



LICENCE NUMBER: L8562/2011/1
LICENCE FILE NUMBER: 2011/004969
APPLICATION DATE: 31 MAY 2011
AMENDMENT DATE: 7 March 2013
EXPIRY DATE: 18 MARCH 2017

PREMISES DETAILS

LICENSEE AND OCCUPIER

Hamersley Iron Pty Limited
Level 22, Central Park
152-158 St Georges Terrace
PERTH WA 6000
ACN: 004 558 276

PREMISES

Koodaideri Exploration Camp
Mining tenement ML252SA section 002
Within coordinates E 708 323, N 7 509 262; E 708 323, N 7 509 056; E 708 530, N 7 509 262; E 708 530, N 7 509 056; E 712 359, N 7 507 829; E 712 454, N 7 507 719; and E 712 348, N 7 507 629
NEWMAN WA 6753

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**
64	Class II putrescible landfill site	20 tonnes or more per year	50 tonnes per year	Not more than 5 000 tonnes per year
85	Sewage facility	More than 20 but less than 100 cubic metres per day	46.5 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 onsite which are not related to the control of emissions and discharges from the prescribed premises activity. This does not restrict the Department of Environment 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 Koodaideri Exploration Camp has been assessed as a "prescribed premises" under category numbers 64 and 85, within Schedule 1 of the Environmental Protection Regulations 1987.



Category 64 - Class II or III putrescible landfill site: premise 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.

Hamersley Iron Pty Limited (Hamersley Iron) has constructed a landfill that will receive both inert and putrescible waste generated by the Koodaideri project and camp. The volume of waste the facility will receive during normal operation is less than 50 tonnes per year (t/yr).

Category 85 - Sewage facility: premises –

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

The wastewater treatment plant (WWTP) is able to handle a throughput of 46.5 kilolitres (kL) per day, which is a throughput capacity equivalent to 150 people.

This amendment conducted in March 2013 is to include the Class II landfill facility constructed under works approval W4895/2011/1. Compliance documentation was received by DEC on the 11 January 2013.

1.0 BACKGROUND

1.1 GENERAL COMPANY DESCRIPTION

Rio Tinto's wholly owned Hamersley Iron is one of the world's largest iron ore producers. From mines in the Pilbara region of Western Australia it is a major supplier to the Pacific rim and European steel industries. Hamersley Iron wholly owns five mines - Mount Tom Price, Paraburdoo, Marandoo, Brockman 2 and 4 and Yandicoogina - and also operates the 60 per cent owned Channar mine and the 54 per cent owned Eastern Range mine on behalf of joint venture partners.

Environmental impacts on the project site are managed via the Rio Tinto Health Safety Environment and Quality Management System (HSEQ MS). The primary purpose of HSEQ MS is to manage environmental performance through control of impacts on the environment, consistent with the business Environmental Policy and objectives. HSEQ MS was recertified to AS/NZS ISO14001 in November 2010.

1.2 LOCATION OF PREMISES

The Koodaideri project area is located on mining tenement AML70/252, section 002 approximately 104 kilometres (km) north-west of Newman and approximately 80km east of Wittenoorn in the Pilbara region of Western Australia (Figure 1).

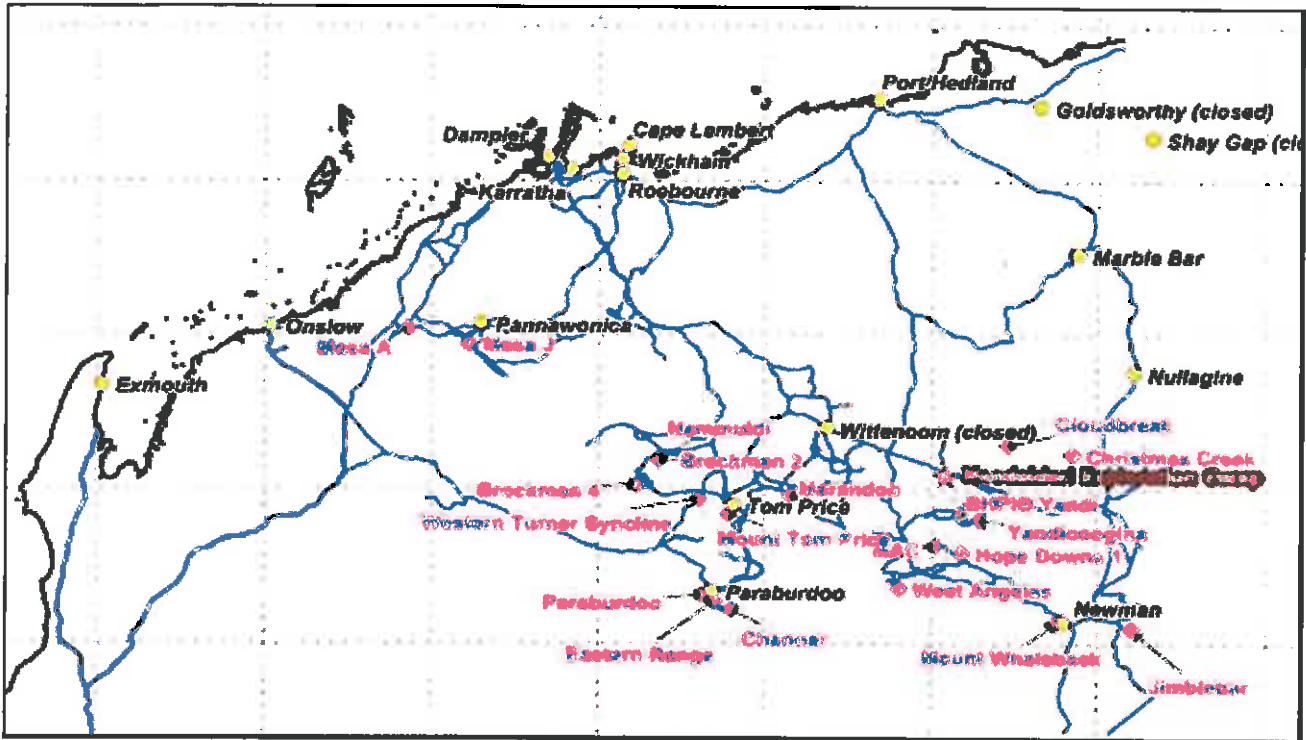


Figure 1: Regional location of Koodaideri Exploration Camp

Treated wastewater from the WWTP will be irrigated onto a sprayfield, which will be located at least 170 metres (m) east of the kitchen/dining building and the outdoor dining area. The WWTP and landfill are located at the following coordinates (Figure 2):

The coordinates for the perimeter of the sprayfield are (MGA 94, zone 50):

- E 708 362, N 7 509 239;
- E 708 493, N 7 509 239;
- E 708 493, N 7 509 137; and
- E 708 362, N 7 509 137.

Landfill perimeter (MGA 94, zone 50):

- E 712 359, N 7 507 829;
- E 712 454, N 7 507 720;
- E 712 348, N 7 507 629; and
- E 712 254, N 7 507 739.

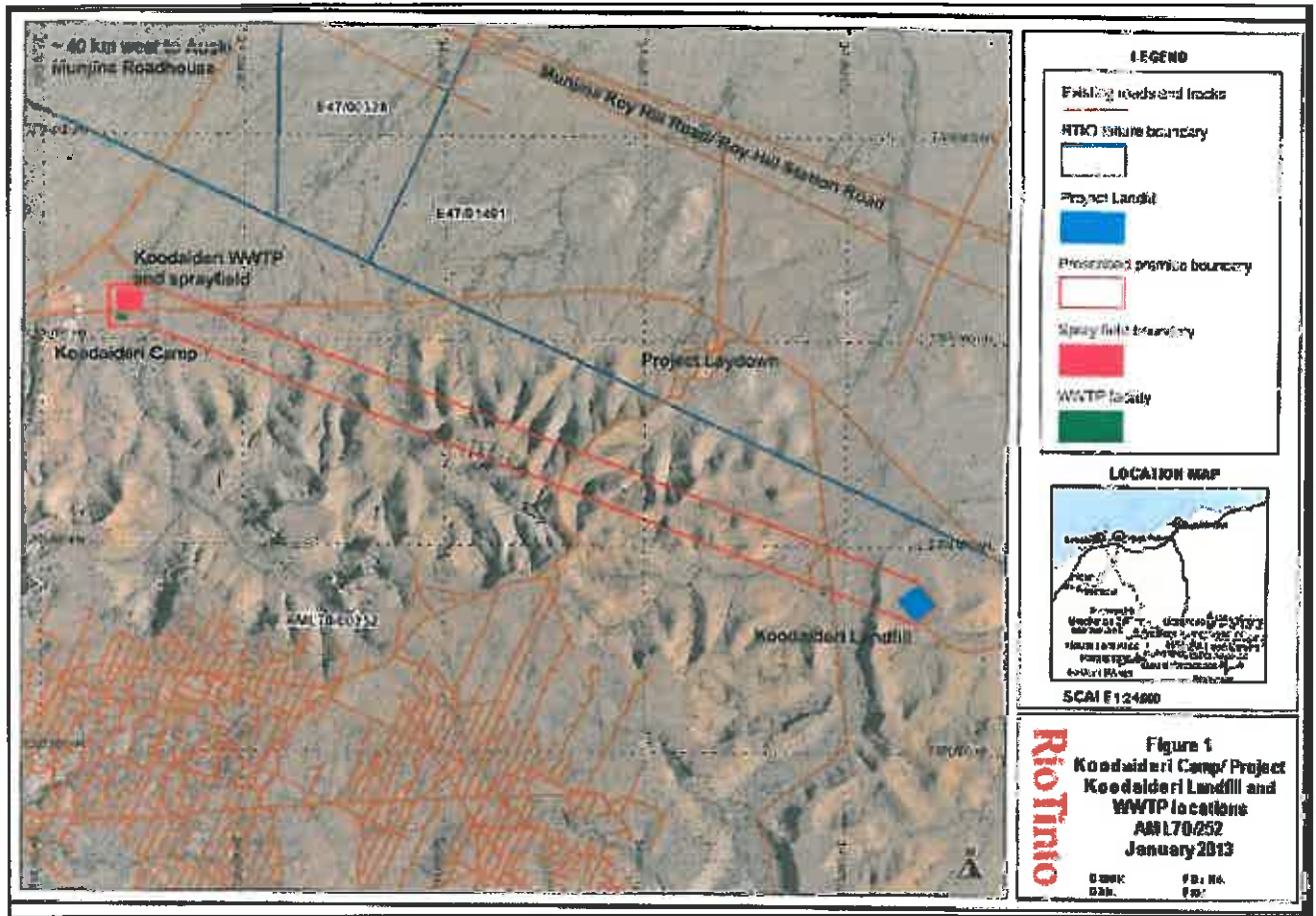


Figure 2: Koodaideri landfill and WWTP location

Climate

The climate can be characterised as arid tropical with two distinct seasons, summer and winter. The summer months extend from October to April, when average daily temperatures range from 33 degrees Celsius (°C) to 39°C however maximums can exceed 47°C. The winter months extend from May to September with temperatures ranging from approximately 12°C to 26°C.

Rainfall in the Pilbara tends to be unpredictable and erratic and the annual mean rainfall recorded is approximately 305.7 millimetres (mm) and the majority of the rainfall seems to fall during the months of January, February and March. Wittenoom located 80km north-west of the project area received an average annual rainfall of 454.5mm while its annual evaporation rate was far greater at approximately 3 175mm.

Topography

The project area is dominated by two land systems:

- Boolgeeda Land System - stony lower slopes, crests, broad valleys and plains; and
- Newman Land System - rugged jaspilite plateaux, ridges and mountains.

The WWTP and sprayfield will be located on the stony plains of the Boolgeeda Land System. Tests taken from the WWTP sprayfield confirmed that the soil present was a gravely loam with medium to high clay content.



Vegetation

The project area falls predominately within the Hamersley District of the Eremaean Botanical Province. The stony slopes of the project area are usually dominated by *Triodia Spinifex* hummock grasslands with a varying overstorey of Eucalypts and *Acacia* shrublands.

Fauna

A total of 146 active pebble mound mouse *Pseudomys chapmani* mounds were recorded within the Koodaideri project area. The pebble mound mouse frequently occurs in higher densities within its preferred habitat of the Hamersley Range so they should not be affected by the operation of the facilities.

Surface and Groundwater

The geology of the project area comprises a thin veneer of sheet wash gravels over sub cropping weathered Mt McRae Shale. The weathered shales are of low permeability therefore the underlying groundwater is not likely to be in hydraulic connection with adjacent alluvium 500m to the west. The project area covers a portion of the Hamersley Ranges with elevations ranging from 20m to 200m above the broad flood plains, which flow on to the Fortescue Marsh system which lies approximately 12km to the north of the project area.

Water bores associated with the Koodaideri drilling program has determined that the standing water table varies between 53m below the surface (1km to the north of the landfill) to approximately 72m (1.5km to the south of the landfill) and the natural groundwater is of relatively high quality – fresh to brackish and slightly acidic (pH 6.4).

1.3 PROPOSAL DESCRIPTION

Landfill

The landfill receives both inert and putrescible waste generated by the Koodaideri project and camp. The types of waste that the Koodaideri landfill can accept are documented in Table 2.

Table 2: Landfill classes and waste types

Landfill Class	Common Name	Waste Types Permitted For Disposal*
Class II	Putrescible Landfill	<ul style="list-style-type: none"> • Clean Fill; • Type 1 Inert Waste; • Putrescible Wastes; • Contaminated solid wastes meeting waste acceptance criteria specified for Class II landfills (possibly with specific licence conditions); • Type 2 Inert Wastes (with specific licence conditions); and • Type 1 and Type 2 Special Wastes (for registered sites as approved under the Controlled Waste Regulations).

*Department of Environment and Conservation Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009).

Tipping Area (Figure 3)

The landfill design features one excavated trench 9m wide, 79m long to a depth of 2m. The constructed trench design restricts the tipping face to a width of approximately 3m at any given time. The trench has been orientated approximately 45 degrees from the north to reduce the impact of prevailing winds mobilising waste from the facility.



Waste Compaction, Cover and Maintenance

Waste is covered on a monthly basis due to the low volume of disposed waste and is covered with stockpiled excavated material obtained during the construction of the trench.

Fencing and Gates

The facility is surrounded by a 1.8m high cyclone mesh fence with two lockable gates, to allow controlled access of authorised personnel/mobile equipment. Shade cloth have been secured to the perimeter fence (excluding the facility gates) to prevent prevailing winds mobilising waste from the facility.

Separation of waste from water and site boundary

All excavated trenches, constructed to contain waste are:

- located 10m from the perimeter fence (including the ramped area);
- located approximately 13km away from any standing water body; and
- designed to ensure that the stored waste material lies at least 13m above the water table aquifer.

Stormwater management

The location of the facility has been chosen to reduce the catchment area for surface water that could potentially impact the facility. The following have been implemented:

- 0.4m high earthen bunds have been placed around the open trench to control stormwater entering and leaving the excavation;
- ramping to the open trench features a 0.2m high roll over bund; and
- any stormwater entering the open trench is retained and allowed to evaporate off.

Firebreaks

A 3m wide firebreak has been cleared and will be maintained around the perimeter of the fence.

Burning of Green Waste

No green waste is burnt, instead it will be buried in the landfill.

Signage

Signage has been installed at the facility main entrance indicating the:

- type of waste accepted and those not accepted at the facility; and
- personnel contact details for entry authorisation and in case of emergency.

Disposal of clinical waste and material containing asbestos

No clinical waste or asbestos is disposed of at the landfill facility. All clinical and material asbestos waste is taken off-site for disposal at a landfill authorised to accept such wastes.

Rehabilitation

The landfill will utilise the Health Safety Environment and Quality Management System (HSEQMS) Procedure – OCP7 Closure, Rehabilitation and Monitoring during decommissioning of the facility by:

- compacting and capping the final trenches with at least 1m of excavated material;
- the remediated area will be allowed to regenerate naturally with hand seeding only employed if monitoring determines that the disturbed area is not regenerating as required; and
- photographic monitoring points will be established across the decommissioned facility, with the area photographed/assessed on an annual basis until a full botanical assessment is undertaken once the area has been allowed to regenerate for three years.

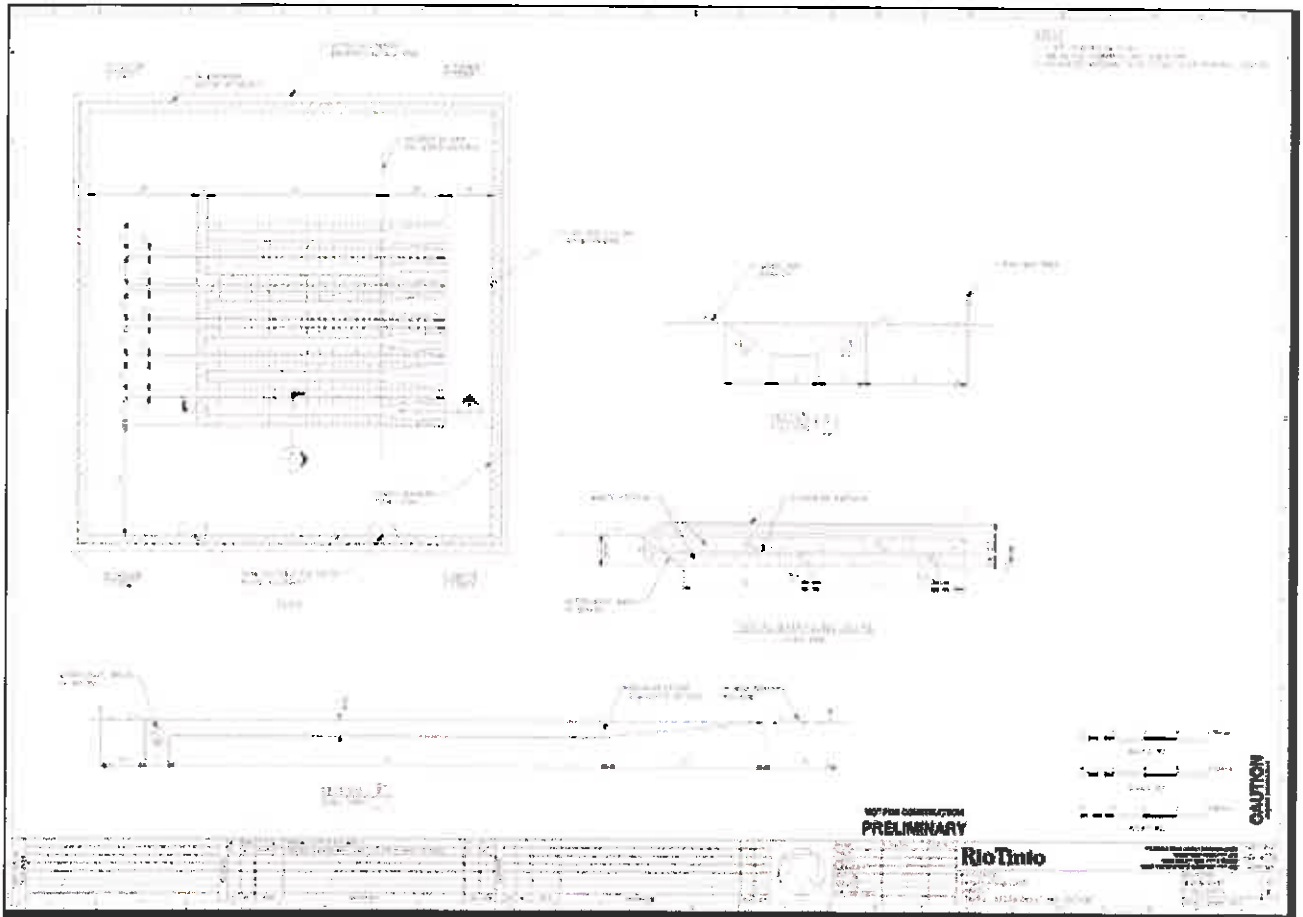


Figure 3: Landfill design

WWTP

The WWTP will consist of the following elements (Figure 4):

- mechanically raked bar screen (to screen the sewage);
- preliminary anoxic selector tank;
- anoxic buffer tanks for denitrification;
- aeration/decant tank for biochemical oxygen demand reduction, phosphorus reduction and the growth of de-nitrifying bacteria;
- sludge settling and holding tank (with supernatant return to anoxic tank);
- chlorination and irrigation tank (storage prior to spray field transfer); and
- nine 4.5mm aperture sprinklers in a 1.329ha spray field.

Raw sewage from the collection pump station enters the WWTP via a bar screen for debris removal. Once it has passed through the screen it is pumped to the preliminary anoxic selector tank where the sewage is blended with a portion of aerated mixed liquor delivered from the mixed liquor blend pump located in the aeration/decant tank. This encourages the growth of desirable aerobic bacteria in preference to filamentous bacteria that cause settling problems later in the process. The selector tank then gravity feeds the blended mixture into the two anoxic buffer tanks for denitrification. The blended liquor is then forwarded into the aeration/decant tank at a rate that maintains the anoxic buffer tanks at a 30% level. The aeration/decant tank aerates the liquid and doses it with a phosphorus precipitant. When the tank reaches its upper working level, the aeration ceases and the contents are allowed to settle for an hour. Any clear supernatant liquid is then drawn off until the low working level of the aeration tank is reached and the decanting stops. At this point, the next aeration/fill sequence resumes in the aeration tank. The decanted supernatant is dosed with liquid



chlorine before being pumped to the final effluent tank where it is allowed to remain for thirty minutes to ensure adequate disinfection (chlorine contact time).

Excessive sludge is periodically removed from the aeration tank and pumped to the sludge holding tank. Any clear supernatant liquor that settles out of the sludge is returned to the anoxic tanks via a gravity overflow while the concentrated sludge is allowed to settle.

The chlorinated final effluent is then discharged for irrigation via nine sprinklers to the 1.329ha sprayfield (Figure 5). The expected water quality performance standards for the WWTP are outlined in Table 3 and nutrient loading rates in Table 4.

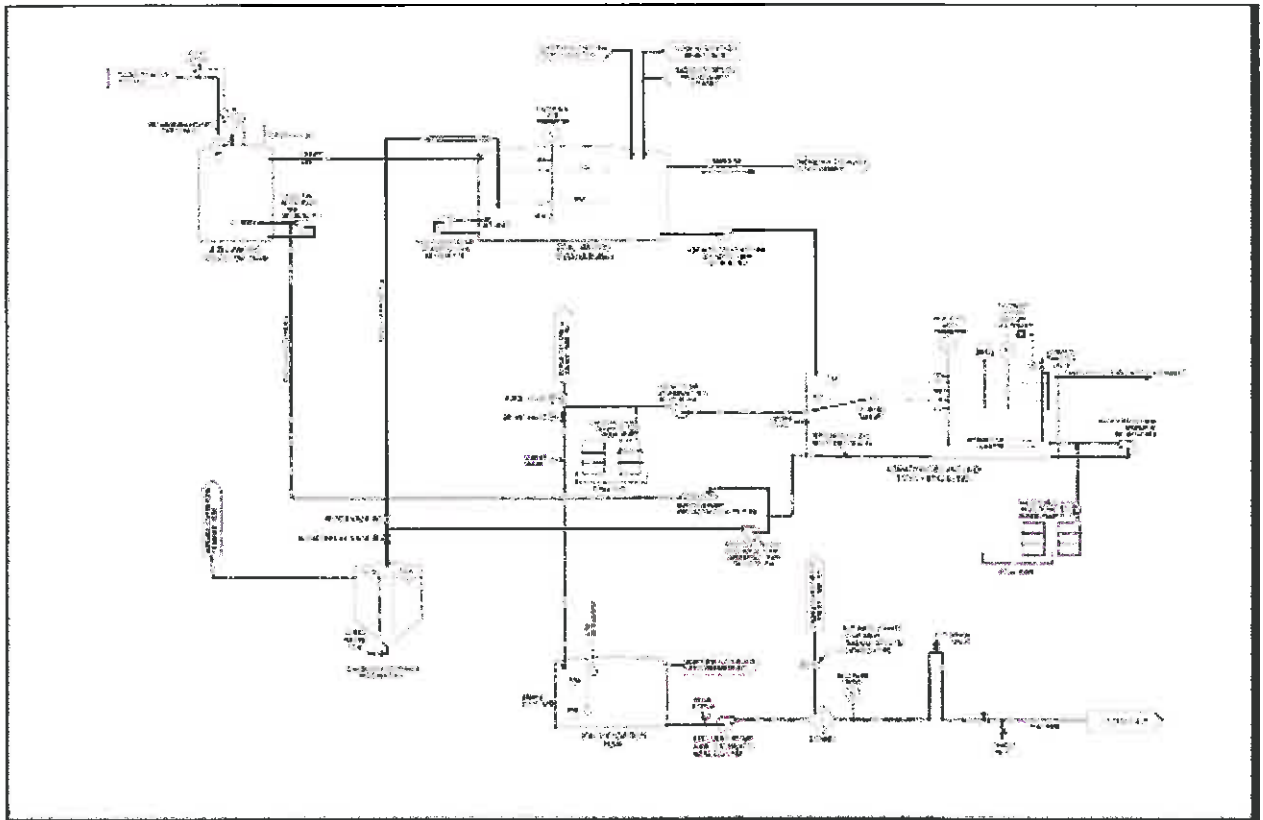


Figure 4: Process Flow Diagram

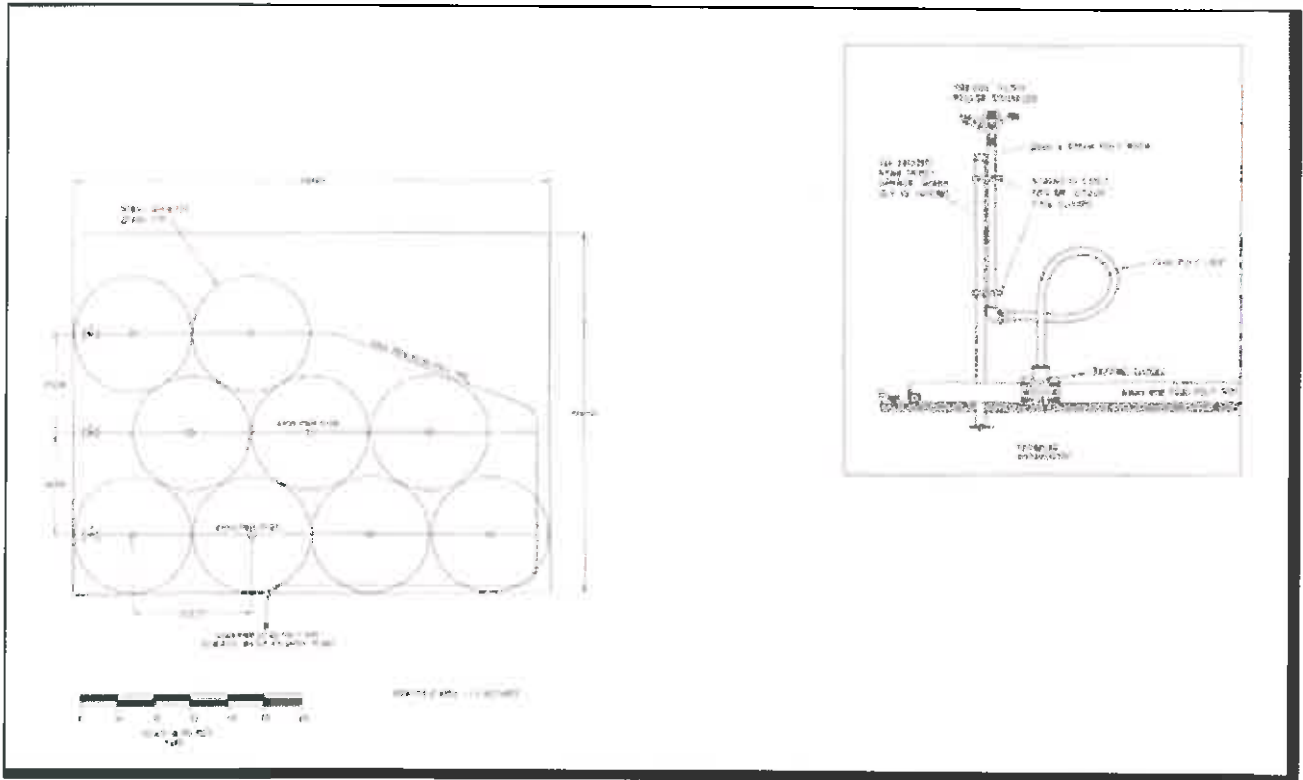


Figure 5: Sprayfield layout

Table 3: WWTP performance standards for water quality

Parameter	Expected performance standard	Australian Guidelines*
Biochemical Oxygen Demand (mg/L)	20	20-30
Total Suspended Solids(mg/L)	30	25-40
Total Nitrogen (mg/L)	20	20-50
Total Phosphorus (mg/L)	8	6-12
pH (pH units)	6.5-8.5	Approx 6-9
Residual Chlorine (mg/L)	0.5	N/A
E.coli (cfu/100mL)	<1000	10 ⁵ -10 ⁶

*Refers to Secondary Treatment of wastewater – *National Water Quality Management Strategy, Australian Guidelines for Sewerage Systems – Effluent Management* (Agriculture and Resource Management Council of Australia and New Zealand Australian and New Zealand Environment and Conservation Council, 1997).

Table 4: Expected nutrient loadings for the 1.329 ha irrigation field.

Parameter	Nitrogen	Phosphorus
Maximum Throughput	46.5 m ³ /day	
Irrigation Area	1.329 ha	
Effluent Quality	20 mg/L	8 mg/L
Nutrient Loading	255 kg/ha/year	102 kg/ha/year
Guideline*	480 kg/ha/year	120 kg/ha/year

*Water Quality Protection Note 22 – Irrigation with nutrient-rich wastewater (Department of Water, 2008). These guidelines refer to Risk Category D.

The preliminary anoxic selector tank holds up to 4.7kL of sewage and is kept at full capacity at all times. Macerated sewage is gravity fed from the preliminary anoxic selector tank to the anoxic tank. The anoxic tank has a capacity of 26kL and contains an additional buffer of half a day of influent capacity. This buffer storage is for peak flows and to allow for minor maintenance. The process is designed so that all available buffer storage upstream of a fault



is allowed to fill before the system is allowed to overflow to a spill containment lagoon. The spill containment lagoon has a storage capacity for two full days of influent and is located approximately 5m from the rear of the WWTP process tanks.

The WWTP has high level alarms and overloads built in as well as emergency stop and safety features and is monitored on a daily basis. The spray disposal field is fenced to prevent unauthorised access and signs have been posted, advising the public that the areas are irrigated with recycled water.

In addition to the WWTP and landfill the Koodaideri Exploration Camp has the following infrastructure:

- 120 permanent rooms with supporting offices;
- concrete wash down bay with an associated sediment trap/oil water separator;
- fuel facility;
- power generation facility; and
- 2 x 55 000 litres (L) diesel fuel tanks including separate refuelling concrete pads with bunding and a sump.

1.4 REGULATORY CONTEXT

1.4.1 Part IV Environmental Protection Act 1986, Environmental Impact Assessment

The Koodaideri Exploration Camp has not been referred to the Environmental Protection Authority.

1.4.2 Part V Environmental Protection Act 1986, Environmental Management

The Koodaideri Exploration Camp has been assessed as a "prescribed premises" under the Environmental Protection Regulations 1987 for category 64 and 85 prescribed activities.

The landfill and WWTP were constructed under W4895/2011/1, compliance documentation for the WWTP was received on the 1 July 2011 and final compliance documentation for the construction of the landfill was received by DEC on the 11 January 2013.

DEC will also administer the following legislation:

- *Contaminated Sites Act 2003*;
- Environmental Protection Regulations 1987;
- Environmental Protection (Controlled Waste) Regulations 2004;
- Environmental Protection (Unauthorised Discharges) Regulations 2004;
- Department of Environment and Conservation Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009); and
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

1.4.3 Other Decision Making Authorities' Legislation which applies

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

- *Occupational Safety and Health Act 1984*;
- Occupational Safety and Health Regulations 1996;
- *Dangerous Goods Safety Act 2004*;
- Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007;
- Australian Standards 1940-2004 The storage and handling of flammable and combustible liquids; and
- *Health Act 1911* – irrigation of treated sewage.



1.4.5 Local Government Authority

The premises is located within the Shire of East Pilbara.

2.0 STAKEHOLDER AND COMMUNITY CONSULTATION

2.1 LICENCE APPLICATION

SUBMISSIONS RECEIVED DURING 21 DAY PUBLIC COMMENT PERIOD

The application for licence details for this facility was advertised in The West Australian newspaper on 11 July 2011 as a means of advising stakeholders and to seek public comments. No submissions were received.

2.2 LICENCE AMENDMENT

SUBMISSIONS RECEIVED DURING 21 DAY PUBLIC COMMENT PERIOD

This licence amendment does not require advertising.

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 Koodaideri Exploration Camp. In order to determine the site's appropriate environmental regulation, an emissions and discharges risk assessment was conducted of the facilities using the environmental risk matrix outlined in Appendix A. The results of this are summarised in Table 5.



Table 5: 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)	Emission significance of 1 No point source air emissions should be generated from the operation of the landfill or WWTP.	No level of socio-political concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> .
Dust emissions	Landfill Emission significance of 1 Dust emissions will be generated during operation due to authorised vehicle movements during delivery and/or covering of waste. Due to the remote location of the landfill the environmental risk posed by dust emissions should not be significant. Dust will be minimised through the following measures: <ul style="list-style-type: none"> • speed limits will be set; • vehicles will be restricted to designated roads and tracks; and • the facility will be fenced off to dissipate the force from prevailing winds. WWTP Emission significance of 1 Dust emissions should not be generated from the operation of the WWTP.	No level of socio-political concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> . Environmental Protection (Unauthorised Discharges) Regulations 2004.
Odour emissions	Landfill Emission significance of 1 The landfill has the potential to generate odour emissions if it is not managed properly. The facility will be managed in accordance with the HSEQMS Procedure – Landfill Management Plan and waste will be covered monthly in order to minimise the generation of odour emissions and windblown waste. The facility is located greater than 4km from the existing Koodaideri camp infrastructure. WWTP Emission significance of 1 The WWTP has been located to minimise the potential for odour impacts to the accommodation facilities and associated buildings/offices. The predominant wind conditions were considered when siting the facility.	No level of socio-political concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> . HSEQMS Procedure – Landfill Management Plan.



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)
Noise emissions	<p>The sprayfield will be located at least 170m east of the kitchen/dining building and the outdoor dining area. There are no other sensitive receptors in the immediate vicinity of the WWTP and regular monitoring, maintenance and appropriate management of the facility will act to reduce the likelihood of odour emissions.</p> <p>Emission significance of 1 Noise emissions should not be significant during the operation of the landfill and WWTP.</p> <p>Hammersley Iron will comply with the Environmental Protection (Noise) Regulations 1997.</p>	No level of socio-political concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> . Environmental Protection (Noise) Regulations 1997.
Light emissions	<p>Landfill Emission significance of 1 Light emissions should not be significant during the operation of the landfill.</p> <p>WWTP Emission significance of 1 The WWTP will be supplied with local area lighting. The lights will be mounted on raised fittings and faced downwards to minimise light emissions outside of the WWTP area. It is unlikely that the lighting will affect the Koodaideri Camp.</p>	No level of socio-political concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> .
Discharges to water	<p>Emission significance of 1 There should be no discharges to water associated with the operation of the landfill and WWTP.</p> <p>There are no nearby permanent or semi-permanent water bodies in the vicinity of the landfill and WWTP.</p>	No level of socio-political concern.	E – No regulation, other management mechanisms.	LIC – Conditions will be added to the licence relating to stormwater management.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> . Environmental Protection (Unauthorised Discharges) Regulations 2004.
Discharges to land	<p>Landfill Emission significance of 1 Hammersley Iron have implemented the following drainage controls at the landfill:</p> <ul style="list-style-type: none"> 0.4m high earthen bunds have been placed around the open trench to control stormwater from entering and leaving the excavation; ramping to the open trench features a 0.2m high roll over bund to control stormwater entering and leaving the 	No level of socio-political concern.	E – No regulation, other management mechanisms.	LIC – Conditions on monitoring to ensure that effluent quality is maintained including targets and reporting conditions.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> . Environmental Protection (Unauthorised Discharges) Regulations 2004. Environmental Health Directorate, Guidelines for the Use of Recycled Water in Western Australia, November 2010.



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)
<p>excavation; and</p> <ul style="list-style-type: none"> any stormwater entering the open trench is retained and allowed to evaporate off. <p>The facility is also located approximately 13km away from any standing water body and designed to ensure that the stored waste material lies at least 30m above the water table aquifer.</p> <p>WWTP Emission significance of 3 The WWTP should not contribute to surface runoff. Low drift fan-spray nozzles have been installed, which provide a coarse droplet with an even spray radius and distribution. The flow and pressure are designed to prevent pooling and the application limit will be below the Department of Health recommended maximum application limit.</p> <p>Effluent discharge quality is consistent with "Australian Guidelines for Sewerage Systems: Effluent Management" for secondary treated wastewater 1997.</p> <p>Parameter significance: BOD - 3 (66% of guidelines) TSS - 3 (75% of guidelines) TN - 2 (40% of guidelines) TP - 3 (66% of guidelines) E.coli -1 (<1% of guidelines)</p> <p>Treated wastewater from the WWTP will be discharged to a 1.329ha sprayfield for irrigation and nitrogen and phosphorus meet the Water Quality Protection Note 22- Irrigation with nutrient-rich wastewater. N - 255 kg/ha/yr P - 102 kg/ha/yr</p> <p>Groundwater levels in the area are approximately 40m below ground level. In combination with the irrigation rates and positioning of the irrigation sprayfield the risk of nutrient enrichment of waterways/groundwater from spray irrigation is unlikely.</p> <p>The sprayfield is operational for four hours daily allowing</p>						<p>Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.</p> <p>Pilbara 320 Generic 150EP Waste Water Treatment Plant - Operations and Maintenance Guidelines and Procedures document.</p>



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)
Solid / liquid wastes	adequate time for maintenance. It is also fenced to prevent unauthorised entry and signs have been posted advising the public that the area is irrigated with recycled water. <u>Landfill</u> Emission significance of 1 Solid inert waste as well as solid putrescible wastes is disposed of at the landfill facility. All wastes that are controlled waste (e.g. hydrocarbon-based wastes, clinical waste and solids from the WWTP) are removed from the project area by a licensed contractor for disposal to a licensed facility. <u>WWTP</u> Emission significance of 1 The concentrated sludge is drawn off by a tanker for off-site disposal by a licensed waste disposal operator. Waste management practices on site focus on minimising the generation of waste products through the application of Reduce, Reuse and Recycle principles.	No level of socio-political concern.	E – No regulation, other management mechanisms.	LIC – Conditions will be added to the licence relating to landfill management and windblown waste.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> . Environmental Protection (Controlled Waste) Regulations 2004.
Hydrocarbon/chemical storage	<u>Landfill</u> Emission significance of 1 No hydrocarbons or chemicals are stored at the landfill. All relatively small quantities at the project laydown and the camp workshop. All hydrocarbons and chemical waste are removed from site by a licensed waste carrier and disposed of at an approved facility. <u>WWTP</u> Emissions significance of 1 All chemicals associated with the WWTP are stored in a secure appropriately designed storage area. The unit is ventilated and includes a safety shower, eyewash and green safety light. It also has lockable gates, signage and a spill containment tray. Other Infrastructure Two 55 000L fuel storage tank are located at the camp. Each	No level of socio political concern.	E – No regulation, other management mechanisms.	LIC – Conditions will be added to the relating to liquid chemical storage.	N/A.	General provisions of the <i>Environmental Protection Act 1986</i> . 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. Rio Tinto Iron Ore – IronSafe Standard 4.7 for the Storage of Flammable and Explosive Material.



ENVIRONMENTAL ASSESSMENT REPORT

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)
	<p>tank has a separate drive-through banded concrete slab to control any discharges and the concrete slab drains to a central collection point with a grille and a sump that allows the potentially hydrocarbon-contaminated water to be pumped out.</p> <p>Both tanks are double-skinned and compliant to the Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007 and Australian Standards 1940-2004. The storage and handling of flammable and combustible liquids.</p> <p>Rio Tinto's own internal Safety Standards is adhered to – IronSafe Standard 4.7 for the Storage of Flammable and Explosive Material and a Dangerous Goods Licence has been gained for the site.</p>					
Native Vegetation Clearing	<p>Emissions significance of 1</p> <p>All clearing of native vegetation is in accordance with the conditions of the Native Vegetation Clearing Permit CPS 3878/2.</p>	No level of socio political concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A.	<p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p>Environmental Protection (Clearing of Native Vegetation) Regulations 2004.</p> <p>Native Vegetation Clearing Permit CPS 3878/2.</p>
Contaminated site identification	<p>Emissions significance of 1</p> <p>This premises is not currently registered as a contaminated site under the <i>Contaminated Sites Act 2003</i>.</p>	No level of socio political concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A.	<p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p><i>Contaminated Sites Act 2003</i>.</p>



4.0 GENERAL SUMMARY AND COMMENTS

Hamersley Iron have constructed the Koodaideri Exploration Camp to support an extensive drilling program. The camp provides accommodation for up to 120 personnel at any one time as well as facilities for the project team and additional infrastructure. The landfill will receive both inert and putrescible waste generated by the Koodaideri project and camp and during normal operation should receive less than 50t/yr. The WWTP has a design capacity of 46.5m³/day.

As shown in Table 5, emissions and discharges related to the operation of the landfill and WWTP are a low risk to the environment if managed as per Hamersley Iron commitments and should not result in significant impacts to the environment.

The facilities are also subject to the general provisions of the *Environmental Protection Act 1986* relating to the causing and reporting of pollution and will be subject to inspections by DEC officers.



OFFICER AMENDING REPORT

Sonya Poor

Position: Environmental Officer
Pilbara Regional Office
Department of Environment and Conservation
9182 2009

March 2013

ENDORSEMENT

Alana Kidd

Position: A/Regional Leader – Industry Regulation
Pilbara Regional Office
Department of Environment and Conservation
9182 2037

March 2013

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APPENDIX A: EMISSIONS AND DISCHARGES RISK ASSESSMENT MATRIX

Table 6: 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 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 7: 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 8: 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

