Government of **Western Australia**
Department of **Environment Regulation**

ENVIRONMENTAL ASSESSMENT REPORT

LICENCE NUMBER: L8591/2011/1
LICENCE FILE NUMBER: 2011/007881
APPLICATION DATE: 18 August 2011
AMENDMENT DATE: 9 January 2014
EXPIRY DATE: 18 March 2017

PREMISES DETAILS

LICENSEE HOLDER AND OCCUPIER
P.M.R. Quarries Pty Ltd
41 Spearwood Avenue
BIBRA LAKE WA 6163
ACN: 008 866 448

PREMISES
Mt Minnie Project
M8/475
ONSLOW WA 6710

PRESCRIBED PREMISES SUMMARY

Table 1: Prescribed premises summary

Category number*	Category Description*	Category Production or Design Capacity*	Premises Production or Design Capacity#
12	Screening, etc. of material	50 000 tonnes or more per year	750 000 tonnes per annual period
77	Concrete batching or cement products manufacturing	100 tonnes or more per year	142 300 tonnes per annual period

* From Schedule 1 of the Environmental Protection Regulations 1987
# From application
** From Schedule 4 of the Environmental Protection Regulations 1987

This Environmental Assessment Report (EAR) has been drafted for the purposes of detailing information on the management and mitigation of emissions and discharges from the prescribed premises. The objective of the EAR is to provide a risk assessment of emissions and discharges, and information on the management of other activities occurring onsite which are not related to the control of emissions and discharges from the prescribed premises activity. This does not restrict the Department of Environment Regulation (DER) to assessing only those emissions and discharges generated from the activities that cause the premises to become prescribed premises.

Basis of Assessment
The Mt Minnie Project (MMP) has been assessed as a "prescribed premises" under category number 12 and 77, within Schedule 1 of the Environmental Protection Regulations 1987.

Category 12 - *Screening, etc. of materials: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.*

Category 77 – *Concrete batching or cement products: premises on which cement products or concrete are manufactured for use at places or premises other than those premises.*

P.M.R. Quarries Pty Ltd (PMR) have established a hard rock quarry in the Mt Minnie/Onslow region which supplies crushed materials to the Wheatstone Liquefied Natural Gas (LNG) Project and the local market. A works approval for the crushing and screening plant associated with this proposal was issued in December 2011.

A concrete batching plant has been constructed at the quarry site and has the capacity to produce up to 142,300 tonnes of product per year. The plant was constructed under works approval W5361/2013/1 issued in October 2013.

1.0 BACKGROUND

1.1 GENERAL COMPANY DESCRIPTION

PMR trades as WA Limestone, WA Bluemetal and WA Premix and is a Perth based family business that has been operating for more than 30 years and has extensive experience in quarrying in the Pilbara region. PMR utilised ISO 14001 certified environmental consultants for the preparation and compliance of site specific environmental management plans and all sites and operations are conducted to relevant industry and national codes of practice.

1.2 LOCATION OF PREMISES

The project is located within mining lease M8/475 which is currently held by Twelve Mile Pty Ltd, who has entered into an agreement with PMR. M8/475 is located 80 kilometres (km) south-east of Onslow and 3km north-west of the intersection of the North West Coast Highway and Onslow Road in the Pilbara region of Western Australia (Figure 1). The lease is located within the former Mt Minnie pastoral lease, which is now managed by Department of Parks and Wildlife.

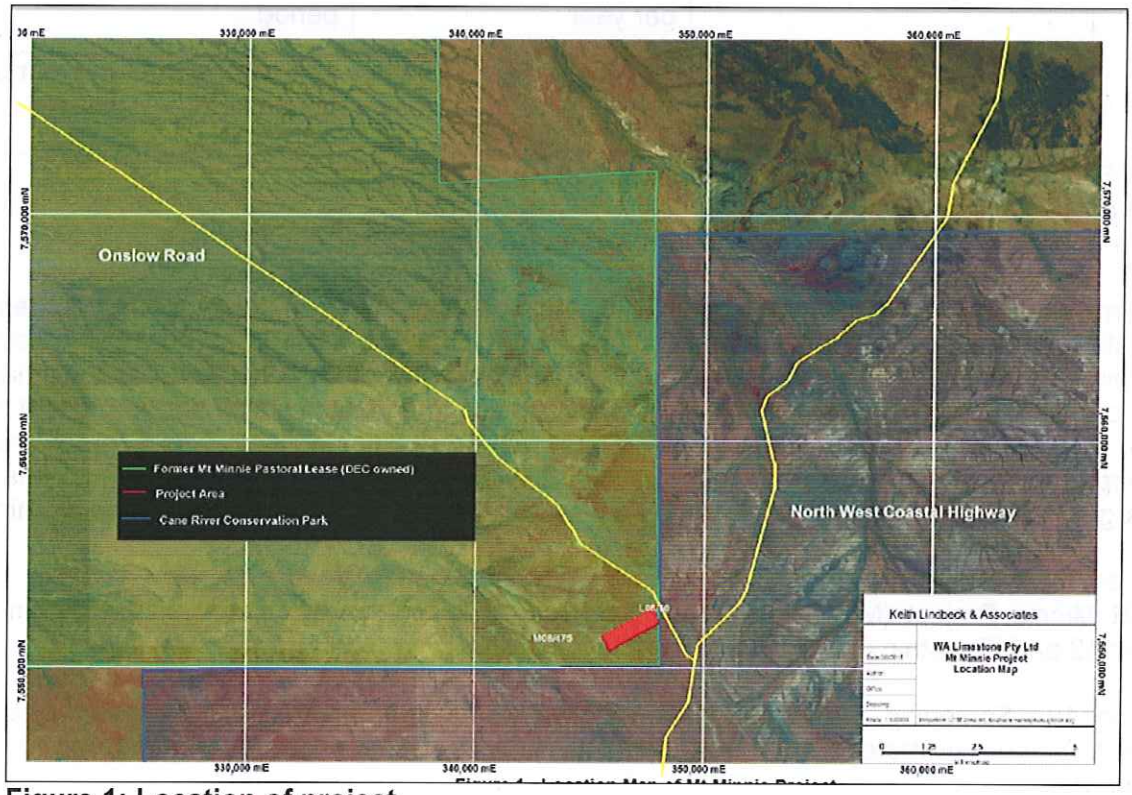

Figure 1: Location of project.

Climate

The climate at Onslow is arid tropical with most rainfall occurring between January and June, either as a result of tropical cyclones or depressions. The average annual rainfall for Onslow

is 275 millimetres (mm) and prevailing winds in the region are from the south and south-east during winter and from the westerly sector in the summer.

Topography
The topography of the project area is characterised by hills, ranges, stony plains and sandplains on sedimentary rock.

Flora and Fauna
In July 2011, a Level 1 flora and fauna survey of the project area was undertaken by Keith Lindbeck and Associates and Native Vegetation Solution. No Declared Rare Flora or Priority Flora were recorded in the survey area. One potential Priority 3 species, *Eremophila forrestii subsp Viridis* was recorded outside the tenement area.

The project area does not contain habitats of high ecological significance from a faunal perspective, or contain faunal assemblages that are ecologically significant. The survey recorded 2 reptile species, 2 mammal species and 11 bird species, although the 2 mammal species were both non-native.

Surface water and groundwater
There are no lakes, river, or other significant water bodies within the project area and groundwater depth within the project area is 15 metres (m) below the surface.

1.3 PROPOSAL DESCRIPTION

A quarry and crushing and screening plant with a total capacity of 750,000 tonnes per year has been constructed at the site. The infrastructure associated with the crushing and screening plant consists of:

- quarry;
- crusher/screening plant;
- magazine;
- material stockpile;
- workshop and offices;
- weighbridge; and
- access road.

A concrete batching plant with the capacity to produce up to 142 300 tonnes per year, was later constructed at the site. The plant is a HZS75 Mobile Concrete Wet Mix Batching Plant and consists of four modules:

- containerised aggregates storage bins;
- containerised Wet mix module;
- containerised horizontal cement silo; and
- containerised water chiller unit.

Figure 2 below, shows the layout of the site and the location of infrastructure.

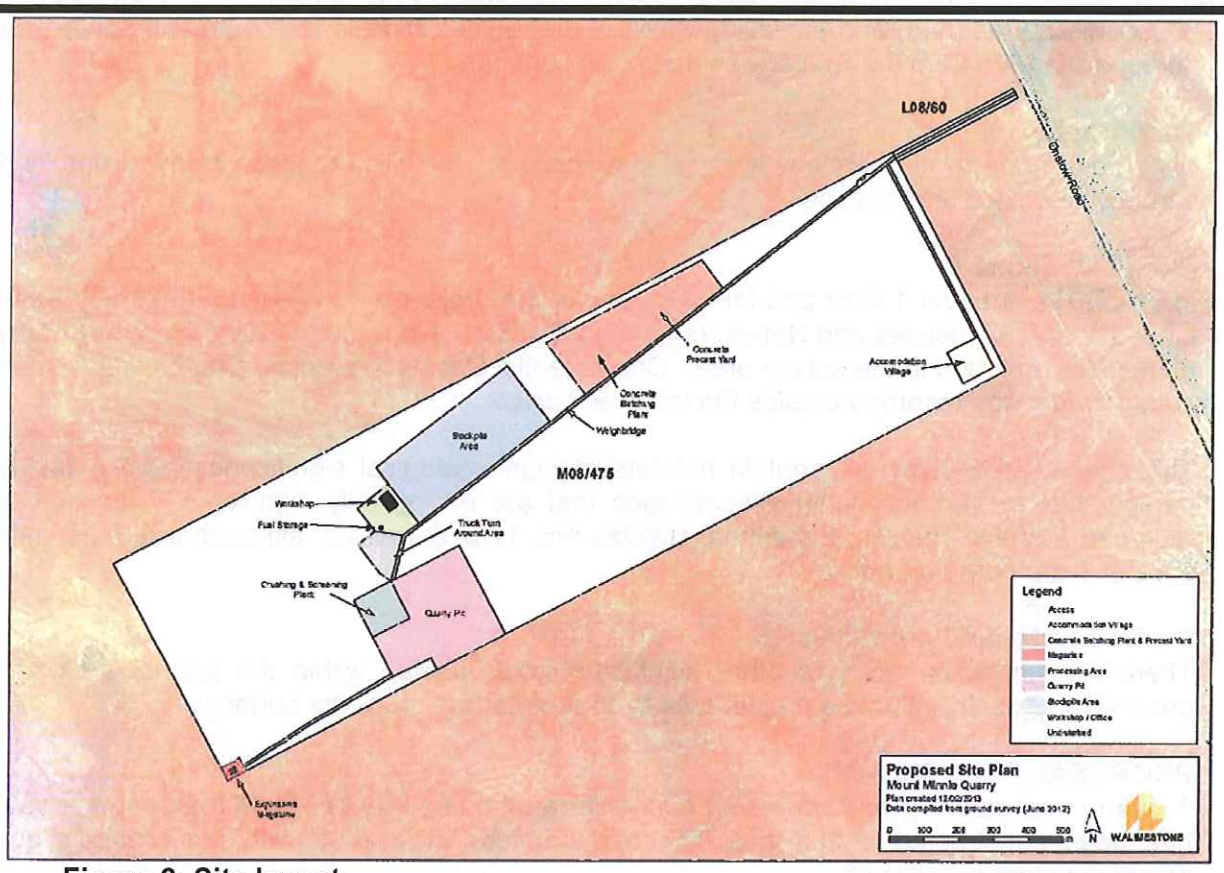

Figure 2: Site layout.

Material mined from the quarry is transported to the Run Of Mine (ROM) stockpile for processing through the crushing/screening plant which processes approximately 200 tonnes of material per hour. The plant has been erected on compacted soil and consist of a primary jaw crusher, a secondary cone crusher, a screening plant, recirculation cone crusher and stockpile handling equipment such as conveyors and loaders (Figure 3). Dust sprays have been installed on each screen at the feed end, at each conveyor transfer chute and the crusher feed chutes.

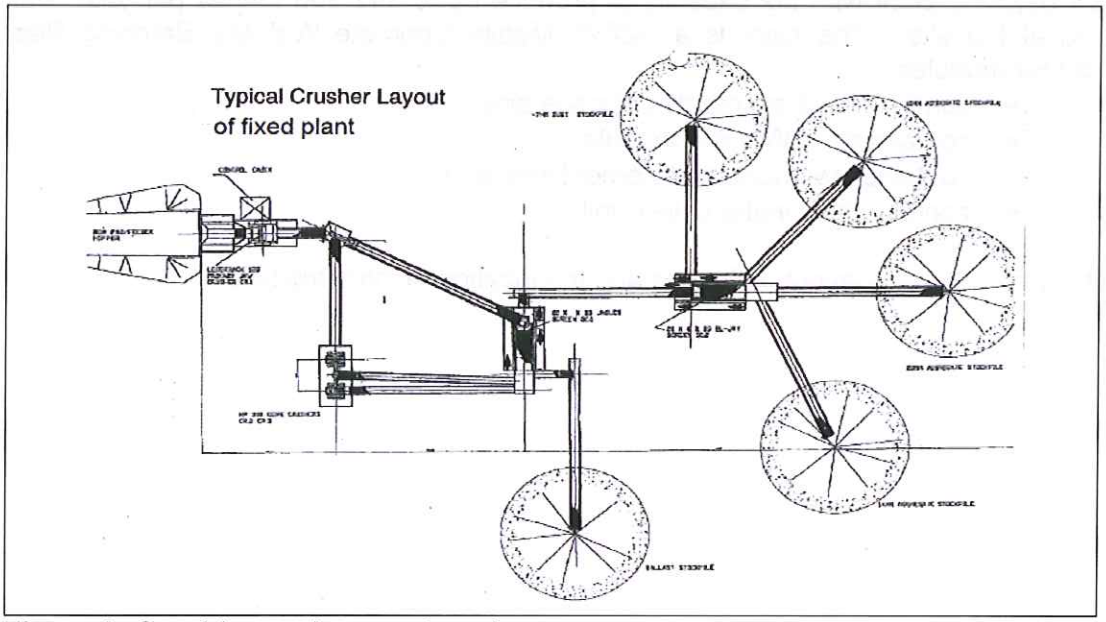

Figure 3: Crushing and screening plant.

The project requires up to 10,000 litres (L) of water per day for the plant and dust suppression. Water for the operation of the site is sourced from groundwater bores located at the site.

Aggregates for the concrete plant is sourced from the quarry and delivered by truck or wheel loader for storage in stockpiles within 30 metres (m) of the plant. Cement powder is delivered in tankers and loaded into storage silos via closed circuit transfer.

Aggregates is loaded into feed hopper bins using a front end loader and then fed into the plant via conveyors. Cement is transferred directly into the plant from the silos. Aggregates, cement, admixtures and water are mixed in the plant for transfer into the trucks. The quantity of each product loaded into the plant is controlled via computer console by the plant manager.

A concrete wash out pit captures all wastewater used to wash out truck agitators. Water either evaporates from the pit or is pumped to the water storage tanks for reuse in the process. The pit is periodically allowed to dry out and solids removed for disposal. There is no discharge from the pit.

Support facilities

An access road off Onslow Road has been constructed to allow access to and from the site. Power on site is supplied by portable diesel generators and workshop/office facilities located on site are portable units. A weighbridge facility with an office is also located at the project site. Portable chemical toilet facilities are used onsite and serviced by a licensed operator and all domestic and industrial waste is be removed from site and disposed of at the Onslow landfill.

The workshop is located on a bunded concrete area and all liquids and surface water is drained into a sump. All equipment maintenance is undertaken on this concrete slab to ensure any spillage is contained and drains into the sump. The sump is constructed with sufficient capacity to contain rainfall and is pumped out as required with disposal to a licensed facility.

Fuel consumption for the project is approximately 2750L per day and fuel is stored in two bunded 55 kilolitre (kL) tanks. The refuelling is undertaken on a concrete pad built to contain any spills. All stormwater in the refuelling area is directed to the sump and either evaporates or is removed from site by a licenced contractor. Oils and other hydrocarbons are stored on a bunded oil storage container or within a suitable bunded area.

1.4 REGULATORY CONTEXT

1.4.1 Part IV *Environmental Protection Act 1986*, Environmental Impact Assessment

The MMP has not been referred to the Environmental Protection Authority.

1.4.2 Part V *Environmental Protection Act 1986*, Environmental Management

The MMP has been assessed as a "prescribed premises" for category 12 under the Environmental Protection Regulations 1987. Works approval W5039/2011/1 was issued in December 2011 and compliance documentation was received on the 2 March 2012. PMR were issued with a licence to operate in March 2012.

A works approval W5361/2013/1, was issued in October 2013 to construct a concrete batching plant at the site. PMR submitted compliance document and DER issued

compliance certificate 5 December 2013 for the concrete plant. This amendment includes the addition of category 77 to the licence for the operation of the plant.

DER also administer the following legislation:

- *Environmental Protection Act 1986*;
- Environmental Protection Regulations 1987;
- Environmental Protection (Noise) Regulations 1997;
- Environmental Protection (Unauthorised Discharges) Regulations 2004; and
- Environmental Protection (Controlled Waste) Regulations 2004.

1.4.3 Other Decision Making Authorities' Legislation which applies

The onsite storage of hydrocarbons and dangerous goods is regulated by the following legislation:

- *Occupational Safety and Health Act 1984*;
- Occupational Safety and Health Regulations 1996;
- *Dangerous Goods Safety Act 2004*;
- Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007; and
- Australian Standards 1940-2004 The storage and handling of flammable and combustible liquids.

1.4.4 *Rights in Water Irrigation Act 1914*

PMR have a groundwater licence with Department of Water to abstract up to 20,000 kL of groundwater per year.

1.4.5 Local Government Authority

The premises is located within the Shire of Ashburton.

2.0 STAKEHOLDER AND COMMUNITY CONSULTATION

SUBMISSIONS RECEIVED DURING 21 DAY PUBLIC COMMENT PERIOD

The application for licence details for this facility was advertised in The West Australian newspaper on 19 September 2011 as a means of advising stakeholders and to seek public comments. No submissions were received.

3.0 EMISSIONS AND DISCHARGES RISK ASSESSMENT

DER considers that conditions should focus on regulating emissions and discharges of significance. Where appropriate, emissions and discharges which are not significant should be managed and regulated by other legislative tools or management mechanisms.

The following section assesses the environmental risk of potential emissions from the MMP. In order to determine the site's appropriate environmental regulation, an emissions and discharges risk assessment was conducted of the MMP using the environmental risk matrix outlined in Appendix A. The results of this are summarised in Table 2.

Table 2: Risk assessment and regulatory response summary table.

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Air emissions (point source)	**Operation – 1** No point source air emissions should be generated during operation of the plant.	**No** level of social-political concern.	**E** – No regulations, other management mechanisms.	No conditions.	N/A.	General provisions of the *Environmental Protection Act 1986.*
Dust emissions	**Operation – 1** *Crushing and screening plant* There is potential for dust to be generated during operations of the crushing and screening plant as it is a dry process. The nearest sensitive receptors are Nanutarra Roadhouse located 45km from plant and the town of Onslow located 80km south-east of the plant. PMR have implemented the following mitigation measure to minimise dust emissions: • water mist sprays are located on crushing circuit; • sprinklers have been installed on all stockpiles; • maximum speed limit for all vehicles of 50km per hour; • minimise vehicle movement on site; • restrict access to existing tracks; and • use of water trucks on haul roads. *Concrete batching plant* There is potential for dust emission during operation of the plant. PMR have committed to be compliant with the concrete batching regulations and the following measure to reduce the potential for dust emissions from the plant: • Enclosed conveyor system; • Material maintained at optimum moisture content; • Silo fitted with filter system compliance with concrete batching regulations; and • Wind shields and sprinkler systems fitted to loadout bays.	**No** level of social-political concern. Nearest sensitive receptor is Nanutarra Roadhouse located 45km from plant and Onslow township 80km south-east of plant.	**E** – No regulations, other management mechanisms.	Standard REFIRE conditions relating to dust emissions.	N/A.	General provisions of the *Environmental Protection Act 1986.* Environmental Protection (Unauthorised Discharges) Regulations 2004. Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998.
Odour emissions	**Operation – 1** There should be no odour emissions generated during operation of the plant.	**No** level of social-political concern.	**E** – No regulations, other management mechanisms.	No conditions.	N/A.	General provisions of the *Environmental Protection Act 1986.*

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Noise emissions	**Operation – 1** The crushing and screening and concrete plants are operated to comply with the Environmental Protection (Noise) Regulations 1997 and Mines Safety and Inspection Regulations 1995. The nearest sensitive receptors are Nanutarra Roadhouse located 45km from plant and the town of Onslow located 80km south-east of the plant.	**No** level of social-political concern.	**E** – No regulations, other management mechanisms.	No conditions.	N/A.	General provisions of the *Environmental Protection Act 1986.* Environmental Protection (Noise) Regulations 1997. Mines Safety and Inspection Regulations 1995.
Light emissions	**Operation – 1** There are no light emissions generated during operation of the plant as it operates during day shift only.	**No** level of social-political concern.	**E** – No regulations, other management mechanisms.	No conditions.	N/A.	General provisions of the *Environmental Protection Act 1986.*
Discharges to water	**Operation – 1** There are no discharges to water associated with operation of the plant. No major creek or river systems occur within the project area. Groundwater depth in vicinity of plant is 15m. All surface runoff in the plant area are directed to a pond and retained on site.	**No** level of social-political concern.	**E** – No regulations, other management mechanisms.	No conditions.	N/A.	General provisions of the *Environmental Protection Act 1986.* Environmental Protection (Unauthorised Discharges) Regulations 2004.
Discharges to land	**Operation – 1** There are no discharges to land associated with the operation of the plants. All potentially contaminated water from the workshop, washdown bay and refuelling area is directed by the concrete pad to a collection point where the water either evaporates or is pumped out by licenced contractor for disposal to licenced facility. A concrete pit captures all wastewater from truck washing. The water either evaporates or is pumped into the storage tank for reuse into the system. The pit is periodically dried out and solid waste is removed for disposal to a licenced facility.	**No** level of social-political concern.	**E** – No regulations, other management mechanisms.	Standard REFIRE conditions relating to stormwater managemen.	N/A.	General provisions of the *Environmental Protection Act 1986.* Environmental Protection (Unauthorised Discharges) Regulations 2004. Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998.

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Solid / liquid wastes	**Operation – 1** Waste oils and hydrocarbon contaminated material are recycled or taken offsite for disposal at a licensed facility. Any concrete waste is removed from site for disposal at a licenced facility. All general waste generated on site is removed from site for disposal at an appropriate licensed facility.	**No** level of social-political concern.	**E** – No regulations, other management mechanisms.	No conditions.	N/A.	General provisions of the *Environmental Protection Act 1986.* Environmental Protection (Unauthorised Discharges) Regulations 2004. Environmental Protection (Controlled Waste) Regulations 2004. Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998.
Hydrocarbon/ chemical storage	**Operation – 1** Fuel is stored in 2 x 55kL self-bunded tanks and all oils or other hydrocarbons stored on a bunded oil storage container or within a bunded area. All chemical and reagents are stored in accordance with Australian Standards and Department of Mines and Petroleum requirements. Drip trays and absorbent matting is available to contain leaks from equipment engine bays. Spill kits are available on site in the event of a potential hydrocarbon spill. Any potential spills are cleaned up and any contaminated soil is collected and transferred offsite to an approved facility. The refuelling area consists of a concrete pad built to contain spills. All spills are pumped out and disposed of at a licensed facility. All potentially contaminated water is removed from site by a licenced contractor. Chemical additives for the concrete plant are stored in self bunded tanks which have the capacity to hold a minimum of 120% of the contents of the tanks. PMR manage the storage of hydrocarbons and chemicals in accordance with: • Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007; and • Australian Standards 1940-2004 The storage and handling of flammable and combustible liquids.	**No** level of social-political concern.	**E** – No regulations, other management mechanisms.	Standard REFIRE conditions relating to storage of liquid chemicals. and immediate recovery of spills.	N/A.	General provisions of the *Environmental Protection Act 1986.* Environmental Protection (Unauthorised Discharges) Regulations 2004. Australian Standards 19940-2004 The storage and handling of flammable and combustible liquids. Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007.

4.0 GENERAL SUMMARY AND COMMENTS

PMR have established a hard rock quarry in the Mt Minnie area in the Onslow region. A concrete batching plant also operates at the quarry site.

As shown in Table 2, emissions and discharges associated with the crushing and screening plant and the concrete batching plant are a low risk to the environment if managed as per PMR commitments and should not result in significant impacts to the environment.

The plant is also subject to the general provisions of the *Environmental Protection Act 1986* relating to the causing and reporting of pollution and is subject to inspections by DER officers.

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APPENDIX A: EMISSIONS AND DISCHARGES RISK ASSESSMENT MATRIX

Table 3: Measures of Significance of Emissions

Emissions as a percentage of the relevant emission or ambient standard		Worst Case Operating Conditions (95th Percentile)			
		>100%	50 – 100%	20 – 50%	<20%*
Normal Operating Conditions (50th Percentile)	>100%	5	N/A	N/A	N/A
	50 – 100%	4	3	N/A	N/A
	20 – 50%	4	3	2	N/A
	<20%*	3	3	2	1

*For reliable technology, this figure could increase to 30%

Table 4: Socio-Political Context of Each Regulated Emission

		Relative proximity of the interested party with regards to the emission				
		Immediately Adjacent	Adjacent	Nearby	Distant	Isolated
Level of Community Interest or Concern*	5	High	High	Medium High	Medium	Low
	4	High	High	Medium High	Medium	Low
	3	Medium High	Medium High	Medium	Low	No
	2	Low	Low	Low	Low	No
	1	No	No	No	No	No

Note: These examples are not exclusive and professional judgement is needed to evaluate each specific case.
*This is determined by DER using the DER "Officer's Guide to Emissions and Discharges Risk Assessment" May 2006.

Table 5: Emissions Risk Reduction Matrix

		Significance of Emissions				
		5	4	3	2	1
Socio-Political Context	High	A	A	B	C	D
	Medium High	A	A	B	C	D
	Medium	A	B	B	D	E
	Low	A	B	C	D	E
	No	B	C	D	E	E

PRIORITY MATRIX ACTION DESCRIPTORS
A = Do not allow (fix)
B = licence condition (setting limits + EMPs - short timeframes)(setting targets optional)
C = licence condition (setting targets + EMPs - longer timeframes)
D= EIPs, other management mechanisms/licence conditions (monitoring/reporting)/other regulatory tools
E = No regulation, other management mechanisms