VISITORS & CONTRACTORS MUST REPORT DIRECTLY TO THE SITE OFFICE.
- NO UNAUTHORISED ACCESS IS PERMITTED!

First Aid Personnel
Rodd Welsh, Craig McDonald, Stewart Gunn, Peter Horner.

Company Doctor
Coal Services Lithgow - 6350 1050

General Contact &/or Complaints, please ring 02 63550268.



FIRST EMERGENCY STEPS

ASSESS
- Does a danger still exist?
- What are the injuries?
- What help is required?

ALERT
Phone emergency services

ASSIST
- Provide First Aid and comfort
- Direct emergency services

EVACUATION PROCEDURE

1. Proceed via safest route to the EMERGENCY ASSEMBLY AREA
2. Assist mobility impaired personnel as requested.
3. Ensure your presence is noted at the Emergency Assembly Area.
4. Do not re-enter the Plant or buildings until instructed to do so by the Emergency Service Personnel or Plant Manager.

LEGEND

- Fire Extinguisher
- First Aid Kit
- Stop / Give-Way
- Call Point
- No Entry
- General Traffic Direction
- Tip Off Area
- Tarping Area
- Dump Trucks Quarry Access / Load / Exit
- Haul Trucks Quarry Access / Load / Exit
- LV / Pedestrian Access Road
- Emergency Evacuation Area

ChemAlert Colour Ratings

ChemAlert's distinct colour rating system to allows for an easy visual interpretation of the hazard level associated with chemical substances.

The three distinct colours and their meaning are as follows:

GREEN

Low Health Hazard with normal use.

User Check List:

- Read the SDS and ChemAlert report thoroughly before using the product
- Clarify any concerns you might have about the product or its application
- If PPE is specified, are workers experienced in its use?

AMBER

Moderate Health Hazard with normal use.

User Check List:

- Read the SDS and ChemAlert report thoroughly before using the product
- Clarify any concerns you might have about the product or its application
- Is there a safer substitute?
- Is the area adequately ventilated?
- Does the area of application need to be isolated?
- Is air monitoring required to evaluate exposure levels?
- Have safe work practices or procedures been established?
- If PPE is specified, are workers experienced in its use?

RED

High Health Hazard with normal use.

User Check List:

- Read the SDS and ChemAlert report thoroughly before using the product.
- Clarify any concerns you might have about the product or its application.
- Does the product need to be used (can the product or task be eliminated)?
- Is there a safer substitute?
- Is the area adequately ventilated?
- Does the area of application need to be isolated?
- Is there a first aid officer or nurse available?
- Is air monitoring required to evaluate exposure levels?
- Have safe work practices or procedures been established?
- Are medical records kept for those handling this product?
- If PPE is specified, are workers experienced in its use?

ChemAlert.

Stock Register

(Location Name: Adbri Limited/ CONCRETE & AGGREGATES/ NEW SOUTH WALES/ HY-TEC/ AUSTEN QUARRY, Child Locations Included)
(Sort By: Product Name, Filter By: None)

Stock Number	Product Name				Supplier (Emergency Contact)				
	Hazardous	Dangerous Good	UN number	Packing Group	Hazchem Code	Status	In Stock Inventory	Risk Assessment	SDS Date
2423	298 ASPHALT EMULSION				WESTERN COLLOID S.C., INC. (1-323-231-8292)				
	Yes	No	-	-	-	None	Yes	-	07-Oct-2015
2388	636-LINE BRITISH PAINTS H2O ENAMEL SEMI GLOSS				DULUX GROUP (AUSTRALIA) PTY LTD (1800 220 770/ 0800 220 770)				
	Yes	No	-	-	-	None	Yes	-	16-Jul-2021
2387	637-LINE BRITISH PAINTS H2O ENAMEL GLOSS				DULUX GROUP (AUSTRALIA) PTY LTD (1800 220 770/ 0800 220 770)				
	No	No	-	-	-	None	Yes	-	14-Apr-2020
569	ACETYLENE (DISSOLVED)				AIR LIQUIDE AUSTRALIA LIMITED (1800 800 055, 1800 812 588)				
	Yes	DG 2.1	UN 1965	-	2YE	None	Yes	-	07-Apr-2022
2074	ADBLUE				AUSBLUE (1300 287 258)				
	No	No	-	-	-	None	Yes	-	05-Oct-2020
1773	AIR TOOL OIL				GULF WESTERN OIL ((02) 9673 9600/ 13 11 26)				
	No	No	-	-	-	None	Yes	-	30-Sep-2020
2107	AJAX SPRAY N WIPE ANTIBACTERIAL ALL PURPOSE CLEANER SPRAY APPLE BLOSSOM AND CITRUS				COLGATE-PALMOLIVE PTY LTD ((02) 9037 2994)				
	Yes	No	-	-	-	None	Yes	-	23-May-2018
2329	ALPHA SP 150				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	23-Feb-2022
941	ALPHA SP 220				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	28-Feb-2022
2400	ALPHASYN EP 150				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	02-Jul-2019
2401	ALPHASYN EP 220				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	02-Jul-2019
2405	ALPHASYN EP 460				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	02-Jul-2019
1792	AMMONIUM NITRATE				ORICA AUSTRALIA PTY LTD (1800 033 111)				
	Yes	DG 5.1	UN 1942	PG III	1Y	None	Yes	-	09-Nov-2021
2397	AMPLIFY DIESEL				AMPOL AUSTRALIA PETROLEUM PTY LTD (FORMERLY CALTEX AUSTRALIA) (1800 033 111)				
	Yes	DG 9	UN 3082	PG III	•3Z	None	Yes	-	15-Oct-2020

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Stock Register

(Location Name: Adbri Limited/ CONCRETE & AGGREGATES/ NEW SOUTH WALES/ HY-TEC/ AUSTEN QUARRY, Child Locations Included)
(Sort By: Product Name, Filter By: None)

Stock Number	Product Name				Supplier (Emergency Contact)				
	Hazardous	Dangerous Good	UN number	Packing Group	Hazchem Code	Status	In Stock Inventory	Risk Assessment	SDS Date
1742	ARMORALL				ENVIRO CHEMICALS (AUSTRALIA) PTY LTD (1800 033 111)				
	No	No	-	-	-	None	Yes	-	01-Jan-2022
2395	AUTOCHEM HEAVY DUTY ENGINE DEGREASER				CHEMTOOLS PTY LTD (1300 738 250/ 13 11 26)				
	Yes	No	-	-	-	None	Yes	-	31-Jul-2020
497	AUTOMOTIVE DIESEL FUEL				AMPOL AUSTRALIA PETROLEUM PTY LTD (FORMERLY CALTEX AUSTRALIA) (1800 033 111)				
	Yes	No	-	-	-	None	Yes	-	23-Jun-2021
2340	BP KOMATSU HYDRAULIC OIL 46				KOMATSU AUSTRALIA (+61 2 9795 8222)				
	No	No	-	-	-	Approved	Yes	-	11-Jan-2019
2392	BP KOMATSU LITHIUM EP GREASE G2-LI				KOMATSU AUSTRALIA (+61 2 9795 8222)				
	No	No	-	-	-	None	Yes	-	27-Jun-2018
836	BRAKE AND CLUTCH FLUID				AMPOL AUSTRALIA PETROLEUM PTY LTD (FORMERLY CALTEX AUSTRALIA) (1800 033 111)				
	No	No	-	-	-	None	Yes	-	27-May-2021
1797	BULK CENTRA PRODUCTS				ORICA AUSTRALIA PTY LTD (1800 033 111)				
	Yes	DG 1.1D	UN 0241	-	E	None	Yes	-	17-Feb-2021
2389	C4 HYDRAULIC 10W				GULF WESTERN OIL ((02) 9673 9600/ 13 11 26)				
	No	No	-	-	-	None	Yes	-	31-May-2018
722	CARBON DIOXIDE (GAS & LIQUID)				CHUBB FIRE & SECURITY AUSTRALASIA (1300 369 309)				
	Yes	DG 2.2	UN 1044	-	2	None	Yes	-	16-Dec-2022
2330	CASTROL CARECLEAN LIME				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	Yes	No	-	-	-	None	Yes	-	24-Jan-2019
2419	CASTROL MINE GREASE				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	20-Jun-2021
2331	CASTROL MULTIPURPOSE DEGREASER				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	Yes	No	-	-	-	None	Yes	-	06-Jan-2022
2193	CASTROL PREMIUM COOL PLUS 50				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	Yes	No	-	-	-	None	Yes	-	29-Jul-2021
237	CASTROL PREMIUM HEAVY DUTY				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	29-Jun-2021
194	CASTROL RX SUPER 15W-40				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	Approved	Yes	-	15-May-2018

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Stock Register

(Location Name: Adbri Limited/ CONCRETE & AGGREGATES/ NEW SOUTH WALES/ HY-TEC/ AUSTEN QUARRY, Child Locations Included)
(Sort By: Product Name, Filter By: None)

Stock Number	Product Name				Supplier (Emergency Contact)				
	Hazardous	Dangerous Good	UN number	Packing Group	Hazchem Code	Status	In Stock Inventory	Risk Assessment	SDS Date
2334	CASTROL TECTION 15W-40				BP LUBRICANTS USA INC. (1 (800) 447-8735, Outside the US: +1 703-527-3887 (CHEMTREC))				
	No	No	-	-	-	None	Yes	-	04-Sep-2019
848	CASTROL TFC 410				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	29-Jan-2021
1924	CASTROL TFC 430				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	20-Oct-2020
2098	CASTROL TFC 450				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	20-Oct-2020
1879	CHUBB ABE DRY CHEMICAL POWDER FIRE EXTINGUISHER				CHUBB FIRE & SECURITY AUSTRALASIA (1300 369 309)				
	Yes	DG 2.2	UN 1044	-	-	None	Yes	-	16-Dec-2022
2413	CHUBB BE DRY CHEMICAL POWDER FIRE EXTINGUISHER				CHUBB FIRE & SECURITY AUSTRALASIA (1300 369 309)				
	Yes	DG 2.2	UN 1044	-	-	None	Yes	-	16-Dec-2022
2412	CHUBB CLASS-D FIRE EXTINGUISHER				CHUBB FIRE & SECURITY AUSTRALASIA (1300 369 309)				
	Yes	DG 2.2	UN 1044	-	-	None	Yes	-	23-Mar-2018
2415	CHUBB ECO FF FOAM FIRE EXTINGUISHER				CHUBB FIRE & SECURITY AUSTRALASIA (1300 369 309)				
	Yes	DG 2.2	UN 1044	-	-	None	Yes	-	16-Dec-2022
2416	CHUBB F3 FOAM MOBILE FIRE EXTINGUISHER				CHUBB FIRE & SECURITY AUSTRALASIA (1300 369 309)				
	Yes	DG 2.2	UN 1044	-	-	None	Yes	-	14-May-2018
2414	CHUBB FOAM FIRE EXTINGUISHER				CHUBB FIRE & SECURITY AUSTRALASIA (1300 369 309)				
	Yes	DG 2.2	UN 1044	-	-	None	Yes	-	PRODUCT OBSOLETE
2361	CLEANER JIF 375ML REGULAR				OFFICEMAX NEW ZEALAND LIMITED (+64 800 700 112/ +61 3 9573 3188)				
	Yes	No	-	-	-	None	Yes	-	01-Nov-2019
2410	COMPANION				SST AUSTRALIA PTY LTD (1800 638 556)				
	Yes	DG 8	UN 1760	PG II	2X	None	Yes	-	16-Aug-2022
1791	CORDTEX DETONATING CORDS				ORICA AUSTRALIA PTY LTD (1800 033 111)				
	Yes	DG 1.1D	UN 0065	-	E	None	Yes	-	27-Jul-2022
2364	DETTOL HAND SANITISER				RB (HYGIENE HOME) AUSTRALIA PTY LTD (13 11 26 (PIC))				
	Yes	DG 3	UN 1170	PG III	•2Y	None	Yes	-	13-Apr-2020
2066	DETTOL LIQUID HAND WASH				RB (HYGIENE HOME) AUSTRALIA PTY LTD (13 11 26 (PIC))				
	Yes	No	-	-	-	None	Yes	Available	14-Oct-2019

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Stock Register

(Location Name: Adbri Limited/ CONCRETE & AGGREGATES/ NEW SOUTH WALES/ HY-TEC/ AUSTEN QUARRY, Child Locations Included)
(Sort By: Product Name, Filter By: None)

Stock Number	Product Name				Supplier (Emergency Contact)				
	Hazardous	Dangerous Good	UN number	Packing Group	Hazchem Code	Status	In Stock Inventory	Risk Assessment	SDS Date
2391	DY-MARK HEAVY DUTY DEGREASER 400G				DY-MARK AUSTRALIA ((07) 3327 3099)				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	01-Nov-2019
2393	DY-MARK ZINC GUARD SILVER ZINC				DY-MARK AUSTRALIA ((07) 3327 3099)				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	01-Nov-2019
1187	EXEL DETONATORS (1.1B PACKAGING)				ORICA AUSTRALIA PTY LTD (1800 033 111)				
	Yes	DG 1.1B	UN 0360	-	E	None	Yes	-	11-Apr-2018
2386	GALMET SPRAYPAINT AEROSOL (ALL COLOURS EXCEPT SILVER)				ITW POLYMERS & FLUIDS PTY LTD (1800 385 556 / 0438 465 960/ 1800 039 008/ (03) 9573 3112)				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	01-Nov-2019
2411	GASSER 2, GASSIT, UGS 400 SERIES GASSER (UNDERGROUND GASSER)				ORICA AUSTRALIA PTY LTD (1800 033 111)				
	Yes	No	-	-	-	None	Yes	-	27-Feb-2019
870	GLEN 20 ALL IN ONE SPRAY DISINFECTANT - ALL SCENTS				RB (HYGIENE HOME) AUSTRALIA PTY LTD (13 11 26 (PIC))				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	23-Jan-2020
2359	HARPIC LIQUID FRESH POWER – TROPICAL BLOSSOM				RB (HYGIENE HOME) AUSTRALIA PTY LTD (13 11 26 (PIC))				
	Yes	No	-	-	-	Approved	Yes	-	31-Jan-2020
207	HHS2000				WURTH AUSTRALIA PTY LTD (1300 657 765/ 13 11 26)				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	20-Sep-2021
2409	HOT DEVIL BUTANE				LN MARKETING P/L (03 9775 0713)				
	No	DG 2.1	UN 1057	-	2W	None	Yes	-	31-May-2018
2332	HYSPIN AWH-M 32				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	27-Nov-2020
2333	HYSPIN AWS 46				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	21-Jul-2022
816	INOX-MX3 AEROSOL				CANDAN INDUSTRIES PTY LTD ((07) 5574 8205)				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	28-Feb-2022
917	KEROSENE				GLENDALE PACKAGING PTY LTD (0401 699 204)				
	Yes	DG 3	UN 1223	PG III	3Y	None	Yes	-	30-Jun-2019
1999	KOMATSU AXLE OIL AXO80				BP AUSTRALIA PTY LTD (1800 14 14 74 within Australia or +61 2 8014 4558)				
	No	No	-	-	-	None	Yes	-	**17-Jan-2018**
1998	KOMATSU EO15W40-DH				BP AUSTRALIA PTY LTD (1800 14 14 74 within Australia or +61 2 8014 4558)				
	Yes	No	-	-	-	None	Yes	-	12-Jul-2021

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Stock Register

(Location Name: Adbri Limited/ CONCRETE & AGGREGATES/ NEW SOUTH WALES/ HY-TEC/ AUSTEN QUARRY, Child Locations Included)
(Sort By: Product Name, Filter By: None)

Stock Number	Product Name				Supplier (Emergency Contact)				
	Hazardous	Dangerous Good	UN number	Packing Group	Hazchem Code	Status	In Stock Inventory	Risk Assessment	SDS Date
2399	KOMATSU EO15W40-DH				KOMATSU AUSTRALIA (+61 2 9795 8222)				
	No	No	-	-	-	None	Yes	-	27-Jun-2018
2402	KOMATSU GENUINE ENGINE COOLANT (CONCENTRATE)				KOMATSU AMERICA CORP. (+1 352 323 3500)				
	Yes	DG 9	UN 3082	PG III	•3Z	None	Yes	-	07-Oct-2020
2407	KOMATSU GENUINE HYDRAULIC OIL HO-MVK EX				KOMATSU LTD (+81 3 5561 2952; +81 3 5561 107 8414)				
	No	No	-	-	-	None	Yes	-	01-Jul-2019
1467	KOMATSU HYDRAULIC OIL 46				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	Available	11-Feb-2020
2406	KOMATSU HYPER GREASE G2-TE				KOMATSU AUSTRALIA (+61 2 9795 8222)				
	Yes	No	-	-	-	None	Yes	-	02-Nov-2020
2403	KOMATSU POWERTRAIN OIL 30				KOMATSU AUSTRALIA (+61 2 9795 8222)				
	No	No	-	-	-	None	Yes	-	11-Jan-2019
1997	KOMATSU POWERTRAIN OIL TO-10				CASTROL AUSTRALIA PTY LTD ((02) 8014 4558; 1800 141 474)				
	No	No	-	-	-	None	Yes	-	29-Jan-2021
1206	KOMATSU POWERTRAIN OIL TO-30				BP AUSTRALIA PTY LTD (1800 14 14 74 within Australia or +61 2 8014 4558)				
	No	No	-	-	-	None	Yes	Available	02-Nov-2020
2408	LECTRA CLEAN (AEROSOL) (POST 1 JULY 2018)				CRC INDUSTRIES (AUST) PTY LIMITED (13 11 26 (PIC))				
	Yes	DG 2.2	UN 1950	-	2YE	None	Yes	-	PRODUCT OBSOLETE
2382	LUDOWICI EZITROWEL PART A				FLSMIDTH (1800 039 008)				
	Yes	DG 6.1	UN 2206	PG III	2X	None	Yes	-	**20-Nov-2013**
2383	LUDOWICI EZITROWEL PART B				FLSMIDTH (1800 039 008)				
	Yes	No	-	-	-	None	Yes	-	**20-Nov-2013**
2417	MEGAPOXY 108 - PART A				VIVACITY ENGINEERING PTY LTD ((02) 9875 3044)				
	Yes	DG 9	UN 3082	PG III	•3Z	None	Yes	-	**16-Jan-2018**
2418	MEGAPOXY 108 - PART B				VIVACITY ENGINEERING PTY LTD ((02) 9875 3044)				
	Yes	DG 8	UN 2289	PG III	2X	None	Yes	-	**16-Jan-2018**
2394	MOLYTEC NON-CHLORINATED BRAKE CLEANER				MOLYTEC AUSTRALIA P/L (1300 452 355)				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	15-Nov-2022
159	MOLYTEC ZINC COTE				MOLYTEC AUSTRALIA P/L (1300 452 355)				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	15-Nov-2022

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Stock Register

(Location Name: Adbri Limited/ CONCRETE & AGGREGATES/ NEW SOUTH WALES/ HY-TEC/ AUSTEN QUARRY, Child Locations Included)
(Sort By: Product Name, Filter By: None)

Stock Number	Product Name				Supplier (Emergency Contact)				
	Hazardous	Dangerous Good	UN number	Packing Group	Hazchem Code	Status	In Stock Inventory	Risk Assessment	SDS Date
2424	NORTHFORK TOILET CLEANER				ACCO BRANDS AUSTRALIA PTY LTD (13 11 26 (Poisons Information Centre))				
	Yes	No	-	-	-	None	Yes	-	23-Apr-2021
2362	NORTHFORK TOILET RIM FRESHENER				ACCO BRANDS AUSTRALIA PTY LTD (13 11 26 (Poisons Information Centre))				
	No	No	-	-	-	None	Yes	-	02-Dec-2022
2396	OSI VP275 MULTIPURPOSE SILICONE SEALANT				HENKEL AUSTRALIA PTY LTD (1800 032 379)				
	Yes	No	-	-	-	None	Yes	-	09-Sep-2021
2365	OUST 3IN1 FROM GLADE HOSPITAL GRADE DISINFECTANT AEROSOL - OUTDOOR SCENT				S.C. JOHNSON & SON PTY. LTD. (AU) (13 11 26 (Poisons Information Centre)/ (02) 9428 9111)				
	Yes	DG 2.1	UN 1950	-	2YE	None	Yes	-	09-Nov-2021
570	OXYGEN, ALIGAL 3, LASAL 2003				AIR LIQUIDE AUSTRALIA LIMITED (1800 800 055, 1800 812 588)				
	Yes	DG 2.2 / 5.1	UN 1072	-	2S	None	Yes	-	21-Oct-2021
2363	PALMOLIVE ANTIBACTERIAL DISHWASHING LIQUID LEMON				COLGATE-PALMOLIVE PTY LTD ((02) 9037 2994)				
	Yes	No	-	-	-	None	Yes	-	PRODUCT OBSOLETE
1186	PENTEX BOOSTERS				ORICA AUSTRALIA PTY LTD (1800 033 111)				
	Yes	DG 1.1D	UN 0042	-	E	None	Yes	-	20-Apr-2022
2425	PINE O CLEEN MULTIPURPOSE CLEANER TRIGGER CRISP APPLE				RB (HYGIENE HOME) AUSTRALIA PTY LTD (13 11 26 (PIC))				
	Yes	No	-	-	-	None	Yes	-	14-Feb-2020
2384	RAPIDSTICK PITBULL 201 LOW MODULUS HYBRID SEALANT				CHEMTOOLS PTY LTD (1300 738 250/ 13 11 26)				
	Yes	No	-	-	-	None	Yes	-	31-Aug-2018
1007	SEPTONE PROTECTA GRIT				ITW AAMTECH AUSTRALIA (1800 039 008)				
	No	No	-	-	-	None	Yes	-	01-Nov-2019
2385	SHELL GADUS S2 V100 3				VIVA ENERGY AUSTRALIA LTD (1800 651 818/ 13 11 26)				
	No	No	-	-	-	None	Yes	-	05-Jan-2021
2404	SHELL OMALA OIL F 460 (USA)				VIVA ENERGY AUSTRALIA LTD (1800 651 818/ 13 11 26)				
	No	No	-	-	-	None	Yes	-	20-Mar-2020
80	SHELL OMALA S2 G 150				VIVA ENERGY AUSTRALIA LTD (1800 651 818/ 13 11 26)				
	No	No	-	-	-	Approved	Yes	-	04-Mar-2020
2335	SHELL SPIRAX S4 CX 10W				VIVA ENERGY AUSTRALIA LTD (1800 651 818/ 13 11 26)				
	No	No	-	-	-	None	Yes	-	26-May-2022

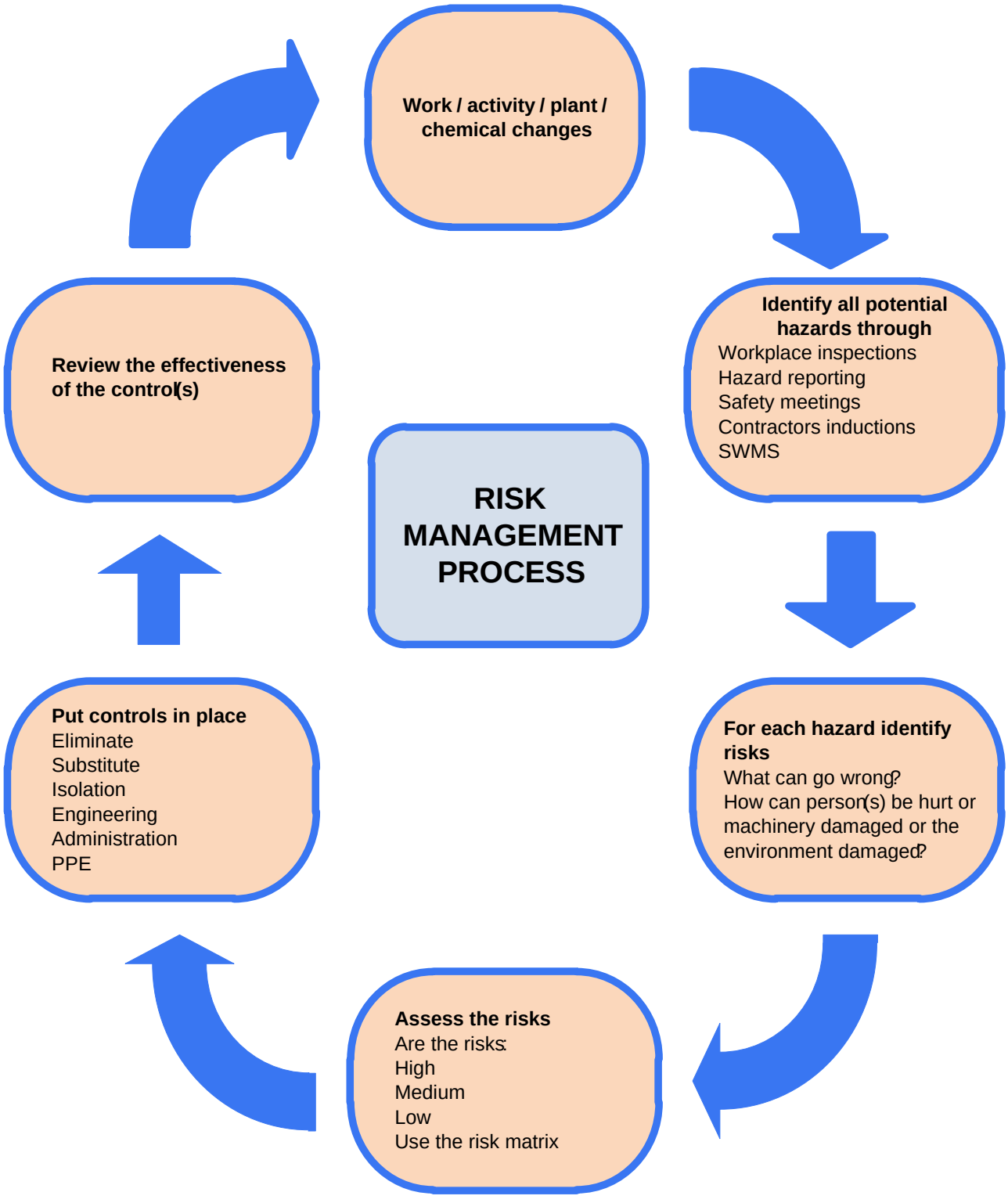
Stock Register

(Location Name: Adbri Limited/ CONCRETE & AGGREGATES/ NEW SOUTH WALES/ HY-TEC/ AUSTEN QUARRY, Child Locations Included)
(Sort By: Product Name, Filter By: None)

Stock Number	Product Name				Supplier (Emergency Contact)				
	Hazardous	Dangerous Good	UN number	Packing Group	Hazchem Code	Status	In Stock Inventory	Risk Assessment	SDS Date
2390	ULTRA CLEAR COMPRESSOR 46				GULF WESTERN OIL ((02) 9673 9600/ 13 11 26)				
	No	No	-	-	-	None	Yes	-	31-May-2018
2398	ULTRION 8187				ECOLAB PTY LTD (1800 205 506, +64 7 958 2372)				
	No	No	-	-	-	None	Yes	-	16-Nov-2018
1259	WINDEX GLASS & MORE MULTI-SURFACE				S.C. JOHNSON & SON, INC. (+1 866 231 5406)				
	No	No	-	-	-	None	Yes	Available	20-Jun-2019

Appendix 7K

Risk Management Process



ABL-HSE-GSS-07-01 RISK ASSESSMENT TOOL

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Risk Assessment Guidance

Refer to consequence table in "ABL-HSE-GSS-07-04 HSE Risk Assessment Process". Only Safety examples are provided below.

CONSEQUENCE (the extent of the harm or damage with current controls in place)

Negligible	- Minor Injuries requiring First aid Treatment.
Minor	- Single or multiple injuries requiring medical treatment.
Serious	- Single or multiple injuries requiring hospitalisation and incurred a loss of more than one full shift.
Significant	- Single severe injury causing irreversible permanent disability or impairment or single fatality.
Catastrophic	- Incident with short or long term effects causing multiple fatalities.

LIKELIHOOD (the chance of the situation occurring with current controls in place)

Rare	- The consequence may only occur in exceptional circumstances or 'the probability is close to zero'.
Unlikely	- The consequence is not likely to occur. There is confidence that it will not occur although it is conceivable.
Possible	- The consequence could occur sometime or 'I've heard of it happening'.
Probable	- The consequence is likely to occur. It is known to occur, or not surprised as it has happened' several times.
Very Likely	- It is almost certain that the consequence will occur. Common or frequent occurrence.

CONSEQUENCE	LIKELIHOOD				
	Rare	Unlikely	Possible	Probable	Very Likely
Negligible	1	2	4	7	11
Minor	3	5	8	12	16
Serious	6	9	13	17	20
Significant	10	14	18	21	23
Catastrophic	15	19	22	24	25

	Negligible	Minor	Serious	Significant	Catastrophic
Health & Safety	Minor Injuries requiring First aid Treatment. No ongoing health effects. Near Miss with the potential consequence for the injuries above	Single or multiple injuries requiring medical treatment No ongoing health effects. Near Miss with the potential consequence for the injuries above.	Single or multiple injuries requiring hospitalisation and incurred a loss of more than one full shift. Near Miss with the potential consequence for the injuries above.	Single severe injury causing irreversible permanent disability or impairment or single fatality. Near Miss with the potential consequence for the injuries above.	Incident with short or long term effects causing multiple fatalities. Near Miss with the potential consequence for the injuries above.
Environmental Impact	Minor incident with minimal or no lasting effects. Onsite uncontrolled release immediately contained. Clean-up completed within 12 hours. Less than 5 litre spill	Incident with minor effects on the environment. Onsite uncontrolled release not immediately contained or minor off site release. Clean-up completed within 72 hours. 10 to 20 litre spill.	Incident with medium term effects on the environment. Offsite uncontrolled release with an effect on the environment for one year.	Incident with serious environmental effects. Offsite uncontrolled release not contained causing of up to 10 years impact duration.	Catastrophic incident with impairment of the ecosystem function. Significant and identifiable risk to humans, animals and plant species.
Community	Low level incident Public concern restricted to one local complaint	Minor- medium impact issue Public concern with a small local group Potential for local media attentions	Medium impact issue Ongoing public concern with a local group or community Involvement of non-government organisation - Local media	Serious social incident Ongoing local and/or state issue. Involvement of government department/s and non-government organisations. National Media	Very Serious Incident Ongoing state or national issue. Involvement of federal government department/s and non-government organisations. National media
Cost or Damages	**< $10K**	$10K - $50K	$50K - $150K	$150K - $1M	**> $1M**
Investigation Team	Local Supervisor or Manager OHS representative or member of the OHS committee	Plant Manager Team Leader / Supervisor OHS Representative or Member of the OHS committee	Plant Manager (Investigation leader) HSE Manager Manager external to site OHS Representative or member of the OHS committee	Manager External to site or discipline (Investigation Manager) HSE Manager Site Manager OHS Representative External resources or assistance as required	Manager External to site or discipline (Investigation Manager) HSE Manager Site Manager OHS Representative External resources or assistance as required
Investigation Outcomes	Completion of incident report form including: Brief report covering: • Description of incident • Contributing factors • Prevention Measures	Completion of incident form: Brief report covering the following: • Brief statement from person's involved and witnesses • Description of incident • Contributing factors • Prevention measures	Completion of incident form: Investigator Terms of Reference. Incident timeline. Detailed report covering the following: • Detailed statement for person's involved and witnesses • Description of incident • Contributing factors • Recommendations and prevention measures	Completion of incident form: Investigator Terms of Reference. Incident timeline. Detailed report covering the following: • Detailed statement for person's involved and witnesses • Description of incident • Contributing factors • Recommendations and prevention measures	Completion of incident form: Investigator Terms of Reference. Incident timeline. Detailed report covering the following: • Detailed statement for person's involved and witnesses • Description of incident • Contributing factors • Recommendations and prevention measures

Appendix 8G Environmental Hazard Management Matrix

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
Dust	Traffic Plant	**Worker Health Issues;** Eye injuries/infections due to airborne dust. Respiratory problems due to inhalation. Skin allergic reactions due to contaminated dust. **Environmental Issues;** Downpour of rain washing silt and contaminants into waterways.	Monthly dust monitoring results consistently below the required concentrations. Annual report states effectiveness of SWMP in detaining dust on site. Worker exposure and protection provided proved acceptable.	**Worker Health Measurement;** Dust survey carried out around plant to determine employee exposure levels. Workers Health examinations conducted. **Environmental Measurement;** Dams tested for quality of water. Annual Ecology survey. Monthly and annual water and dust collection samples analysed. Heavy Rain Event Site Inspection.	**Worker 13** **Environment 17**	Site Soil and Water Management Plan (SWMP) developed for dust management. (Landscape & Rehabilitation Management Plan) Water truck used on a regular basis during operating hours to minimise dust production from haul road traffic. Quarry main access road sealed to minimise dust production. Sprinklers system installed to assist with dust minimisation on roadways. Dust suppression installed on plant equipment to reduce plant produced airborne dust. Dust suppression system continually improved and more effective methods sourced. Work area kept clean and tidy to prevent build-up of dust/debris. Suitable PPE ie respirator or dust mask available and used when & where necessary, employee's trained in the effective use of PPE. Policies in place regarding mandatory use of eye protection i.e. double eye protection when grinding.	**Worker 9** **Environment 13**	All

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
	Cleaning Blasting	Dust contamination affecting local ecosystem biodiversity. Airborne dust carried off site.				Workers trained in the selection and use off appropriate eye and respiratory protection. Confined space to be cleared of all atmospheric hazards and air quality monitored by competent person before and during confined activities. Ensure sufficient ventilation is available before entry proceeds. (Extraction fans must be used if welding is being carried out) Test results to return readings within allocated concentrations, if pollutant concentrations exceeded, contingency plans implemented. If accidental water discharge occurs emergency response plans ready to contain TSS, involving spill stations and CAR systems in QMS. If wet weather discharge occurs daily water samples to be taken to monitor PH, TSS & Oil & Grease. Continuous sampling apparatus in place for airborne dust monitoring. Blasting carried out by competent external contractors with the minimizing of dust and fly-rock production considered.		

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
Waste Material	Production Office	**Environmental Issues;** General waste disposal. Site Waste leaving quarry site into local catchments.	Regulator limits production to 1.1Mt per annum extracted from the premises. Approximately 60,000 tonnes of overburden produced, stockpiled and rehabilitated annually.	**Environmental Measures;** Production and subsequent waste quantities recorded.	**Worker** 1 **Environment** 8	Quarry produced overburden is reused in rehabilitation program Daily production monitored and filed in database. Office produced recyclable material is stored in skip bin and periodically collected to be treated off site. Office waste or non-recyclables collected and disposed of off site in an approved manner.	**Worker** 1 **Environment** 5	LA/RW
Heat	Sun	**Worker Health Issues;** Dehydration. Exhaustion.		**Worker Health Measures;** Incident and near miss reports. Worker Health Examinations	**Worker** 13 **Environment** 1	Sunscreen and drinking water located in crib rooms, plant operation rooms and offices. Employees to partake in safe work methods with regard to heat, including adequate PPE. Employees educated on the dangers of heat stress and methods	**Worker** 9 **Environment** 1	All

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
	Plant/Machinery	Skin Damage.		Employee Communications – Tool Box Talks, Safety Alerts.		to combat the problem. Working in heat and dehydration educational signs displayed in crib rooms. First aid officer on site during working hours. Adequate first aid equipment available. Drinking Water to be supplied to all Visitors, Contractors & Employees. Long sleeves and trousers to be worn during work activities and a hat to be worn when working outdoors. Ensure compliance with work/rest requirements as outlined in ABL-HSE GOS-29-02 Fatigue Management Requirements. Drivers to be instructed in Fatigue Management requirements. Mobile equipment to have functioning air conditioning system installed, when necessary windows tinted to protect drivers from sun exposure. Screens in place to segregate work area. Hot work signs erected. On site meteorological station to survey daily temperatures. Only competent/trained personnel to carry out hot work. Ensure hot work is conducted in a designated hot work area with a Hot Work Permit/JSA/SWMS to be completed and filed.		
	Hot Work							
	Tools							

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
Noise	Traffic Plant Blasting	**Worker Health Issues;** Industrial deafness.	Quarry worker level of noise protection deemed effective. Quarry boundary noise below requirements. PPV and air blast overpressure readings below limits.	**Worker Health Measurements;** Worker Health Examinations. Worker Noise Exposure survey undertaken by external company. Worker noise PPE and knowledge examined to determine adequacy. Quarry boundary monitored to determine level of quarry produced noise. Blast ground vibration peak particle velocity and air blast overpressure monitored at each blast by acting company. Survey undertaken to determine noise levels in proximity to plant machinery.	**Worker 21** **Environment 1**	Hours of work restricted. 5:00-22:00 Monday-Thursday, 05:00-20:00 Friday, 5:00-15:00 Saturday Blasting restricted between 10:00 – 15:00 Monday to Friday. Blast noise monitoring conducted at each blast by external contractors carrying out blasts. Monitoring conducted on air blast overpressure (limit 115dBL) and ground vibration peak particle velocity (limit 5mm/s) at location deemed closest sensitive location not under control of the Quarry, (Hartley Village). Regular maintenance carried out on equipment to minimise noise production. Sound proofing on generators and generator sheds. Sound proofing on mobile plant engine compartments. Instruction on selection and use of suitable hearing protection. Hearing protection worn as required. PPE signage displayed in appropriate locations. Noise exposure level map displayed in crib room depicting noise levels in proximity to plant. Noise limits <35dB(A) for 15minute intervals.	**Worker 14** **Environment 1**	All

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
Hazardous Substances	Chemicals Fuels Waste Oil (plant/machinery)	**Worker Health Issues;** Chemical burns. Fume inhalation. Poisoning. Flammable substances. **Environmental Issues;** Hazardous substances leeching into groundwater/waterways.	Monthly Coxs River monitoring has remained below required limits.	**Worker Health Monitoring;** Incident and Near miss reports. Workers health examination conducted. **Environmental Measures;** Catchments water quality monitoring monthly and annually.	**Worker 13** **Environment 21**	SDS register kept and maintained on site. Suitable storage facilities/bunded area available. Suitable PPE available and used as required. Safer substances sourced and used where possible. Personnel suitably trained/informed in the process of refuelling plant, generators and handling of hazardous substances. Maintenance to be carried out in designated area. Danger signage in place (Corrosive Substance, etc). Procedures in place for major environmental incidents. Spillages cleaned up immediately using spill kits available. All spill kit stocks maintained, correct spill kit procedure form located with each spill kit. Fuel - Large Spill 1) In the case of large spills contact relevant personnel 2) Stop leak without risk. 3) Move containers from spill area. 4) Approach the release from upwind 5) Prevent entry into water courses, basements or confined areas. 6) Wash spillages into an effluent treatment plant or proceed as follows. 7) Contain and collect spillage with non- combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place into a container according to local legislation. 8) Determine flammability and if required use spark-proof tools and explosive proof equipment. Dispose of via a licensed waste disposal contractor	**Worker 9** **Environment 14**	All

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
						9) Contaminated absorbent material may pose the same hazard as the spilt product 10) In the case of spillage on water, prevent the spread of product by the use of suitable barrier equipment. 11) Recover product from the surface 12) Dispose of via an appropriately licensed waste disposal Small Spill 1) Stop leak without risk. 2) Move containers from spill area 3) Absorb with an inert material and place in appropriate waste disposal container. 4) Determine flammability and if required use spark-proof tools and explosion-proof equipment. 5) Dispose of via an appropriately licensed waste disposal Contents of spill kits to be inspected quarterly & restocked after use. Oils and hydraulic fluids to be disposed of in accordance with Environmental legislation. First aid officer on site during working hours. Adequate first aid equipment available. If soil contamination is discovered water management to be constrained by guidelines prepared by the DEC.		

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
Water	Dams River System	**Environmental Issues;** Coxs River water contamination. Coxs River Ecology.	Ecology study found no significant changes had occurred to flora and fauna. Microinvertebrates survey results determined 'not possible to attribute any microinvertebrate changes to quarry activities'. Quarry effects on groundwater levels negligible.	**Environmental Measures;** Coxs River water samples tested monthly both upstream and downstream. Annual monitoring of Coxs river microinvertebrates. Additional annual testing carried out on quarry catchments. Discharge Requirements. -pH; 6.5-8.5 -Oil/Grease; 10mg/L -Electrical Conductivity; <1500us/cm -Total Suspended Solids; <30 mg/L -Biochemical Oxygen Demand; 20 Heavy Rain Event Site Inspection.	**Worker 1** **Environment 21**	Site Soil and Water Management Plan developed for water management. (Water Management Plan, WMP & Landscape & Rehabilitation Management Plan) Individual catchments analyzed for best fit water management plan, developed for capacity up to a 20 day 95th percentile rain event. Site soil analysis carried out to determine soil characteristics including erodibility. Ground disturbance activities (clearing through to development) scheduled for completion within 6 months. Inspections carried out after heavy rainfall events to examine the soundness of water management systems. Diversion drains constructed around the quarry, diverting clean runoff from upslope catchments around the quarry. In the case of water breach Contingency Plan to be implemented, involving spill stations and CAR system in QMS. All external batters of dams to be grassed with a slope no steeper than 1V:3H. Continual monitoring and maintenance of sedimentation dams. Periodic removal of consolidated sediment from the Quarry	**Worker 1** **Environment 18**	ALL/RW

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
	Rainfall					Access Road sediment basins. Water management systems will employ regular maintenance to ensure effectiveness. Including regular inspections and cleaning of under road storm water pipes. Runoff from all disturbance areas is directed to silt dams and sedimentation dams. Water levels monitored and pumped from sediment dams to storage dams to ensure sufficient capacity in the event of significant rain event. Sediment dam water tested and treated prior to discharge at licensed discharge points, to ensure released water meets EPA requirements. Samples to be taken and tested daily during discharge events. Annual Report submitted to Council with a summary of water monitoring results, as well as diversion drain and quarry water management condition. Macroinvertebrates monitored upstream and downstream of quarry activities. Sediment dams regularly emptied to maintain required capacity for 5 day 95th percentile rain event (44mm of rain in any consecutive 5 day period). Prior to ground disturbance activities upslope diversion banks and downstream sediment retention implemented.		
	Groundwater							

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
Fire	Plant/Mobile Plant. Bushfires. Electrical Fires. Power Tools	**Worker Health Issues;** Burns to employees. Smoke inhalation **Environmental Issues;** Flora and Fauna destruction. Bushfire.		**Worker Health Measurement;** Incident and Near Miss reports. **Environmental Measures;** WCC fire department fire hazard monitoring.	**Worker 22** **Environment 22**	Ensure hot work is conducted in a designated hot work area and Hot Work Permit/JSA/SWMS to be completed and filed. Only competent/trained personnel to carry out hot work. Screens in place to segregate work area. Equipment to be in good condition and suitable for the task. Electrical equipment must be tested and tagged in accordance with AS3760. Fire fighting equipment fitted to all mobile plant. Employees trained in first attack fire fighting. Use of flame retardant material to cover susceptible equipment. Adequate fire extinguishers located throughout site. Use of correct PPE for the task/job. Periodic testing of Fire extinguishers is conducted by an external service provider. First aid officer on site during working hours.	**Worker 15** **Environment 22**	All Fire Wardens; RW;CM;KK

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
	Hot Work					Fire warden present on site during work hours. Adequate first aid equipment available. Bush fire emergency procedure in place.		

HAZARD	SOURCE	HEALTH EFFECTS	INFO	MEASUREMENT	ASSESS RISK	CONTROLS	REVIEW	RESPONSIBLE
Biodiversity Destruction	Land clearance Ecosystem Contamination	**Environmental Issues;** Loss of local flora and fauna.	Annual ecology survey has discovered an increase in wildlife diversity within the local catchment.	**Environmental Measures;** Annual 3 day ecology survey carried out by external company. Monitoring of Aquatic Microinvertebrates.	**Worker 1 Environment 23**	Vegetation Management Plan in place with both immediate and long term plans. Local native plant seeds collected and raised in nursery to be re introduced into previously cleared areas. All bund wall areas are rehabilitated with native flora. Long term objectives include post quarry life plans to ensure after life quarry footprint is minimal. Overburden pile continually rehabilitated in accordance with pile growth. Weed control plans in place to monitor weed development and when required sprays used to remove weeds. Flora and Fauna surveys conducted across all parts of quarry lease area. Flora and Fauna species catalogued annually to determine biodiversity fluctuation. Any threatened species identified and plans put in place for protection.	**Worker 1 Environment 18**	RW/CM

Adelaide Brighton Ltd **APPENDIX 7F**

HY-TEC

Austen Quarry - Risk Register

This contents of this risk assessment will be reviewed when new risk identified, procedural review and/or risk / controls not adequate

Risk Identification			Risk Score Without Controls (Inherent Risk)			Control			Risk Score with Controls (Residual Risk)			Further Action Required
Work Activity	Risk relating to activity	Causes (What can cause the hazard to occur)	Consequence (Catastrophic = Principal Hazard)	Likelihood	Inherent Risk Score	Principal Hazard (if Applicable) Control / Management Plan	Control Description	Highest Control Level Achieved (Hierarchy of Controls)	Consequence (Catastrophic = Principal Hazard)	Likelihood	Residual Risk Score	Action Required to achieve Desired Residual Risk (to be managed in Cintillate)
Electrical - Component Lifecycle Management	> Electrical equipment develop risk which can caused hazard to workers.	> Electrical components can fail due to the amount of use and age.	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	> Electrical component to be replaced as per OEM, Australian Standards or Mine Design Guidelines recommendations. > Schedule for replacement to be managed via gearbox. > Repaired or replaced as per safety alerts or information from industry or regulator.	Engineering / Redesign	Significant	Rare	10	
Electrical - Contractor Management	> Competence of contractors completing work at quarry.	> Electrical work / engineering work is outsourced to a contractor(s).	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	> All plant and equipment to be designed and maintained to the appropriate Australian standards. > All electrical contractors are to have applicable trade certificates or appropriate engineering documentation. > Electrical tradesperson is nominated to NSW regulator. > All contractors must have appropriate insurances managed by site pass. > Quarry Manager to shall check and maintain a records for the competency of all	Engineering / Redesign	Significant	Unlikely	14	
Electrical - Equipment to test electrical equipment.	Electric shock from using electrical test equipment.	> Failure of equipment. > Incorrect equipment used. > Exposed live electrical points.	Significant	Possible	18	Electrical Engineering Control Plan	> All electrical test equipment must be designed for testing the level of voltage anticipated. > Voltage tester must not expose workers to the risk of electric shock. > Test leads and testing devices should be provided with over current protection. > Be free from damage and cracks in insulation. > Also electrical testing screw drivers are not permitted.	Isolation	Serious	Unlikely	9	
Electrical - General Electrical Risks	> Electric shock / electrocution to workers.	> Workers touching electrical components they do not understand. > Poor or dangerous wiring.	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	> Only trained and competent workers are to touch electrical components, people approved to work on electrical components must be authorised by the Quarry Manager. > Isolation points to great physical breaks in power to complete tasks, lock out tagged out. > Inspection and testing of electrical equipment. > Inspections and testing completed on electrical components. > Electrical components shall be fitted with residual current devices. > Drawing of electrical systems. > Electrical systems within protected areas (washdown areas) will be minimum IP55, electrical systems which are outside shall be a minimum of IP56. All other work areas should be accessed.	Engineering / Redesign	Significant	Rare	10	
Electrical - High Voltage work	Electrocution	> High voltage	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	> Site does not have high voltage electrical.	Elimination	Negligible	Rare	1	
Electrical - Maintenance	> Electrical equipment develop risk which can caused hazard to workers.	> Electrical components can fail due to the amount of use and age.	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	Regular maintenance shall be completed ensuring: > Operation of electrical installation and not impaired by interference, damage or wear. > Live parts are insulated and workers are protected from inadvertent contact. > Earth leakage systems operates effectively. > Not exceeding operating limits. > The installation does not have the potential to start a fire. > Safety integrity limits (SIL) are maintained.	Isolation	Significant	Rare	10	
Electrical - New electrical installations to site.	> New plant / structures can bring new hazards to site.	> Unknown / unforeseen risks / processes	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	> All new electrical components brought onto the quarry to have design risk review completed, prior to construction. > All new electrical systems brought onto site to have commissioning plan develop and tested for continuity of earth, insulation resistance, polarity, correct circuit connections, earth fault-loop impedance and RCD operation. > All new electrical components to have an management of change completed, reviewed by either the OEM or qualified engineer. > A operational risk assessment (pre start up safety review) to be completed on all new electrical components to look for new introduced risks. > All new electrical components to be designed and built as per Australian standards.	Engineering / Redesign	Significant	Rare	10	
Electrical - Portable powered tools	Electric shock from using tool	> Poorly maintained tool. > Tool being used beyond its capacity.	Significant	Possible	18	Electrical Engineering Control Plan	> Use battery powered tools as oppose to electrical tools. > All electrical tools must be tagged and tested and inspected by a competent person. > Electric power tools must be inspected prior to use. > All electrical tools must have an RCD fitted for use.	Substitution	Serious	Unlikely	9	
Electrical - Power Distribution	Electrocution from powerlines	> In ground powerlines > Over head powerlines	Significant	Possible	18	Electrical Engineering Control Plan	> Austen quarry has no overhead powerlines. > Clearance work permit to be completed if working near overhead power lines or excavating near powerlines on site. > Powerlines onsite shall be know and clearly identified. > Signage in place to indication high of powerliner, vehicle clearance	Elimination	Significant	Rare	10	
Electrical - Restoration of Power	Electrocution from restoration of power	> Daily starting of generator	Significant	Possible	18	Electrical Engineering Control Plan	> Prestart inspection to be completed prior to starting generator for the day. > Procedure and training for starting of generator. > Generated started with out people working within vicinity.	Engineering / Redesign	Serious	Unlikely	9	
Electrical - Restoration of Power	Electrocution from restoration of power	> Overload trip > Short Circuit trip	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	> Reset of power to be completed by an electrician after, fault is identified and repaired. > further tests also carried out to determine it is safe to start-up. > Started with out people working within vicinity.	Engineering / Redesign	Serious	Unlikely	9	
Electrical - Restoration of Power	Electrocution from restoration of power	> Circuit breaker reset > Blown fuse	Significant	Possible	18	Electrical Engineering Control Plan	> Reset only complete if the fault is known, if fault is unknow then electrician shall complete reset. > If trip occurs second time electrician shall investigate trip. > Lock Out / Tag Out shall be used for replacement of fuses	Engineering / Redesign	Serious	Unlikely	9	
Electrical - Switchboards and Distribution Boards	> Worker entering switchboard or distribution board in which they are not permitted to access.	> Workers are unaware they are not to access board.	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	> All boards must be locked preventing worker access. > Only authorised persons are to able to access boards. > Access to cables behind boards are only permitted when competent and with a clearance to work permit. > Signage in place to warn of electrical installations and access is restricted	Isolation	Significant	Rare	10	

Electrical - Switchboards and Distribution Boards	Fire on switchboard / distribution board.	> Dust and heat causing over heating of distribution boards.	Significant	Possible	18	Electrical Engineering Control Plan	> Boards are contained in sealed room free from dust and contaminates. > Power distribution rooms are also air condition. > Multiple exit points from power distribution rooms, and easy to get away from boards. > No combustible material stored in distribution rooms > Signage indicating controls.	Engineering / Redesign	Minor	Unlikely	5	
Electrical - Work on live electrical circuits	Electrocution	> Live electrical work	Catastrophic (Principal Hazard)	Possible	22	Electrical Engineering Control Plan	> ABL employees and contractor are not permitted to work on live circuits.	Elimination	Negligible	Rare	1	
Explosives - Air quality / contaminates post blast	> Workers / community exposed to dangerous levels of airborne contaminates.	> Wind speed / direction. > Poor blast design.	Catastrophic (Principal Hazard)	Possible	22	Explosives Control Plan	> Controls as per risk (Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica)). > Onsite monitors to determine is blast dust is exiting site. > Exclusion zones for workers. > Notification to public and workers on blasting days. > Blasting to be postponed is weather conditions not suitable. > EPA licencing regarding dust generated offsetting off site.	Isolation	Catastrophic (Principal Hazard)	Rare	15	
Explosives - Airblast Overpressure & Ground Vibration.	> Overpressure & Ground Vibration causing injuries to workers / community	> Poor design and plan for blast	Catastrophic (Principal Hazard)	Possible	22	Explosives Control Plan	> Blasts are designed for each specific location, developed by quarry manager in consultation with the shot firer. > Exclusion zones to be in place for when blast occurs, including safety margin for expected Overpressure / Vibration. > Notification to public (neighbours 48 hours prior) and workers on blasting days. > Monitors in place for Overpressure and Vibration, these are to be reviewed in post blast review.	Engineering / Redesign	Catastrophic (Principal Hazard)	Rare	15	
Explosives - Generation of fly rock	> Fly rock causing injuries to workers / community	> Drill hole stem lengths incorrect, generating face burst and fly rock.	Catastrophic (Principal Hazard)	Possible	22	Explosives Control Plan	> Shot firer to plan blast hole depth during planning phase. > Exclusion zones to be in place for when blast occurs, including safety margin for expected fly rock distances. > Notification to public (neighbours 48 hours prior) and workers on blasting days. > Post blast review to verify hole depths and exclusion zones are sufficient, for fly rock.	Engineering / Redesign	Catastrophic (Principal Hazard)	Rare	15	
Explosives - Misfire during blasting.	> Injury to worker, worker being too close to misfire shot.	> Unfired blast holes, Unfired detonator and/or Unfired product, identified post blast	Catastrophic (Principal Hazard)	Possible	22	Explosives Control Plan	> Exclusion zone established when if unfired explosive found. > Shot firer shall manage the misfire, and potentially attempt to refire the shot. > If the shot can not be refired it shall be extracted with a vacuum truck and diluted with water.	Isolation	Catastrophic (Principal Hazard)	Rare	15	
Explosives - Misfire during blasting.	> Injury to worker, worker being too close to misfire shot.	> Unfired detonator / explosive found during excavation.	Catastrophic (Principal Hazard)	Possible	22	Explosives Control Plan	> Exclusion zone established when if unfired explosive found. > Competent shot firer to return to site to manage un detonated explosive. > Investigation to be completed on incident.	Isolation	Catastrophic (Principal Hazard)	Rare	15	
Explosives - Preparing for blast.	> Injuries to workers and/or local community. > Damaged to culturally significant sites and other community infrastructure.	> Poor design of blast. > Blasting outside of licenced / approved times.	Catastrophic (Principal Hazard)	Possible	22	Explosives Control Plan	> Blasts are designed for each specific location, developed by quarry manager in consultation with the shot firer. > Blast design shall include, drilling plan, blast hole size / load and address other hazards and misfires. > Shot firing is out sourced to a competent company, contracts and shot firers companies are managed through site pass. > Shot firers / company shall provide safe systems of work for Hy-Tec review. > Buffers to be established for indigenous heritage / culturally significant sites. > All blasting must comply with site licences and restrictions.	Engineering / Redesign	Catastrophic (Principal Hazard)	Rare	15	
Explosives - Storage of explosives	> Detonation / theft of explosives	> Blast cancelled, unplanned event keeping explosives on site.	Catastrophic (Principal Hazard)	Possible	22	Explosives Control Plan	> Explosives are not to be stored on site, shot firer contractors shall only bring explosives onsite when they are needed. > In an unforeseen event requires the explosives to be stored on site the Shot Firer must work with the site to develop a plan, ensuring they are compliant with the Explosives Act 2003 and appropriate Australian Standards.	Isolation	Catastrophic (Principal Hazard)	Rare	15	
Fire - External fire event potentially affecting the site.	> Workers being stuck onsite due to fire risk. > Fire fighting agencies accessing site being unaware of risk. > Workers on site to protect assets.	Fire event onsite due to offsite fire event (bush fire).	Catastrophic (Principal Hazard)	Possible	22	Fire Prevention and Protection Management Plan	> Emergency management plan for external fire event. > Emergency rations to be onsite for minimum 5 days (including food and water). > The site shall develop a fire plan for the specific fire event, ensuring water carts etc. have water to extinguisher spot fires. > Site shall have tools in place for external communication during a fire event and utilise government websites to manage approaching fire and weather conditions. > Sites shall have provisions for some sleeping. > Sites need to manage road closures and enable workers to leave prior to roads being closed if possible. > Open areas need to be available to get to separate people from the fire risk.	Isolation	Catastrophic (Principal Hazard)	Rare	15	
Fire - External fire event potentially affecting the site.	> Fire to assets / people.	Fire event onsite due to offsite fire event (bush fire).	Catastrophic (Principal Hazard)	Possible	22	Fire Prevention and Protection Management Plan	> Site shall have emergency management plan developed. > Fire management plan shall be available and visible within site. > Maps in place of the site. > Engage with fire authority, to show site and discuss fire plans, prior to incident.	Isolation	Catastrophic (Principal Hazard)	Rare	15	
Fire - Hot Work	Fire as a result of hot work outside of workshop.	> Unknown hazards due to hot work.	Catastrophic (Principal Hazard)	Unlikely	19	Fire Prevention and Protection Management Plan	> All hot work outside of the workshop must be completed with a hot work permit. > Fire extinguishers must be in place for hot work, as well as wetting areas when outside with combustible material. > Hot works are not permitted outside during total fire bans.	Administrative	Catastrophic (Principal Hazard)	Rare	15	
Fire - Management of fire equipment	Failure of fire equipment when needed.	> Poorly maintained or incorrect fire equipment.	Catastrophic (Principal Hazard)	Possible	22	Fire Prevention and Protection Management Plan	> All fire equipment must be inspected as per OEM recommendations or Australian Standards. > Workers must be trained in fire equipment. > Suitable volume and type of fire equipment must be in place for each different emergency type.	Engineering / Redesign	Serious	Possible	13	
Fire - Plant / Mobile Plant	> Fire while people are in or operating mobile plant.	> Malfunction within machine.	Catastrophic (Principal Hazard)	Rare	15	Fire Prevention and Protection Management Plan	> Machines are inspect pre shift for any signs of potential faults. > All machines on site are inspected and maintained as per OEM recommendations. > Machines are fitted with fire extinguishers enabling workers to escape machinery. > Machines are easy to escape from or have multiple evacuation methods.	Engineering / Redesign	Serious	Rare	6	

Fire - Pressurised gas cylinders	Pressurised gas cylinders failing causing risk.	> Fire spreading to cylinder storage. > Failure of gas cylinder causing flammable risk. > Storage of non compatible material.	Significant	Possible	18	Fire Prevention and Protection Management Plan	> All cylinders must be stored upright, and chained, in designated storage area. > All cylinders must be inspected to ensure they are free from damage and complaint to Australian standards. > Cylinders are exchanged through supplier, ensuring they are complaint. > SDS must be consulted with to ensure non compatible items are not stored together. > All gas cylinders shall be isolated from areas, by either one-hour firewall or by minimum of three metre distance.	Isolation	Serious	Possible	13	
Fire - Refuelling of vehicles	Vehicle catching fire due to being on during refuelling.	> Vehicle being on during refuelling. > Ignition sources within refuelling area.	Catastrophic (Principal Hazard)	Unlikely	19	Fire Prevention and Protection Management Plan	> All refuelling to occur in designated refuelling areas. > All vehicles refuelled onsite are diesel not unleaded petrol. > Closed systems for refuelling, minimal oxygen within fuelling areas. > Vehicles must be turned of during refuelling, unless completed under specific risk assessment. > No ignition sources are permitted within refuelling areas. > Fire extinguishers / fire protection systems. > Daily pre start inspections on vehicles.	Engineering / Redesign	Significant	Rare	10	
Fire - Spontaneous Combustion	> Site has no risk of spontaneous combustion		Negligible	Rare	1	Principal Hazard However Not Present on Site	> Nil no risk present	Elimination	Negligible	Rare	1	
Fire - Storage Oils / flammables	Fire of oils / flammable liquids	> Fire spreading to oil / flammable storage.	Catastrophic (Principal Hazard)	Unlikely	19	Fire Prevention and Protection Management Plan	> All flammable material must be stored in flammable storage cabinets. > All chemicals must be labelled. > All chemicals shall be stored in suitable lidded containers. > SDS must be consulted to not store incompatible material together.	Isolation	Significant	Rare	10	
Fire - Waste oils / flammables	Fire of waste oils / flammable liquids	> Poor housekeeping of flammable equipment leading to fire or making fire worse.	Significant	Unlikely	14	Fire Prevention and Protection Management Plan	> All rags must be disposed of correctly, and work areas cleaned at the end of the job. > All waste oil must be stored in designed oil storage containers. > Suitable fire extinguishers within areas to manage flammability risk. > Large volumes of flammable material not stored on site.	Administrative	Significant	Rare	10	
Fire - Welders / cutters	Welding / cutting of material.	> Fire / explosion of welding equipment.	Significant	Unlikely	14	Fire Prevention and Protection Management Plan	> Regular inspections of all welding and cutting units. > All cables and leads must be kept free from grease and oil. > Flash back arrestors must be fitted to all welders / cutters. > Welding screens must be in place to prevent injuries to other workers. > All people welding must wear the correct PPE.	Engineering / Redesign	Serious	Unlikely	9	
Fixed Plant & Structures - Boot (Bin)	Worker falling into the bin.	> Workers needs to access bin area or unintentional access of bin area. > Haul truck / Loader falling into bin	Significant	Possible	18	Not Applicable	> Pedestrians to not access boot unless under Clearance to work permit. > Haul Truck Drivers are not to leave cabin when parked at the boot. > Tyre bump stop in place to prevent truck falling into the bin (Boot)	Engineering / Redesign	Significant	Rare	10	> Signed to be installed indicating no pedestrian access.
Fixed Plant & Structures - Boot (Bin)	Rocks spilling out of the bin, causing injury to worker below the bin.	> The bin can be over full, > Larger load of rock to go into bin.	Significant	Possible	18	Mechanical Engineering Control Plan	> Boot (bin) has edge spillage boards which are 1800mm higher than the boot. > Every 5 years a mechanical engineer completes inspections of all plant and structures for signs of fatigue. > Workers are not to be within 6 metres of the bottom of the boot when loads are being tipped into the bin. > Haul truck sizes are designed in accordance with volume of material the boot can handle.	Isolation	Significant	Rare	10	> Tool box talk and signage to be in place explaining no go area for base of boot. > Register to be developed of what is to be inspected every 5 years.
Fixed Plant & Structures - Conveyors	Entanglement of operator within conveyor.	> Worker can access conveyor with potential to get entangled.	Significant	Possible	18	Not Applicable	> All conveyor are guarded to prevent access. > Work on conveyors to be done under a Clearance to work permit and lock out, tag out process. > LOTO in place to prevent unplanned plant movements. > Conveyor siren starts prior to conveyor start.	Engineering / Redesign	Serious	Unlikely	9	
Fixed Plant & Structures - Conveyors	Fires within bearing / rollers	> No grease within bearing causing friction fire to start.	Serious	Unlikely	9	Mechanical Engineering Control Plan	> Weekly inspection of whole tertiary, inspecting all elements. > Daily visual inspection of plant prior to start up. > Bearing temperature inspection > Weekly shutdown maintenance > Fire extinguishers on plant.	Administrative	Serious	Rare	6	
Fixed Plant & Structures - Conveyors	Debris falling from conveyor, impacting worker.	> Overloading conveyors. > People accessing conveyor at incorrect place.	Serious	Possible	13	Mechanical Engineering Control Plan	> Largest size rock around 350mm with minimum potential fall height. Workers do not need to access between boot and tertiary crusher, post tertiary crush maximum rock size is 20mm. > Workers wear hard hats when outside walking around site. > Workers to only pass under conveyor system under designated walkways. > Skirt rubbers at transfer points, skirt rubbers centralise rocks onto centre of the conveyor.	Substitution	Minor	Rare	3	> Enclose conveyor under designated walkways.
Fixed Plant & Structures - Conveyors	Failure of plant structures.	> Heavy corrosion of plant caused by dust and elements.	Catastrophic (Principal Hazard)	Unlikely	19	Mechanical Engineering Control Plan	> Every 5 years a mechanical engineer completes inspections of all plant and structures for signs of fatigue. > Weekly inspection of whole tertiary, inspecting all elements.	Engineering / Redesign	Catastrophic (Principal Hazard)	Rare	15	
Fixed Plant & Structures - Conveyors	Cuts and lacerations from conveyor belts.	> Conveyors can have sharp edges.	Minor	Probable	12	Not Applicable	> Workers generally do not need to handle conveyor belts. > Worker wear category 3 cut resistant gloves.	PPE	Negligible	Unlikely	2	
Fixed Plant & Structures - Crushers	Falling into the crusher.	> Maintenance activities / inspections of crusher.	Significant	Possible	18	Mechanical Engineering Control Plan	> Guarding in place to prevent people falling into crusher, > Guarding inspected daily during prestart to ensure all guarding is in place. > Any other work bar inspection / top up oil requires clearance to work permit and working at heights permit.	Isolation	Significant	Rare	10	
Fixed Plant & Structures - Crushers	Engulfment within crusher, during maintenance.	> Maintenance activities / inspections of crusher.	Significant	Unlikely	14	Mechanical Engineering Control Plan	> Lock Out, Tag Out for all worker to be completed where worker needs to access crusher. > Any other work bar inspection / top up oil requires clearance to work permit and working at heights permit.	Isolation	Minor	Rare	3	
Fixed Plant & Structures - Crushers	Entanglement within crusher drive components.	> Maintenance activities / inspections of crusher.	Significant	Unlikely	14	Mechanical Engineering Control Plan	> Guarding in place to prevent people falling into crusher, > Guarding inspected daily during prestart to ensure all guarding is in place. > Guarding in place to ensure limb in unable to access moving parts. > Any other work bar inspection / top up oil requires clearance to work permit and working at heights permit.	Isolation	Significant	Rare	10	
Fixed Plant & Structures - Crushers	High pressure injections from hydraulic systems	> Failure of hoses and seals.	Significant	Unlikely	14	Mechanical Engineering Control Plan	> All high pressure hydraulic components that propose a potential risk have burst protection in place or guarding. > Lock Out, Tag Out for all worker working on hydraulic systems.	Engineering / Redesign	Serious	Rare	6	> Develop dear doctor letter for a HPI injury and emergency response plan.

Fixed Plant & Structures - Crushers	> Limb pinch between moving parts of machine.	> Maintenance activities / inspections of screens.	Serious	Unlikely	9	Mechanical Engineering Control Plan	> Guarding in place to prevent people falling into crusher, > Guarding inspected daily during prestart to ensure all guarding is in place. > Guarding in place to ensure limb in unable to access moving parts. > Any other work bar inspection / top up oil requires clearance to work permit and working at heights permit.	Isolation	Minor	Rare	3	
Fixed Plant & Structures - Crushers & Screens	Fall into crusher or screen resulting in injury or fatality	Removing blockages from crushers and screens	Significant	Possible	18	Mechanical Engineering Control Plan	> Hand rails and suitable guarding in place to prevent accidental fall into danger areas > Warning signs in place to inform of inherent dangers. > 2 persons working in the area at all times	Engineering / Redesign	Significant	Rare	10	
Fixed Plant & Structures - Crushers & Screens	Incident within confined space	Parts of the crusher are confined spaces for workers.	Significant	Possible	18	Not Applicable	> Only registered and qualified persons are allowed to conduct work in confined spaces in accordance with AS2865 - Safe work in a confined space. > A clearance to work and confined space permit must be used when entering confined space. > Air quality monitored during confined space activities, adequate ventilation must be present prior to entry. > Ensure sufficient ventilation is available before entry proceeds. (Extraction fans must	Administrative	Significant	Unlikely	14	
Fixed Plant & Structures - Screens	> Pinch between moving parts of machine. > Limb crush points	> Maintenance activities / inspections of screens.	Serious	Unlikely	9	Mechanical Engineering Control Plan	> Guarding in place to prevent people falling into screen, > Guarding inspected daily during prestart to ensure all guarding is in place. > Guarding in place to ensure limb in unable to access moving parts. > Any other work, bar inspection / greasing requires clearance to work permit and working at heights permit.	Isolation	Minor	Rare	3	
Fixed Plant & Structures - Screens	Entanglement within screens.	> Maintenance activities / inspections of screens.	Serious	Unlikely	9	Mechanical Engineering Control Plan	> Guarding in place to prevent people falling into screen, > Guarding inspected daily during prestart to ensure all guarding is in place. > Guarding in place to ensure limb in unable to access moving parts. > Any other work, bar inspection / greasing requires clearance to work permit and working at heights permit.	Isolation	Minor	Rare	3	
Fixed Plant & Structures - Screens	Engulfment within screens, during maintenance.	> Maintenance activities / inspections of screens.	Significant	Unlikely	14	Mechanical Engineering Control Plan	> Lock Out, Tag Out for all worker to be completed where worker needs to access screens. > Any other work, bar inspection / greasing requires clearance to work permit and working at heights permit.	Isolation	Minor	Rare	3	
Fixed Plant & Structures - Tertiary crushing plant	Fall from heights - Parts of plant are elevated with the potential for workers to fall from heights.	> Completing pre start inspections and greasing moving parts. > Slips while on plant, due to wet surfaces	Significant	Possible	18	Mechanical Engineering Control Plan	> All plant is guarded to prevent workers fall from height, handrails. > Only workers with operational need access tertiary crusher platforms. > Any other work, bar inspection / greasing requires clearance to work permit and working at heights permit. > Workers wear lace up safety footwear. > Anti-slip construction of walking surfaces on tertiary crusher plant.	Engineering / Redesign	Significant	Rare	10	
Ground & Strata Management - Bench Failure	> Bench may fail causing injuries to workers below or workers on the bench.	> Bench may fail due to weathered material. > Pooling of water or rain event washing away material. > Undercut of highwall.	Catastrophic (Principal Hazard)	Possible	22	Ground Control Management Plan	> Workers shall not be within the toe of the highwall, highwalls which have poor strata shall exclusion zones as determined by an engineer. > Geotechnical studies undertaken of benches. > Daily visual inspection looking for evidence of ground stability or strata failure. > Drilling and operations completed as per pit design. > Catch benches in place.	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	
Ground & Strata Management - Dumping	> Dumping over water or over a highwall.	> Movement of dump. > Incorrect position of vehicle to dump. > Debris from dumping not cleared.	Catastrophic (Principal Hazard)	Possible	22	Ground Control Management Plan	> Floor shall be slopping upwards. > The Quarry Manager or Supervisor shall determine safe distance from the tip edge, a minimum of 5 metres from windrow to be used. > The dozer shall remain on the dump at all time while tipping is occurring. > Should the dump / tip edge show signs of cracking, tipping shall stop and the face be reinspected. > All unsuitable material for this operation shall be diverted.	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	
Ground & Strata Management - Fill areas / Overburden	> Subsidence / wash away of fill areas.	> Poor compaction of fill areas. > Water ingress into fill areas causing wash away. > Design failures / maintenance of dump areas. > Seismic event.	Catastrophic (Principal Hazard)	Possible	22	Ground Control Management Plan	> Filled areas shall be designed and compacted as per geotechnical report. > Daily inspections of working areas. > Water pressure & corrosion to be considered for design of fill areas. > Sumps to be in place. > Post a seismic activity, fills areas shall be inspected for possible failure. > Dump / fill areas should be no higher than 20 metres unless advised received from geotechnical advice. > Persons shall not access the toe of a dump on foot unless an inspection has been completed prior for loose material / rocks. > Should dump areas be unsafe, geotechnical advice sort and access prohibited until remedial work has taken place. > For any abnormal events a risk assessment must be completed to develop a plan to	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	
Ground & Strata Management - Highwall Failure	> Failure of highwall (Wedge / Slop failure).	> Incorrect slop angle, too steep. > Loose material on highwall. > Excessive highwall face height. > Undercut of Highwall.	Catastrophic (Principal Hazard)	Possible	22	Ground Control Management Plan	> Decrease slop angle shall be consider whilst undertaking geotechnical slope design. > Workers shall not be within the toe of the highwall, highwalls which have poor strata shall exclusion zones as determined by an engineer. > Daily visual inspection looking for evidence of ground stability or strata failure.	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	
Ground & Strata Management - Highwall Failure	> Highwall may fail causing injuries to workers below or workers on top of the highwall due to water.	> Water pooling behind highwall. > Large weather event washing away parts of highwall. > Incorrect slop design (Too Steep). > Incorrect bench design (Too Narrow). > Ground water within pit. > Undercut of Highwall.	Catastrophic (Principal Hazard)	Possible	22	Ground Control Management Plan	> Decrease slop angle shall be consider whilst undertaking geotechnical slope design. > Workers shall not be within the toe of the highwall, highwalls which have poor strata shall exclusion zones as determined by an engineer. > Daily visual inspection looking for evidence of ground stability or strata failure. > Regular performance monitoring to be undertaken of highwalls. > Face height shall not exceed the Geotechnical report requirements. > Geotechnical Engineer shall be engaged as required to reassess mining methodology. > Faces of highwall to not exceed 15 metres, or higher than the loader / excavator can reach for the purposes of scaling.	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	
Ground & Strata Management - Highwall Failure	> Highwall may fail causing injuries to workers below or workers on top of the highwall.	> Seismic activity	Catastrophic (Principal Hazard)	Possible	22	Ground Control Management Plan	> Decrease slop angle shall be consider whilst undertaking geotechnical slope design. > Workers shall not be within the toe of the highwall, highwalls which have poor strata shall exclusion zones as determined by an engineer. > Post a seismic activity, highwall shall be inspected for possible failure, daily inspections. > Face height shall not exceed the Geotechnical report requirements. > Blasting shall also be completed in accordance with the explosives control plan.	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	

Ground & Strata Management - Highwall Failure	> Fracture of Highwall due to Blast.	> Blast onsite weakening strata and causing potential failure onsite.	Catastrophic (Principal Hazard)	Unlikely	19	Ground Control Management Plan	> Site is designed, for blasting activities to take place. > Comply with explosives control plan. > Post blast inspection conducted > Bunding built to capture loose rocks which could fall from highwall. > Scaling completed on highwalls to remove loose rock	Engineering / Redesign	Catastrophic (Principal Hazard)	Rare	15	
Ground & Strata Management - Water Management	> Water may corrode / damage structure within the pit.	> Water pooling behind highwalls and road surfaces. > Large weather event washing away parts of highwall. > Ground water within pit.	Catastrophic (Principal Hazard)	Possible	22	Ground Control Management Plan	> Ground water shall be stored in a sump or pumped to a suitable area. > Water drainage paths shall be established around site, so water does not pool at the toe or crest of critical slops. > Decrease slop angle shall be consider whilst undertaking geotechnical slope design. > Daily visual inspection looking for evidence of ground stability or strata failure. > Regular performance monitoring to be undertaken of highwalls. > Face height shall not exceed the Geotechnical report requirements. > Geotechnical Engineer shall be engaged as required to reassess mining methodology.	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	
Ground & Strata Management - Working near base of highwall	> Highwall may fail causing injuries to workers below highwall face.	> Failure of highwall	Catastrophic (Principal Hazard)	Possible	22	Ground Control Management Plan	> Decrease slop angle shall be consider whilst undertaking geotechnical slope design, and faces shall not exceed the geotechnical requirements. > Workers shall not be within the toe of the highwall, highwalls which have poor strata shall exclusion zones as determined by an engineer. > Catch benches shall be in place. > People and vehicles shall not be with 15 metres of the toe of a highwall unless they	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	
Health Effects - Biological Health	> Health effects due to virus.	> Unknown sources. > Water contaimination.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Follow recommendation from state and federal governments and world health organisation. > Risk assess any health pandemics. > Bottle water for drinking and town water purchased for hand washing etc. > Process water regularly used to prevent stagnate water.	Isolation	Catastrophic (Principal Hazard)	Rare	15	
Health Effects - Psychosocial Hazards	> Physiological hazards for workers.	> Work / Job Stress > Non work related factors	Significant	Possible	18	Health Control Plan	> Employee assistance program available for workers and promoted. > Workers have access to support through different levels of management. > Regular reviews with workers on performance and expectations.	Administrative	Significant	Rare	10	
Health Effects Air Quality & Dust - Asbestos	> Inhalation of asbestos within workplace	> Asbestos in Buildings. > Asbestos naturally occurring.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> No Asbestos onsite.	Elimination	Negligible	Rare	1	
Health Effects Air Quality & Dust - Community exposed to dust working onsite.	> Dust onsite due to mining operations, effecting community health.	> Mining a product with a high silica content. > Breaking rock to make dust and little rocks. > Wind.	Catastrophic (Principal Hazard)	Unlikely	19	Health Control Plan	> Dust monitors on perimeters to monitor if dust is leaving site. > Silica content of product known (product has high silica content). > Local Community is a significant distance from mine. > Water used within processes to reduce airborne dust (Watercart / stockpile sprays / sprinkler systems)	Isolation	Significant	Rare	10	
Health Effects Air Quality & Dust - Dust generated on roads from vehicles (Crystaline Silica).	> Workers inhaling silica dust when moving around the site.	> Vehicles on roads generating dust.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> People shall not walk around quarry for general access, people shall be transported by vehicle to parts of the quarry. > All vehicles access the quarry shall have windows up at all times. > All vehicles accessing quarries shall have air conditioning, with air set to recycle. > Water cart / sprinkler system available to wet roads. > All vehicles shall have door seals which are regularly inspected and replaced as per OEM recommendations.	Isolation	Serious	Unlikely	9	
Health Effects Air Quality & Dust - Dust in Workshop (Crystaline Silica).	> Dust and mud build up in workshop, exposure to workers when needs to be cleaned. > Dust in service area.	> Workers need to sweep up dust and mud in workshop. > Dust settles on equipment. > Dirt floor within service area.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Mud guards on vehicles, particularly articulated vehicles. > Vehicles are wash down prior to entering workshop. > Some dust does enter workshop, however is washed out to minimise exposure.	Administrative	Minor	Unlikely	5	
Health Effects Air Quality & Dust - Fume exposures	> Health effects due to fume exposure.	> Chemicals onsite. > Mobile plant / vehicles.	Significant	Unlikely	14	Health Control Plan	> All chemicals onsite are known and SDS is reviewed, dangerous inhalation risk chemicals are not required on site. > Chemicals are stored in well ventilated areas. > Vehicles operate outside in will ventilated areas.	Engineering / Redesign	Serious	Rare	6	
Health Effects Air Quality & Dust - Human movement generating dust (Crystaline Silica).	> Workers inhaling silica dust when within vehicle cabin. > Dust within offices / lunchrooms, continuing worker exposure during break times.	> Areas where people enter / exit vehicles or offices having product build up.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Vehicles are not to be swept out, however vacuumed out and wiped down with a damp cloth. > Rooms have doors seals. > Rooms have air-conditioning which are regularly serviced.	Administrative	Serious	Unlikely	9	
Health Effects Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Mining a product with a high silica content. > Breaking rock to make dust and little rocks. > Wind.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Site completes annual dust exposure monitoring of work groups (SEGs). (frequency of testing may vary due to exposure). > Silica content of product known (product has high silica content). > Workers complete 5 yearly health Surveillance for silica exposure health effects. (frequency of surveillance may vary due to exposure). > Water used within processes to reduce airborne dust (Watercart / stockpile sprays / sprinkler systems). > All vehicles onsite shall have an enclosed cabin, with air condition and adequate door seals. > Regular / inspections maintenance to take place on all equipment seals and filtration systems (OEM recommendations). > Operations to stop if the dust can not be controlled on windy days. > Workers walking around site have respirators available.	Isolation	Significant	Unlikely	14	
Health Effects Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Operating vehicle / mobile plant. > Excavating. > Grading. > Loading, > Tipping.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Water used within processes to reduce airborne dust (Watercart / stockpile sprays / sprinkler systems). > All vehicles onsite shall have an enclosed cabin, with air condition and adequate door seals. > Regular / inspections maintenance to take place on all equipment seals and filtration systems (OEM recommendations). > OEM maintains vehicle where applicable, OEM also completes cabin leak detection testing. > Windows on vehicles must be closed at all times. > Cabins to be cleaned regularly, wiped with wet cloths and vacuumed.	Isolation	Significant	Unlikely	14	

Health Effects Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Drilling for shot.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Drill rig must have a fully operational dust collector. > Drill bench is prepped prior to drilling. > Drill rig shall have an enclosed cabin, with air condition and adequate door seals. > Windows on vehicles must be closed at all times. > Cabins to be cleaned regularly, wiped with wet cloths and vacuumed. > Vehicle doors must be left closed when out of the vehicle. > Completed cabin leak detection testing. > No unauthorised to bench whilst drilling operations in place.	Isolation	Significant	Unlikely	14	
Health Effects Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Blasting	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Access is restricted to blast area. > Blasting will not take place if weather conditions are not acceptable. > Blast management plan in place and all people suitable distance from blast and airborne dust / fume. > Post blast examination to not take place until the dust has settled. > Further blasting risk assessment in blasting section of this risk assessment.	Isolation	Significant	Unlikely	14	
Health Effects Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Crushing operations. > Conveyor transport.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Wetting product prior to and during the crushing process. > Water sprays on conveyors. > Signed restricted access to crushing plant. > Site completes annual dust exposure monitoring of work groups (SEGs). (frequency of testing may vary due to exposure). > Workers complete 5 yearly health Surveillance for silica exposure health effects. (frequency of surveillance may vary due to exposure). > In plant design minimise drop distances between product transfer points. > Operations to stop if the dust can not be controlled on windy days or frost. > Workers walking around site have respirators available.	Isolation	Significant	Unlikely	14	> Complete static dust monitoring to determine high risk areas around crushing plant. > Look to separate people from crushing plant, utilise cameras. > Skirts / coverage on transfer points.
Health Effects Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Working from primary crusher control room.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Control room is not near primary crusher. > Control room has air conditioner which is set to recuriculte and is serviced monthly. > Site completes annual dust exposure monitoring of work groups (SEGs). (frequency of testing may vary due to exposure).	Isolation	Minor	Rare	3	
Health Effects Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Working from tertiary crusher control room.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Wetting product prior to and during the crushing process. > Water sprays on conveyors. > Crusher has enclosed cabin, with air condition and adequate door seals, air conditioner to be serviced every month. > Site completes annual dust exposure monitoring of work groups (SEGs). (frequency of testing may vary due to exposure). > Workers complete 5 yearly health Surveillance for silica exposure health effects. (frequency of surveillance may vary due to exposure). > In plant design minimise drop distances between product transfer points. > Operations to stop if the dust can not be controlled on windy days or frost. > Workers walking around site have respirators available.	Isolation	Significant	Unlikely	14	> Complete static dust monitoring to determine high risk areas around crushing plant. > Look to separate people from crushing plant, utilise cameras. > Consider moving control room away from crushing plant.
Health Effects Air Quality & Dust - Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Crushing plant maintenance and cleaning.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Wash/wet screens and structures, prior to maintenance. > Extended grease lines in place from restricted space. > Use of small mobile equipment to access under conveyors and structures. > Use disposable coveralls and dust respirators (and trained) when completing maintenance on dusty areas. > Clothing can be washed onsite. > Workers are trained in silica and exposure risks and trained in correct use / fitment of respirators.	Engineering / Redesign	Significant	Unlikely	14	
Health Effects Air Quality & Dust -Confined Space	> Build up of fume / oxygen depleting substance.	> Machine in operation near confined space. > Chemical / substance releasing fume.	Significant	Unlikely	14	Not Applicable	> All confined spaces must be identified and have signage warning of prohibited access. > The atmosphere of the confined space must be tested prior to entry, ensuring there is sufficient oxygen within the space. > Continual air monitoring must occur in the confined space. > Confined spaces entry shall only occur under a permit and risk assessment. > A stand by person must be in place for a confined space entry. > Both the stand by and confined space entrant must be trained in confined space.	Engineering / Redesign	Serious	Rare	6	
Health Effects Air Quality & Dust -Workers exposed to dust working onsite (Crystalline Silica).	> Dust onsite due to mining operations, effecting workers health.	> Washing operations. > Conveyor transport. > Movement of vehicles around site. > Wind.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Site completes 3 yearly dust exposure monitoring of work groups (SEGs). (frequency of testing may vary due to exposure). > Site is a wet process, and does not generate dust through dredge and washing operation (furthermore, product is not crushed down so does not normally form a fine powder). > The site has its own weather station, which enables the site to monitor conditions where dust could generate. This enables the site to water cart operation in risk areas. > Workers are trained in silica and exposure risks.	Isolation	Significant	Unlikely	14	> Workers complete 5 yearly health Surveillance for silica exposure health effects. (frequency of surveillance may vary due to exposure).
Health Effects on Body - Diesel powered vehicles and machinery.	> Inhalation of diesel particulate.	> Diesel powered vehicles can generate diesel particulate.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Vehicles operate in open spaces and all vehicles operate with windows up, with air conditioning. > Vehicles are also fitted with particulate filters. > Workers do not work in diesel fume. > Diesel powered machinery maintained as per OEM recommendations. > Diesel exhaust to be away from open windows and building windows.	Isolation	Minor	Rare	3	
Health Effects on Body - Ergonomics	> Musculoskeletal disorders	> Poorly designed equipment. > Hazardous manual handling.	Serious	Possible	13	Health Control Plan	> All equipment designed with ergonomic consideration. > All new machinery is risk assessed through our Change Management process. > Routine tasks have operating procedures and risk assessments in place. > Permit system in place for non routine task. > Hazardous Manual Handling Standard - ABL-HSE-GOS-12.	Engineering / Redesign	Serious	Unlikely	9	
Health Effects on Body - Fitness for work	> Fitness for work (fatigue)	> Insufficient time to recover between shifts. > Poor shift start and finish times.	Catastrophic (Principal Hazard)	Unlikely	19	Health Control Plan	> All personnel shall comply with ABL-HSE-GOS-29-02 Fatigue Management. > A site specific fatigue risk assessment shall be undertaken if an employee works more than 60 hours in a week.	Administrative	Catastrophic (Principal Hazard)	Rare	15	
Health Effects on Body - Fitness for work	> Fitness for work (drugs / alcohol)	> Worker under the effects of drugs and/or alcohol.	Catastrophic (Principal Hazard)	Unlikely	19	Health Control Plan	> Workers shall tell their supervisor if they are on any prescription medication. > Random drug and alcohol testing of workers. > Workers shall have zero alcohol in their system.	Administrative	Catastrophic (Principal Hazard)	Rare	15	

Health Effects on Body - Hazardous Substances	> Unknown health effects from being exposed to hazardous substances.	> Exposures to hazardous substances.	Catastrophic (Principal Hazard)	Possible	22	Health Control Plan	> Register onsite of all hazardous substances. > SDSs kept onsite and accessible, SDS register is reviewed annual. > For all chemicals brought onto site the SDS is reviewed ensuring any additional controls re implemented. > Attempt to replace dangerous chemicals with low risk chemicals. > Workers are trained in the safe use and handling of the substances. > Signage in place for any specific chemical hazards. > All flammable goods stored in suitable storage locations.	Engineering / Redesign	Serious	Unlikely	9	
Health Effects on Body - Hot Weather / High Humidity	> Heat stress / heat stroke.	> Hot weather / humidity.	Serious	Possible	13	Health Control Plan	> Mobile plant fitted with air conditioners, and all office spaces / building fitted with air conditioners. > Potential to increase breaks if needed or postpone work with no protection from heat. > Workers able to carry water with them, in vehicles / on job. > Workers have long pants, shirts, hat and sunscreen to protect them from UV.	Elimination	Minor	Unlikely	5	
Health Effects on Body - Noise	> Industrial hearing loss.	> Continual noise over 85dBA	Serious	Possible	13	Health Control Plan	> Workers operate within vehicle cabins, vehicle cabins are designed to be under exposure standard. > Buy quite, buying machinery which when in cabin operates at low decibels. > Workers isolated from noisy equipment and breaks taken away from noisy areas. > Noise survey mapping completed on a 5 yearly basis. > Noise monitoring conducted on the mine site. > Hearing protection available. > Signs indicating areas where excessive noise may be and where hearing protection is needed. > Machinery maintained to minimise noise.	Administrative	Serious	Unlikely	9	
Health Effects on Body - Vibration	> Effects on body due to vibration	> Vibration while operating mobile plant.	Serious	Possible	13	Health Control Plan	> Workers operate within vehicle cabins, vehicle cabins and seats are designed to reduce / eliminated vibration exposure. > Maintenance on mobile plant as per OEM recommendations. > Incident / hazard reporting processes	Engineering / Redesign	Minor	Unlikely	5	
Health Effects on Body - Welding	> UV burns. > Health effects from fume.	> Welding light and fume.	Significant	Unlikely	14	Not Applicable	> Welders use screens to prevent exposure to others. > Welders have correct PPE such as welding helmets and leather apron and gloves. > Fume extraction equipment. > Designated Hot work area.	Engineering / Redesign	Minor	Possible	8	
Inundation / Inrush - Gas	> Site is an open cut quarry and there is no risk of gas in workings.		Negligible	Rare	1	Inundation and Inrush Management Plan	> Nil no risk present	Elimination	Negligible	Rare	1	
Inundation / Inrush - Water offsite.	> Water from quarry affecting local community.	> Man made dams and rivers / lakes over flowing or giving way impacting local community.	Significant	Rare	10	Inundation and Inrush Management Plan	> Site is away from local community and possible flood risk from quarry. > Quarry is designed to only capture the water they are licenced to hold, in excessive rain event water will run off quarry in controlled manner. > Pumps able to move quarry water offsite in controlled manner. > Inspections and management of water within and leaving quarry. > Diversion systems in place such as, overflow channels, direct water away from workings and structure of dams	Engineering / Redesign	Serious	Rare	6	
Inundation / Inrush - Water onsite.	> Water into workings putting worker at risk of drowning.	> Quarry water washing through site.	Significant	Rare	10	Inundation and Inrush Management Plan	> Water drains from product very slowly. > Pipelines and drains in place to divert the incoming water into the quarry sumps. > Sumps built to capture and store water. > Water can be pump around site to manage water.	Engineering / Redesign	Serious	Rare	6	
Inundation / Inrush - Water onsite.	> Water into workings putting worker at risk of drowning.	> Man made dams and rivers / lakes above workings giving away, washing through site.	Significant	Rare	10	Inundation and Inrush Management Plan	> Sites designed with all dams at low points on the site, water washing through site is limited to what pumps can push up hill. > Roads and areas where water pools is inspected post rain event and during daily inspections. > Diversion systems in place such as, overflow channels, direct water away from workings and structure of dams. > Regular inspections of dams and dam walls.	Isolation	Serious	Rare	6	
Inundation / Inrush - Water onsite.	> Water into workings putting worker at risk of drowning.	> Ground water rising into workings.	Serious	Unlikely	9	Inundation and Inrush Management Plan	> Flow of ground water into working is very slow. > Inspection of quarry each day to ensure no excessive water. > Pumps in place to move water out of working areas	Engineering / Redesign	Minor	Unlikely	5	
Inundation / Inrush - Water onsite.	> Water into workings putting worker at risk of drowning.	> Significant rain event	Significant	Rare	10	Inundation and Inrush Management Plan	> Site work to stop in excessive rain events, as roads and visibility could be un safe. > Sites designed with all dams at low points on the site, water washing through site. > Roads and areas where water pools is inspected post rain event and during daily inspections. > Diversion systems in place such as, overflow channels, direct water away from workings and structure of dams.	Engineering / Redesign	Serious	Rare	6	
Mine Shaft & Winding Systems	> No risk onsite.	> No risk onsite.	Negligible	Rare	1	Not Applicable	> No risk onsite.	Elimination	Negligible	Rare	1	
Outburst - Gas	> Site is an open cut quarry and there is no risk of gas in workings.		Negligible	Rare	1	Principal Hazard However Not Present on Site	> Nil no risk present	Elimination	Negligible	Rare	1	
Plant & Structures - Maintenance of plant	> Unable to complete safe maintenance / servicing on equipment.	> Safety devices not fitted to plant.	Catastrophic (Principal Hazard)	Possible	22	Mechanical Engineering Control Plan	> All plant on sire must be risk assessed ensure safety devices and warning signals are in place and in suitable positions. > Inspections in place to ensure safety devices are in working order, apart of pre start up inspection. > Servicing completed on safety and warning systems. > Lock Out / Tag Out process, to verify isolation points re effective. > Clearance to work permit to be completed for non standard maintenance tasks. > Upon completion of maintenance work, all plant to returned to operational design.	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	
Plant & Structures - Maintenance of plant	> Injuries to person	> Release of energy	Significant	Possible	18	Not Applicable	> All plant to be designed to enable isolation of energy sources. > Lock Out / Tag Out and Clearance to work process. > Machinery Preventative maintenance and inspections	Isolation	Significant	Rare	10	
Plant & Structures - Boom Lift (Boom Length Greater than 11m)	> Person fall from boom lift	> Failure of boom lift	Catastrophic (Principal Hazard)	Possible	22	Mechanical Engineering Control Plan	> People using boom lift must have the applicable high risk work licence. > Boom lift must be fitted with crusher bar. > Boom lift capacity must not be exceeded. > People working within basket must be attached to basket with lanyard. > Boom lift used must be suitable for all terrain. > Exclusion zone to be in place for people not working with boom lift	Engineering / Redesign	Significant	Unlikely	14	

Plant & Structures - Contractor Management	> Competence of contractors completing work at quarry. > Advising risky solutions	> Mechanical engineering work is outsourced to a contractor(s).	Catastrophic (Principal Hazard)	Possible	22	Mechanical Engineering Control Plan	> Mechanical engineer to complete 5 yearly inspection of all fixed plant and structures. > All plant and equipment to be designed and maintained to the appropriate Australian standards. > All mechanical contractors are to have applicable trade certificates or demonstrate minimum of 2 years working within industry, completing that style of task. > All contractors must have appropriate insurances managed by site pass. > Quarry Manager to shall check and maintain a records for the competency of all contractors who complete maintenance works.	Engineering / Redesign	Significant	Unlikely	14	
Plant & Structures - Hirer Plant & Equipment	> Hirer plant and equipment used on site.	> Unknown / unforeseen risks / processes	Catastrophic (Principal Hazard)	Possible	22	Mechanical Engineering Control Plan	> All new plant brought onto the quarry to be risk assessed prior to use. > All hirer plant brought onto site, to used under clearance to work permit and any other applicable permits. > Hire equipment suppliers to be of suitable ABL standard to provide equipment to ABL sites. > Procurement processes to establish suitable suppliers as well as sub contractor	Engineering / Redesign	Significant	Unlikely	14	
Plant & Structures - Inspections / Maintenance of plant	> Plant develop risk which can caused hazard to workers.	> Plant and structures can deteriorate over time and operation.	Catastrophic (Principal Hazard)	Possible	22	Mechanical Engineering Control Plan	> All plant is to be maintained as per OEM specifications, Australian Standards, Mine Design Guidelines and information from relevant safety alerts. > Life cycle of plant to also be establish as per OEM recommendations, and maintenance completed by qualified person(s). > All plant has a daily visual inspection, pre start-up inspection. > All plant has a weekly detailed operational inspection, all inspection points have induvial item numbers. > Bi Monthly quarry inspections completed. > Off highway vehicles shall be inspected for every 250hrs of service. > All fixed plant has a 5 yearly external inspection by external mechanical engineer, register of equipment is stored in gearbox. > If inspections identify any issues, corrective action is developed and entered into Gearbox for completion. > Quarry manager will review / verify all inspections are completed.	Engineering / Redesign	Significant	Unlikely	14	
Plant & Structures - Ladders & Scaffolding	> Worker fall from ladder.	> Failure of ladder enabling worker to fall.	Significant	Possible	18	Mechanical Engineering Control Plan	> All ladders shall have a formal 3 monthly inspection completed. > All portable ladders shall Australian standards and be of industrial quality, capacity 150kg or greater. > All scaffolding shall be completed by a scaffolding company who has qualified scaffolders.	Engineering / Redesign	Significant	Unlikely	14	
Plant & Structures - Lifting with cranes.	> Fall of load.	> failure of lifting equipment	Catastrophic (Principal Hazard)	Unlikely	19	Mechanical Engineering Control Plan	> No person to stand or be under suspended load. > All crane lifts must have a lift plan with clearance to work or procedure for lift. > Cranes must be compliance with Australian standard. > All lifting equipment must be inspected every three months. > Qualified dogman to sling appropriate loads.	Isolation	Serious	Unlikely	9	
Plant & Structures - New plant to site / Modification to plant	> New plant / structures can bring new hazards to site.	> Unknown / unforeseen risks / processes	Catastrophic (Principal Hazard)	Possible	22	Mechanical Engineering Control Plan	> All new plant brought onto the quarry to have design risk review completed, prior to construction. > All new plant brought onto site to have commissioning plan develop and executed to look for possible risk. > All new plant to have an management of change completed, reviewed by either the OEM or qualified engineer. > A operational risk assessment (pre start up safety review) to be completed on all new plant to look for new introduced risks.	Engineering / Redesign	Significant	Unlikely	14	
Plant & Structures - Non Destructive Testing	> Plant develop risk which can caused hazard to workers.	> Parts of plant can fail due to the amount of use	Catastrophic (Principal Hazard)	Possible	22	Mechanical Engineering Control Plan	> Non destructive testing to be completed on equipment as per OEM, Australian Standards or Mine Design Guidelines recommendations. > Schedule for Non destructive testing to be managed via gearbox. > All non destructive testing to be completed by a NATA certified testing facility. > If non destructive testing is cost prohibitive, item is to be replaced prior to item being out side of service life.	Engineering / Redesign	Significant	Unlikely	14	
Plant & Structures - Pressure vessels	> Pressure vessel failure causing explosion.	> Not maintained or inspected. > Collision with pressure vessel.	Catastrophic (Principal Hazard)	Possible	22	Mechanical Engineering Control Plan	> All pressure vessel must be inspected annual, by an external qualified provider. > Pressure vessels must comply with Australian Standards. > All pressure vessels must be protected from collision with mobile plant. > All portable pressure vessels must be stored in a secured place. > Pressure vessels fitted with pressure relief valves.	Isolation	Serious	Rare	6	
Plant & Structures - Vehicles with rubber tyres.	> Failure of Rim or tyres.	> Poor maintenance of rim or tyre enabling failure.	Significant	Possible	18	Mechanical Engineering Control Plan	> All rims to complete non destructive testing (10000 hours on new or 5000 hours on pre tested) as per OEM / Australian Standards. > Person who completes work on rims / tyres must be competent in rim management, with competence managed in site pass and preferable work for the OEM. > Daily inspections completed on wheel assemblies and tyres. > Tyres are inspected to ensure inflation is correct as per OEM requirements, tyres shall be tested with a pressure gauge.	Engineering / Redesign	Significant	Unlikely	14	
Plant & Structures - Vehicles with rubber tyres	> Failure of Rim or tyres.	> Rubber tyre vehicles which have come into contact with electricity or heating	Catastrophic (Principal Hazard)	Unlikely	19	Mechanical Engineering Control Plan	> Any rubber tyred vehicle which has come into contact with high voltage electricity or heating shall be isolated in a 300m exclusion zone for a minimum of 24 hours.	Isolation	Serious	Rare	6	
Road - Bodies of Water	> Vehicle enter body of water.	> Unaware of body of water.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> Bunding shall be erected within 5 metres of the sloping edge, not the waters edge. > Signage in place warning of locations of bodies of water. > Life Buoy located around bodies of water.	Isolation	Serious	Rare	6	

Road - Design of roads within quarry	> Collision of vehicles.	> Poor roads / conditions enabling vehicle collision.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> All two-way travel roads should be 3 times the width of the widest vehicle, if not possible road must include radio call point and vehicle passing points. > Ideally two way roads would have a centre berm to separate vehicles. > No road shall be narrower than 1.5 times the width of the widest vehicle which will travel along it. > All berms shall be half the wheel height of the biggest vehicle site. > Roads shall be made of suitable material and maintained so they are in a safe condition. > Roads should be under a 1/10 grade, roads with a steeper grade shall have a specific risk assessment. > Corners shall be designed with cross-falls of no greater than 5 degrees. > Drainage provision shall be installed on all roadways and benches to removed pooled water. > Where possible centre berms shall be used as a road divider. > Intersections, Crests and blind corners should be eliminated, if they can not be eliminated then a specific risk assessment should be completed. > Where possible light vehicle traffic should be separate from heavy vehicle traffic.	Engineering / Redesign	Significant	Unlikely	14	
Road - Interaction with Power Lines	> Vehicle collision with overhead powerlines	> Unknown vehicle height. > Unknown powerline height.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> No overhead powerlines on site.	Engineering / Redesign	Significant	Rare	10	
Road - Maintenance of Roads	> Unplanned movement of vehicle travelling on roads, causing collision.	> Road condition deteriorates due to poor maintenance.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> Road ways must be regularly maintained and watered. > All workers must be notified at pre-start or toolbox talk, if roads are in poor condition or being maintained during shift. > Obstacles and debris shall be removed from road ways. > Road ways shall be inspected for cracking, sinking or slippages during / after any periods of heavy rain.	Engineering / Redesign	Serious	Unlikely	9	
Road - Refuelling Stations	> Vehicle collides with re fuelling station	> Unplanned movement of vehicle, roll away.	Significant	Possible	18	Roads and Other Vehicle Operating Areas Management Plan	>Fixed refuelling stations shall be listed on a sites traffic management plan. > Refuelling stations must be designed and constructed as per AS1940. > Physical barriers must be in place to prevent collision with refuelling stations.	Isolation	Serious	Unlikely	9	
Road - Traffic Management	> Unplanned movement of vehicle travelling on roads, causing collision.	> Vehicle operators not aware of road rules.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> All vehicles have two way radios to call operators who may be not following road rules. > All people are inducted to site and trained in traffic management rules. Plus annual refresher training of drivers. > Signage onsite directing vehicles, and signage is compliant to AS1744:1975. > Signage is in visible location where they do not generate a hazard and they are place far enough away from a hazard to enable an operator to stop. > Site traffic management maps.	Engineering / Redesign	Significant	Unlikely	14	> Site shall complete specific site walk through risk assessment for traffic management, identifying heights of berms, one / two way roads, placement of signage, speed limits, radio call points, parking areas, and dealing with road hazards (Crests, blind corners, Intersections), pedestrian integration.
Road Vehicle Operations - Access and Egress of all Mobile Plant.	> Fall while accessing or exiting mobile plant.	> Design of access / egress. > Damage to access / egress.	Serious	Possible	13	Not Applicable	> Three points of contact for accessing mobile plant. > Fall protection in place for mobile plant. > Review each piece of plant for access and egress, prior to introduction to site. > Mobile plant operators have appropriate PPE. > Pre-Start inspection on all mobile plant.	Engineering / Redesign	Serious	Rare	6	
Road Vehicle Operations - Collision with fixed plant	> Collision with fixed plant	> Machinery needs to access areas near fixed plant to tip / load.	Significant	Possible	18	Roads and Other Vehicle Operating Areas Management Plan	> Speed limits within congested 15km/h. > Signage reinforcing all site speed limits. > Reversing cameras in place. > Designated stop and hold points, and exclusion zones.	Administrative	Serious	Possible	13	
Road Vehicle Operations - Congested Work Areas	> Collision of vehicles within congested work zones Heavy Vehicle V Heavy Vehicle	> Certain work areas (Boot, Loader, Stockpile area, loading zones) have multiple vehicle movements.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> Speed limits within congested 15km/h. > Radio communication between vehicles > Signage reinforcing all site speed limits. > Reversing cameras in place. > Flashing lights for dust / dawn operations. > Designated stop and hold points, and exclusion zones. > Reversing alarms on equipment.	Isolation	Serious	Possible	13	
Road Vehicle Operations - Congested Work Areas	> Collision of vehicles within congested work zones Heavy Vehicle v Light Vehicle	> Certain work areas (Boot, Loader, Stockpile area, loading zones) have multiple vehicle movements.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> Speed limits within congested 15km/h. > Radio communication between vehicles, light vehicles must give way to all heavy vehicles. > Signage reinforcing all site speed limits. > Reversing cameras in place. > Flashing lights and whip flags on light vehicles. > Designated stop and hold points, and exclusion zones.	Isolation	Serious	Possible	13	
Road Vehicle Operations - Fire on mobile plant.	> Fire on mobile plant.	> Failure on mobile plant causing fire.	Significant	Possible	18	Fire Prevention and Protection Management Plan	> Fire fighting equipment in place to enable driver to escape from vehicle, and of suitable size for self escape. > Fire extinguishers tested every 6 months. > Workers trained in fire equipment. > Pre start inspection on machinery and equipment maintained as per OEM recommendations.	Engineering / Redesign	Significant	Rare	10	
Road Vehicle Operations - General Vehicle Movements	> Collision of vehicles.	> Unknown vehicle movement, > Unable to see other vehicle. > Vehicle causing more severe injury to occupants.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> All vehicles must be fitted two-way radios, > All vehicles must have a flashing light, > Head lights, indicator lights and brake lights. > Vehicles <4.5 Tonne must be fitted with whip flags. > All mobile plant must be fitted with reversing beepers and a fire extinguisher. > All public road going vehicles, must meet road worthy inspections for NSW. > All Off Highway vehicles must comply with maintenance as prescribed where possible OEM. > Roads designed to protect workers and minimise integration between heavy and light vehicles. > Workers are trained and competent to drive vehicle. > Collision avoidance technology, vehicle reversing alarms regularly tested. > Pre-Start checklist completed.	Engineering / Redesign	Significant	Unlikely	14	
Road Vehicle Operations - General Vehicle Movements	> Collision with building / Structure.	> Building in position where run away vehicle can have collision.	Catastrophic (Principal Hazard)	Unlikely	19	Roads and Other Vehicle Operating Areas Management Plan	> Speed calming devices installed. > Barricading and Bollards to slow/stop vehicles. > Separation between vehicles and pedestrian areas. > Run off areas for vehicles. > On site speed limits based on road and operating condition. > Road is maintained to prevent it being slippery. > Gear selection signage installed based off OEM.	Engineering / Redesign	Serious	Rare	6	

Road Vehicle Operations - General Vehicle Movements	> Collision with person.	> Unknown vehicle movement, > Unable to see other person	Significant	Possible	18	Roads and Other Vehicle Operating Areas Management Plan	> Designated walk ways for pedestrians, pedestrians not to walk around moving heavy vehicles. > Pedestrians wear high visibility clothing. > All mobile plant must be fitted with reversing beepers. > All public road going vehicles, must meet road worthy inspections for NSW. > All Off Highway vehicles must comply with maintenance as when possible as per OEM. > Collision avoidance system for site visitors.	Isolation	Significant	Rare	10	
Road Vehicle Operations - General Vehicle Movements	> Collison with other Vehicle, structure or pedestrian.	> Driver not fir for work (fatigue or drugs / alcohol. > Distracted mobile phone (personal device).	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> No mobile phones use while operating vehicles >4.5T GVM. > No vehicle <4.5T GVM drivers are permitted to use mobile phones when driving on a quarry site, exception for site vehicles when using hands free. > Drivers trained in fatigue management and have regular breaks. > All persons onsite must be free from the effects of drugs or alcohol. > Onsite random drug and alcohol testing.	Administrative	Catastrophic (Principal Hazard)	Rare	15	
Road Vehicle Operations - Loading box trailers for light vehicles (<4.5T GVM)	> Failure of trailer.	> Overload vehicle > Bucket damages vehicle	Significant	Possible	18	Not Applicable	> Light vehicle box trailer to not be loaded on site.	Elimination	Negligible	Rare	1	
Road Vehicle Operations - Loading of tipper trailers.	> Failure of tipper vehicle.	> Overloading of truck / trailer.	Minor	Possible	8	Not Applicable	> Maximum capacity of tippers are known. > Scales on loader to indicate weight of load. > loader driver qualified and evenly distributes load. > All tipper vehicles are site inspected. > two communication between truck driver and loader driver.	Administrative	Minor	Rare	3	
Road Vehicle Operations - Operating vehicle in poor visibility conditions	> Collison with other Vehicle, structure or pedestrian.	> Night, > Smoke, > Fog.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> Vehicles are fitted with head lights and tail lights. > All vehicle have flashing lights. > Reflective tape, signs and clothing. > Operators to drive to the conditions.	Engineering / Redesign	Catastrophic (Principal Hazard)	Unlikely	19	> Include in control plan.
Road Vehicle Operations - Roll over / Fall Over	> Vehicle roll over or fall over	> Poor road condition, > Load shift, > Too fast in corner,	Catastrophic (Principal Hazard)	Probable	24	Mechanical Engineering Control Plan	> Further information in Roads and other vehicle control plan. > All vehicles must be fitted with seat belts and must be warn for all vehicle movements. > Workers must not travel in a vehicle seat which does not have a seat belt for each seat. > Maximum speed limit on site is 30 km/h. > Roads are inspected and maintained as per roads and other vehicle control plan. > Excavators must transport loads as low to the ground as possible. > All mobile plant fitted with roll over protection.	Engineering / Redesign	Serious	Unlikely	9	
Road Vehicle Operations - Tarping Load	> Driver falling from vehicle, prime mover and trailers.	> Driver need to tarp up load. > Drivers need to alight vehicle. > Uneven surfaces	Significant	Unlikely	14	Not Applicable	> All roads must be tarped prior to leaving site. > All vehicles must be fundamentally stable (on level ground) prior to exiting the vehicle via use of tarping area. > Driver vehicle inspections conducted for vehicle condition and tarping. > Drivers inducted regarding tarping requirements on site.	Engineering / Redesign	Serious	Unlikely	9	
Roads - Pit Access Road - Driving (1/8 Grade) - Driving down pit access road in Heavy Vehicle (> 4.5t)	> Collision with other Vehicle(s)	> Loss of vehicle control due to vehicle failure.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> Only one heavy vehicle can travel down the pit access road at any point in time. > A vehicle is permitted to pass a slow tracked machine, the tracked machine must pull over "stop" to a safe area to enable other vehicle to pass, radio communication used prior to passing. > All heavy vehicles must travel down pit access road in no higher than 2nd gear. > Conduct toolbox meeting daily on expected movements on pit access road. > Radio communication used to control access to pit access road. > Heavy Vehicles accessing road are serviced as per OEM recommendations and vehicles are fitted with emergency brakes. > Daily inspections completed on all heavy vehicles to ensure vehicles are operating correctly, this is interlocked within the operation of the heavy vehicle. > Vehicles have emergency brakes. > Road is regularly maintained/inspected to ensure road is in a suitable driving condition, road is inspected with light vehicle post any rain event. > Pit access road is fitted with berms, half the wheel height of the largest vehicle. > Signs in place reinforcing to drivers pit access road rules.	Isolation	Significant	Unlikely	14	> Ensure all signs on pit access road reflect controls. > Ensure controls are in applicable inductions.
Roads - Pit Access Road - Driving (1/8 Grade) - Driving up pit access road in Heavy Vehicle (> 4.5t GVM)	> Collision with other Vehicle(s)	> Loss of vehicle control due to vehicle failure.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> All heavy vehicles must travel up the pit access road with a minimum of 50 metres (nose to tail) of distance between vehicles, a light vehicle is not to follow a heavy vehicle up pit access road. > A vehicle is permitted to pass a slow tracked machine, the tracked machine must pull over "stop" to a safe area to enable other vehicle to pass, radio communication used prior to passing. > Radio communication used to control access to pit access road. > Conduct toolbox meeting daily on expected movements on pit access road. > Heavy Vehicles accessing road are serviced as per OEM recommendations and vehicles are fitted with emergency brakes. > Daily inspections completed on all heavy vehicles to ensure vehicles are operating correctly, this is interlocked within the operation of the heavy vehicle. > Vehicles have emergency brakes. > Road is regularly maintained/inspected to ensure road is in a suitable driving condition, road is inspected with light vehicle post any rain event. > Pit access road is fitted with windrows, half the wheel height of the largest vehicle. > Signs in place reinforcing to drivers pit access road rules.	Isolation	Significant	Unlikely	14	> Ensure all signs on pit access road reflect controls. > Ensure controls are in applicable inductions
Roads - Pit Access Road - Driving (1/8 Grade) - General access to pit access road	Heavy vehicle loss of traction.	> Road failure due to rain event. > Road failure due to strata failure.	Significant	Possible	18	Roads and Other Vehicle Operating Areas Management Plan	> Post any rain event a light vehicle shall inspect the road for any possible loss of traction issues for a heavy vehicle. > Light vehicles which access pit access road have 4WD, should a loss of traction event be and issue.	Administrative	Significant	Unlikely	14	

Roads - Pit Access Road - Driving (1/8 Grade) - General access to pit access road.	Collision of vehicle(s) utilising pit access road.	> Pit access road is 1/8 grade which can mark stopping suddenly difficult. > Road has blind corners and potential for fog / twilight / night to hinder vision.	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> Single way traffic only on pit access road. > Light vehicles fitted with flashing lights and whip flags. > Vehicle head lights shall be on. > All vehicles accessing pit access road must communicate via radio at the following call points. The intersection, the cutting, the SS's, the top bend and bottom of the hill (channel 27). > All people driving vehicles on site must hold a C class drivers licence and have the relevant qualifications / approvals on site to drive certain heavy vehicles.	Isolation	Significant	Unlikely	14	> Ensure all signs on pit access road reflect controls. > Ensure controls are in applicable inductions
Roads - Pit Access Road - Driving (1/8 Grade) - Light vehicle (<4.5t GVM) accessing pit access road.	> Collison with other Vehicle (Due to Loss of Control)	> Loss of vehicle control due to operator loss of control	Catastrophic (Principal Hazard)	Possible	22	Roads and Other Vehicle Operating Areas Management Plan	> Light vehicles must not drive faster than 30km/h when on roads within the quarry. > Light vehicles must not interact with heavy vehicles on the pit access road. > Conduct toolbox meeting daily on expected movements on pit access road. > Radio communication used to control access to pit access road. > Light Vehicles accessing road are serviced as per OEM recommendations and vehicles are fitted with emergency brakes (Hand Brake). > Pit access road is fitted with windrows, half the wheel height of the largest vehicle. > Signs in place reinforcing to drivers pit access road rules.	Engineering / Redesign	Serious	Unlikely	9	> Ensure all signs on pit access road reflect controls. > Ensure controls are in applicable inductions
Roads - Pit Access Road - Driving (1/8 Grade) - People conducting work or pedestrians accessing Pit access road	Collision with Pedestrian	> Person walking along pit access road. > Person needing to contact work on pit access road.	Significant	Possible	18	Roads and Other Vehicle Operating Areas Management Plan	> No person(s) are permitted to walk up/down pit access road. > Radio communication used to control access to pit access road. > If work to take place on pit access road, must be done so via work permit. > High visibility clothing worn.	Elimination	Significant	Rare	10	
Roads - Pit Access Road - Driving (1/8 Grade) - Uncontrolled vehicle at intersection from pit access.	Vehicle unable to stop at bottom of 1/8 grade road., collision with other vehicle.	> Traveling two fast, not using gearing. > Failure of vehicle	Catastrophic (Principal Hazard)	Unlikely	19	Roads and Other Vehicle Operating Areas Management Plan	> Road design incorporates a bend for emergency run off, including material to stop uncontrolled moving vehicle. > Easily able to see oncoming vehicle (hazards) uncontrolled coming down hill. > Restrict heavy vehicle movements in poor road / weather conditions. > Warning devices on all vehicles (horn). > Vehicles maintained as per OEM spec and other relevant industry communications. > Pre-start inspections completed every morning on all vehicles, including brake function test. And emergency steering.	Engineering / Redesign	Significant	Unlikely	14	
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Appendix 19B PPE Matrix

PERSONAL PROTECTIVE EQUIPMENT

Note: PPE use is a "minimum" risk control measure, however it can be used in conjunction with other safety controls.

LEGEND– M= Mandatory R = Recommended if required

SITE SPECIFIC RULES WILL DETERMINE WHAT PERSONAL PROTECTIVE EQUIPMENT (PPE) MUST BE WORN

PPE Type / Hazard/Activity	Safety Helmet	Hearing Protection	Eye Protection	Safety Boots	Long Clothing	Hand Protection	Hi-Vis Clothing	Respiratory Equipment	Face Shield	Welding Mask	Safety Harness	
Employees/visitors	M	R	M	M	M		M					
Plant Operation	M	M	M	M	M	R	M	R	R			
Mechanical Maintenance	M	R	M	M	M	R	M	R	R		R	
Fabrication Work	M	M	M	M	M	M	M	R	R	R	R	
Hazardous Substances	M	R	M	M	M	M	M	R	R			
Workshop Activities	M	M	M	M	M	R	M	R	R	R		
Office Work				M	M		M					
Working at Heights	M	R	M	M	M	R	M	R	R	R	M	
Confined Spaces	M	M	M	M	M	R	M	R	R	R	R	
Cleaning Activities	M	R	M	M	M	R	M	R	R		R	

Concrete & Aggregates

PIRMP Document Control — Austen Quarry

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Pollution Incident Response Management Plan Review Sheet				
Plan	Revision No	Date	Review	Approved by (Planning and Development)
PIRMP	1.0	08.03.2013	Reviewed – no changes	D.Thiedeke
PIRMP	1.0	15.05.2014	Reviewed – minor changes made	D.Thiedeke
PIRMP	2.0	04.05.2015	Reviewed – update contacts	D.Thiedeke
PIRMP	3.0	12.05.2016	Reviewed – no changes	D.Thiedeke
PIRMP	4.0	09.05.2017	Reviewed – update contacts	D.Thiedeke
PIRMP	5.0	11.05.2018	Reviewed – no updates	D.Thiedeke
PIRMP	6.0	08.03.2019	Alterations to numerous sections	D.Thiedeke
PIRMP	7.0	27.08.2019	Format changes	D.Thiedeke
PIRMP	8.0	21.08.2020	Format changes – PIRMP review	D.Thiedeke
PIRMP	9.0	16.06.2021	Format changes / S21.2 update / Hazard Register update / Management structure update	D.Thiedeke
PIRMP	10.0	06.02.2023	Alterations to numerous sections	D.Thiedeke