Government of Western Australia
Department of Environment Regulation

Licence

Environmental Protection Act 1986, Part V

Licensee: R.C.G. Pty Ltd

Licence: L7038/1997/12

Registered office: 115 Santa Barbara Parade
QUINNS ROCKS WA 6030

ACN: 008 781 539

Premises address: Quinns Quarry
220 Hester Avenue
NEERABUP WA 6031
Being Part Lot 11533 on Plan 217813 as depicted in Schedule 1 and as defined by the Global Positioning System coordinates:

Position No.	Latitude	Longitude
A	31° 40’ 22.98” S	115° 44’ 00.19” E
B	31° 40’ 27.05” S	115° 44’ 03.64” E
C	31° 40’ 27.61” S	115° 44’ 03.80” E
D	31° 40’ 27.96” S	115° 44’ 03.65” E
E	31° 40’ 28.13” S	115° 44’ 04.32” E
F	31° 40’ 29.77” S	115° 44’ 04.63” E
G	31° 40’ 29.72” S	115° 44’ 05.35” E
H	31° 40’ 30.58” S	115° 44’ 05.87” E
I	31° 40’ 30.20” S	115° 44’ 08.06” E
J	31° 40’ 28.19” S	115° 44’ 08.25” E
K	31° 40’ 27.36” S	115° 44’ 07.07” E
L	31° 40’ 27.37” S	115° 44’ 05.74” E
M	31° 40’ 27.05” S	115° 44’ 03.64” E
N	31° 40’ 25.49” S	115° 44’ 11.24” E
O	31° 40’ 23.56” S	115° 44’ 13.83” E
P	31° 40’ 23.94” S	115° 44’ 20.08” E
Q	31° 40’ 40.96” S	115° 44’ 15.15” E
R	31° 40’ 49.97” S	115° 44’ 16.54” E
S	31° 40’ 50.19” S	115° 44’ 10.36” E
T	31° 40’ 31.18” S	115° 44’ 03.88” E
U	31° 40’ 25.80” S	115° 44’ 00.82” E

Granted: Thursday, 16 June 2011

Commencement date: Thursday, 16 June 2011

Expiry date: Thursday, 30 September 2021

Prescribed premises category
Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
13	Crushing of building material: premises on which waste building or demolition material (for example, bricks, stones or concrete) is crushed or cleaned.	1,000 tonnes or more per year	200,000 tonnes per annual period
62	Solid waste depot: premises on which waste is stored, or sorted, pending final disposal or re-use.	500 tonnes or more per year	100,000 tonnes per annual period
63	Class I inert landfill: premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial.	500 tonnes or more per year	500,000 tonnes per annual period
70	Screening, etc. of material: premises on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.	More than 5,000 but less than 50,000 tonnes per year	50,000 tonnes per annual period

Conditions
This Licence is subject to the conditions set out in the attached pages.

Date signed: 11 November 2016

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Alan Kietzmann
MANAGER – LICENSING (WASTE INDUSTRIES)
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Contents

Introduction

This Introduction is not part of the Licence conditions.

DER's industry licensing role
The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements
This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:
http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.

- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.

- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees
If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non-payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions
If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary
R.C.G. Pty Ltd (R.C.G.) is a family owned company which has operated a limestone quarry at the Quinns Quarry premises located on Hester Avenue in Neerabup within the City of Wanneroo. The

R.C.G. has operated this quarry since 1974. R.C.G. holds licence L7038/1997/12 for the following prescribed premises categories:

- Category 62: Solid waste depot
- Category 63: Class I inert landfill site; and
- Category 70: Screening of material.

The land is owned by the State and planning approval was granted by the Department of Planning on 30 September 2016 for a period of five years. The planning approval authorises crushing of construction and demolition waste, an inert landfill, solid waste depot and screening of material. The licence duration was amended through Amendment Notice 1 granted 19 October 2016, to align with the planning approval expiry date of 30 September 2021, which is consistent with DER's Guidance Statement: *Licence Duration* (updated August 2016).

The western boundary of the premises is located adjacent to the Transperth northbound railway line. The northern, southern and eastern boundaries are located adjacent to Bush Forever areas as classified under State Planning Policy 2.8 *Bushland Policy for the Perth Metropolitan Region* (June 2010).

Soil types at the premises consist of estuarine deposits, siliceous and brown sands and leached sands over Tamala limestone, with no known risk of acid sulphate soils. Depth to groundwater is located approximately 28m below the premises, with an aquifer depth of 32 metres. As this premises has been used as a limestone quarry, the crusher will be located at a depth of 17m below the natural ground level which will mean that groundwater will be located 11m below the proposed crushing operations. Groundwater in the area is considered fresh and has a low risk of iron staining.

Sensitive receptors in the area include but may not be limited to:

- Houses located in a residential community approximately 140m from the western boundary.
- Groundwater in the Gnangara Mound. The premises is located within a Priority 3 Public Drinking Water Source Area (P3 PDWSA).
- Neerabup Lake located approximately 1km east of the premises.

Current Operations
Solid waste depot and inert landfill
Asbestos, asphalt, construction and demolition (C&D) waste, and other waste types that meet Inert Type 1 classification are accepted at the site predominantly from sources within the Perth

Metropolitan area. The waste is stored, sorted and non-conforming waste removed. Clean sand is separated for use as cover material, inert wastes and asbestos are buried within the landfill area and non-conforming waste is removed offsite to a licensed disposal facility.

Screening of material
Quarrying operations have ceased, however limestone which has been previously excavated from the premises is stockpiled on-site prior to being crushed into smaller pieces for sale.

Proposed Operations
The occupier has submitted a licence amendment request to include category 13 (crushing of building material) in the licence so that C&D waste that meets the Inert Waste Type 1 classification currently received at the premises can be crushed prior to being landfilled.

A separation distance of 1,000 metres is recommended between a sensitive receptor and a premises that undertakes crushing, with the main emissions considered to be noise and dust. The CEO's Delegated Officer has determined that because the crushing facility is within 1,000m of sensitive receptors, there is an elevated risk to the environment, and may require greater regulatory controls.

The main emissions associated with the activities undertaken at the premises include noise from plant operations and vehicles, and fugitive air (dust and asbestos) from waste handling, processing and storage.

The licences and works approvals issued for the Premises since 2005 are:

Instrument log		
Instrument	**Issued**	**Description**
L7038/1997/10	13/06/2005	Licence re-issue
L7038/1997/11	15/06/2006	Licence re-issue
L7038/1997/12	16/06/2011	Licence re-issue
L7038/1997/12	28/04/2016	Amendment to licence expiry date
L7038/1997/12	19/10/2016	Amendment Notice 1: extension of licence expiry date
L7038/1997/12	DRAFT	Amendment to include crushing activities

Severance
It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Acceptance Criteria' has the meaning defined in Landfill Definitions**;**

'ACM' means Asbestos Containing Material;

'Act' means the *Environmental Protection Act 1986;*

'Anniversary Date' means 1 July of each year;

'annual period' means a 12 month period commencing from 1 July until 30 June in the following year;

'AS 1726-1993' means the Australian Standard AS 1726-1993 *Geotechnical site investigations*;

'asbestos' means the asbestiform variety of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals and includes actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite and any mixture containing 2 or more of those;

'asbestos containing material' has the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites, Western Australia, (DOH, 2009);

'asbestos fibres' has the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites, Western Australia, (DOH, 2009);

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples;*

'AS/NZS 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters;*

'Asphalt Waste' has the meaning defined in Landfill Definitions;

'Attachment 1' means Attachment 1 of this Licence unless otherwise stated;

'Attachment 2' means Attachment 2 of this Licence unless otherwise stated;

'Attachment 3' means Attachment 3 of this Licence unless otherwise stated;

'averaging period' means the time over which a limit or target is measured or a monitoring result is obtained;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purposes of notification means:

Chief Executive Officer
Department Pt.V Div.3 EP Act
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au

'classified load' means the classification of waste loads during acceptance and post acceptance based on the risk of waste material containing asbestos or ACM and through visual inspection. Classification of waste loads shall be undertaken in accordance with the provisions outlined in Section 3.3 and 3.4 DER Asbestos Guidelines;

'Clean Fill' has the meaning defined in Landfill Definitions;

'Compliance Report' means a report in a format approved by the CEO as presented by the Licensee or as specified by the CEO from time to time and published on the Department's website;

'construction and demolition waste' has the meaning defined in Landfill Definitions;

'Contaminated Sites Guidelines' means the Contaminated Sites guideline document titled "Assessment and management of contaminated sites December 2014" published by the Chief Executive Officer of the Department of Environment as amended from time to time;

'Drilling Slurry' means the solid and liquids abstracted from underground drilling works, meeting the criteria for Class I landfills, as specified in the Landfill Definitions;

'damp' means wet enough that dust cannot be visibly generated;

'Department' means the department established under s.35 of the Public Sector Management Act and designated as responsible for the administration of Division 3 Part V of the Environmental Protection Act 1986;

'DER' means Department of Environment Regulation;

'DER Asbestos Guidelines' means document titled "Guidelines for managing asbestos at construction and demolition waste recycling facilities", published by the Department of Environment and Conservation, as amended from time to time.

'Inert Waste Type 1' has the meaning defined in Landfill Definitions;

'Landfill Definitions' means the document titled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer of the Department of Environment as amended from time to time;

'Licence' means this Licence numbered L7038/1997/12 and issued under the Act;

'Licensee' means the person or organisation named as Licensee on page 1 of the Licence;

'Metal Dust' means the fine and small particles of waste concrete generated during concrete crushing operations, meeting the criteria for Class I landfills, as specified in the Landfill Definitions;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'normal operating conditions' means any operation of a particular process (including abatement equipment) excluding start-up, shut-down and upset conditions, in relation to stack sampling or monitoring;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'quarantined storage area or container' means a hardstand storage area or sealed-bottom container that is separate and isolated from authorised waste disposal areas and is capable of containing all non-conforming waste and its constituents, these areas must be clearly marked and their access restricted to authorised personnel;

'quarterly' means the 4 inclusive periods from 1 October to 31 December and in the following year, 1 January to 31 March, 1 April to 30 June and 1 July to 30 September;

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'shut-down' means the period when plant or equipment is brought from normal operating conditions to inactivity;

'Special Waste Type 1' has the meaning defined in Landfill Definitions;

'spot sample' means a discrete sample representative at the time and place at which the sample is taken;

'start-up' means the period when plant or equipment is brought from inactivity to normal operating conditions;

'tpa' means tonnes per annum; and

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 Premises operation

1.2.1 The Licensee shall only accept waste on to the Premises if:
(a) it is of a type listed in Table 1.2.1; and
(b) the quantity accepted is below any quantity limit listed in Table 1.2.1; ~~and~~
(c) it meets any specification listed in Table 1.2.1; and
(d) demonstrates compliance with the acceptance criteria for a Class I landfill.

Table 1.2.1: Waste acceptance

Waste type	Quantity Limit	Specification [1]
Clean Fill Inert Waste Type 1	Combined limit of 475,000 tpa	None specified.
Asphalt waste	5,000 tpa	None specified
Metal Dust	5,000 tpa	Metal dust only to be accepted in a damp state from BGC premises located adjacent to Premises, as depicted on the 'Premises map' in Schedule 1.
Drilling Slurry	5,000 tpa	Must be in spadeable form
Special Waste Type 1	10,000 tpa	Cement bonded asbestos. No fibrous asbestos shall be accepted.

Note 1: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

1.2.2 The Licensee shall ensure that where waste does not meet the waste acceptance criteria set out in condition 1.2.1 it is removed from the Premises by the delivery vehicle or, where that is not possible, stored in a quarantined storage area or container and removed to an appropriately authorised facility as soon as practicable.

1.2.3 The Licensee must visually inspect all loads of waste when they arrive at the Premises prior to unloading to determine the risk of a load containing asbestos or ACM and each load shall be classified in accordance with the risk classification procedure outlined in Section 3.3 of the DER Asbestos Guidelines as per Attachment 1(Classified Load).

1.2.4 The Licensee shall direct each accepted and Classified Load to an unloading area at the site for further inspection. The unloading area shall be appropriately designed and constructed to ensure the waste will not mix with other waste.

1.2.5 The Licensee shall dampen all Classified Loads prior to unloading and maintain the waste in a damp state throughout the inspection process using appropriate dust suppression measures.

1.2.6 The Licensee must inspect and maintain records for all unloaded waste in accordance with the low risk and high risk load procedure as outlined in section 3.4 of the DER Asbestos Guidelines as per Attachment 2.

1.2.7 The Licensee must continue to visually inspect waste on the Premises at all stages of the storage, sorting and screening process. Suspect asbestos identified at any stage of the process must be handled in accordance with the high risk load procedure outlined section 3.4 of the DER Asbestos Guidelines, as per Attachment 2.

1.2.8 The Licensee must maintain waste and processed waste on the Premises in at least two separate stockpile areas for unprocessed waste, processed waste tested for ACM and:

(a) unprocessed waste and processed waste areas must be kept clearly separated at a minimum 3 m distance;
(b) processed waste tested for ACM and processed waste awaiting testing for ACM must be clearly separated by a minimum 3 m distance OR clearly delineated and separated with impermeable barriers; and
(c) clearly visible and legible signage must be erected on individual stockpiles to clearly identify and delineate tested processed waste, untested processed waste and unprocessed waste.

1.2.9 The Licensee shall ensure that the asbestos content of any recycled output originating from Inert Waste Type 1 does not exceed the contamination limit of 0.001% w/w for asbestos (in any form).

1.2.10 The Licensee shall ensure that recycling outputs originating from Inert Waste Type 1 are sampled and tested in accordance with the DER Asbestos Guidelines, as outlined in Attachment 3.

1.2.11 The Licensee shall ensure that wastes accepted onto the Premises or landfill are only subjected to the processes set out in Table 1.2.2 and in accordance with any process limits described in that Table.

Table 1.2.2: Waste processing

Waste type	Process(es)	Process limits
Clean Fill	Acceptance, screening and storage prior to removal off-site or disposal by landfilling	• Crushing and screening of Metal Dust and Special Waste Type 1 is not authorised. • All processing, storage, containment and landfilling to be maintained in areas designated in the 'Site Layout Map' in Schedule 1.

Table 1.2.2: Waste processing		
Waste type	**Process(es)**	**Process limits**
Inert Waste Type 1	Acceptance, crushing, screening and storage prior to removal off-site or disposal by landfilling	• No waste shall be temporarily stored or landfilled within 25 metres from the boundary of the premises. • The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2m. • Metal Dust must be maintained in a damp state at all times, or otherwise stabilised to minimise dust emissions. • Drilling Slurry must only be stored in a temporary or permanent bunded infrastructure that meets 1 x 10^{-8} m/s permeability, capable of preventing surface run-off of leachate and slurry and which includes a leachate collection system. • Drilling slurry can only be landfilled at the Premises or re-used once it has dried. • Special Waste Type 1 must not to be deposited within 2m of the final tipping surface of the landfill; and • No works shall be carried out on the landfill that could lead to a release of asbestos fibres. • All loads to be wet down prior to unloading, loading and processing. • All stockpiles at the premises are limited to 5m or less in height. • Operate the infrastructure as specified in Table 1.2.3 to ensure: (a) stockpiles and unsealed access roads are maintained in a damp state to prevent dust lift-off; and (b) water spray nozzles on crushing and screening equipment, including conveyors, are functioning when the equipment is in operation. • Cease activities when relevant infrastructure specified in Table 1.2.3 fails or during weather conditions where dust emissions cannot be effectively controlled.
Metal Dust	Acceptance, validation, and storage prior to removal off-site or disposal by landfilling	
Drilling Slurry	Acceptance, validation and storage prior to removal off-site or disposal by landfilling	
Special Waste Type 1	Acceptance and storage prior to removal off-site or disposal by landfilling.	
Asphalt Waste	Acceptance and storage prior to removal off-site, re-use on-site or disposal by landfilling	

1.2.12 The Licensee shall ensure that the infrastructure or equipment specified in Table 1.2.3 is installed and operated in accordance with the specification of that table and located in the area depicted in the Site Layout Map in Schedule1.

Table 1.2.3: Infrastructure and equipment requirements	
Item	**Specification**
Drying bed	Drying bed for drilling slurry must be maintained with a minimum 200mm limestone base and 200mm limestone bunds.
2 x Water truck	Maintain an operational water cart with 10,000L capacity, and a standby water truck with 10,000L capacity. The water truck must be fitted with high volume side and

Table 1.2.3: Infrastructure and equipment requirements	
Item	**Specification**
	rear spray bars and/or water cannon/sprays to ensure complete coverage of stockpiles and roadways and to assist during tipping and processing to minimise dust lift-.
Landfill compactor	Maintain a 42 tonne landfill compactor in good working order
2 x Front end loader	To be maintained in good working order
Excavator	Maintain a 30 tonne excavator in good working order
300mm grizzly screen	To be located 17m below natural ground level in the area depicted in the 'Map of premises operational areas'.
Terex Finlay Jaw Crusher (or similar model)	To be located 17m below natural ground level in the area depicted in the 'Map of premises operational areas'.
Screening plant	To be located 17m below natural ground level in the area depicted in the 'Map of premises operational areas'.
Spray nozzles on crusher and screener	Crushing and screening equipment must be fitted with water spray nozzles. The spray reach and rate of flow of water spray nozzles must be maintained in good working order to ensure complete coverage of crushers and screeners.
Dust covers on crusher discharge conveyor	Crushing equipment must be fitted with a dust cover on the discharge conveyor. The dust cover must be maintained in good working order to ensure dust emissions from the discharge conveyor are minimised.
Abstraction bore	Must be maintained in good working order to ensure that an adequate water supply for the water pipeline is available at all times
Water pipeline for crushing and screening stockpile area	Must be maintained in good working order.

1.2.13 The Licensee may only operate the crushing and screening equipment between the hours of 7am to 5pm Monday to Friday and from 7am to 1pm on Saturday.

1.2.14 The Licensee shall manage the landfilling activities to ensure:

(a) waste is levelled and compacted as soon as practicable after it is discharged; and

(b) waste is placed and compacted to ensure all faces are stable and capable of retaining rehabilitation material; and

(c) rehabilitation of a cell or phase takes place within 6 months after disposal in that cell or phase has been completed.

1.2.15 The Licensee shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.2.4 and that sufficient stockpiles of cover are maintained on site at all times.

Table 1.2.4: Cover requirements[1]			
Waste Type	**Material**	**Depth**	**Timescales**
Special Waste Type 1	Clean Fill, Type 1 Inert waste or validated spadeable drilling slurry	300mm	Immediately after deposit
		1000mm	By the end of the working

Table 1.2.4: Cover requirements[1]			
Waste Type	**Material**	**Depth**	**Timescales**
			day in which the asbestos waste was deposited
Clean Fill, Inert Waste Type 1, Asphalt Waste, Metal Dust, Spadeable Drilling Slurry	No cover required		

Note 1: Additional requirements for the covering of tyres are set out in Part 6 of the *Environmental Protection Regulations 1987.*

1.2.16 The Licensee shall implement the following security measures at the site:
- (a) erect and maintain suitable fencing to prevent unauthorised access to the site; and
- (b) ensure that any entrance gates to the premises are securely locked when the premises are unattended; and
- (c) undertake regular inspections of all security measures and repair damage as soon as practicable.

1.2.17 The Licensee shall collect all windblown waste from the boundary to prevent windblown waste from escaping the Premises.

2 Monitoring

2.1 General monitoring

2.1.1 The licensee shall ensure that:
- (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
- (b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
- (c) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

2.1.2 The Licensee shall ensure that quarterly monitoring is undertaken at least 45 days apart.

2.2 Monitoring and recording of inputs and outputs

2.2.1 The Licensee shall undertake the monitoring in Table 2.2.1 according to the specifications in that table.

Table 2.2.1: Monitoring and recording of inputs and outputs				
Input/Output	**Parameter**	**Units**	**Averaging period**	**Frequency**
Waste Inputs	Clean Fill; Inert Waste Type 1; Metal Dust; Drilling Slurry; Special Waste Type 1; and Asphalt Waste.	tonnes	N/A	Each load arriving at the Premises
Waste Outputs	Waste type as defined in the Landfill Definitions			Each load leaving or rejected from the Premises
Product outputs	Crushed and screened products			Each load leaving the Premises

2.3 Monitoring of noise emissions

2.3.1 The Licensee shall undertake noise monitoring in accordance with the requirements of Table 2.3.1:

Table 2.3.1: Noise monitoring

Reference number	Requirement	Date of completion
NM1	The Licensee shall undertake noise monitoring of the Premises during normal operating conditions at the Premises boundary. A report on the noise monitoring shall be prepared in accordance with Part 3 of the *Environmental Protection (Noise) Regulations 1997 (Noise Regulations).* The report shall be submitted to the CEO and shall include: (a) methods used for monitoring of noise; (b) an assessment of whether noise emissions from the Premises comply with the assigned noise level in the Noise Regulations; and (c) if improvements are required to comply with the prescribed standard, the Licensee is required to provide a report outlining the steps and timeframes involved in meeting that specification.	Noise monitoring to be completed within two months of the licence amendment being granted and report to be provided to the CEO within one month of the monitoring being completed.

2.4 Ambient environmental quality monitoring

2.4.1 The Licensee shall undertake the monitoring in Table 2.4.1 to the specifications in that table.

Table 2.4.1: Monitoring of ambient groundwater quality

Monitoring point reference and location	Parameter	Units	Averaging period	Frequency
MB1 as depicted in the **Map of monitoring bore locations** in Schedule 1	Standing water level	m(AHD)	Spot sample	Quarterly
	pH			
	Electrical conductivity	µS/cm		
	Arsenic	mg/L		
	Cadmium			
	Chromium			
	Copper			
	Mercury			
	Lead			
	Manganese			
	Nickel			
	Zinc			
	Potassium			
	Selenium			
	Chloride			
	Sulphate			
	Total acidity			
	Total alkalinity			
	Total aluminium			
	Total iron			
	Total nitrogen			
	Total phosphorus			

MB1 as depicted in the **Map of monitoring bore locations** in Schedule 1	Total Dissolved Solids (TDS)	mg/L	Spot sample	Quarterly
	Organochlorine pesticides			
	BTEX (benzene, toluene, ethylbenzene, xylene)			
	Polycyclic aromatic hydrocarbons (PAHs)			
	Polychlorinated biphenyls (PCBs)			
	Total petroleum hydrocarbons			

3 Improvements

3.1 Improvement program

3.1.1 The Licensee shall complete the improvements in Table 3.1.1 by the date of completion in Table 3.1.1.

Table 3.1.1: Improvement program

Improvement reference	Improvement	Date of completion
IC1	The Licensee shall submit to the CEO a report that assesses the permeability of the Drilling Slurry drying bed(s). If the drying bed(s) does not achieve a hydraulic conductivity of 1 x 10^{-8} m/s or less, representative across the respective infrastructure, the Licensee is required to provide a report outlining the steps and timeframes involved in meeting that specification.	Within 2 months of the grant date of this amended licence
IC2	The Licensee shall install a minimum of two groundwater monitoring bores down hydraulic gradient of the of Premises activities. The bores are required to be constructed according to the ASTM D5092-04(2010)e1 *Standard practice for design and installation of groundwater monitoring wells* The bores shall be logged as per AS1726-1993 for the unified classification system for soils.	Within 6 months of the grant date of this amended licence
IC3	The Licensee shall provide to the CEO, a quality construction and assurance report from an independent third party to certify that the groundwater monitoring bores specified in IC2, have been installed as per the requirements of IC2, including bore logs required under IC2.	Within 1 month of the bores being installed

4 Information

4.1 Records

4.1.1 All information and records required by the Licence shall:
(a) be legible;
(b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;

(c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and

(d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  (i) off-site environmental effects; or
  (ii) matters which affect the condition of the land or waters.

4.1.2 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

4.2 Reporting

4.2.1 The Licensee must submit to the CEO within 30 days after the Anniversary Date, a Compliance Report indicating the extent to which the Licensee has complied with the Conditions in this Licence for the Annual Period.

4.2.2 The Licensee shall submit to the CEO within 30 days after the Anniversary Date, an Annual Environmental Report containing the information listed in Table 4.2.1 for the Annual Period.

Table 4.2.1: Annual Environmental Report

Condition or table (if relevant)	Parameter	Format or form[1]
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
1.2.9 and 1.2.10	Recycled outputs sampling and testing data	None specified
2.1.1	Summary of monitored and recorded inputs and outputs	None specified
Table 2.4.1	Monitoring results of ambient groundwater quality: • An interpretive summary and assessment of ambient groundwater quality monitoring results against relevant assessment levels for water as published in the Contaminated Sites Guidelines; and • An interpretive summary and assessment of ambient groundwater quality monitoring results against previous monitoring results. Trend graphs shall be provided in support of this assessment.	• GR1; • A summary of the results should be presented in tabulated form within the body of the report as well as onto site drawings, where appropriate.
4.1.2	Complaints summary	None specified

Note 1: Forms are in Schedule 2

4.3 Notification

4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements			
Condition or table (if relevant)	**Parameter**	**Notification requirement[1]**	**Format or form[2]**
-	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act
Note 2: Forms are in Schedule 2

Schedule 1: Maps

Premises map

The Premises is shown in the map below. The pink line depicts the Premises boundary and excludes the areas named “BGC Premises” and “Leighton’s Premises”. The red numbers refer to the GPS coordinates on page 1 of this Licence. The BGC Premises is located on a separate cadastral lot. The Leighton’s Premises occupier the southern portion of Lot 11533.

The locations of the monitoring point defined in Table 2.4.1 are shown below. ~~and are located within the BGC Premises (Lot 12476 on Plan 192405).~~

Map of premises operational areas

Licence: L7038/1997/12 Licensee: R.C.G. Pty Ltd
Form: GR1 Period:
Name: Monitoring of point source emissions to groundwater

Form GR1: Monitoring of point source emissions to groundwater						
Emission point	**Parameter**	**Result[1]**	**Result[1]**	**Averaging period**	**Method**	**Sample date & times**
MB1	Standing water level	M (AHD)		Spot sample		
	pH					
	Electrical conductivity	µS/cm				
	Arsenic	mg/L	g/day			
	Cadmium	mg/L	g/day			
	Chromium	mg/L	g/day			
	Copper	mg/L	g/day			
	Mercury	mg/L	g/day			
	Lead	mg/L	g/day			
	Manganese	mg/L	g/day			
	Nickel	mg/L	g/day			
	Zinc	mg/L	g/day			
	Potassium	mg/L	g/day			
	Selenium	mg/L	g/day			
	Chloride	mg/L	g/day			
	Sulphate	mg/L	g/day			
	Total acidity	mg/L	g/day			
	Total alkalinity	mg/L	g/day			
	Total aluminium	mg/L	g/day			
	Total iron	mg/L	g/day			

MB1	Total nitrogen	mg/L	g/day	Spot sample		
	Total phosphorus	mg/L	g/day			
	Total Dissolved Solids (TDS)	mg/L	g/day			
	Organochlorine pesticides	mg/L	g/day			
	BTEX (benzene, toluene, ethylbenzene, xylene)	mg/L	g/day			
	Polycyclic aromatic hydrocarbons (PAHs)	mg/L	g/day			
	Polychlorinated biphenyls (PCBs)	mg/L	g/day			
	Total petroleum hydrocarbons	mg/L	g/day			

Note 1: All units are referenced to STP dry

Signed on behalf of R.C.G. Pty Ltd: …….. Date: …….

Licence: L7038/1997/12 Licensee: R.C.G. Pty Ltd
Form: N1 Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.
Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of R.C.G. Pty Ltd	
Date	

Attachment 1: Section 3.3 of the DER Asbestos Guidelines (page 10 - 11)

- Ensuring a "no asbestos" clause is included in any contracts with C&D waste suppliers;
- Installing a clearly visible sign saying "No Asbestos" is present at the entry to the facility;
- Establishing a system to record the details of loads arriving/received at the site which have been found to contain asbestos.

DEC has a supply of brochures that outline the rules on disposal of asbestos loads that can be handed to customers. Please contact DEC's Waste Management Branch on (08) 6467 5323 for copies.

3.3 Acceptance procedures

When waste arrives at the recycling facility, acceptance procedures must serve to confirm that the characteristics of the waste are consistent with the waste types permitted by the Part V licence and to determine the risk of the load containing asbestos.

To follow on from the pre-acceptance procedures, all persons bringing waste onto the premises must be asked to sign a declaration or provide a 'customer warranty' on a vehicle load specific basis confirming that their load is free from asbestos. The associated documentation should be retained on the premises and be available for DEC to inspect Where an individual is not prepared to sign this disclaimer or provide such a warranty the load shall be refused entry.

All loads must be visually inspected when they arrive at the recycling site. Where the inspection identifies that the wastes are not permitted by the licence and/or asbestos is visually identified in the load it shall be rejected for acceptance. A record of all rejected loads must be maintained on the premises and be available for DEC to inspect. As a minimum, a record must be made of the waste producer, waste carrier, registration number of the vehicle and the date of rejection.

The risk of a load containing asbestos is related to the type and source of the waste. In general, buildings and structures constructed after 1990 are unlikely to have asbestos containing materials within them, whereas buildings and structures constructed before this date may have been built using asbestos containing materials.

Because large buildings and structures undergo regulated asbestos removal programs and inspections before they are demolished the probability of asbestos being present in the demolition debris should be low. However, a risk of contamination can remain from asbestos formwork embedded or attached to concrete columns that cannot be readily identified through the asbestos clearance certification processand from asbestos piping from reclaimed road, car park areas and water supply systems.

It is also common for mixed waste from unknown sources, particularly those in skip bins or from small-scale demolition or refurbishment activities to contain amounts of asbestos waste. These sources must be considered high risk.

To determine the risk of an incoming load containing asbestos the gatehouse operator shall establish:

- The source of the load including the site location and if possible the age of any building or structure from which the C&D waste originated;

- The content/waste types within the load; and
- The type of load.

Where the source of the load can clearly be determined to be a building or structure constructed after 1990 then the load can be considered to represent a low risk of asbestos contamination and managed as outlined in the following section. Where the waste originates from a building constructed before 1990 or there is uncertainty over this issue, the risks associated with asbestos in the load must be established in line with the Risk Classification Matrix below.

Once classified, each load must be directed to the appropriate area for unloading and further inspection in line with the following sections.

Risk Classification Matrix			
	Type of load		
Material Type	**Commercial**	**Public, utes, cars and trailers***	**Skip bins**
Clean Concrete (without formwork)	Low	High	High
Clean Brick	Low	High	High
Clean Bitumen / Asphalt	Low	High	High
Mixed Construction waste	High	High	High
Mixed Demolition waste	High	High	High

* if it is possible to view the entire load of incoming C & D material (eg a small trailer with a shallow load, then consideration may be given to classifying these loads as low risk
(Risk Matrix Classification *adapted from WorkSafe Victoria 2006 and WMAA 2009*)

3.4 Load inspection after acceptance

Each accepted and classified load shall be directed to an unloading area at the site which is appropriately designed and constructed to ensure the waste will not mix with other waste. Where feasible, separate unloading areas shall be provided for low risk and high risk wastes.

All loads shall be dampened prior to unloading and maintained in a dampened state throughout the inspection process. Operators will need to ensure there are adequate facilities on the premises to achieve this.

Low risk load procedure

Loads classified as "low risk", must be visually inspected while the material is being unloaded to determine whether any asbestos can be identified.

If suspect fibrous asbestos (FA) or asbestos fines/fibres (AF) are detected, the load must be isolated, kept wet and once appropriately contained in accordance with the Asbestos Factsheet in Appendix A, redirected to an appropriately authorised disposal facility. If suspect ACM is identified, the load must be reclassified as "high risk" and continue to be processed in accordance with the high risk procedure below. Where the visual inspection confirms that the

Attachment 2: Section 3.4 of the DER Asbestos Guidelines (page 11 and page 12)

- The content/waste types within the load; and
- The type of load.

Where the source of the load can clearly be determined to be a building or structure constructed after 1990 then the load can be considered to represent a low risk of asbestos contamination and managed as outlined in the following section. Where the waste originates from a building constructed before 1990 or there is uncertainty over this issue, the risks associated with asbestos in the load must be established in line with the Risk Classification Matrix below.

Once classified, each load must be directed to the appropriate area for unloading and further inspection in line with the following sections.

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(Risk Matrix Classification *adapted from WorkSafe Victoria 2006 and WMAA 2009*)

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Loads classified as "low risk", must be visually inspected while the material is being unloaded to determine whether any asbestos can be identified.

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load is clear of suspect ACM, FA and AF, the load may then be added to the waste stockpiles awaiting further processing eg crushing and screening.

High risk load procedure

Loads classified as "high risk" must be unloaded and spread over a sufficiently large area to enable a comprehensive visual inspection of all sides of the material to be undertaken. One method of achieving this is to spread the material to a depth of less than 30cm and to turn over the material with the use of an excavator or similar. Where appropriate, larger sections of concrete should be inverted to permit a visual check for embedded or underlying asbestos product debris.

If suspect FA or AF are detected, the load must be isolated, kept wet and once appropriately contained in accordance with the Asbestos Factsheet in Appendix A, and redirected to an appropriately authorised disposal facility.

Where suspect ACM is identified within a load and is not capable of being easily removed by hand, the load must be rejected and should be isolated, kept wet and once appropriately contained in accordance with the Asbestos Factsheet in Appendix A, and redirected to an appropriately authorised disposal facility.

Where suspected ACM fragments capable of being easily removed by hand are identified in a load, the suspect ACM must be removed from the load and either:

1. Appropriately isolated and covered for asbestos testing. If testing of representative samples confirms the material is ACM it must be redirected to an appropriately authorised disposal facility. If testing confirms the material is not ACM the waste can be added to the stockpile awaiting further processing; or

2. Assumed to be ACM and redirected to an appropriately authorised disposal facility.

All suspected or assumed ACM must be segregated. Material must be clearly labelled, kept secure and sufficiently contained to prevent the release of asbestos including wind blown fibres.

Once all suspected or assumed ACM has been removed from a load in line with the above procedure the residual waste can be added to the stockpile awaiting further processing.

Records must be kept to ensure that the process from receipt of C&D material to the completion of the unloading procedure is auditable and that any loads found to contain suspect asbestos can be traced back to the customer and originating site. Through Part V licence conditions, DEC will require records of loads found to contain asbestos and action taken by the C&D recycler to address this issue with the customer, to be submitted on a regular basis. DEC will take follow up action with customers delivering asbestos containing waste to the premises as necessary.

Attachment 3: Section 4.3 of the DER Asbestos Guidelines (pages 15 - 20)

4 Monitoring and Testing

Monitoring must be undertaken to confirm that risk management measures are effectively meeting their objectives. This shall include qualitative and quantitative monitoring and product testing.

4.1 Qualitative monitoring

Site operatives must undertake visual inspections whilst the facility is operational to ensure that fugitive emissions of dust are being adequately controlled and are not being carried outside of the premises. Where fugitive dust releases are identified their source must be investigated and all reasonable and practicable measures implemented to prevent or minimise the release.

Where risk management measures are ineffective or likely to be ineffective at preventing visible dust crossing the site boundary, for example during adverse weather conditions, waste processing activities must cease until additional measures have been put in place to prevent the discharge or until the adverse weather conditions have passed.

4.2 Quantitative environmental monitoring

On some sites it may be necessary for ambient dust or asbestos fibre air monitoring to be undertaken to provide further confidence in risk management measures. Such monitoring may be required where recycling sites are located in close proximity to sensitive receptors, are within a relevant Environmental Protection Policy area or have a poor compliance history relating to fugitive dust control. Where quantitative dust monitoring is not proposed, the proponent/operator must provide a risk based justification as to why it is not considered necessary at their premises.

Dust monitoring provides a useful surrogate measure to evaluate the potential generation and distribution of airborne dust and asbestos fibres and will normally be sufficient on most sites. Dust monitoring equipment must demonstrate that dust levels are kept as low as reasonably possible. Tapered Element Oscillating Microbalance (TEOM) (or equivalent) equipment is preferred to provide continuous and accurate perimeter air monitoring for community protection. Any site perimeter monitoring for this purpose should be conducted to ensure compliance with the National Environmental Protection Measure (NEPM) ambient air 24 hour PM_{10} goal of 50 ug/m^3.

Where air quality monitoring is required, an air quality monitoring and reporting strategy must be developed by a person suitably experienced in dust/asbestos sampling and exposure assessment and any associated analysis be undertaken by a laboratory accredited by NATA for this purpose.

4.3 Product testing and supply

To ensure that recycled products have been produced to the required specification in relation to asbestos content it is necessary for product testing to be undertaken. The testing procedures detailed in this section have application for the three main recycled products:

1. Recycled drainage rock 20-27mm;

2. Recycled sand, screened to <10mm; and
3. Recycled road-base, <19mm.

The testing must be documented as outlined under Section 5.3.

Product specification

To ensure the health of those using or coming into contact with recycled C&D products is protected, the asbestos content (in any form) of any recycled products must not exceed 0.001% asbestos weight for weight (w/w).

Inspection and sampling requirements

All types of recycled product must be inspected and/or sampled and tested for ACM, FA and AF, as outlined below. Inspections and sampling may be undertaken by staff employed by the licensee as long as they have received the required asbestos training for operational staff set out in section 5.2.

ACM and FA are subject to visual inspection and sampling procedures since they are larger in size (>7mm) and AF (<7mm) is assessed by submitting samples for laboratory analysis.

Recycled products may be sampled from conveyors or stockpiles. Whichever approach is adopted, the operator will need to ensure that they have appropriate systems in place to allow them to identify where in the product stockpiles each sample is from to allow further testing or separation to occur if required.

Stockpile inspection and sampling

In the case of recycled drainage rock and recycled road-base a visual inspection should be undertaken in a systematic grid fashion over the any new stockpile material to identify any suspect asbestos material.

No sampling is required for recycled drainage rock, other than to determine by laboratory analysis if necessary whether a suspect fragment is asbestos.

For recycled road-base and screened sand, sampling is necessary and must be spread evenly over the whole stockpile surface or samples may be taken at regular intervals (as per conveyor sampling) during construction of the stockpile. Suspect asbestos material or areas must be targeted for sampling.

Sampling of road base and screened sand products must occur at a minimum rate of 40 locations per 4000 tonnes or 14 samples per 1000m^3 of product.

Conveyor sampling

Sampling of road base and screened sand products must occur at a minimum rate of 1 sample per 70m^3 of a product output. Suspect asbestos material or areas must be targeted for sampling.

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Sample treatment

Each sample collected must be at least 10 litres in volume and then be divided into 2 size fractions (>7mm and <7mm) in the field by sieving though a 7mm screen or spread out for inspection on a contrasting colour fabric. The >7mm fraction should be examined for any suspect asbestos material and this be retained to calculate the level of contamination.

The <7mm fraction will need to be a minimum 500 ml, be wetted, and submitted for laboratory analysis. This sample size is considered necessary to improve the limit of detection for asbestos in the analysis procedure.

Reduced Sampling Criteria

Once premises have demonstrated that their procedures are able to consistently produce recycled product that meets the product specification and undertake their activities to a high standard, DEC may authorise a reduced product testing rate including down to 5 locations per 4000 tonnes (1 sample per 600m^3) of product.

The criteria that DEC will use to consider and determine a reduction in product sampling frequency are:

1. Activities at the premises have been validated through a DEC inspection or audit to comply with these guidelines;
2. DEC has confirmed through an inspection or audit that the conditions of the Part V licence are being met;
3. DEC has not undertaken any enforcement action in relation to the activities at the premises in the last 6 months;
4. Product testing has demonstrated that the product specification has been consistently achieved at the premises for a continuous 6 month period;
5. The presence of mitigating factors such as best practice management measures, high control of source material or use of the product for low risk purposes;
6. The quantity of waste processed in the last 6 months and the different sources/types of material processed at the premises; and
7. DoH has agreed to the reduction in product sampling rate at the premises.

All requests for a reduced product sampling rate must be submitted in writing to the relevant DEC Industry Regulation Regional Leader for the Premises, details of which can be found in the interpretation section of the Part V licence for the Premises.

DEC will refer all requests to the DoH and operators must ensure that all requests include sufficient evidence, particularly in relation to product testing, to support compliance with the above criteria.

Proponents should note however, that despite a premises meeting the above reduced sampling criteria, there may be occasions where a reduced sampling rate is not approved by DEC. This

may occur for example where the site is close to sensitive receptors, contentious and/or there is a need to provide public confidence in the activities at the site.

Where a reduced sampling rate is approved at a premises, DEC will provide written notification of the approval and will continue to closely monitor that premises to ensure it remains compliant with the reduced sampling criteria. DEC's monitoring of the premises will be further supported by the annual process audits required by section 5.1 and the results of the product sampling.

DEC will withdraw the approval to implement a reduced sampling frequency where the reduced sampling criteria are not being met on an on-going basis. Where DEC withdraws approval for a reduced sampling frequency, proponents will be provided with the reasons for the withdrawal.

In the event that approval for a reduced sampling rate is withdrawn by DEC, proponents will be required to make a new reduced sampling frequency request and demonstrate that they have:

1. Implemented appropriate measures to prevent a re-occurrence of the non-compliance that caused the previous agreement for a reduced sampling frequency to be withdrawn; and that
2. The product specification (sampled at the 40 samples per 4000 tonnes rate) has been consistently met for a 6 month period following the implementation of the measures identified in 1. above.

Sample Analysis Method

>7mm sample fractions

Asbestos concentrations (ACM and FA) should be calculated in accordance with the methods detailed in section 4.1.7 of Department of Health (DoH), 2009, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia.* As detailed in the DoH Guidelines, averaging asbestos levels across the stockpile is not appropriate and asbestos levels within each sample should be reported.

<7mm sample fractions

Each <7mm sample fraction must be analysed for FA and AF.

Asbestos analysis must be undertaken by an independent NATA certified laboratory and comply with Australian *Standard Method for the Qualitative Identification of asbestos in bulk samples* (AS4964–2004) or be demonstrated to be able to achieve the equivalent level of results to this Australian Standard.

AS4964-2004 is currently the only method in Australia that has NATA certification, however the practicable level of detection for this standard polarized light microscopy method (PLM) and dispersion staining (DS) is 0.01%w/w. It is possible however, to measure asbestos contamination at or lower than 0.001%w/w where an increased sample size used, however DEC recognises that any reporting of concentrations below 0.01%w/w will be outside the conditions set by NATA.

Therefore, to determine whether recycled products meet the product specification for asbestos content, samples must be a minimum of 500mL in size. Proponents must adopt one of the following analytical approaches:

1. Detected/non-detected – where any quantity of asbestos is detected by the PLM method it must be assumed, without further analysis, to be in concentrations above the product specification limit of 0.001%w/w. A weight of evidence approach may be adopted i.e. the frequency and occurrence of other positive results in the stockpile can be taken into account, to determine whether the stockpile being assessed is considered to meet the product specification or not; or

2. Where any quantity of asbestos is detected by the PLM method, the sample is subject to further testing in the form of a semi-quantitative method with a lower level of detection for asbestos. A number of laboratories have developed such semi-quantitative methods for the analysis of low levels of asbestos. Techniques include:
   - The extraction and weighing of fibre bundles or fibre cement material from the total sample; and
   - Measuring the width and length (ie volume) of individual fibre by Phase Contrast Microscopy (PCM) and calculating the weight of fibres in the extracted sub-sample.

The use of either of these methods is considered acceptable to DEC.

Whatever analysis methods are adopted by an operator, DEC expects a number of assessment based statements to be included in all laboratory analytical reports. These include:

- Details of the sample size;
- A Statement of Limit of Detection of the analysis;
- Results in relation to asbestos detected or not – note that AS4964-2004 allows for a nil detection if the asbestos is less than a certain concentration and is non-respirable however DEC would consider a positive result to exceed the 0.001% w/w limit;
- Description of any asbestos detected; and
- Estimate of the concentration of asbestos detected if practical to do so.

Interpreting Inspection and Sampling Results

If the visual inspection, sieve sample or analytical results identify asbestos above or possibly above the 0.001%w/w criteria then that stockpile or product process should be deemed potentially contaminated and considered for off-site disposal as asbestos waste, or subject to further actions to remediate it or to demonstrate its acceptability by further assessment. A record should be made of the decision making and action taken eg off-site disposal, further assessment undertaken etc, in relation to that stockpile.

In addition to the above, where asbestos is identified above or possibly above the 0.001%w/w criteria, an investigation into the likely cause for the presence of asbestos in the product should be undertaken and measures implemented to prevent a reoccurrence. A record of the

investigation and its findings together with the details of any preventative measures implemented at the site should be made.

As a guide, in the case of recycled drainage rock identification of a piece of ACM or FA per $10m^2$ of surface would be deemed to exceed the specification for that area, and for the whole stockpile if repeated in 2 or more other separate areas. A single fragment exceedance can be considered an isolated occurrence in the absence of other contamination evidence and the stockpile allowed for beneficial use. If there is multiple contamination only of a localised area then that area can be excavated to the extent of any visible asbestos and then the remainder of the stockpile considered to be suitable for use.

For laboratory analysis it is important that each result be considered on its own merits in regard to the asbestos control specification and that there is no averaging across samples. In the case of a single exceedance at a level less than 0.01% w/w, the stockpile (nominally 4000 tonnes) may not be deemed contaminated if repeat samples of immediately adjacent areas do not demonstrate specification exceedances.

The same approach as indicated in the preceding paragraph can be applied to the results of the >7mm sieve sampling in regard to the recycled sand material and roadbase. In this case a $1cm^3$ fragment of ACM or FA would be deemed to exceed the specification for a 10L sample.

It should be noted that specification exceedances in regard to different assessment methods for the same type of stockpile should not be viewed in isolation from each other.

Product Supply

Recycled products should only be supplied to customers from stockpiles that have been sampled and tested in accordance with section 4.3 and shown to conform to the product specification.

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Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: R.C.G. Pty Ltd

Licence: L7038/1997/12

Registered office:	115 Santa Barbara Parade QUINNS ROCKS WA 6030
ACN:	008 781 539
Premises address:	Quinns Quarry 220 Hester Avenue NEERABUP WA 6031 Being Part Lot 11533 on Plan 217813
Granted:	Thursday, 16 June 2011
Commencement date:	Thursday, 16 June 2011
Expiry date:	Thursday, 30 September 2021

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER) CEO's delegated officer has decided to grant an amended licence. The DER delegated officer considers that in reaching this decision, he has taken into account all relevant considerations.

Decision Document prepared by:	Lauren Fox A/Senior Licensing Officer
Decision Document authorised by:	Alan Kietzmann Delegated Officer

Contents

1 Purpose of this Document

This decision document explains how the Delegated Officer has assessed and determined the application and provides a record of the decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	13	200,000 tpa
	62	100,000 tpa
	63	500,000 tpa
	70	50,000 tpa
Application verified Application fee paid	Date: N/A Date: N/A	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes☐ No☒	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☒ No☐ Department of Water consulted Yes ☒ No ☐	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒		
Is the Premises subject to any EPP requirements? Yes☐ No☒		

3 Executive summary of proposal and assessment

This decision document relates to the inclusion of prescribed category 13 to Licence 7037/1997/12. It also re-assesses the environmental and health risks from the site operations, and where appropriate places additional regulatory controls to mitigate the risk. Lastly, it considers administrative updates and incorporates the Amendment Notice 1 determinations into the licence.

Premises Overview
R.C.G. Pty Ltd (R.C.G.) is a family owned company which has operated a limestone quarry at the Quinns Quarry premises located on Hester Avenue in Neerabup within the City of Wanneroo.

R.C.G. has operated this quarry since 1974. R.C.G. holds licence L7038/1997/12 for the following prescribed premises categories:

- Category 62: Solid waste depot
- Category 63: Class I inert landfill site; and
- Category 70: Screening of material.

Current Operations
Solid waste depot and inert landfill
Asbestos, asphalt, construction and demolition (C&D) waste, and other waste types that meet Inert Type 1 classification are accepted at the site predominantly from sources within the Perth Metropolitan area. The waste is stored, sorted and non-conforming waste removed. Clean sand is separated for use as cover material, inert wastes and asbestos are buried within the landfill area and non-conforming waste is removed offsite to a licensed disposal facility.

Screening of material
Quarrying operations have ceased, however limestone which has been previously excavated from the premises is stockpiled on-site prior to being crushed into smaller pieces for sale.

Proposed Operations
The occupier has submitted a licence amendment request to include category 13 (crushing of building material) in the licence so that C&D waste that meets the Type 1 classification currently received at the premises can be crushed prior to being landfilled.

A separation distance of 1,000 metres is recommended between a sensitive receptor and a premises that undertakes crushing, with the main emissions considered to be noise and dust. The CEO's Delegated Officer has determined that because the crushing facility is within 1,000m of sensitive receptors, there is an elevated risk to the environment, and may require greater regulatory controls.

The main emissions associated with the activities undertaken at the premises include noise from plant operations and vehicles, and fugitive air (dust and asbestos) from waste handling, processing and storage.

Applicable Regulations, Standards and Guidelines
The overarching legislative framework of this assessment is the *Environmental Protection Act 1986* and *Environmental Protection Regulations 1987*. DER Guidance Statements and other documentation which inform the assessment in line with this legislation are as follows:

- *Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009);*
- *Guidelines for managing asbestos at construction and demolition waste recycling facilities (December 2012);*
- *Guidance Statement: Regulatory Principles (July 2015);*
- *Guidance Statement: Licence and Works Approvals Process (August 2016);*

- *Guidance Statement: Setting Conditions (October 2015);*
- *Guidance Statement: Land Use Planning (October 2015);* and
- *Guidance Statement: Licence Duration (August 2016)*.

4 Location and siting

4.1 Siting context and planning approval

Lot 11533 is owned by the State of Western Australia and zoned as 'Parks and Recreation' under the City of Wanneroo's District Planning Scheme No. 2. Planning approval was granted by the Department of Planning on 30 September 2016 for a period of five years.

The planning approval was granted for an extractive industry. The Department of Planning confirmed in correspondence to DER Officers that the use of the premises for "crushing of construction and demolition waste, inert landfill, solid waste depot and screening of material" was authorised under the approval.

The licence duration was amended through Amendment Notice 1 granted 19 October 2016, to align with the planning approval expiry date of 30 September 2021, which is consistent with DER's Guidance Statement: *Licence Duration* (updated August 2016).).

The approval restricts operational hours of the crusher to 07:00 to 17:00 Monday to Friday and 07:00 to 13:00 on Saturday, and the 'loading and movement of trucks into and out of the site, clearing, establishment, excavation works and all other operations not referred to" are limited to 06:30 to 17:00 Monday to Friday, 07:00 to 13:00 on Saturday, with the landfill authorised to be open between 08:00 to 15:30 on Sundays.

Clearing activities have not been applied for under this licence amendment. This licence does not authorise any clearing of native vegetation.

4.2 Residential and sensitive receptors

The residential community of Clarkson is located 140m west of the Premises boundary. An area zoned 'General Rural', which includes residences, is located 470m from the northern end of the eastern boundary. The western boundary of the premises is located adjacent to the Transperth northbound railway line.

The northern, southern and eastern boundaries are located adjacent to Bush Forever areas as classified under State Planning Policy 2.8 *Bushland Policy for the Perth Metropolitan Region* (June 2010) which forms the Neerabup National Park.

4.3 Soil Type

The Delegated Officer has reviewed surface geology information and publicly available surface geology maps for the site as presented in Davidson, W.A. (1995) ('Hydrogeology and groundwater resources of the Perth region, Western Australia', Western Australia Geological Survey, Bulletin 142, Davidson, W.A. (1995)) and the Department of Water's mapping system, *Perth Groundwater Atlas* (PGA). The information available depicts that the Premises is mapped in the Tamala limestone formation, which is predominantly calcarenite. This is consistent with historical onsite activities relating to mining limestone and sand.

The Tamala limestone formation extends along the coastal strip of the Perth region and consists of a creamy-white to yellow, or light-grey, calcareous aeolianite. It contains various proportions of quartz sand, fine- to medium-grained shell fragments, and minor clayey lenses.

The quartz sand varies from fine to coarse-grained, but is predominantly medium grained, moderately sorted, sub-angular to rounded, frosted, and commonly stained with limonite (Davidson, 1995).

The formation reported to contain numerous solution channels and cavities, particularly in the zone of water table fluctuation, and in some areas exhibits karst structures (McPherson and A. Jones, 2005 Geosciences Australia). Its upper surface is exposed and leached to the extent that the upper part of the unit comprises unconsolidated sand. Depending on the location, this unit unconformably overlies the Leederville Formation, Osborne Formation or the Bassendean Sand, and is known to exhibit a maximum known thickness of 110 m. Along the coastal margin it is unconformably overlain by the Becher Sand or the Safety Bay Sand (Davidson, 1995).

4.5 Groundwater and surface water resources

The nearest surface water body is the Neerabup Lake located 1km east of the Premises. The Indian Ocean is 3.68km west of the site.

As identified through PGA, groundwater below the premises ranges from 35 to 45 metres below ground level (mbgl), with these differences attributed to the varying contours of the premises topography from mining and filling activities. The thickness of the aquifer, being the Gnangara Mound, is 32m. PGA also states that groundwater is considered fresh (total dissolved solids between 0 - 500 mg/L), has a low risk of iron staining and has no known risk of Acid Sulfate Soils (ASS).

The premises is located within a Priority 3 Public Drinking Water Source Area (P3 PDWSA) and is located approximately 715m east of two well-head protection zones within the Clarkson residential community. Additional four well-head protection zones are within 2km west of the Premises. Well-head protection zones are areas surrounding a production bore to protect the drinking water from contamination. Given the premises' location within a P3 PDWSA, the amendment application was referred to the Department of Water (DoW). DoW responded to advise that the referral had been assessed however no comments were provided.

Groundwater data required from monitoring under previous licences is inconclusive to determine if site activities have impacted on groundwater quality. A discussion of the previous data is provided in Appendix A.

4.5 Meteorology

Wind direction and strength

The closest Bureau of Meteorology (BoM) station for the site is the Pearce RAAF WA station (station number: 009053) approximately 22.6km from the Premises. Annual wind roses for the Pearce RAAF WA station provide an indication of likely wind direction and strength for the site. The annual average 9am and 3pm wind speed vs direction plots are presented in Figure 1. 9am observations indicate a predominant easterly wind towards the residential community while the 3pm observations indicate a predominant south-westerly wind towards the Neerabup National park.

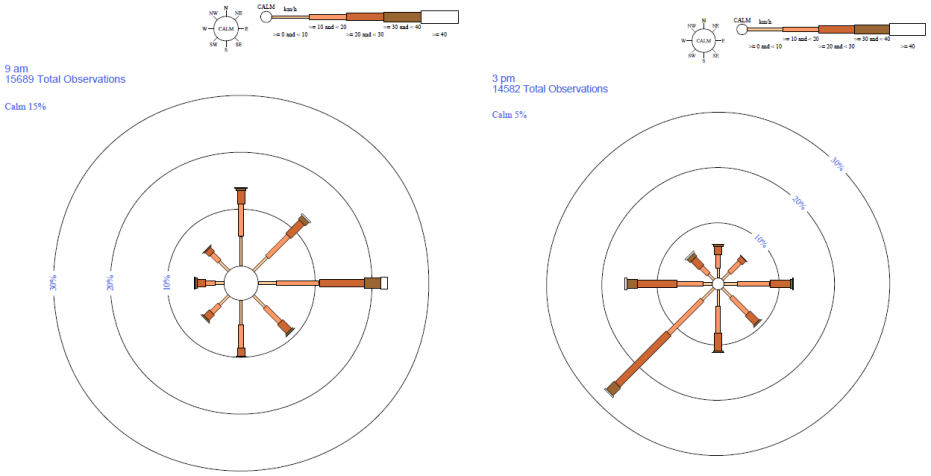

Figure 1: Annual average 9am and 3pm wind speed vs direction plots – Pearce RAAF WA.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987*, DEC's Policy Statement - Limits and targets for prescribed premises (2006), and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Interpretation	N/A	The following definitions have been included into the 'Interpretation' section of the licence as they are referenced within the licence conditions and require clarification: • 'Anniversary Date'; • 'AS 1726-1993' • 'asbestos containing material'; • 'Asphalt Waste'; • 'Attachment 1'; • 'Attachment 2'; • 'Attachment 3'; • 'classified load'; • 'Compliance Report'; • 'Contaminated Sites Guidelines'; • 'damp'; • 'Department'; • 'DER'; • 'DER Asbestos Guidelines'; • 'Metal Dust'; • 'NATA'; • 'NATA accredited'; • 'quarantined storage area or container'; • 'quarterly' and • 'spot sample'. The following definitions have been updated to reflect the current licence version	N/A

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Interpretation continued		or to provide further clarity: 'CEO'; and 'Drilling Slurry'.	
Premises operation	L1.2.1 – L1.2.17	Licence condition 1.2.1(d) has been added to ensure the waste accepted and potentially landfilled meets the classification criteria for Class I as authorised by prescribed premises category 63. Table 1.2.1 of condition 1.2.1 has had minor amendments to the 'Specification' column for Metal Dust and Drilling Slurry. These amendments do not alter the requirements of the licence and are administrative in nature to reflect a consolidation of licence conditions. Previous condition 1.2.2 requiring visual inspection of loads has been replaced with condition 1.2.3. Previous condition 1.2.3 has been renumbered as condition 1.2.2 and has the word 'segregated' replaced with 'quarantines' there are no additional amendments to this condition. Conditions 1.2.3 to 1.2.10 have been included to address asbestos emissions. These are discussed in Appendix A. Table 1.2.2 of condition 1.2.11 (formerly condition 1.2.4) has been updated to reflect the amended premises operations (crushing and screening) and to include additional controls to manage fugitive emissions. Fugitive emissions are discussed in Appendix A. Condition 1.2.12 and Table 1.2.3 has been included to specify the infrastructure and equipment requirements for the Premises to assist in minimising fugitive emission and release of asbestos fibres. This has been discussed in Appendix A.	Application supporting documentation

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Premises operation continued		Condition 1.2.13 has been included to restrict the operational hours of the crushing and screening equipment to mitigate noise emissions. This is detailed further in Appendix A. Former conditions 1.2.5, 1.2.6 and 1.2.7 have been renumbered as conditions 1.2.14, 1.2.15 and 1.2.16, respectively. There are no additional amendments to these conditions. Former condition 1.2.8, related to windblown waste, has been renumbered to condition 1.2.17 and has also been updated to reflect DER's current licence version.	
Fugitive emissions	L1.2.11 and L1.2.12	**Please refer to Appendix B**	Application supporting documentation
Odour **Odour continued**	L1.2.1 and L1.2.2	Emission Description *Emission:* Odour emissions generated storing of non-conforming waste. *Impact*: Nuisance impacts affecting the comfort, amenity, wellbeing and health of residences located 140m west of the Premises boundary. No odour complaints have been received for this Premises. *Controls:* The occupier only accepts inert wastes for storing, processing and landfilling which by nature, generate little to no odour emissions. Risk Assessment *Consequence:* Minor *Likelihood*: Rare *Risk Rating:* Low Regulatory Controls Condition 1.2.1 (and Table 1.2.1) limits the authorised waste types received at	Application supporting documentation

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		the Premises to inert wastes which generate little to no odour. Condition 1.2.2 requires non-confirming wastes to be removed offsite which assists in reducing odour generating wastes being stored, processed or landfilled at the Premises. Residual Risk *Consequence:* Minor *Likelihood*: Rare *Risk Rating:* Low	
Noise	L1.2.12 and L.1.2.13	**Please refer to Appendix A**	Application supporting documentation
Monitoring general	L2.1.1 and L2.1.2	Condition L2.1.1 was included on the licence to specify the methodology that is required to be undertaken for monitoring groundwater. These methods assist in ensuring reliability and accuracy of results. No amendments have been undertaken for this condition Condition L2.1.2 was previously included on the licence to specify the minimum period of time authorised between sampling rounds. The sampling frequency has been amended from annual to quarterly to allow a more accurate representation of seasonal data obtained throughout the year and this condition has been amended to reflect that.	
Monitoring of inputs and outputs	L2.2.1	Condition 1.2.1 specifies the types and volumes of materials permitted to be accepted at the premises. To confirm that the occupier is complying with these limits, Condition 2.2.1 was included on the previous licence to monitor the inputs and outputs of the premises. Table 2.2.1 of this condition has been amended to require the occupier to monitor and record the weight of all crushed and screened products leaving the Premises. The heading of this table has also been amended by the inclusion of	Application supporting documentation

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Monitoring of inputs and outputs continued		the words 'and recording'. There are no additional amendments to this condition or table.	
Ambient quality monitoring	L2.4.1	**Please refer to Appendix A – leachate**	Application supporting documentation
Improvements	L3.1.1	**Please refer to Appendix A – leachate**	Application supporting documentation
Information	L4.1.1 and L4.1.2, L4.2.1 and L4.2.2, L4.3.1	Former condition 3.1.2 requiring the submission of an Annual Audit Compliance Report has been replaced by condition 4.2.1. Former condition 3.1.3 regarding complaints management has been renumbered as condition 4.1.2. Former condition 3.2.1 has been replaced by condition 4.2.2 regarding the submission of an Annual Environmental Report. Table 4.2.2 of this condition (formerly Table 3.2.1) has been amended to require the recycled outputs sampling and testing data and a more comprehensive assessment and summary of ambient groundwater monitoring data. Condition 4.3.1 has not been amended, other than being renumbered.	N/A

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
25/03/2015 and 26/03/2015	Application referred to interested parties listed: • City of Wanneroo; • Department of Water; • Western Australian Planning Commission (WAPC)	City of Wanneroo: Comments received on 26/03/2015 advising that the premises is located within an area zoned 'Parks and Recreation' under the Metropolitan Region Scheme and that planning approval is required from WAPC. Department of Water (DoW): notification was received on 21/04/2015 advising that the application was assessed and that DoW has no comments. WAPC: Comments received 1/04/2015 advising that no approvals currently exist for these operations and that planning needs to be obtained from WAPC. Updated comments received 18/10/2016 confirmed that planning approval had been granted for crushing of construction and demolition waste, an inert landfill, solid waste depot and screening of material. This approval is valid until 30 September 2021.	Application was referred to WAPC for comment. N/A Occupier was advised that planning approval is required from WAPC. Licence duration was extended until 30/09/2021 via Amendment Notice 1 granted 19/10/2016.
31/10/2016	Proponent sent a copy of draft instrument during 21 day comment period	A waiver form signed by the occupier was received by DER on 9 November 2016 confirming that the occupier wished to waive the 21 day comment period and have the amendment granted as soon as possible.	N/A

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

Appendix A

Fugitive Emissions

Emission Description

Emission: Fugitive dust emissions from the crushing and screening of construction and demolition waste which have the potential to contain asbestos and silica (within Metal Dust), dust lift-off from trafficked roads, lift-off from stockpiles, and handling of C&D wastes and screened products.

Impact: Degradation of local air quality. Dust emissions blocking photosynthesis of vegetation in the Bush Forever area located immediately adjacent to the northern, eastern and southern boundaries of the Premises. Nuisance impacts on the comfort, amenity, health and wellbeing impacts on sensitive receptors located 140m west of premises boundary.

The Delegated Officers considers that a minimum separation distance of 1,000 metres is recommended between a sensitive receptor and a premises that undertakes crushing.

DER has not received a dust related complaint for this Premises since February 2008. Potential human health impacts from any asbestos fibres in dust emissions. DER has received 3 complaints specifically related to asbestos since November 2012.

Impacts to human receptors include:

- Health
  - Cancer;
  - Silicosis;
  - Asbestosis;
  - Irritation of eyes;
  - Coughing;
  - Sneezing;
  - Hayfever;
  - Increasing symptoms of existing respiratory conditions such as:
    - Asthma;
    - Emphysema; and
    - Chronic obstructive airways disease.
- Nuisance
  - Dust covering people's homes and property;
  - Impacting of people's amenities; and
  - Impacting on people's comfort.

Controls: The licensee has committed to a number of dust mitigation measures as documented in "RCG Pty Ltd, Dust Management Plan Quinns Quarry on Lot 11533 Hester Avenue, Neerabup" prepared by Bowman & Associates Pty Ltd, November 2014 (DMP).

The DMP states that the following controls will be implemented:

- Wetting down stockpiles and loads with a water truck (10,000L capacity) as required;
- Reducing dump heights to 5m;
- Crushing and screening plant will be fitted with spray nozzles to assist in wetting down waste being processed;
- Dust covers fitted on discharge conveyors;
- Temporarily ceasing operations in windy conditions; and
- Consideration of using binding agents on trafficked or open areas.

Risk Assessment (dust)
Consequence: Moderate (when dust abatement is operational)
Likelihood: Possible
Risk Rating: Moderate

There is the possibility that the residential community may be impacted to a moderate degree by dust during normal operations given that the operations are occurring within the 1,000m recommended separation distance. This results in an overall moderate level of risk to the environment and public health from dust emissions.

Regulatory Controls
The Delegated Officer has determined that because the crushing facility is within 1,000m of sensitive receptors, there is an elevated risk to the environment and public health, and may require greater regulatory controls.

Table 1.2.2 (in condition 1.2.11) requires all loads to be wet down prior to loading, unloading and processing, limits stockpile height to 5m or less, and specifies that site infrastructure must be operated to maintain all unsealed access roads and stockpiles in a damp state, and to operate water spray nozzles on the crushing and screening equipment when in use. This table also requires activities to cease if any site infrastructure fails or in weather conditions where dust cannot be effectively managed.

Table 1.2.3 (condition 1.2.12) specifies the infrastructure and equipment requirements for the Premises. This includes the use of a water truck fitted with water cannon/sprays and/or spray bars, and the installation of water spray nozzles on the crusher and screener.

These requirements reflect the dust abatement measures proposed in the licence application (as detailed above in the 'Emissions description' section) and include additional controls that the Delegated Officer considers necessary to effectively manage dust emissions.

Residual Risk
Consequence: Moderate
Likelihood: Unlikely
Risk Rating: Moderate

Dust containing silica
The occupier has not specified any controls to specifically address silica fibres in Metal Dust however the controls proposed in the DMP as detailed above, will also be applicable to assist in controlling silica fibres.

Risk Assessment (**Silica fibres**)
Consequence: Severe
Likelihood: Unlikely
Risk Rating: High

The controls proposed by the proponent should control silica fibres within Metal Dust such that it is unlikely that silica fibres will be released from the activities. However, due to the severe consequences of silica fibres reaching a receptor, the risk rating is high.

Regulatory Controls

Given the health risks posed by silica fibres and due to the premises being within 1,000m from sensitive receptors, The Delegated Officer has determined that there is an elevated risk to the environment and public health which may require greater regulatory controls.

All regulatory controls specified above for fugitive emissions assist in minimising the release of silica fibres from Metal Dust. Table 1.2.2 also specifies that metal Dust is not authorised to be crushed or screened and must be maintained in a damp state (or otherwise stabilised) to reduce dust emissions that may contain silica.

Risk Assessment (Silica fibres)
Consequence: Severe
Likelihood: Rare
Risk Rating: High

Although the impacts associated with the release of silica is considered to be severe, the risk of fibres being released with regulatory controls in place is rare and therefore despite the residual risk being high, this is considered to be acceptable.

Dust containing asbestos
The licensee provided the document "RCG Pty Ltd, Asbestos Management Plan for Landfill at Quinns Quarry on Lot 11533 Hester Avenue, Neerabup" prepared by Bowman & Associates Pty Ltd, February 2015 (AMP), in support of the licence amendment application.

Below is an overview of the proposed controls outlined in the AMP:

- Pre-acceptance procedures:
  - Advising all clients that asbestos is not accepted with material for the crushing and screening plant;
  - Recording details of all loads arriving at the premises that contain, or potential contain asbestos.
- Acceptance procedures:
  - Asbestos for disposal is received wrapped in black plastic and driven to a separate designated area within the landfill where it is immediately covered.
  - Loads are visually inspected at the weighbridge and tipping face. The weighbridge operator is required to ask the waste driver the source and nature of waste so that each load can be classified in accordance with the *Guidelines for managing asbestos at construction and demolition waste recycling facilities,* published by the Department of Environment and Conservation (December 2012) (DER Asbestos Guidelines); and
  - Loads classified as 'high risk' will be taken to the designated asbestos landfill area for further visual inspection. Loads will remain damp during inspection.
- Post-acceptance:
  - Loads will be inspected and managed in accordance with DER's Asbestos Guidelines;
  - If asbestos is not identified in the material for crushing and screening, it will be processed onsite;
  - Waste containing asbestos will be isolated, kept damp and directed to the asbestos landfill area.
  - Visual inspection will be ongoing throughout all phases of the site operations;
  - Sampling of processed material will be undertaken in accordance with DER's Asbestos Guidelines.

It is noted that the AMP appears to be consistent with DER's Asbestos Guidelines. The proposed controls for fugitive dust also assist in reducing the likelihood of asbestos fibres being released.

Risk Assessment (**Asbestos fibres**)
Consequence: Severe
Likelihood: Unlikely
Risk Rating: High

The controls proposed by the proponent should control asbestos such that it is unlikely that asbestos fibres will be released from the activities. However, due to the severe consequences of asbestos fibres reaching a receptor the risk rating is high.

Regulatory Controls
Although the AMP appears to meet the requirements of DER's Asbestos Guidelines, DER officers attended the Premises in February 2016 and noticed uncovered asbestos present onsite and other asbestos that had remained onsite for several hours without being covered in cover material. DER has received a few complaints/queries from members of the public and people who deliver waste to the Premises regarding asbestos management at the site.

Conditions 1.2.3 to 1.2.10 have been included specifically in regards to asbestos management. These conditions assist in reducing the risk of asbestos fibres being released during crushing and screening operations, as well as reducing the risk to public health when the processed material is re-used. These conditions are representative of the requirements for asbestos management as specified in the DER Asbestos Guidelines and reflect the occupier's commitments as stated in the AMP.

Existing condition 1.2.15 (formerly condition 1.2.6), specifying cover requirements, also assists in reducing risk of asbestos fibres being released.

The regulatory controls included for general fugitive dust emissions also assist in reducing the likelihood of asbestos being released.

Risk Assessment (Asbestos fibres)
Consequence: Severe
Likelihood: Rare
Risk Rating: High

While impacts from releases of asbestos fibres is considered to be severe, the risk of fibres being released with regulatory controls in place is rare and therefore despite the residual risk being high, this is considered to be acceptable.

Noise emissions

A noise assessment was undertaken on behalf of the occupier in January 2010 which included monitoring of noise emissions generated from the crusher machinery at a distance of 5m from the crusher and 140m from the crusher at the closest noise sensitive receptors, being residences located on Liberty Drive.

At the time of the noise monitoring, no material was being crushed so the results of monitoring are for the machinery levels only.

The assigned noise levels at the residences is 45 dB at LA_{10} from 7am to 7pm Monday to Saturday, as outlined in the *Environmental Protection (Noise) Regulations 1997* (EP Noise Regulations). The noise monitoring demonstrated that the crusher could comply with the assigned levels of the Noise Regulations during daytime hours with an LA_{10} level of 40 dB.

The noise levels of the crusher between 7pm to 10pm were on par with the assigned noise levels (40dB) however the noise levels would exceed the assigned limits for night time hours (35 dB for 10pm to 7am, Monday to Saturday).

The Delegated Officer identified that the noise assessment was undertaken when no material was processed through the crusher, which indicates that crushing of waste will likely result in higher levels of noise emissions being generated, which may impact on the Licensee's ability to comply with day time assigned levels.

Emission Description
Emission: Unreasonable noise emissions from the crushing and screening of waste as well as noise emitted from vehicle movements (including reversing beepers) and the general handling of waste.

Impact: Reduced wellbeing, amenity and comfort of sensitive noise receptors located 140m from premises boundary. The Delegated officer considers that a crushing facility that does not have a separation distance of 1,000m represents a higher risk to sensitive receptors.

Controls: The occupier has committed to only crush between the hours of 7am to 3pm Monday to Friday. The crushing and screening plant will be located within the existing quarry area which is 17m deep and is against the quarry wall, providing a natural noise barrier. Onsite vehicles will be limited to a 40km/hour speed limit. Mobile plant equipment is fitted with mufflers.

Risk Assessment
Consequence: Moderate
Likelihood: Possible
Risk Rating: Moderate

Regulatory Controls
Condition 1.2.12 requires the crusher and screener to be located within a specified area (in Schedule 1 of licence) which is 17m below the natural ground level, and represents to the occupier's commitment to undertake operations in this area.

Condition 1.2.13 has been included to limit crushing and screening activities to 7am to 5pm Monday to Friday and 7am to 1pm on Saturday to ensure consistency with the planning approval's authority to operate within these hours. These hours are also with the day time hours as specified under the EP Noise Regulations.

Given the close proximity to residents, the moderate risk level associated with noise emissions, and the noise assessment undertaken without waste being processed, the Delegated Officer considers it appropriate to demonstrate compliance against the EP Noise Regulations by undertaking a noise assessment under normal operating conditions, which has been included as condition 2.3.1 (and Table 2.3.1). Where operations do not comply with the EP Noise Regulations, this condition requires the occupier to detail what measures will be undertaken to meet compliance and a timeframe to implement those measures.

Residual Risk
Consequence: Moderate
Likelihood: Possible
Risk Rating: Moderate

Leachate

Information available on surface geology suggests that the Premises is comprised of Tamala Limestone and may be underlain by solution channels and cavities with some areas displaying karstic characteristics (McPherson and A. Jones, 2005 Geosciences Australia), indicative of a permeable geological profile. Groundwater has been identified to range between 35 to 45 mbgl (Perth Groundwater Atlas) given the varied contours from landfilling and quarrying operations at the site.

Local groundwater contours indicate an inferred groundwater flow towards west to south-west, in the direction the residential community. Neerabup Lake is located approximately 1km east of the Premises and is considered to be up hydraulic gradient of the Premises and not in the direction of groundwater flow.

Under the previous licences, the occupier was required to undertake annual groundwater monitoring at two bores, MB1, located in the north-western portion of the Premises, and MB2, located within the BGC premises. Given the inferred groundwater flow, both of these bores are considered to be cross/up hydraulic gradient of the Premises, with no bores located down hydraulic gradient. Given that there are no down hydraulic bores, the data set is insufficient to determine if site activities are impacting on groundwater quality. The data set is further limited by the fact that sampling of all parameters specified within the licence have not historically been provided as required.

Emission Description
Emission: Stormwater contaminated with leachate from storage of non-conforming wastes and leachate discharges from the storage of Drilling Slurry which may include Volatile Organic Compounds (VOCs), benzene, toluene, ethylbenzene and xylene (BTEX), Total Recoverable Hydrocarbons (TRH), Polycyclic Aromatic Hydrocarbons (PAHs), organochlorine pesticides and herbicides, polychlorinated biphenyl (PCB) and metals, amongst other contaminants depending on where the drilling slurry originates from.

Impact: Contamination of surrounding land, surface water drainage systems and infiltration to groundwater. Impacts to the Bush Forever area located immediately adjacent to the north, east and south of the Premises. Groundwater is approximately 35-45 mbgl at the premises and is a Priority 3 Public Drinking Water Source Area (P3 PDWSA). It is noted that the nearest surface water body if Neerabup Lake however it has not been considered as a receptor for this assessment given that it is 1km up gradient of the Premises, with any emissions to surface water considered rare.

Controls: Only inert wastes are accepted at the Premises for landfilling which are considered to have a lower emission risk.

Drilling Slurry, which by nature has the physical properties to infiltrate, is placed in a designated limestone drying bed to allow for evaporation. The permeability of the drying bed is not known and DER does not have information to specify whether the drying bed is bunded. DER also does not have information on the chemical composition of the drilling slurry.

Risk Assessment
Consequence: Major
Likelihood: Possible
Risk Rating: High

Regulatory Controls
Condition L1.2.1 has been included on the licence to limit the types and quantities of waste that can be accepted at the premises to those that have been assessed as suitable and can be sufficiently managed through the premises infrastructure and controls.

Condition L1.2.2 requires the occupier to remove any wastes from the Premises that are not authorised by condition 1.2.1. This condition assists in reducing the risk of stormwater becoming contaminated from the storage of non-conforming wastes.

Condition L1.2.11 specifies that wastes accepted onto the Premises may only be subject to the processes set out in Table 1.2.2 and in accordance with any process limits described in that Table. The process limits have been included to manage the activities to those that have been assessed through this decision document and have been considered to be necessary by the Delegated Officer to effectively regulate emissions from the Premises. The process requirements have been included to reduce the risk of leachate entering the environment and to reduce odour and dust emissions.

The Delegated Officer has considered the geological profile, physical properties of Drilling Slurry, separation distance to groundwater and the sites location within a P3 PDWSA and considers that a permeability not more than 1×10^{-8} m/s is required for the slurry drying bed. Table 1.2.2 specifies this requirement and also requires the drying bed to be bunded. Improvement condition L3.1.1 (and Table 3.1.1 specifying requirement IC1) requires the occupier to undertake permeability testing of any existing drying beds to demonstrate hydraulic conductivity of 1×10^{-8} m/s and where this has not been met, a timeframe of proposed actions to be undertaken to meet this requirement.

Although the permeability of the ASS/PASS and greenwaste pads has not been provided with the application, given the depth to groundwater (minimum 11.5m bgl) and the surface geology being calcarenite limestone, the infrastructure requirements for these areas as required through regulatory controls are anticipated to assist in preventing discharges of leachate into the environment. In the event that acidic leachate migrates through the ASS/PASS pad, it will be naturally treated through the surface limestone. This treatment process is likely to produce salts that have the potential to enter the groundwater. This can be monitored through groundwater sampling.

Given the lack of a down-gradient bore, high risk of impacts to the P3 PDWSA and insufficient historical data to determine if site activities are impacting on groundwater quality, IC2 of condition 3.1.1 has been included to require a minimum of two down gradient bores to be installed at the Premises, which is considered by the Delegated Officer as being necessary to provide a more accurate and reliable data set in relation to groundwater quality.

The occupier is also required under condition L2.4.1 (and Table 2.4.1) to undertake quarterly groundwater monitoring of the up hydraulic gradient bore (MB1), considered to be the control bore, to assist in determining if site activities are impacting on groundwater as well as providing a better data set depicting seasonal trends. Previous licences only required annual monitoring which was insufficient given the high risk of the receiving environment.

In addition to the parameters required to be monitored under previous licences, the following parameters have also been included to obtain a more reliable data set:

- Cadmium;
- Chromium;
- Copper;
- Mercury;
- Lead;
- Nickel;
- Potassium;
- Total acidity;
- Total alkalinity;
- Total Dissolved Solids (TDS);
- Organochlorine pesticides;
- BTEX (benzene, toluene, ethylbenzene, xylene);
- Polycyclic aromatic hydrocarbons (PAHs);

- Polychlorinated biphenyls (PCBs); and
- Total petroleum hydrocarbons.

Condition 2.4.1 has also been amended to remove the requirement to record and investigate any results that do not meet the specified target. This condition does not specify any targets so this requirement was redundant. Table 2.4.1 of this condition has also been amended to refer to the map in schedule 1 which the location of the bore is depicted.

Once the additional two groundwater monitoring bores have been installed, these will also require quarterly monitoring.

Residual Risk
Consequence: Major
Likelihood: Possible
Risk Rating: High