



Ms Julie Mahony
Senior Environmental Advisor
Atlas Iron Limited
PO Box 7071
CLOISTERS SQUARE
PERTH WA 6000

Dear Ms Mahony

Environmental Protection Act 1986 – Amendment to licence
Licence: L8678/2012/1
Premises: Mt Dove Direct Shipping Ore Project

Further to my letter dated 6 June 2013, please find enclosed your amended *Environmental Protection Act 1986* licence.

If you have any questions or objections relating to the licence, please do not hesitate to contact the enquiries officer above on 9182 2034 for clarification or discussion of any grievances you have.

If you are concerned about, or object to any aspect of the amendment you may lodge an appeal with the Minister for the Environment within 21 days from the date on which this licence is received. The Office of the Appeals Convenor can be contacted on 6467 5190 to find out the procedure and fee.

Members of the public may also appeal the amendments. The Appeals Registrar at the Office of the Appeals Convenor can be contacted after the closing date of appeals to check whether any appeals were received.

Yours sincerely,

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

Thursday, 4 July 2013

enc: Amended licence L8678/2012/1 and Environmental Assessment Report

MEMORANDUM FOR THE RECORD

DATE: 10/15/54

TO: SAC, NEW YORK

FROM: SA, NEW YORK

SUBJECT: [Illegible]

RE: [Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

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[Illegible Signature]

[Illegible Title]



AMENDED LICENCE FOR PRESCRIBED PREMISES
Environmental Protection Act 1986

LICENCE NUMBER: L8678/2012/1

FILE NUMBER: 2012/005843

LICENSEE

Atlas Iron Limited
Level 18 Raine Square
300 Murray Street
PERTH WA 6000
ACN: 110 396 168

PREMISES

Mt Dove Direct Shipping Ore Project
Mining Tenement M47/1449 and L45/248
INDEE WA 6721
(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
5	Processing or beneficiation of metallic or non-metallic ore	50,000 tonnes or more per year	2.4 Million tonnes per annum (Mtpa)
85	Sewage facility	More than 20 but less than 100 cubic metres per day	35 cubic metres per day

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*

Date of Issue: Thursday, 6 December 2012

Date of Amendment: Thursday, 4 July 2013

ISSUE DATE Thursday, 6 December 2012
COMMENCEMENT DATE: Monday, 10 December 2012
AMENDMENT DATE: Thursday, 4 July 2013
EXPIRY DATE: Saturday, 9 December 2017

CONDITIONS OF LICENCE
Environmental Protection Act 1986

LICENCE NUMBER: L8678/2012/1

FILE NUMBER: 2012/005843

DEFINITIONS

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

"Australian Standard 1940-2004" means the relevant parts of Australian Standard 1940-2004: The Storage and Handling of Flammable and Combustible Liquids;

"Australian Standard 5667" means the most recent version and relevant part of AS/NZS 5667;

"Director" means Director, Environmental Regulation Division of the Department of Environment Regulation 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 Regulation
PO Box 835
KARRATHA WA 6714

Telephone: 9182 2000
Facsimile: 9144 1118;

"environmentally hazardous material" means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm.

"NATA" means National Association of Testing Authorities; and

"Standard Methods for Examination of Water and Wastewater-APHA-AWWA-WEF" means the best current practice of American water analysts developed by the American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF).

GENERAL CONDITIONS

DUST CONTROL

1. The licensee shall ensure that all areas on the premises from which dust may be generated are maintained so that no visible dust is discharged beyond the boundary of the premises.

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.

DISCHARGE TO LAND

4. The licensee shall ensure that the quality of any wastewater discharged at the premises for use in dust suppression contains a total recoverable hydrocarbon concentration of less than 15mg/L.

CONDITIONS OF LICENCE
Environmental Protection Act 1986

LICENCE NUMBER: L8678/2012/1

FILE NUMBER: 2012/005843

LIQUID CHEMICAL STORAGE

5. The licensee shall store environmentally hazardous chemicals including fuel, oil or other hydrocarbons (where the cumulative volume of each substance stored in separate areas on the premises exceeds 250 litres) within low permeability (10^{-9} metres per second or less) compound(s) designed to contain not less than 110% of the volume of the largest storage vessel or inter-connected system, and at least 25% of the total volume of substances stored in the compound.
6. The licensee shall ensure that the compound(s) described in condition 5 shall:
 - (a) be graded or include a sump to allow recovery of liquid;
 - (b) be chemically resistant to the substances stored;
 - (c) include valves, pumps and meters associated with transfer operations wherever practical. Otherwise the equipment shall be adequately protected (eg. bollards) and contained in an area designed to permit recovery of chemicals released following accidents or vandalism;
 - (d) be designed such that jetting from any storage vessel or fitting will be captured within the bunded area [see for example Australian Standard 1940-2004 Section 5.9.3 (g)];
 - (e) be designed such that chemicals which may react dangerously if they come into contact, are in separate bunds in the same compound or in different compounds; and
 - (f) be controlled such that the capacity of the bund is maintained (eg. regular inspection and pumping of trapped uncontaminated rainwater).
7. The licensee shall immediately recover, or remove and dispose of, any liquid resulting from spills or leaks of chemicals including fuel, oil or other hydrocarbons, whether inside or outside the low permeability compound(s).

8.

WASTEWATER TREATMENT PLANT CONDITIONS

9. The licensee shall ensure that all effluent discharged to land consists only of treated wastewater.
10. The licensee shall maintain devices for measuring monthly cumulative volumes for all effluent that is discharged for the purpose of irrigation.
11. The licensee shall record the cumulative volume of effluent discharged for the purpose of irrigation and this data shall be included in the Annual Environmental Report in tabular form.
12. The licensee shall ensure that water quality monitoring occurs during the operation of the WWTP, such that water quality of the effluent is monitored at the frequency stated in Column 2 of Table 1 for the parameters in Column 1 of Table 1.

CONDITIONS OF LICENCE

Environmental Protection Act 1986

LICENCE NUMBER: L8678/2012/1

FILE NUMBER: 2012/005843

Table 1: WWTPs water quality monitoring requirements

Column 1	Column 2
Parameters	Monitoring Frequency
Biochemical Oxygen Demand (mg/L)	Quarterly
Total Suspended Solids (mg/L)	Quarterly
pH	Quarterly
Total Nitrogen (mg/L)	Quarterly
Total Phosphorus (mg/L)	Quarterly
<i>E.coli</i> (cfu/100 mL)	Quarterly

13. The licensee shall collect all water samples required by Condition 12 in accordance with the relevant parts of AS/NZS 5667 and the analyses shall be conducted by an organisation with NATA accreditation for the specified parameters in accordance with the current "Standard Methods for Examination of Water and Wastewater-APHA-AWWA-WEF".
14. The licensee shall compare the results of the water quality monitoring required by Condition 12, to the targets stated in Column 2 of Table 2, for the parameters in Column 1 of Table 2 and present this information in the Annual Environmental Report and report any exceedences of these targets in the Annual Audit Compliance Report.

Table 2: WWTPs effluent quality criteria

Column 1	Column 2
Parameter	Target Discharge
Biochemical Oxygen Demand (mg/L)	<20
Total Suspended Solids (mg/L)	<5
pH (pH value)	6.5-8.5
Total Nitrogen (mg/L)	<20
Total Phosphorus (mg/L)	<8
<i>E.coli</i> (cfu/100 mL)	<10

REPORTING CONDITIONS

15. The licensee shall by 30 April 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 March the previous year and ending on 28 February in that year.
16. The licensee shall submit to the Director, by 30 April, an Annual Environmental Report containing data collected over the period beginning 1 March the previous year and ending 28 February in that year. The report shall contain but not be limited to:
 - (i) a summary of any complaints received about emissions from the Premises including the date, time, the complaints address (street name and suburb only), a description of the complaint, the likely cause and findings of any investigations;
 - (ii) a summary of any issues raised by the Department of Environment Regulation (e.g. arising from inspections) during the reporting period, details on how these have been addressed or rectified or, if the required work has yet to be completed, how and when they will be rectified or completed; and

CONDITIONS OF LICENCE
Environmental Protection Act 1986

LICENCE NUMBER: L8678/2012/1

FILE NUMBER: 2012/005843

- (iii) number of spills or discharges of environmental hazardous materials which occurred otherwise than in accordance with the conditions of this licence and the actions taken to address these spills or discharges and future preventative measures.

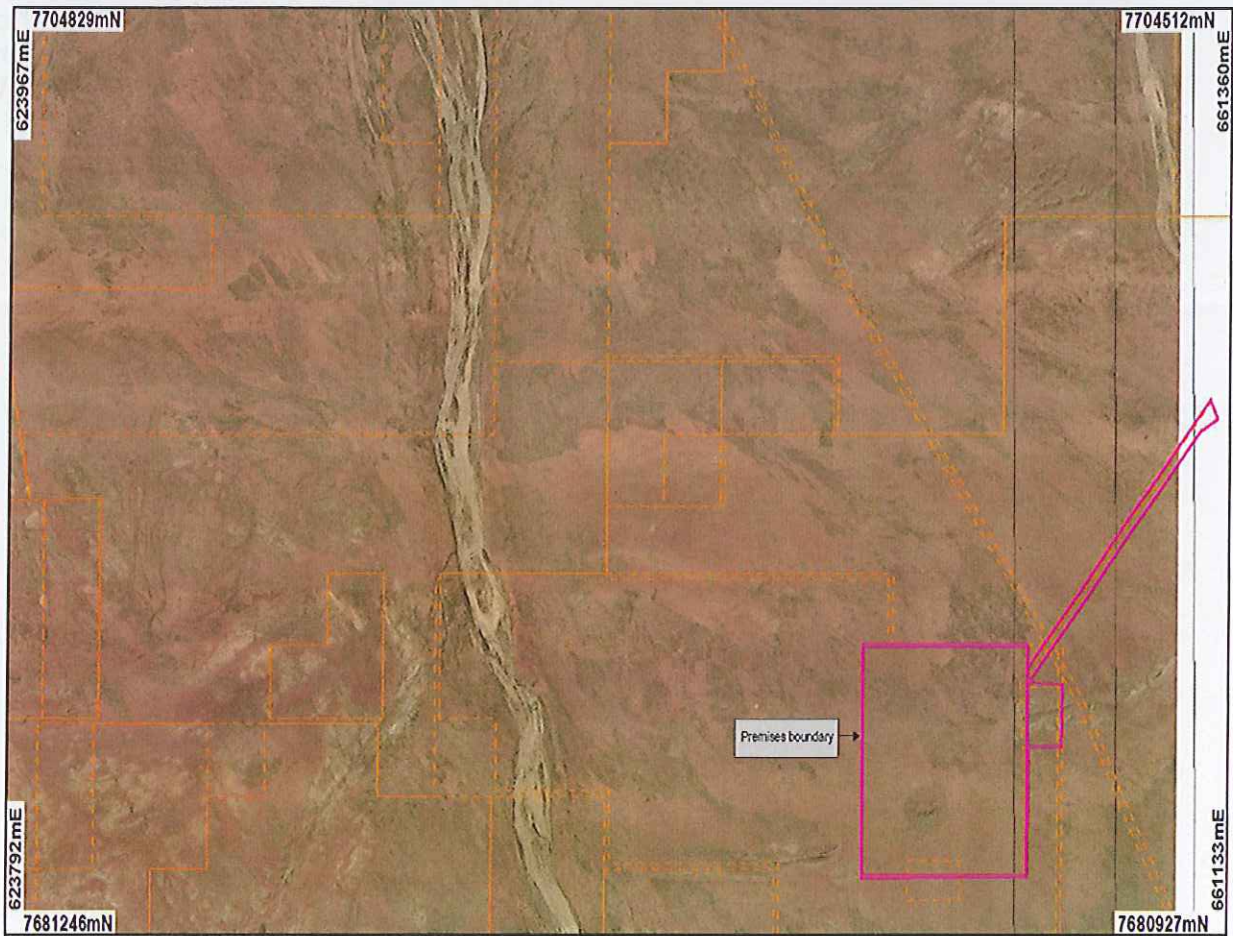
ATTACHMENT 1
PLAN OF PREMISES

CONDITIONS OF LICENCE

Environmental Protection Act 1986

LICENCE NUMBER: L8678/2012/1

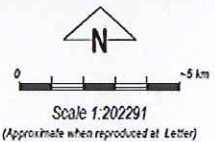
FILE NUMBER: 2012/005843



LEGEND

- | | |
|--|---|
| Cadastre | <input type="checkbox"/> Public Roads |
| <input type="checkbox"/> Freehold | <input type="checkbox"/> Unallocated Crown Land |
| <input type="checkbox"/> Crown Reserve | <input type="checkbox"/> Water |
| <input type="checkbox"/> State Forest / Timber Reserve | <input type="checkbox"/> Image Index |
| <input type="checkbox"/> Marine Park | <input type="checkbox"/> Recently added |
| <input type="checkbox"/> Crown Lease | <input type="checkbox"/> Coverage |
| <input type="checkbox"/> Lease / Reserve | <input type="checkbox"/> Mining Tenements |
| <input type="checkbox"/> Lease on State Forest / Timber Reserve (cont) | |

- Towns**
- A
 - B
 - C
- Bungalbin 50cm Orthomosaic - Landgate 2007
 Yule 1.4m Orthomosaic - Landgate 2002



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Prepared by: Joshig
 Prepared for:
 Date: 28/05/2012 2:27:00 PM

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation
 Our environment, our future
 WA Crown Copyright 2002

CONDITIONS OF LICENCE
Environmental Protection Act 1986

LICENCE NUMBER: L8678/2012/1

FILE NUMBER: 2012/005843

ATTACHMENT 2

ANNUAL AUDIT COMPLIANCE REPORT

SECTION A
LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name:	ABN:
Trading as:	
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: _____

ISSUE DATE
AMENDMENT DATE:

Thursday, 6 December 2012
Thursday, 4 July 2013

CONDITIONS OF LICENCE

Environmental Protection Act 1986

LICENCE NUMBER: L8678/2012/1

FILE NUMBER: 2012/005843

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	<input type="checkbox"/> by the individual licence holder, or <input type="checkbox"/> by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	<input type="checkbox"/> by the principal executive officer of the licensee; or <input type="checkbox"/> 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 Regulation.
A corporation	<input type="checkbox"/> by affixing the common seal of the licensee in accordance with the Corporations Act 2001; or <input type="checkbox"/> by two directors of the licensee; or <input type="checkbox"/> by a director and a company secretary of the licensee, or <input type="checkbox"/> if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or <input type="checkbox"/> by the principal executive officer of the licensee; or <input type="checkbox"/> 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 Regulation.
A public authority (other than a local government)	<input type="checkbox"/> by the principal executive officer of the licensee; or <input type="checkbox"/> 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 Regulation.
a local government	<input type="checkbox"/> by the chief executive officer of the licensee; or <input type="checkbox"/> 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: _____

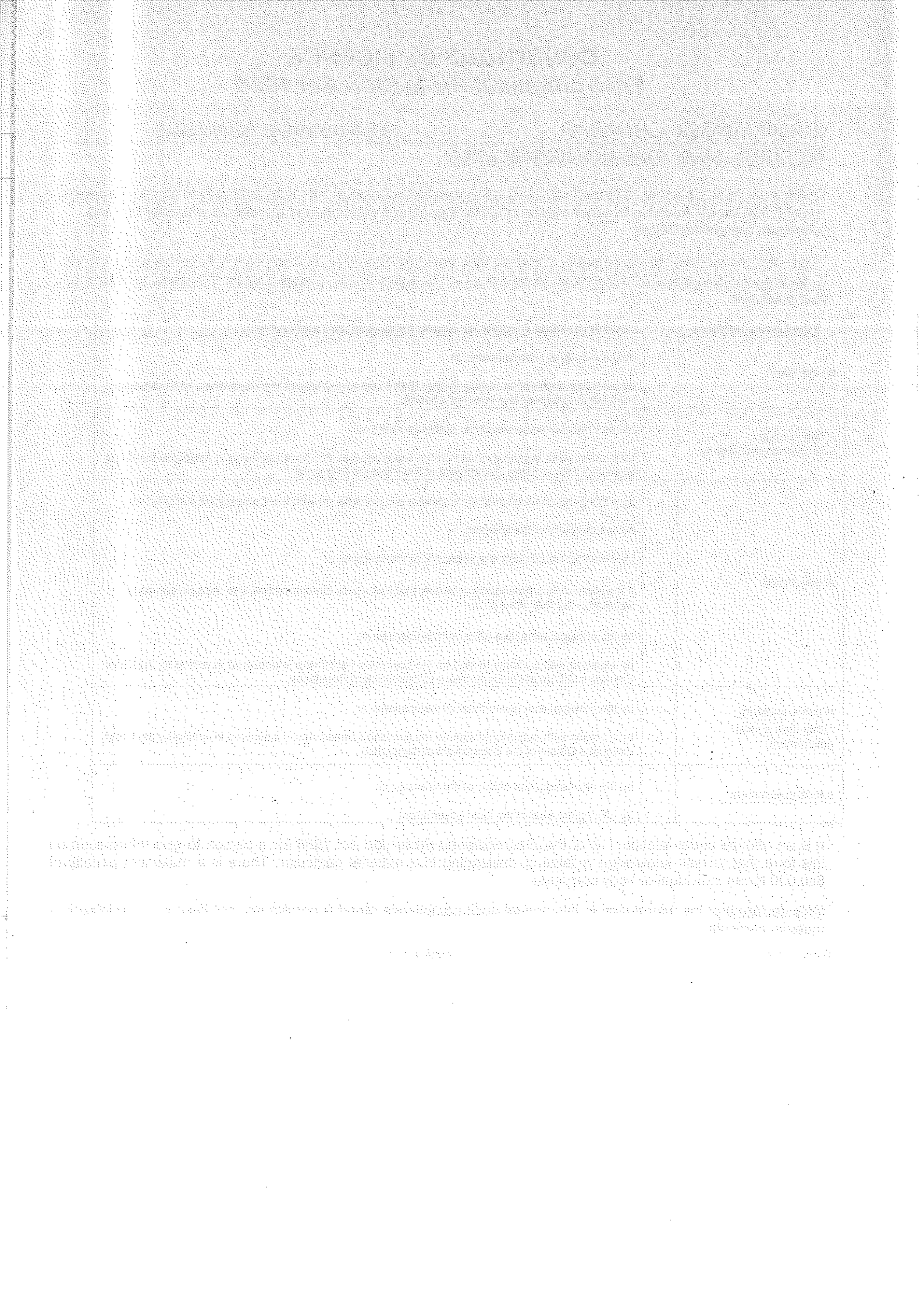
DATE: ____/____/____

DATE: ____/____/____

SEAL (if signing under seal)

ISSUE DATE
AMENDMENT DATE:

Thursday, 6 December 2012
Thursday, 4 July 2013





LICENCE NUMBER: L8678/2012/1
LICENCE FILE NUMBER: 2012/005843
APPLICATION DATE: 15 August 2012
EXPIRY DATE: 09 December 2017
AMENDMENT DATE: 04 July 2013

PREMISES DETAILS

LICENSEE

Atlas Iron Limited
Level 18 Raine Square
300 Murray Street,
PERTH WA 6000

PREMISES

Mt Dove Direct Shipping Ore Project
Mining Tenement M47/1449 and L45/248
INDEE WA 6721

PRESCRIBED PREMISES CATEGORY

Table 1: Prescribed premises category

Category number*	Category Description*	Category Production or Design Capacity*	Premises Production or Design Capacity#	Premises Fee Component**
5	Processing or beneficiation of metallic or non-metallic ore	50,000 tonnes or more per year	2.4 Million tonnes per annum (Mtpa)	More than 500 000 but not more than 5 000 000 tonnes per year
85	Sewage facility	More than 20 but less than 100 cubic metres per day	35 cubic metres per day	Not applicable

* 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 Regulation (DER) to assessing only those emissions and discharges generated from the activities that cause the premises to become prescribed premises.

Basis of Assessment

The Mt Dove Direct Shipping Ore (DSO) Project has been assessed as "prescribed premises" category number 5 and 85, under Schedule 1 of the Environmental Protection Regulations 1987.



Category 5: Processing or beneficiation of metallic or non-metallic ore: premises on which –

- (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed;
- (b) tailings from metallic or non-metallic ore are reprocessed; or tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.

Atlas Iron Limited (Atlas Iron) operates an iron ore crushing and screening plant with a design capacity of 2.4Mtpa at the Mt Dove DSO Project.

Category 85: premises –

- (a) on which sewage is treated (excluding septic tanks); or
- (b) from which treated sewage is discharged onto land or into waters.

Atlas Iron operates a wastewater treatment plant (WWTP) at the Mt Dove DSO Project, with a design capacity of 40m³/day and anticipated throughput of 35m³/day. Treated wastewater (TWW) is disposed of via subsurface irrigation to 0.85 hectares (ha) of landscaped and vegetated areas within the accommodation area.

Works approval W5181/2012/1 approved the construction of the crushing and screening plant and WWTP at the Mt Dove DSO Project. The works approval was issued 14 June 2012 and compliance documentation for the crushing and screening plant and WWTP was submitted to DER 29 November 2012 and 13 December 2012, respectively.

June 2013 amendment

In June 2013 the Mt Dove DSO Project operating licence was amended to include the operation of the Category 85 WWTP. The WWTP commissioning report was submitted to DER on the 15 May 2013 and demonstrates that the WWTP is generally meeting the expected water quality targets.

1.0 BACKGROUND

1.1 GENERAL COMPANY DESCRIPTION

Atlas Iron is an independent Australian iron ore company listed on the ASX100 index. Atlas Iron's project portfolio covers an area of over 18,000 square kilometres (km²), primarily in the north east Pilbara, Newman and the Midwest region of Western Australia. Other operations of Atlas Iron include the Pardoo and Wodgina Operations near Port Hedland.

Atlas Iron currently operates the Pardoo DSO project, which is regulated via licence L8276/2008/1. Atlas also shares operations at Wodgina, which is regulated via licence L4328/1989/9, held by Global Advanced Metals.

1.2 LOCATION OF PREMISES

The Mt Dove DSO project is located in the Pilbara region of Western Australia, approximately 68 kilometres (km) south of Port Hedland. The approved project area has a disturbance footprint of approximately 219 hectares (ha) and is wholly located within Indee Pastoral Lease 3114/1197, which covers an area of 1,000,000ha and is currently used as a Brahman cattle station.

Indee Station has a number of groundwater bores for stock watering. The nearest bore of which is located approximately 9km north of the accommodation camp that is being constructed as part of the Mt Dove project. The nearest occupied homestead is the Indee Homestead, which is located 22km north east of the project. The Yandeyarra community, located approximately 50km south west of the project, is the nearest permanently occupied community.



The project area is situated approximately 12km east of the Turner River and 17km to the West of the Yule River at an elevation of approximately 75 metres (m) above sea level. This is within the Chichester subregion of the Pilbara biogeographic zone, which is characterised by a semi-desert tropical climate with active drainage in the Fortescue, De Grey and Ashburton river systems. Regionally, the land slopes gently in a north north easterly direction towards the Turner River. Overbank deposits of alluvial clay, silt and sand overlie much of the land surrounding the project area. There are no defined creeks or rivers in the project area.

The southern boundary of the Yule River Water Reserve (No.31427), which supplies water to the town of Port Hedland and is identified as a Priority 1 Source Protection Area, is located approximately 6km north of the project area. The watertable in the shallow alluvial aquifer surrounding the project area lies approximately 6 to 12 metres below ground level (mBGL) and is considered to be moderately fresh to brackish.

The project area is characterised by spinifex grasslands and trees and shrub-steppe communities. Five fauna species of conservation significance have been identified in the project area. There are no previously recorded sites of aboriginal significance located within the project area, although there are three previously recorded sites located to the south and south west of the project area. Atlas Iron has committed that none of these sites will be directly affected by the proposed project.

1.3 PROCESS DESCRIPTION

Atlas Iron has developed the Mt Dove DSO project which involves development of an open pit mine to extract 2.3 million tonnes of iron ore over a mine life of two years. Ore is transported via haul trucks to the 28ha Run of Mine (ROM) facility, where it is stockpiled. Mining is conducted above the watertable and no dewatering is undertaken.

In-pit sump pumping may be required to remove any incidental rainfall or seepage, which may occur as the pit approaches its final depth. Surface water runoff from the ROM facility and the waste rock dump is collected by cut channels or fill bunds and directed to sedimentation ponds, where it is held until fines and contaminants settle out, before being released into the natural drainage lines. Atlas Iron has indicated that processing and product transport activities and use of the ROM pad on the premises will continue for up to 12 months after mining ceases. Settlement ponds capable of retaining 1 in 100 year annual recurrence interval (ARI) storm event would have surface area similar to the ROM pad itself. Also, the probability of a 1 in 100 year ARI event occurring during the project life of 2 years is expected to be only slightly more than 1%. Given this and also with the objective of minimising clearing and ground disturbance required during the project life, Atlas Iron has sized the sedimentation ponds to accommodate 1 in 5 year ARI storm event with a rock-armoured overflow for larger events. The sedimentation ponds will be maintained to retain capacity.

In an extreme rainfall event, if ponded water accumulates within the pit to the extent that mining safety is affected, then the water will be allowed to settle to reduce turbidity and then pumped to a nearby natural drainage channel.

Crushing and screening

Atlas Iron uses a single mobile crushing and screening plant which is capable of producing an all-fines product (<10mm). Ore hauled from the open pit to the ROM ore storage facility undergoes three crushing stages and two screening stages. Oversize reject from the crusher feed is stockpiled and broken on a campaign basis for re-feed to the crushing plant. The capacity of the stockpiles below the radial stackers is limited to approximately 11,000 tonnes



(t) and on occasion the product is rehandled to adjacent bulk out stockpiles. See Figure 1 for the process flow diagram.

Crushing, product transport and shipping activities operate 24 hours a day, 7 days a week.

Atlas Iron has committed to take the following measures to control dust emissions on the premises:

- For stockpile dust control, misting water sprays will be added at the top of the stacker conveyors to maintain moist 'active' stockpiles;
- Inactive stockpiles, loading stockpiles and surrounding areas will be sprayed by a water truck as required to maintain acceptable dust emissions;
- Water mist dust suppression will be utilised throughout the plant on all transfer points as well as on the stockpile conveyor discharge points; and
- Trafficked areas around these stockpiles will be watered by the water carts on a regular basis.

Process water, for dust suppression and pre-conditioning of ore, will be sourced from production bores on the premises and pumped without treatment to its points of storage and consumption.

Atlas Iron has indicated that a mechanical workshop, refuelling pad and washdown area will be established on the premises. Atlas Iron has committed that this area will be concrete lined to achieve a permeability of approximately 10^{-9} m/s. Any runoff from the area will be directed to a lined collection sump designed to retain a 1 in 5 year storm event. The contaminated runoff will be treated through an oil water separator system designed to achieve Total Petroleum Hydrocarbon (TPH) concentration of less than 30mg/L. Atlas Iron has indicated that treated wastewater from the oil-water separator will be stored in a high density polyethylene (HDPE) lined turkey's nest on-site which will also contain water sourced from groundwater bores. This is expected to provide a dilution factor to achieve TPH concentration of 0.06mg/L. Atlas Iron has indicated that water from this turkey's nest will be used on-site for dust suppression. Atlas Iron has committed that any hydrocarbon or chemical spill on the hydrocarbon storage/refuelling area will be captured in a lined detention sump and disposed off-site at a licensed facility.

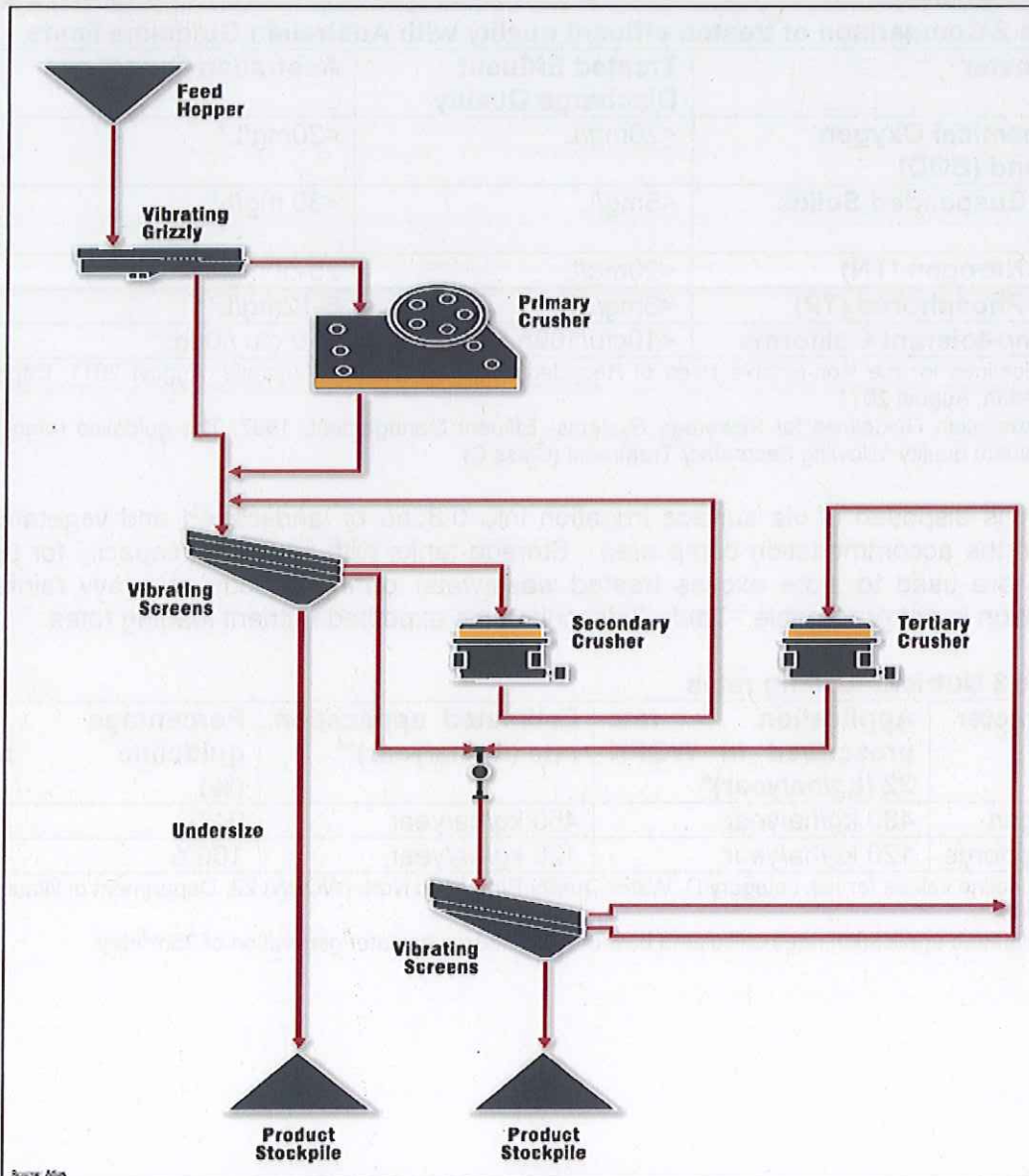


Figure 1: Process flow diagram of the crushing screening plant

WWTP

Atlas Iron constructed a WWTP of 40m³/day design capacity to treat sewage and wastewater generated from the accommodation camp on site. The throughput of the WWTP is 35m³/day. The WWTP is a tank based Submerged Aeration Filter (SAF) unit. Anaerobic treatment occurs in Primary Tank 1 and Primary Tank 2. Besides assisting in impurities removal, these tanks act as a flow buffer to subsequent processes. Sludge settled at the bottom of these tanks and inlet screenings is periodically removed using vacuum truck for offsite disposal at a licensed facility. The aerobic tank is used to achieve effective aeration. A blower injects a large volume of air into the tank from the diffusers. Special media has been installed to increase the surface area for a healthy growth of aerobic bacteria. Aerobic treatment stage is followed by clarification followed by chlorination.

Figure 2 shows the layout of the proposed WWTP and Table 2 describes the expected quality of treated effluent



Table 2 Comparison of treated effluent quality with Australian Guideline limits

Parameter	Treated Effluent Discharge Quality	Australian Guidelines
Biochemical Oxygen Demand (BOD)	<20mg/L	<20mg/L*
Total Suspended Solids (TSS)	<5mg/L	<30 mg/L*
Total Nitrogen (TN)	<20mg/L	20-50mg/L**
Total Phosphorus (TP)	<8mg/L	6-12mg/L**
Thermo-tolerant Coliforms	<10cfu/100ml	<10 cfu /100ml*

*Guidelines for the Non-potable Uses of Recycled Water in Western Australia, August 2011, Department of Health, August 2011

** Australian Guidelines for Sewerage Systems- Effluent Management, 1997. The guideline refers to typical effluent quality following Secondary Treatment (Class C)

TWW is disposed of via surface irrigation into 0.85ha of landscaped and vegetated areas within the accommodation camp area. Storage tanks with a storage capacity for up to two days are used to store excess treated wastewater during periods of heavy rainfall when irrigation is not practicable. Table 3 describes the expected nutrient loading rates.

Table 3 Nutrient loading rates

Parameter	Application rate prescribed in WQPN 22 (kg/ha/year)*	Estimated application rate (kg/ha/year)**	Percentage of guideline rate (%)
Nitrogen	480 kg/ha/year	450 kg/ha/year	94%
Phosphorus	120 kg/ha/year	120 kg/ha/year	100%

*Guideline values for risk category D, Water Quality Protection Note (WQPN) 22, Department of Water, July 2008.

**Estimated application rates calculated based on treated wastewater generation of 35m³/day.

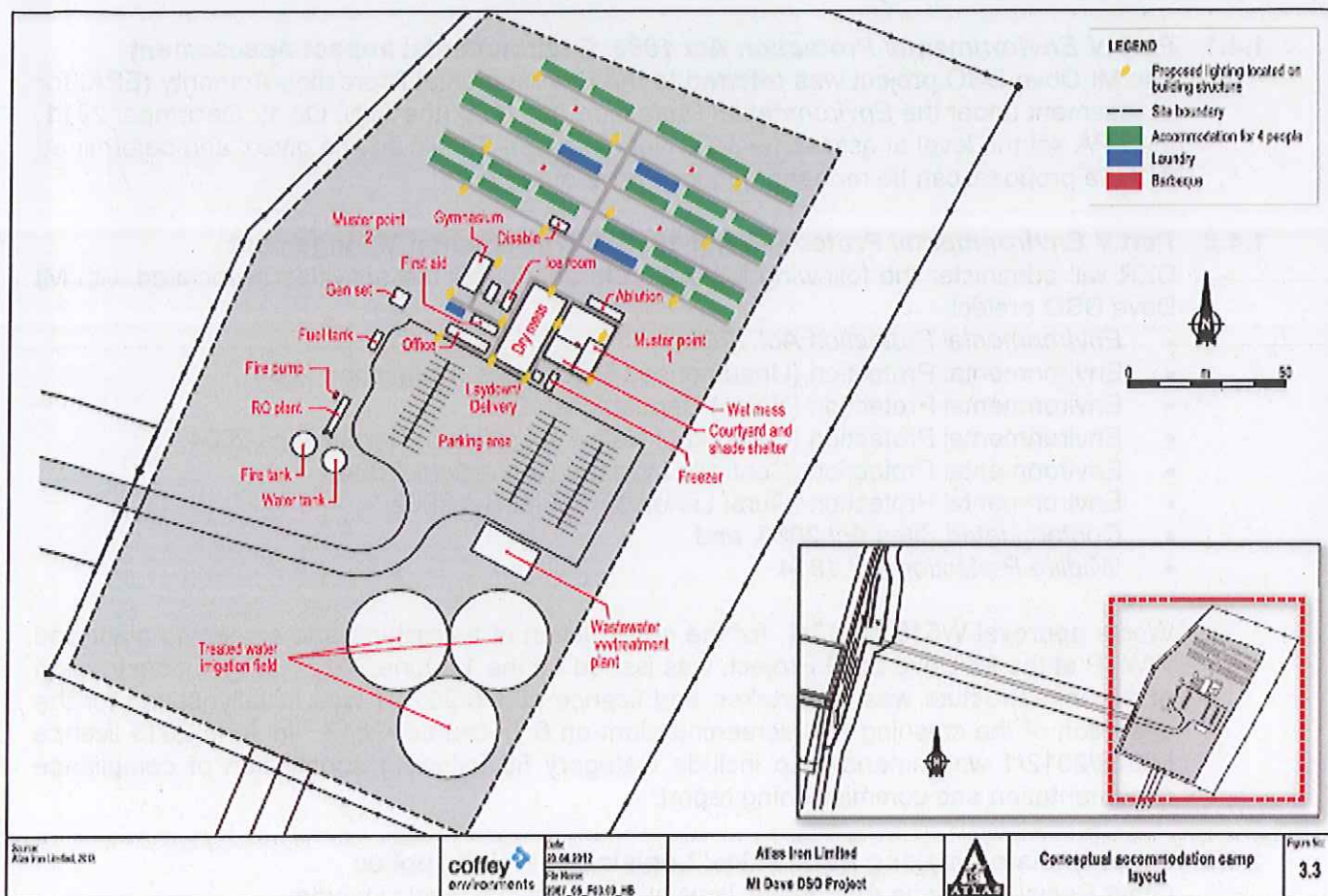


Figure 2: Layout showing location of the proposed WWTP and irrigation area

Wastewater from the administration building and workshop areas is diverted to the WWTP for disposal. A licensed waste disposal contractor collects solids from the WWTP and septic system as required.

Stormwater is diverted from irrigated areas to reduce the potential for stormwater contamination through the irrigation zone. The high evaporation rate at the site reduces the risk of leaching. In addition, drippers may be placed near the soil surface to maximise evaporation when required. Overall operational management includes regular visual monitoring and weed eradication programs as required.

Project schedule

Atlas Iron is aiming to commence pre-stripping and mining for the proposed project in the second quarter of 2012 (subject to receipt of all required approvals), with the first production of DSO expected in the fourth quarter of 2012. At the scheduled proposed mining rate of 2.4 Mtpa, mining is expected to progress for 13 months. Processing and product transport is scheduled to continue up to a further 12 months after mining ceases. The rate of processing and ore product transport will depend on market conditions and the requirements for blending across all of Atlas Iron's product sources.



1.4 REGULATORY CONTEXT

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

The Mt Dove DSO project was referred to the Environmental Protection Authority (EPA) for assessment under the *Environmental Protection Act 1986* (the Act). On 12 December 2011, the EPA set the level of assessment as 'Not assessed- Public advice given' and determined that the proposal can be managed under Part V of the Act.

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

DER will administer the following legislation to administer the activities associated with Mt Dove DSO project:

- *Environmental Protection Act 1986*;
- Environmental Protection (Unauthorised Discharges) Regulation 2004;
- Environmental Protection (Noise) Regulations 1997;
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004;
- Environmental Protection (Controlled Waste) Regulations 2004;
- Environmental Protection (Rural Landfill) Regulations 2002;
- *Contaminated Sites Act 2003*; and
- *Wildlife Protection Act 1914*.

Works approval W5181/2012/1, for the construction of a crushing and screening plant and WWTP at the Mt Dove DSO Project, was issued on the 14 June 2012. Staged construction of this infrastructure was undertaken and licence L8678/2012/1 was initially issued for the operation of the crushing and screening plant on 6 December 2013. In June 2013 licence L8678/2012/1 was amended to include Category 85 following submission of compliance documentation and commissioning report.

1.4.3 Other Decision-making Authorities' Legislation which applies

Other Decision Making Authorities' legislation which may apply include:

- *Mining Act 1978*;
- Mining Regulations 1981;
- *Mines Safety and Inspection Act 1994*;
- Mines Safety and Inspection Regulations 1995;
- Explosive and Dangerous Goods (Dangerous Goods Handling & Storage) Regulations 1992;
- *Occupational Safety and Health Act 1984*;
- Occupational Safety and Health Regulations 1996; and
- Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.

1.4.4 *Rights in Water Irrigation Act 1914*

Atlas Iron has indicated that approval under the *Rights in Water and Irrigation Act 1914* to construct groundwater wells and extract groundwater under Sections 26D and 5C, respectively has been obtained and the wells have been installed.

1.4.5 Local Government Authority

The Local Government Authority is the Town of Port Hedland.

2.0 STAKEHOLDER AND COMMUNITY CONSULTATION

SUBMISSIONS RECEIVED DURING 21 DAY PUBLIC COMMENT PERIOD

The application for licence details for this facility were advertised in The West Australian newspaper on 19 September 2012 as a means of advising stakeholders and to seek public comments. No submissions were achieved. This amendment did not require advertising.



3.0 EMISSIONS AND DISCHARGES RISK ASSESSMENT

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

The following section assesses the environmental risk of potential emissions from the Mt Dove DSO Project. In order to determine the site's appropriate environmental regulation, an emissions and discharges risk assessment was conducted of the Mt Dove DSO Project using the environmental risk matrix outlined in Appendix A. The results of this are summarised in Table 4.

Table 4: Emissions and Discharges Risk Assessment Matrix. The table contains multiple rows and columns, but the text is extremely faint and illegible. It appears to be a risk matrix with various categories and risk levels.



Table 4: Risk assessment and regulatory response summary table

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Air emissions (point source)	<p>Significance of emission - 1 There are no significant point source air emissions associated with the operation of the crushing and screening plant and WWTP.</p> <p>There are minor air emissions from the diesel powered generators used to supply power to the crushing and screening facility.</p>	Low. The nearest sensitive receptor is located 22km from the premises.	E - No regulation, other management mechanisms.	LIC - No conditions.	N/A.	General provisions of the Environmental Protection Act 1986.
Dust emissions	<p>Significance of emissions - 1 <u>Crushing and screening plant</u> During operation dust may be generated from crushing and screening activities, raw material and product stockpiles, loading-unloading activities, vehicle movement and wind-blown dust from cleared areas.</p> <p>Atlas Iron implements the following measures to minimise dust emissions during operation;</p> <ul style="list-style-type: none"> The application of chemical crusting agents to reduce windblown dust emissions from susceptible areas; Suppression of dust on unsealed trafficable roads and access tracks using water as required; Use of sprinklers and water trucks across cleared infrastructure, access roads and stockpile areas and around areas of Project activity; The crushing and screening plant is equipped with water sprays on all transfer points as well as on the stockpile conveyor discharge points; Road trains area covered to minimise dust emissions during transport; Vehicle speeds are restricted to minimise dust generation from traffic; and Visual observations of vegetation is undertaken to monitor potential impacts from fugitive dust. <p><u>WWTP</u> There is no significant dust emissions associated with the operation of the WWTP.</p>	Low. The nearest sensitive receptor is located 22km from the premises.	D - EIPs, other management mechanisms/licence conditions (monitoring/reporting/other regulatory tools.	LIC - standard dust condition to be applied to licence.	N/A.	General provisions of the Environmental Protection Act 1986.



Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Odour emissions	<p>Significance of emissions - 1 Crushing and screening plant There is no odour associated with the operation of the crushing and screening plant.</p> <p><u>WWTP</u> Minor odour emissions are generated during operation of the WWTP as the facility is a closed tank based system which minimises odour emissions.</p>	Low. The nearest sensitive receptor is located 22km from the premises.	E - No regulation, other management mechanisms.	LIC - No conditions.	N/A.	General provisions of the Environmental Protection Act 1986.
Noise emissions	<p>Significance of emissions - 1 Crushing and screening plant Noise will be generated from the crushing and screening plant during operation.</p> <p>The following measures have been implemented to minimise noise generation:</p> <ul style="list-style-type: none"> • Engineering controls such as standard noise abatement devices, mufflers, enclosures and housings installed on fixed and mobile machinery; • Blasting operation only occur during the daytime in accordance with the Environmental Protection (Noise) Regulations 1997; • A buffer distance of 20m has been established around significant caves on Mt Dove to minimise disturbance to ghost bats and the Pilbara leaf-nosed bats; and • Regular liaison is maintained with surrounding external receptors to identify, record and address any issues as they arise. <p><u>WWTP</u> There are no significant noise emissions during operation of the WWTP.</p>	Low. The nearest sensitive receptor is located 22km from the premises.	E - No regulation, other management mechanisms.	LIC - No conditions.	N/A.	General provisions of the Environmental Protection Act 1986. Environmental Protection (Noise) Regulations 1997.
Light emissions	<p>Significance of emissions - 1 Crushing and screening plant and WWTP The crushing, screening and product transfer activities continue 24 hours, 7 days a week. Light emissions are generated during night time operations, however, are not considered significant due to the remote location of the project. There are no sensitive receptors nearby to be impacted by the light emissions.</p>	Low. The nearest sensitive receptor is located 22km from the premises.	E - No regulation, other management mechanisms.	LIC - No conditions.	N/A.	General provisions of the Environmental Protection Act 1986.



Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Discharges to water	<p>Significance of emissions - 1 Crushing and screening plant and WWTP There is no direct discharge to water during operation of the crushing and screening plant and WWTP.</p>	<p>Low. The nearest sensitive receptor is located 22km from the premises.</p>	<p>E – No regulation, other management mechanisms.</p>	<p>LIC – No conditions.</p>	N/A.	<p>General provisions of the Environmental Protection Act 1986.</p>
Discharges to land	<p>Significance of emissions - 1 <u>Crushing and screening plant</u> During operation of the crushing and screening plant there is not expected to be any planned discharges to land. In-pit sump clearing occurs as required to remove any incidental rainfall or seepage. Any ponded water is allowed to settle first to reduce turbidity and then discharged to a nearby natural drainage channel.</p> <p>The following measures have been implemented to avoid stormwater contamination:</p> <ul style="list-style-type: none"> Storm water diversion structures have been constructed to divert 'clean' runoff around cleared areas including the open pit and waste rock dump; The ROM pad is 300mm above the surrounding natural surface to prevent surface water contamination; Surface water in contact with mining activities is contained and directed to sedimentation ponds before being released into the environment; and Potentially contaminated runoff from refuelling and workshop areas is stored within a sump prior to treatment through an oil water separator to achieve TPH concentrations of less than 30mg/L. Treated wastewater from oil water separators is stored in an HDPE lined dam on-site prior to being used for dust suppression. Expected TPH concentration of diluted wastewater is expected to achieve TPH concentration of 0.06mg/L. <p><u>WWTP</u> Atlas Iron uses the treated wastewater from the WWTP for irrigation in the accommodation camp area. The following nutrient loading rates have been calculated:</p>	<p>Low. The nearest sensitive receptor is located 22km from the premises.</p>	<p>E – No regulation, other management mechanisms.</p>	<p>LIC – Standard condition requiring management of stormwater. Condition requiring TPH concentration in water used in dust suppression not to exceed 15mg/L. Condition requiring the monitoring of TVWV and setting of targets for water quality.</p>	N/A.	<p>Environmental (Unauthorised Discharges) Regulations 2004. General provisions of the Environmental Protection Act 1986. Environmental (Unauthorised Discharges) Regulations 2004.</p>



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Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Solid / liquid wastes	<p>Significance of emissions – 1 <u>Crushing and screening plant</u> During operation of the crushing and screening plant, Atlas implements the following measures to appropriately manage waste generated on the premises:</p> <ul style="list-style-type: none"> Wastes are segregated and stored appropriately on-site and are disposed of at appropriately licensed facilities; Waste storage areas on-site have been designed to minimise wildlife access; Putrescible waste is stored in vessels with closed lids; Recyclables are collected on a regular basis and returned to the supplier or transported to a licensed recycling facility at Port Hedland; and <p>As described in Table 2, the quality of treated wastewater from the WWTP is expected to remain well within the guidelines values specified by the Department of Health (DoH) and National Water Quality Management Strategy (NWQMS) Australian Guidelines for Sewerage Systems- Effluent Management, 1997.</p> <ul style="list-style-type: none"> BOD: <20mg/L (100% of the DoH guidelines); TSS: <5mg/L (16.6% of the DoH guidelines); TN: <20mg/L (40% of the NWQMS guidelines); TP: <8mg/L (66.6% of the NWQMS guidelines); and Thermo tolerant Coliforms :< 10cfu/100ml (100% of the DoH guidelines). <p>It is noted that, the camp will accommodate 100 personnel and hence wastewater production volume is 35m³/day even though design capacity of the proposed WWTP is 40m³/day. This means there is potential for TP concentration exceeding the WQPN limits if in future wastewater production at the premises exceeds 35m³/day. Atlas Iron has committed to increasing the size of the irrigation area should the wastewater generation at the premises exceed 35m³/day.</p>	<p>Low. The nearest sensitive receptor is located 22km from the premises.</p>	<p>E – No regulation, other management mechanisms.</p>	<p>LIC – No conditions.</p>	<p>N/A.</p>	<p>General provisions of the Environmental Protection Act 1986. Environmental Protection (Unauthorised Discharges) Regulations 2004. Environmental Protection (Controlled Waste) Regulations 2004.</p>



Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Hydrocarbon/chemical storage	<ul style="list-style-type: none"> Controlled wastes are managed and transported off-site in accordance with the Environmental Protection (Controlled Waste) Regulations 2004. <p><u>WWTP</u> Sludge generated during operation of the WWTP is managed and transported in accordance with the Environmental Protection (Controlled Waste) Regulations 2004.</p> <p>Significance of emissions – 1 <u>Crushing and screening plant and WWTP</u> Atlas has implemented the following measures to appropriately manage hydrocarbons and chemicals stored on the premises:</p> <ul style="list-style-type: none"> The fuel storage and refuelling areas have been constructed to the design specifications of AS1940:2004; Diesel fuel is stored in two 68,000 L double skinned self banded tanks; Diesel storage tanks have been fitted with overflow alarms and visual indicators of an internal wall rupture such as drip tube and protected from vehicle strikers with windrows or bollards; A reinforced concrete slab graded to one low end point, has been installed at the fuel Dispensing area. Any potential hydrocarbon spill during recharging or dispensing will be captured by the concrete pad and drained into a lined detention storage structure before disposal off-site at a licensed facility; Spill recovery and clean up materials are maintained at the workshop and all hydrocarbon storage areas; Generator sets are situated within appropriately sized impervious bunds; Potentially contaminated water from the workshop, refuelling area and washdown facility is treated through the oil-water separator designed to achieve TPH concentration of less than 30mg/L. Treated water is directed to a HDPE lined dam on-site which is maintained at capacity with water supplied from groundwater bores. This is expected to provide dilution and give final TPH concentration of 0.06mg/L in water which is used for dust suppression. 	Low. The nearest sensitive receptor is located 22km from the premises.	E – No regulation, other management mechanisms.	LIC – Standard conditions regarding hydrocarbon management added on the licence.	N/A.	General provisions of the Environmental Protection Act 1986. Environmental Protection Discharges Code of Practice for the Storage and Handling of Dangerous Goods 2004.



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Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	<ul style="list-style-type: none"> Storage facilities for hydrocarbons are regularly inspected for evidence of leaks or spills; All waste hydrocarbons are transported offsite for licensed disposal; Hydrocarbon contamination is reported and managed in accordance with the <i>Contaminated Sites Act 2003</i>. A concrete refuelling pad designed to achieve permeability of 10⁻⁹ m/s has been constructed adjacent to the fuel storage tanks and the refuelling truck will be equipped with drip trays, spill recovery and clean up materials; and The mechanical workshop and washdown area is bunded and concrete lined to achieve a permeability of 10⁻⁹ m/s. 					
Native vegetation clearing	<p>Significance of emissions - 1</p> <p>Atlas cleared 219 hectares as part of the Mt Dove project. Assessment of clearing is delegated to Department of Mines and Petroleum.</p>	Low. The nearest sensitive receptor is located 22km from the premises.	E- No regulation, other management mechanisms.	LIC - No conditions.	N/A.	General Provisions of the <i>Environmental Protection Act 1986</i> Environmental Protection (Clearing of Native Vegetation) Regulations 2004
Contaminated site identification	<p>Significance of Emissions - 1</p> <p>The site is not a reported contaminated site under the <i>Contaminated Sites Act 2004</i>.</p>	Low. The nearest sensitive receptor is located 22km from the premises.	E- No regulation, other management mechanisms.	LIC - No conditions.	N/A.	<i>Contaminated Sites Act 2003</i>



4.0 GENERAL SUMMARY AND COMMENTS

Atlas Iron is operating an iron ore crushing and screening plant with a design capacity of 2.4Mtpa and a WWTP with a design capacity of 40m³/day, at the Mt Dove DSO Project. This assessment has demonstrated that the emissions and discharges from the crushing and screening plant and WWTP are not significant and can be appropriately managed through the management measures Atlas Iron has implemented. Licence conditions relating to the management of dust, stormwater, hydrocarbons and discharges to land have also been applied to the licence.

The general provisions of the Act, relating to the causing of pollution and environmental harm will apply to the premises and the site will also be subject to regular inspections by DER Industry Regulation officers.



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APPENDIX A: EMISSIONS AND DISCHARGES RISK ASSESSMENT MATRIX

Table 3: Measures of Significance of Emissions

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

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

Table 4: Socio-Political Context of Each Regulated Emission

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

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

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

Table 5: Emissions Risk Reduction Matrix

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

PRIORITY MATRIX ACTION DESCRIPTORS

A = Do not allow (fix)

B = licence condition (setting limits + EMPs - short timeframes)(setting targets optional)

C = licence condition (setting targets + EMPs - longer timeframes)

D= EIPs, other management mechanisms/licence conditions (monitoring/reporting)/other regulatory tools

E = No regulation, other management mechanisms