Government of **Western Australia**
Department of **Environment and Conservation**

Your Ref: L8701/2012/1
Our Ref: 2012/006965
Enquiries: Haley Wilson
Phone: 9182 2034
Fax: 9144 1118
Email: haley.wilson@dec.wa.gov.au

Mr Andrew Winzer
Senior Environmental Advisor
Fortescue Metals Group Ltd
Level 2, 87 Adelaide Terrace
East Perth WA 6004

Dear Mr Winzer

***ENVIRONMENTAL PROTECTION ACT 1986*: LICENCE GRANTED**

Premises
Chainage 232 Crushing and Screening Facility
Part of Mining Tenements M45/1177 and AL70/1
NULLAGINE WA 6751
Licence Number: L8701/2012/1

A licence under the *Environmental Protection act 1986* (the Act) has been granted for the above premises. The Department of Environment and Conservation will advertise the issuing of this licence in the public notices section of *The West Australian* newspaper.

The licence includes attached conditions. Under Section 58(1) of the Act, it is an offence to contravene a condition of a licence. This offence carries a penalty of up to $125,000 and a daily penalty of up to $25,000

In accordance with section 102(1)(c) of the Act, you have 21 days to appeal the conditions of the licence. Under section 102(3)(a) of the Act, any other person may also appeal the conditions of the licence. To lodge an appeal contact the Office of the Appeals Convenor on 6467 5190 or by email at admin@appealsconvenor.wa.gov.au.

Where a licence is issued for more than one year it requires payment of an annual fee and will cease to have effect if the fee is unpaid. It is the occupier's responsibility to lodge a fee application and pay the annual fee in sufficient time to avoid incurring a late payment fee and for processing to be completed before the licence anniversary date.

If you have any queries regarding the above information, please contact Haley Wilson on 08 9182 2034.

Yours sincerely

Allisdair MacDonald

Officer delegated under Section 20
of the *Environmental Protection Act 1986*

14 February 2013

enc: *Environmental Protection Act 1986* Licence (L8701/2012/1), EAR

Government of **Western Australia**
Department of **Environment and Conservation**

LICENCE FOR PRESCRIBED PREMISES
Environmental Protection Act 1986

LICENCE NUMBER: L8701/2012/1 **FILE NUMBER: 2012/006965**

LICENSEE
Fortescue Metals Group Limited
87 Adelaide Terrace
EAST PERTH WA 6004
ACN: 002 594 872

PREMISES
Chainage 232 Crushing and Screening Plant
Part of Mining Tenements M45/1177 and AL70/1 Within co-ordinates: E 734750.14, N 7544941.11; E 734696.06, N 7544956.80; E 734516.88, N 7544992.88; E 734483.10, N 7545194.70; E 734607.38, N 7545467.05; E 734677.94, 7545485.49; E 734770.60, N 7545502.99; E 734967.73, N 7545502.99, E 734965.30, N 7545432.88; E 734964.27, N 7545412.21; E 734964.76, N 7545387.53; E 734982.34, N 7545275.86; E 734969.86, N 7545187.93; E 734968.55, 7545157.53; E 734970.69, N 7545044.56; E 734960.51, N 7544970.30; E 734953.79, N 7544964.00; E 734978.07, N 7544797.44; E 734768.21, N 7544812.25.
NULLAGINE WA 6758
(as depicted in Attachment 1)

PRESCRIBED PREMISES CATEGORY
Schedule 1 of the Environmental Protection Regulations 1987

CATEGORY NUMBER	CATEGORY DESCRIPTION	CATEGORY PRODUCTION OR DESIGN CAPACITY	PREMISES PRODUCTION OR DESIGN CAPACITY
12	Screening, etc. of material	50,000 tonnes or more per year	1,000,000 tonnes per year

CONDITIONS OF LICENCE
Subject to the conditions of licence set out in the attached pages.

Officer delegated under Section 20
of the *Environmental Protection Act 1986*

Thursday, 14 February 2013

ISSUE DATE Thursday, 14 February 2013
COMMENCEMENT DATE: Monday, 18 February 2013
EXPIRY DATE: Saturday, 17 February 2018

CONDITIONS OF LICENCE
Environmental Protection Act 1986

LICENCE NUMBER: L8701/2012/1 **FILE NUMBER:** TBA

DEFINITIONS
In these conditions of licence, unless inconsistent with the text or subject matter:

"Director" means Director, Environmental Regulation Division of the Department of Environment and Conservation for and on behalf of the Chief Executive Officer as delegated under Section 20 of the *Environmental Protection Act 1986;*

"Director" for the purpose of correspondence means-

Regional Leader, Pilbara Region
Department of Environment and Conservation
PO Box 835
KARRATHA WA 6714

Telephone: 9182 2000
Facsimile: 9144 1118; and

"severe rainfall event" means greater than a 1 in 100 year rainfall event of 72 hours duration.

GENERAL CONDITIONS

DUST CONTROL

1. The licensee shall ensure that reasonable and practicable measures are taken to ensure that dust generated on the premises does not cross the premises boundary.

STORMWATER MANAGEMENT

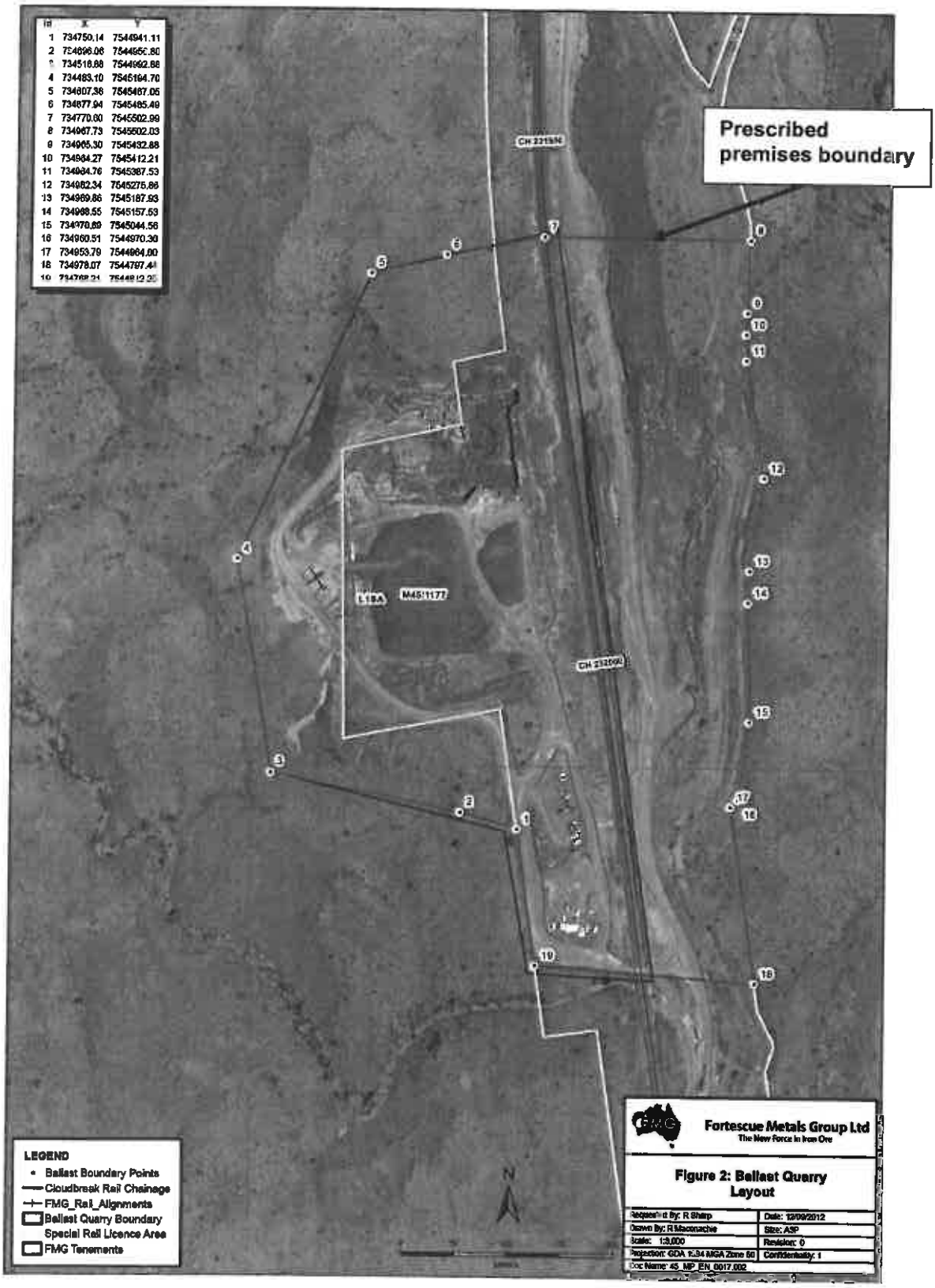
2. The licensee shall ensure that the premises are drained such that, except for severe rainfall events, all surface water run-off is retained on the premises.

3. The licensee shall ensure stormwater drains on the premises are kept clear of waste to allow for their effective use.

REPORTING CONDITIONS

4. The licensee shall by **31 March** in each year, provide to the Director an Annual Audit Compliance Report in the form in Attachment 2 to this licence, signed and certified in the manner required by Section C of the form, indicating the extent to which the licensee has complied with the conditions of this licence, and any previous licence issued under Part V of the Act for the premises, during the period beginning **1 January** the previous year and ending on **31 December** in that year.

ATTACHMENT 1 - PLAN OF PREMISES



ISSUE DATE	Thursday, 7 February 2013
COMMENCEMENT DATE:	Monday, 11 February 2013
EXPIRY DATE:	Saturday, 10 February 2018

ATTACHMENT 2 - ANNUAL AUDIT COMPLIANCE REPORT

SECTION A
LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of licence complied with within the reporting period? (please tick the appropriate box)

Yes □ Please proceed to Section C
No □ Please proceed to Section B

Each page must be initialed by the person(s) who signs Section C of this annual audit compliance report

INITIAL:_____

SECTION B - DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

ISSUE DATE Thursday, 7 February 2013
COMMENCEMENT DATE: Monday, 11 February 2013
EXPIRY DATE: Saturday, 10 February 2018

Please use a separate page for each licence condition that was not complied with.

a) Licence condition not complied with?
b) Date(s) when the non compliance occurred, if applicable?
c) Was this non compliance reported to DEC?
☐ Yes ☐ Reported to DEC verbally Date _____ ☐ Reported to DEC in writing Date _____ ☐ No
d) Has DEC taken, or finalised any action in relation to the non compliance?
e) Summary of particulars of non compliance, and what was the environmental impact?
f) If relevant, the precise location where the non compliance occurred (attach map or diagram)
g) Cause of non compliance
h) Action taken or that will be taken to mitigate any adverse effects of the non compliance
i) Action taken or that will be taken to prevent recurrence of the non compliance

Each page must be initialed by the person(s) who signs Section C of this annual audit compliance report

INITIAL:_____

SECTION C - SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report may only be signed by a person(s) with legal authority to sign it. The ways in which the Annual Audit Compliance Report must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this Annual Audit Compliance Report is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
an individual	☐	by the individual licence holder, or
	☐	by a person approved in writing by the Chief Executive Officer of the Department of Environment and Conservation to sign on the licensee's behalf.
A firm or other unincorporated company	☐	by the principal executive officer of the licensee; or
	☐	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
A corporation	☐	by affixing the common seal of the licensee in accordance with the Corporations Act 2001; or
	☐	by two directors of the licensee; or
	☐	by a director and a company secretary of the licensee, or
	☐	if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or
	☐	by the principal executive officer of the licensee; or
	☐	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
A public authority (other than a local government)	☐	by the principal executive officer of the licensee; or
	☐	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
a local government	☐	by the chief executive officer of the licensee; or
	☐	by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of $50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____ SIGNATURE: _____

NAME: (printed) _____ NAME: (printed) _____

POSITION: _____ POSITION: _____

DATE: _____/_____/_____ DATE: _____/_____/_____

SEAL (if signing under seal)

ISSUE DATE Thursday, 7 February 2013
COMMENCEMENT DATE: Monday, 11 February 2013
EXPIRY DATE: Saturday, 10 February 2018

LICENCE NUMBER: L8701/2012/1
LICENCE FILE NUMBER: 2012/006965
APPLICATION DATE: 28/9/2012
EXPIRY DATE: 17/2/2018

PREMISES DETAILS

LICENSEE HOLDER AND OCCUPIER
Fortescue Metals Group Limited
87 Adelaide Terrace
EAST PERTH WA 6004
ACN: 002 594 872

PREMISES
Chainage 232 Crushing and Screening Plant
Part of Mining Tenements M45/1177 and AL70/1
Within co-ordinates: E 734750.14, N 7544941.11; E 734696.06, N 7544956.80; E 734516.88, N 7544992.88; E 734483.10, N 7545194.70; E 734607.38, N 7545467.05; E 734677.94, 7545485.49; E 734770.60, N 7545502.99; E 734967.73, N 7545502.99, E 734965.30, N 7545432.88; E 734964.27, N 7545412.21; E 734964.76, N 7545387.53; E 734982.34, N 7545275.86; E 734969.86, N 7545187.93; E 734968.55, 7545157.53; E 734970.69, N 7545044.56; E 734960.51, N 7544970.30; E 734953.79, N 7544964.00; E 734978.07, N 7544797.44; E 734768.21, N 7544812.25
NULLAGINE WA 6722

PRESCRIBED PREMISES SUMMARY

Table 1: Prescribed premises summary

Category number*	Category Description*	Category Production or Design Capacity*	Premises Production or Design Capacity#	Premises Fee Component**
12	Screening, etc. of material	50,000 tonnes or more per year	1,000,000 tonnes per year	100,000 – 500,000 tonnes per year

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

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

Basis of Assessment
The Chainage 232 Screening Plant was assessed as a "prescribed premises" under category number 12 within Schedule 1 of the Environmental Protection Regulations 1987.

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

Fortescue Metals Group Limited (FMG) has constructed a crushing and screening plant at the Chainage 232 ballast quarry, which generates ballast material for rail construction purposes. The annual plant capacity of the crushing and screening plant is 1,000,000 tonnes per year, however, FMG's nominated throughput will be 365,000 tonnes per year.

1.0 BACKGROUND

1.1 GENERAL COMPANY DESCRIPTION

FMG is an integrated business comprised of mine, rail and port operations based in the Pilbara region of Western Australia. FMG commenced development of the Pilbara Iron Ore and Infrastructure Project in 2005, which involves a series of iron ore mines in the Pilbara region of Western Australia, along with rail and port infrastructure for export of iron ore through Port Hedland.

FMG has committed to maintaining sound environmental management practices and meeting responsibilities embedded within an environmental management system (EMS). The EMS includes a process that enables managers to review the environmental impacts of operations and to set objectives and targets to further minimise the environmental impacts.

1.2 LOCATION OF PREMISES

The Ballast Quarry is located in a remote area, around 140 kilometres (km) from the nearest major population centre, Newman. The area is adjacent to the existing Fortescue north-south railway and is isolated from sensitive land uses. The nearest sensitive receptor to the Ballast Quarry is the Hillside Outcamp (15 km to the north-east) which is only occupied sporadically, usually during mustering. The location of the site is shown in Figure 1.

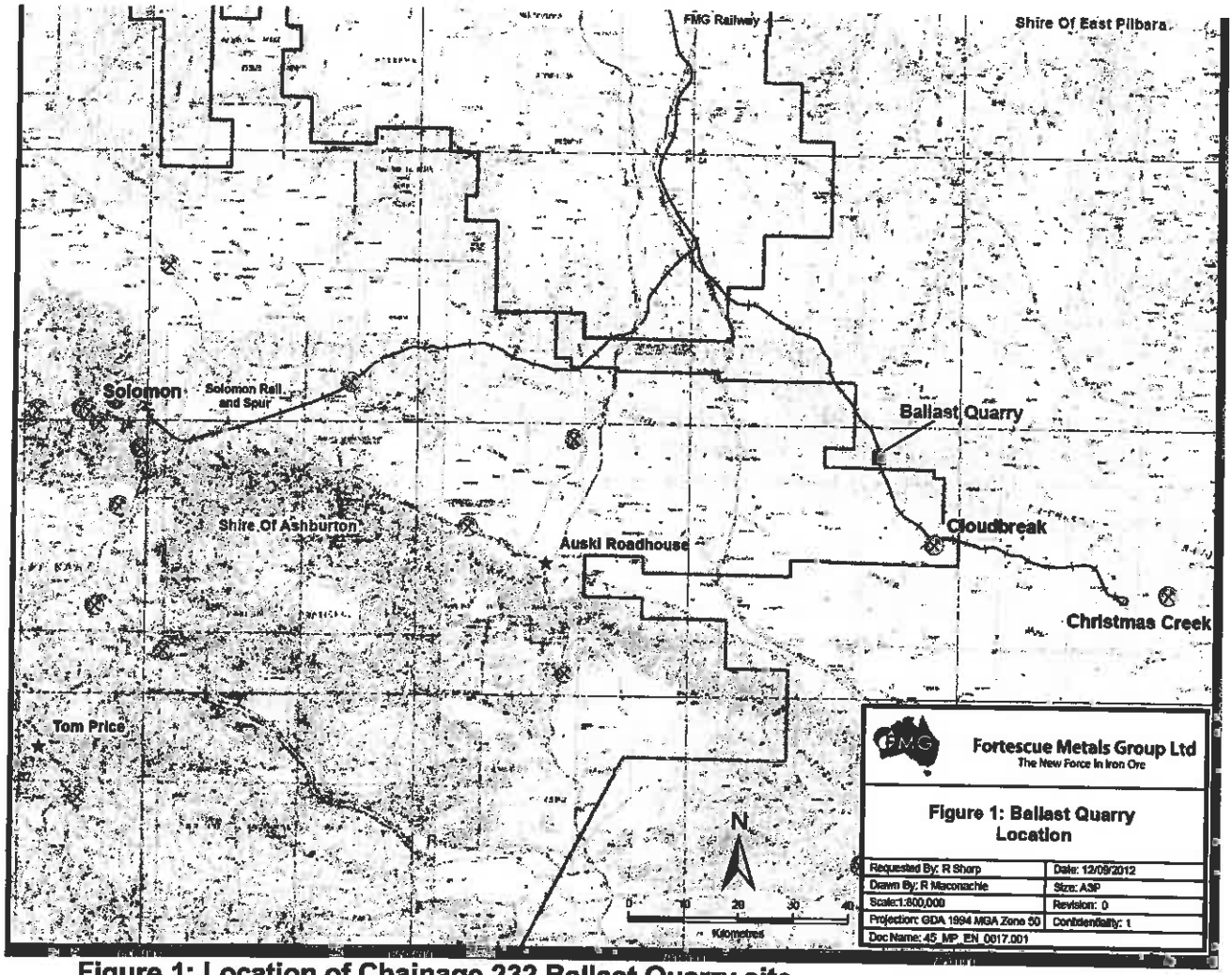


Figure 1: Location of Chainage 232 Ballast Quarry site

The region around the ballast quarry is classified as arid. Annual average rainfall for the Pilbara ranges from 180 millimetres (mm) to over 400 mm with the Bureau of Meteorology data indicating an annual average of 310 mm at Port Hedland (BoM 2011). Average maximum summer temperatures are generally between 35°C and 40°C and winter maximum temperatures generally between 22°C and 30°C. In this climate, annual evaporation rates greatly exceed the mean annual rainfall.

The Ballast Quarry is located within a high dissected plateau of the Chichester Ranges (the Chichester Plateau) with a distinct northwards facing scarp. Soils of the region are dominated by tertiary aged colluvium, characterised by angular fragments of Banded Iron Formation (BIF), chert and shale. The flanks of hills contain iron-rich gravely soils that form extensive sheets of scree which abut the plain levels of lower topography. North-easterly trending ephemeral drainage lines dissect the Chichester Ranges and commonly display alluvial sediments characterised by silt and sand sized sediments with a red/ochre colour. Topsoil near the Ballast Quarry site appears to be very limited due to the rocky nature of the topography.

The Ballast Quarry lies within the Western Shaw River catchment and the closest water bodies to the site are minor, ephemeral tributaries of this river which discharge north toward the coast. Runoff from the quarry site is expected to flow to these drainage lines. Extensive flooding of the area is unlikely to occur and any minor flooding would be short-lived, with floodwaters being discharged via tributaries of the Western Shaw River.

Groundwater in the vicinity of the quarry is expected to be more than 2 m below ground level (mBGL). The nearest measured groundwater levels are between 2 and 5 mBGL, at the rail bores located at Chainage 229, approximately 3 km to the north of the Ballast Quarry. As the Quarry is located on a hillside, operations are not expected to intercept groundwater, although some minor compartmentalised groundwater may be encountered. Groundwater in the area is expected to have salinity of less than 1,000 mg/L total dissolved solids (TDS), exhibiting freshwater quality.

The Ballast Quarry lies within the Western Shaw River catchment and the closest water bodies to the site are minor, ephemeral tributaries of this river which discharge north toward the coast. Runoff from the quarry site is expected to flow to these drainage lines. Extensive flooding of the area is unlikely to occur and any minor flooding would be short-lived, with floodwaters being discharged via tributaries of the Western Shaw River. Several minor non-perennial waterways occur surrounding the Ballast Quarry. The Ballast Quarry has been designed to encourage natural drainage and prevent the establishment of ponded water where practicable.

The Ballast Quarry area lies within the Fortescue Botanical District of the Eremaean Botanical Province as defined by Beard. Vegetation type Ch17 occurs within the areas surrounding the Ballast Quarry, as described by Biota (2004) for the Stage B PER document. Ch17 *Acacia aneura, A. adsurgens, G. wickhamii, Cassia glutinosa, C. luerssenii* scattered shrubs over *Triodia* aff. *basedowii* mid-dense hummock grassland. This vegetation dominates the stony plains and low hills in the Christmas Creek, Mt Lewin and Mt Nicholas areas (Biota 2004). It has scattered shrubs of various species, but particularly those mentioned above, over a hummock grassland of *Triodia* aff. *basedowii*. This vegetation type is not considered to be of high conservation value. No clearing of native vegetation was required for the prescribed premises activity.

1.3 PROCESS DESCRIPTION

Approximately 1,000,000 tonnes of material is anticipated to be crushed and screened at the Ballast Quarry over the initial 12 months of operation for intensive rail construction. Following this period, ballast required for ongoing maintenance is estimated to be up to 30,000 tpa.

Processing comprises drilling, blasting, excavation, crushing and screening. The blasted material from the Ballast Quarry will be excavated and delivered to stockpiles at a crushing and screening plant adjacent to the quarry area. All excavated material will be used as crusher feed with any unsuitable material (e.g. clay) used in rehabilitation works. Crusher fines will be used on the pit and adjacent roads as sheeting, while aggregate will be transported to the Cloudbreak minesite for stemming of blast holes. Negligible waste is expected from the operation.

Onsite facilities provided for the Ballast Quarry include an office, a workshop and a crib room with appropriate first aid equipment and radio and telephone communication systems. A crushing and screening plant has been established adjacent to the Ballast Quarry area which includes:

- a mobile jaw crusher;
- a cone crusher;
- a screen plant;
- bulldozers;
- excavators; and
- front end loaders.

Ballast material produced by the crushing and screening process will be trucked to stockpiles at a Ballast Siding, located approximately 3 km to the south of the Ballast Quarry. Ballast will then be loaded into ballast rail cars for distribution along the railway. No operational

dewatering will be required due to the hydrology of the area. Any minor perched water encountered during operations will be managed through evaporation or sump-pumping. Any water obtained from sump pumping will be disposed of by discharging the water down a creek adjacent to the Ballast Quarry. Once the quarrying operations are complete, the Ballast Quarry will be rehabilitated such that the topography of the area remains consistent with its surroundings.

Operation of the Ballast Quarry will largely utilise existing infrastructure. Water for on-site facilities and dust suppression is supplied from the existing Railway Corridor Borefield. Water is transported to the Ballast Quarry by water tankers. Around 100 kilolitres of water per day is expected to be required during ongoing operations, primarily for dust suppression.

There will be no significant fuel storage on-site as the crushing and screening plant will be powered by diesel engines, refuelled daily by a mobile sevice vehicle. A small diesel generator (15 kW) is used on-site to provide electricity to the workshop, crib facilities and administration office. The generator is self bunded and is refuelled and serviced by the mobile service vehicle. The generator is a modern unit fitted with exhaust and muffler system and is expected to meet modern emission specifications.

1.4 REGULATORY CONTEXT

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

The Chainage 232 ballast quarry is located within the project boundary for FMG's Pilbara Iron Ore & Infrastructure Project: East-West Railway & Mines Sites (Stage B) (Ministerial Statement 707). The Facility was not specifically referred as part of any referral under Part IV and there are no Ministerial conditions relevant to the Chainage 232 crushing and screening plant.

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

The Chainage 232 crushing and screening plant has been assessed as a "prescribed premises" under category 12 within Schedule 1 of the Environmental Protection Regulations 1987 and requires a works approval for construction and licence for operation.

In addition to the operational licence, it is expected that the operations will comply with the following regulations:

- Environmental Protection (Controlled Waste) Regulations 2004;
- Environmental Protection (Unauthorised Discharges) Regulations 2004;
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004; and
- Environmental Protection (Noise) Regulations 1997.

It is understood that Chainage 232 crushing and screening plant is currently operational and that construction occurred without a required *Environmental Protection Act 1986* works approval. The issue of operating the premises without a Licence, and not developing the premises in accordance with a Works Approval, are enforcement matters and will be dealt with by DEC independently of this application. DEC will ensure the investigation of these potential breaches is undertaken in accordance with DEC's Environmental Enforcement and Prosecution Policy.

1.4.3 Other Decision Making Authorities' Legislation which applies

The Chainage 232 crushing and screening plant will also be regulated by the Department of Mines and Petroleum (DMP) under the following legislation:

- *Mining Act 1978;*
- Mining Regulations 1981;

- *Mines Safety and Inspection Act 1994;*
- Mines Safety and Inspection Regulations 1995; and
- Dangerous Goods Safety (Storing and Handling of Non-explosives) Regulations 2007.

1.4.4 *Rights in Water Irrigation Act 1914*

The project will use groundwater from the bores within close proximity to the Chainage 232 quarry, which are licensed under a groundwater licence (GWL) granted under the RiWI Act (GWL 161897). The licence allows for water to be abstracted for 'dust suppression for earthworks and construction purposes, earthworks and construction purposes'.

1.4.5 Local Government Authority

The premises is located within the Shire of East Pilbara.

2.0 STAKEHOLDER AND COMMUNITY CONSULTATION

SUBMISSIONS RECEIVED DURING 21 DAY PUBLIC COMMENT PERIOD

The application for licence details for this facility was advertised in The West Australian newspaper on 12 November 2012 as a means of advising stakeholders and to seek public comments. No submissions were received.

3.0 EMISSIONS AND DISCHARGES RISK ASSESSMENT

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

The following section assesses the environmental risk of potential emissions from the Chainage 232 crushing and screening plant. In order to determine the site's appropriate environmental regulation, an emissions and discharges risk assessment was conducted of the Chainage 232 crushing and screening plant using the environmental risk matrix outlined in Appendix A. The results of this are summarised in Table 2.

Table 2: Risk assessment and regulatory response summary table.

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Air emissions (point source)	**Significance 1** There are no point source emissions expected from this proposal. Minor emissions may occur from small scale diesel motors powering the plant however point source air emissions from these sources are deemed in-significant.	**No socio-political concerns.**	**E** – No regulation, other management mechanisms.	LIC – no conditions.	N/A.	General provisions in the *Environmental Protection Act 1986.* Environmental Protection (Unauthorised Discharges) Regulations 2004.
Dust emissions	**Significance 1** Dust will be generated by crushing, stockpiling, loading and transport of materials. Dust has the potential to impact on surrounding vegetation. The plant itself is not fitted with dust suppression equipment. FMG has committed to suppressing dust by watering of roads, work areas and stockpiles and pre-conditioning of ore.	**No socio-political concerns.** Nearest sensitive receptor is 15 km away.	**E** – No regulation, other management mechanisms.	LIC – standard dust condition.	N/A.	General provisions in the *Environmental Protection Act 1986.* Environmental Protection (Unauthorised Discharges) Regulations 2004. *Occupational Safety and Health Act 1984.* Occupational Safety and Health Regulations 1996. Mine Safety and Inspection Regs 1995. FMG's *Mine and Rail Dust Management Plan* (45-PL-EN-0030)
Odour emissions	**Significance 1** There are no significant odours expected from this proposal.	**No socio-political concerns.**	**E** – No regulation, other management mechanisms.	LIC – no conditions.	N/A.	General provisions in the *Environmental Protection Act 1986.*
Noise emissions	**Significance 1** Noise will be generated from a number of activities onsite There is a significant separation distance to the nearest sensitive receptor (15km). The premises is therefore expected to comply with the Environmental Protection (Noise) Regulations 1997.	**No socio-political concerns.** Nearest sensitive receptor is 15 km away.	**E** – No regulation, other management mechanisms.	LIC – no conditions.	N/A.	General provisions in the *Environmental Protection Act 1986.* Environmental Protection (Noise) Regulations 1997. FMG's *Port and Rail Operations - Noise - Environmental Management Plan* (45-PL-EN-0021)
Light emissions	**Significance 1** Works may be required to be undertaken outside of daylight hours, however the plant is extremely remote and impacts from potential light sources are expected to be insignificant.	**No socio-political concerns.**	**E** – No regulation, other management mechanisms.	LIC – no conditions.	N/A.	General provisions in the *Environmental Protection Act 1986.*

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Discharges to water	**Significance 1** The Ballast Quarry lies within the Western Shaw River catchment and the closest water bodies to the site are minor, ephemeral tributaries of this river which discharge north toward the coast. Stormwater runoff will be managed onsite using sedimentation channels and v-drains. Runoff from the quarry site is expected to flow to these drainage lines. Extensive flooding of the area is unlikely to occur and any minor flooding would be short-lived, with floodwaters being discharged via tributaries of the Western Shaw River. The proponent has indicated that there may be an occasional need to pump out small quantities of groundwater/stormwater from onsite sumps to the nearby creek system, passing through sedimentation stages if necessary. The significance of these discharges is considered minor.	**No socio-political concerns.**	**E** – No regulation, other management mechanisms.	LIC – no conditions.	N/A.	General provisions in the *Environmental Protection Act 1986* Environmental Protection (Unauthorised Discharges) Regulations 2004.
Discharges to land	**Significance 1** There are no discharges to land expected from this proposal.	**No socio-political concerns.**	**E** – No regulation, other management mechanisms.	LIC – conditions relating to surface water management.	N/A.	General provisions in the *Environmental Protection Act 1986* Environmental Protection (Unauthorised Discharges) Regulations 2004.
Solid / liquid wastes	**Significance 1** Minor amounts of waste will be generated from onsite operations. Ablution and crib room facilities will have underbelly tanks, which will be emptied regularly by vacuum trucks and therefore no on-site discharges are expected. All other waste streams will be appropriately segregated, stored and disposed or recycled where practicable to prevent contamination. Solid putrescible and inert waste will be collected and disposed off-site at an appropriately licensed facility. Sewage, wastewater from site buildings and other controlled waste (e.g. oily rags) will be appropriately stored until collection by a controlled waste contractor for	**No socio-political concerns.**	**E** – No regulation, other management mechanisms.	LIC – no conditions.	N/A.	General provisions in the *Environmental Protection Act 1986.*

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DEC Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	disposal off-site to an appropriately licensed facility. Controlled waste (including hydrocarbons and contaminated soil) will be handled and disposed of in accordance with the Environmental Protection (Controlled Waste) Regulations 2004. There will be no waste rock or soil stockpiles left at the end of the construction phase as all excavated soil and rock will be used in the construction of the rail line or in re-contouring the land for rehabilitation.					
Hydrocarbon/chemical storage	**Significance 1** No fuel is stored on-site. Refuelling of machinery is undertaken by mobile service equipment equipped with break-free couplings to minimise spillage Only incidental quantities of hydrocarbons (e.g. Jerry can <20L) are expected to be stored on-site. Spills and leaks are responded to in accordance with the process outlined in FMG's Chemical and Hydrocarbon Management Plan.	**No socio-political concerns.**	**E** – No regulation, other management mechanisms.	LIC – no conditions.	N/A.	General provisions of the *Environmental Protection Act 1986.* Environmental Protection (Unauthorised Discharges) Regulations 2004. Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007. Australian Standards 1940-2004 The Storage and Handling of Flammable and Combustible Liquids. FMG's *Chemical and Hydrocarbon Management Plan* (45-PL-EN-0011); *Chemical and Hydrocarbon Spills Procedure* (45-PR-EN-0014) and *Chemical and Hydrocarbon Storage Procedure* (45-PR-EN-0015).
Native vegetation clearing	**N/A.** No clearing is proposed.	N/A.	N/A.	N/A.	N/A.	General provisions in the *Environmental Protection Act 1986.* Environmental Protection (Clearing of Native Vegetation) Regulations 2004.
Contaminated site identification	**N/A.** No contaminated sites issues have been identified with this proposal.	N/A.	N/A.	N/A.	N/A.	*Contaminated Sites Act 2003.*

4.0 GENERAL SUMMARY AND COMMENTS

FMG operates a crushing and screening plant to generate sub-ballast capping material for the north-south railway project. The material requires crushing and screening prior to use. The nominated plant capacity of the screening plant is 1,000,000 tonnes per year. Minor earthworks also occur on-site to manage stormwater drainage as required.

The emissions and discharges associated with the operation of the crushing and screening plant has been assessed in Table 2 and is deemed to be of low significance if managed as per FMG's commitments, and will not result in significant impacts to the environment.

OFFICER PREPARING REPORT

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APPENDIX A: EMISSIONS AND DISCHARGES RISK ASSESSMENT MATRIX

Table 3: Measures of Significance of Emissions

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

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

Table 4: Socio-Political Context of Each Regulated Emission

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

Note: These examples are not exclusive and professional judgement is needed to evaluate each specific case

*This is determined by DEC using the DEC "Officer's Guide to Emissions and Discharges Risk Assessment" May 2006.

Table 5: Emissions Risk Reduction Matrix

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

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