



# Partial Decision Document

## *Environmental Protection Act 1986, Part V*

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**Proponent:** Pilbara Iron Company (Services) Pty Ltd

**Licence:** L4762/1972/14

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**Registered office:** Level 22, Central Park  
152-158 St Georges Terrace  
PERTH WA 6000

**ACN:** 107 210 248

**Premises address:** Greater Tom Price Iron Ore Mine  
Mining tenement AML70/4 sections 1-7, 10, 13, 232 – 235, 258,  
L47/136, L47/209, L47/210, L47/342, L47/645, AG70/3, and G47/1258  
within coordinates: E542850 N7491490; E548350 N7488660; E580100  
N7475190; E584500 N7483800  
MOUNT SHEILA WA 6751

**Issue date:** Thursday, 21 May 2015

**Commencement date:** Thursday, 28 May 2015

**Expiry date:** Wednesday, 27 May 2020

### Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue an amended licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Ty Hibberd  
Licensing Officer

Decision Document authorised by: Alana Kidd  
Manager Licensing – Resource Industries



## Contents

Partial Decision Document	1
Contents	2
1 Purpose of this Document	2
2 Administrative summary	3
3 Executive summary of proposal and assessment	4
4 Decision table	5
5 Advertisement and consultation table	8
6 Risk Assessment	10
Appendix A	11
Appendix B	15
Appendix C	16

### 1 Purpose of this Document

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



## 2 Administrative summary

Administrative details															
Application type	Works Approval <input type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input checked="" type="checkbox"/> Works Approval amendment <input type="checkbox"/>														
Activities that cause the premises to become prescribed premises	<table border="1"> <thead> <tr> <th>Category number(s)</th> <th>Assessed design capacity</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>40,000,000 tonnes per year</td> </tr> <tr> <td>6</td> <td>11,000,000 tonnes per annual period (Western Turner Syncline Stage 2-B1 and Section 17 Deposits) 3,000,000 tonnes per annual period (South East Prongs Deposit)</td> </tr> <tr> <td>12</td> <td>10,000,000 tonnes per year</td> </tr> <tr> <td>54</td> <td>320 cubic metres per day</td> </tr> <tr> <td>64</td> <td>6,000 tonnes per year</td> </tr> <tr> <td>73</td> <td>4,532 cubic metres in aggregate</td> </tr> </tbody> </table>	Category number(s)	Assessed design capacity	5	40,000,000 tonnes per year	6	11,000,000 tonnes per annual period (Western Turner Syncline Stage 2-B1 and Section 17 Deposits) 3,000,000 tonnes per annual period (South East Prongs Deposit)	12	10,000,000 tonnes per year	54	320 cubic metres per day	64	6,000 tonnes per year	73	4,532 cubic metres in aggregate
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	12	10,000,000 tonnes per year													
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	64	6,000 tonnes per year													
73	4,532 cubic metres in aggregate														
Application verified	Date: 06/07/2015														
Application fee paid	Date: NA														
Works Approval has been complied with	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>														
Compliance Certificate received	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>														
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>														
Commercial-in-confidence claim outcome	N/A														
Is the proposal a Major Resource Project?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	<table border="1"> <tbody> <tr> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>           Referral decision No:            Managed under Part V <input type="checkbox"/>            Assessed under Part IV <input checked="" type="checkbox"/> </td> </tr> </tbody> </table>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input checked="" type="checkbox"/>												
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Is the proposal subject to Ministerial Conditions?	<table border="1"> <tbody> <tr> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>           Ministerial statement No: 807 and 946 (Western Turner Syncline)             EPA Report No: 1325 and 1477         </td> </tr> </tbody> </table>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Ministerial statement No: 807 and 946 (Western Turner Syncline)  EPA Report No: 1325 and 1477												
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Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i> )?	<table border="1"> <tbody> <tr> <td>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> <td>Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> </tr> </tbody> </table>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>												
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>														
Is the Premises within an Environmental Protection Policy (EPP) Area If Yes include details of which EPP(s) here.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>														
Is the Premises subject to any EPP requirements? If Yes, include details here, eg Site is subject to SO <sub>2</sub> requirements of Kwinana EPP.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>														



### 3 Executive summary of proposal and assessment

Pilbara Iron Company (Services) Pty Ltd (the Licensee) operates the Greater Tom Price Iron Ore Mine (Greater Tom Price) under Part V operating Licence L4762/1972/14 for Category 5, 6, 54, 64 and 73 activities within Schedule 1 of the *Environmental Protection Regulations 1987*. Greater Tom Price is located on mining tenement AML70/4 within the east Pilbara region of Western Australia, approximately 5 kilometres (km) from the townsite of Tom Price.

The Licensee has requested a number of amendments to L4762/1972/14 relating to the design capacity for Category 5, the inclusion of Category 12, and the operation of two Category 64 waste dump landfills. As a part of this amendment, existing Licence conditions were also reassessed in accordance with Departmental reform as published on the Department of Environment Regulation's (DER) website under "*Administrative changes implemented within the Department of Environment Regulation*".

#### Category 5

The Licensee has requested that the design capacity for Category 5 be increased from 32,000,000 tpa to 40,000,000 tpa. Due to efficiencies achieved in mining and processing activities it is expected that the Greater Tom Price operations will have a future capacity of up to 40,000,000 tpa. The State Agreement limit for Greater Tom Price is 60,000,000 tpa.

#### Category 12

The Licensee has requested that Category 12 be included onto the Licence to account for new crushing and screening infrastructure constructed under Works Approval W5368/2013/1. A nominal design capacity of 10,000,000 tonnes per annum (tpa) was requested in case multiple plants are required onsite simultaneously in the future to process materials other than ore. The plants will be managed in accordance with the *Iron Ore (WA) Mobile Crushing and Screening Management Plan*, Rio Tinto, 2015 (RTIO-HSE-0235877) and Licence conditions.

#### Waste dump landfills

The Licensee has requested the addition of two Category 64 Class II putrescible landfills on the Licence, classified as 'waste dump landfills' by the Licensee. Both waste dump landfills, labeled WDL1 and WDL2 in Attachment 9 of L4762/1972/14, are operational on the Premises but were not on the Licence due to being under capacity (< 500 tpa). However, due to expansion of the Greater Tom Price mining area, the Licensee wishes to increase the design capacity for each of these waste dump landfills to 1,000 tpa and include them in the overall design capacity for Category 64 (currently 4,000 tpa). The waste dump landfills will accept Inert Type I and II wastes, Special Waste Type 1 and Putrescible waste (wooden pallets only) and will comply with existing conditions on the Licence.

#### Amendment summary

Changes to the Licence during this amendment include:

- Increased design capacity for Category 5 to 40,000,000 tpa;
- Inclusion of Category 12 (design capacity 10,000,000 tpa) and Licence condition L1;
- Inclusion of WDL1 and WDL2 and a capacity increase for existing Category 64 to 6,000 tpa (from 4,000 tpa);
- Amendment to condition L27 (previously L16) to include improvement requirements IR1 – IR3 relating to the Greater Tom Price Tailings Storage Facility (TSF), the Section 6 Pit and the MOC and Beneficiation Plant WWTPs;
- Removal of previous conditions 1, 2, 4, 7, 8, 9, 10, 16 – 20, 25, 37 and 38;
- Updated premises maps; and
- Administrative changes.

Where conditions have been added or removed from the existing licence these have been justified in Section 4. DER is currently undertaking a reform process. All Pilbara Iron licences will be systematically reviewed and updated in the near future, in consultation with the Licensee.





DECISION TABLE			
Licence section	Condition number L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Point source emissions to surface water including monitoring	L8 – L10	<p>The Licence has condition L8 (previously L13) relating to the monitoring of surface waters and dewatering discharge points at Greater Tom Price. There will be no changes to the frequency of monitoring or monitoring locations due to the inclusion of WDL1 and WDL2 and increased capacity for Category 64.</p> <p>The waste dump landfills (WDL1 and WDL2) are predominately for disposal of inert wastes, with the exception of wooden packaging and broken wooden pallets which are classed as putrescible. No hazardous waste will be placed in the waste dump landfills. The nearest surface water feature to WDL1 is the B1 dewatering discharge point which is approximately 1.9 km north-east, and to WDL 2 the Hardy River located approximately 2.45 km west. Stormwater at the waste dump landfills will be managed so that water that has come into contact with the waste is retained onsite. As such, the risk of contamination to surface water bodies from the operation of these waste dump landfills is considered to be low.</p> <p>Condition L9 (previously L14) has been updated to remove the targets from the Licence. The removal of reference to targets is in accordance with Departmental reform as published on DER’s website under “Administrative changes implemented within the Department of Environment Regulation” <a href="http://www.der.wa.gov.au">www.der.wa.gov.au</a>. The Licensee will be required to still compare the surface water monitoring results to the appropriate ANZECC 2000 water quality values in the Annual Environmental Report, including a comparison against previous years monitoring data.</p> <p>Condition L10 (previously L15) has been amended to reference infrastructure constructed to minimise erosion and scouring impacts at the discharge point.</p>	<p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p>DER public website at: <a href="http://www.der.wa.gov.au">www.der.wa.gov.au</a>.</p>
Emissions to land including monitoring	L2 – L4 and L18 – L26	<p>Details of DER’s assessment and decision making are included in Appendix A.</p>	<p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p><i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>.</p> <p>DER public website at: <a href="http://www.der.wa.gov.au">www.der.wa.gov.au</a>.</p>



<b>DECISION TABLE</b>			
<b>Licence section</b>	<b>Condition number L= Licence</b>	<b>Justification (including risk description &amp; decision methodology where relevant)</b>	<b>Reference documents</b>
<b>Fugitive emissions</b>	N/A	Details of DER's assessment and decision making are included in Appendix B.	General provisions of the <i>Environmental Protection Act 1986</i> .  <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> .  DER public website at: <a href="http://www.der.wa.gov.au">www.der.wa.gov.au</a> .
<b>Ambient quality monitoring</b>	N/A.	Previous condition L17 has been removed. The Licensee is required under Ministerial Statements 807 and 946 (Western Turner Syncline) to monitor and manage vegetation health at Greater Tom Price. Vegetation health can be adequately regulated by these Ministerial Statements.	Ministerial statements 807 and 946.
<b>Improvements</b>	L27	Details of DER's assessment and decision making are included in Appendix C.	General provisions of the <i>Environmental Protection Act 1986</i> .  <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> .  <i>Western Turner Syncline Stage 2 Water Quality Management Plan</i> .  <i>Tom Price TSF Seepage Investigation</i> (10 September 2015).  <i>National Environment Protection (Assessment of Site Contamination) Measure 1999</i> .



## 5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
19/03/2016	Proponent sent a copy of draft instrument (21 day amendment)	<p>The following comments were received on 10/03/2016:</p> <ul style="list-style-type: none"> <li>In relation to condition L9, the Licensee requested that “<i>appropriate ANZECC 2000 water quality trigger values</i>” be replaced by “ANZECC 2000 livestock drinking water quality trigger values”. The text “<i>appropriate ANZECC 2000 water quality trigger values</i>” was retained to maintain consistency with other Licences held by the Licensee.</li> <li>In relation to condition L27, IR2 and IR4, the Licensee believes information requests such as these do not warrant inclusion as specific Licence conditions. The Licensee states that other mechanisms exist to request information (e.g. email or letter) and that the Licensee is more than happy to provide this information following such a request. The Licensee further believes that inclusion of improvement conditions such as this does not align with recent discussions held with the DER Reform &amp; Strategy team during recent industry consultation.</li> </ul> <p>Whilst the DER acknowledges the Licensees preference to receive such requests though an alternate medium (e.g. email or letter), improvement conditions are the preferred method to request further information where an activity on the Premises has the potential to cause pollution or environmental harm. This allows for the Licence to be amended and issued irrespective of receiving this information, but in doing so acknowledges present knowledge deficiencies that must be addressed by the Licensee to maintain compliance and negate potential environmental harm. Requesting information though Licence conditions is consistent with Section 62A of the EP Act, and provides DER with the regulatory power to take enforcement action(s) should the improvement requirement, or information request(s), not</p>	<p>The following changes were made:</p> <ul style="list-style-type: none"> <li>The completion date for IR2 has been extended to 27 May 2016;</li> <li>DER has determined to remove IR3 from the Part V operating Licence given that investigations are being undertaken under the CS Act. The Licensee will continue to provide DER with progress reports in line with the Identification, Reporting and Classification of Contaminated Sites guideline; and</li> <li>The completion date for IR4 (now IR3) was extended for 3 months until Thursday, 30 June 2016.</li> </ul>





		<p>be met.</p> <ul style="list-style-type: none"><li>In relation to condition L27, IR3, the Licensee requested this item be removed given that the <i>Contaminated Sites Act 2003</i> (CS Act) is the principal legislation for the identification, recording, management and remediation of contaminated sites.</li></ul> <p>The Tom Price mining area was reported under the CS Act in June 2015 and has subsequently been classified as 'possibly contaminated – investigation required'. Since receipt of the site classification the Licensee has commissioned an independent and appropriately qualified consultancy, ERM Australia to undertake an Acid and Metalliferous Drainage (AMD) Review and Integrated Hydrogeological Risk Assessment for the Tom Price Iron Ore mine site to bridge the requirements of the CS Act.</p> <p>The Licensee believes that inclusion of IR3 is duplication between Part V and the CS Act. The Licensee states that they will continue to provide the DER progress reports in line with the Identification, Reporting and Classification of Contaminated Sites guideline (draft, September 2015).</p>	
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## 6 Risk Assessment

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

**Table 1: Emissions Risk Matrix**

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



## Appendix A

### Emissions to land including monitoring

#### (a) WWTPs

Greater Tom Price has four on-site packaged WWTPs:

- MOC WWTP – design capacity of 36m<sup>3</sup>/day;
- Beneficiation plant WWTP – design capacity of 36m<sup>3</sup>/day; and
- Mine camp WWTP1 and WWTP2 – combined design capacity of 248m<sup>3</sup>/day.

The Mine Camp WWTPs discharge treated effluent to two irrigation fields with a combined area of 7.7 hectares (ha).

Both the MOC and Beneficiation Plant WWTPs discharge via overflow pipes.

Three concreted sludge drying beds are installed adjacent to the Mine camp WWTPs to accept the sludge discharge. The sludge drying beds have inbuilt drainage to recirculate liquid draining from the sludge back into the process. Once dried, the inert dried sludge will be disposed of at an approved landfill site.

The expected water quality performance standards for all four WWTPs are outlined in Table 2 and the nutrient loading rates for the Mine camp WWTPs in Table 3.

**Table 2: WWTPs 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)	<30	20-50
Total Phosphorus (mg/L)	<8	6-12
Residual free Chlorine (mg/L)	0.5	N/A
pH (pH units)	6.5-8.5	6-9
<i>E.coli</i> (cfu/100mL)	<1000	10 <sup>5</sup> -10 <sup>6</sup>

\*Australian Guidelines for Sewerage Systems – Effluent Management (Secondary Treatment).

**Table 3: Mine Camp WWTPs - Expected nutrient loadings for the 7.7 ha irrigation field.**

Parameter	Nitrogen	Phosphorus
Maximum Throughput	248 m <sup>3</sup> /day	
Irrigation area	7.7 ha	
Effluent Quality	30 mg/L	8 mg/L
<b>Nutrient Loading</b>	<b>352 kg/ha/yr</b>	<b>94 kg/ha/yr</b>
<b>Guideline*</b>	<b>480 kg/ha/yr</b>	<b>120 kg/ha/yr</b>

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

#### Emission Description

*Emission:* Discharge of treated effluent to land via the irrigation sprayfields or overflow pipes.

*Impact:* Effluent discharged to land has the potential to result in degraded or waterlogged land, with soil or groundwater contamination arising where the effluent is either saline, turbid, nutrient enriched, and/or contaminated with metals.

*Controls:* With regard to the Mine Camp WWTPs, the irrigation sprayfields are fenced and signed to restrict personnel from accessing these areas. Site management is carried out as per a site Environmental Management Plan and includes regular inspections, weed management and servicing. Pooling of irrigated treated wastewater and surface runoff is unlikely due to sprayfield design (low drift fan-spray nozzles), vegetation uptake and the high evaporation rate experienced in the region. The irrigation sprayfields are located approximately 10 – 20 m above groundwater



level and there is no major drainage channels present in the irrigation sprayfields, mitigating any risk associated with high rainfall. The nearest sensitive receptor is the town of Tom Price 5 km north-east.

The MOC and Beneficiation Plant WWTPs discharge to land via separate overflow pipes.

The expected water quality performance standard for all four WWTPs is consistent with 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).

#### Risk Assessment

The Licensee's Annual Environmental Report for the 2014 reporting period noted that there were numerous exceedances of the effluent quality targets for the MOC and Beneficiation Plant WWTPs. Monitoring results demonstrate that the target for Total Suspended Solids of 40 mg/L was exceeded on two occasions for the Beneficiation Plant WWTP (quarter 1 and 4) and once from the MOC WWTP (quarter 4). For the MOC WWTP, the Total Nitrogen target of 50 mg/L was exceeded twice (quarter 3 and 4), as was the Total Phosphorus target of 12 mg/L (quarter 3 and 4). An explanation for these exceedances was not provided in the AER or AACR.

A review of the Licence as a part of this amendment also identified that the MOC and Beneficiation Plant WWTPs *do not* discharge to the Reclaim Dam as previously advised by the Licensee. Consequently, DER requested further information on these WWTPs. The Licensee advised DER that the MOC WWTP discharges treated effluent to a confined earthen sump which is located to the immediate south of the WWTP. Effluent evaporates from the sump and is not connected to the Reclaim Dam. The Beneficiation Plant WWTP discharges treated effluent to an earthen drain which runs north-east from the plant, leading towards the Reclaim Dam approximately 2 km away. Under normal operating conditions it is unlikely that treated effluent reaches the Reclaim Dam and therefore the primary disposal method is evaporation via the drain with seepage also likely. Consequently, the Licensee has been non-compliant with condition L3, which required effluent from the MOC and Beneficiation Plant WWTPs to be discharged to the Reclaim Dam only.

*Consequence:* Minor

*Likelihood:* Possible

*Risk Rating:* Moderate

#### Regulatory Controls

The Greater Tom Price WWTPs, specifically the MOC and Beneficiation Plant WWTPs, have been assessed as posing a moderate environmental risk. Risk was determined based on the following criteria:

- Poor treatment performance (i.e. target exceedances) and a lack of information to determine whether sufficient controls were applied to improve the quality of the effluent discharged; and
- Misinformation on the environmental siting of the MOC and Beneficiation Plant WWTPs which were thought to discharge to the Reclaim dam.

Previous conditions L7 and L8 relating to effluent water quality were removed in accordance with Departmental reform as published on DER's website under "*Administrative changes implemented within the Department of Environment Regulation*" [www.der.wa.gov.au](http://www.der.wa.gov.au). However, due to the moderate risk rating, improvement condition L27 (IR4) has been included on the Licence requiring the Licensee to provide further information on the MOC and Beneficiation Plant WWTPs including as assessment of their environmental risk. Licence conditions relevant to these WWTPs will be re-assessed following an assessment of this information.

Condition L2 (previously L3) was amended to accurately reflect WWTP discharge locations on the Premises (i.e. the MOC and Beneficiation Plant WWTPs do not discharge to the Reclaim Dam).

Condition L3 (previously L5) requires the Licensee to record the monthly cumulative volume of treated wastewater being discharged from each WWTP. Previous condition L4 was removed as an operational device for measuring the cumulative volume of all treated wastewater is required to ensure compliance with re-classified condition L3.



Condition L4 (previously L6) requires the Licensee to monitor the WWTPs water quality on a quarterly basis and report these results in the Annual Environmental Report for assessment. This condition has been updated to ensure the Licensee provides an assessment and comparison against the *National Water Quality Management Strategy, Australian Guidelines for Sewerage Systems - Effluent Management*, Agriculture and Resource Management Council of Australia and New Zealand and Australian and New Zealand Environment and Conservation Council, 1997 (NWQMS 1997) and all recorded monitoring data. A definition for NWQMS 1997 has been added to the Licence.

Residual Risk

*Consequence:* Minor

*Likelihood:* Possible

*Risk Rating:* Moderate

**(b) Waste dump landfills**

Emission Description

*Emission:* Waste disposal to the waste dump landfills (WDL1 and WDL2).

*Impact:* Windblown waste and potential for contamination of surrounding environment.

*Controls:* The Licensee states that there will be no hazardous waste placed in the waste dump landfills and that the waste material being disposed of is not expected to generate wind-blown rubbish or leachate. The waste dump landfills will accept rubber (conveyor belts including those on low grade steel spools, screen mats and tyres), wooden packaging, broken wooden pallets, inert plastic, concrete rubble and steel products that are unable to be recycled or otherwise disposed of. Signage installed will indicate acceptable, approved waste that can be disposed of at the waste dump landfills.

WDL1 was constructed to accept waste from the B1 mining area. The nearest sensitive receptor is the B1 dewatering discharge point which is approximately 1.9 km to the north-east. The depth to the water table at this location is greater than 50 metres (m).

WDL2 was constructed in 2011 to accept waste from the Western Turner Sycline mining area. The nearest sensitive receptor to WDL 2 are the Hardy River and Tom Price town, located approximately 2.45 km west and 19 km east of WDL-2, respectively. Depth to groundwater at the landfill is greater than 65 m from the surface

No environmental monitoring occurs at WDL1 or WDL2. The Licensee considers that the risk associated with the waste types disposed at these waste dump landfills does not warrant specific monitoring. No issues have been identified at these sites to date. Some groundwater monitoring does occur in the vicinity of the waste dump landfills (as per the Groundwater Operating Strategy associated with RiWI Act Licences GWL107418 and GWL167297), but this is to manage the potential impacts of dewatering. Potential impacts to groundwater from the operation of these waste dump landfills should be detected through this monitoring.

Stormwater will be managed at the waste dump landfills so that water that has come into contact with the waste is retained onsite.

Risk Assessment

*Consequence:* Insignificant

*Likelihood:* Rare

*Risk Rating:* Low

Regulatory Controls

The existing Licence has conditions relating to the management of the waste dump landfills (now L23 – L26). Condition 23 specifies the types of waste that may be accepted at a *waste dump landfill*, while conditions 24 - 26 are operational conditions ensuring appropriate covering and positioning of waste so as to minimise environmental risks. No additional conditions are required on the Licence for management of WDL1 or WDL2.

Residual Risk

*Consequence:* Insignificant



*Likelihood: Rare*  
*Risk Rating: Low*

### **(c) Soil Bioremediation Facilities (Landfarm)**

#### Emission Description

*Emission:* Discharges of hydrocarbon contaminated soils beyond the landfarm area into the environment.

*Impact:* Hydrocarbons in high concentrations can have toxic effects on aquatic organisms if allowed to enter surface waters near to the facility.

*Controls:* Soil bioremediation facilities are bunded to prevent the ingress and egress of stormwater during heavy rain events. In the rare event that a significant rainfall causes the release of hydrocarbon contaminated stormwater runoff beyond the landfarm area it is likely that concentrations would be very low.

#### Risk Assessment

*Consequence: Minor*  
*Likelihood: Rare*  
*Risk Rating: Low*

#### Regulatory Controls

Previous conditions L37 and L38 for the soil bioremediation facility have been removed as the risk associated with this activity has been assessed as low. The *Environmental Protection (Unauthorised Discharges) Regulations 2004* adequately regulate the discharge of hydrocarbon contaminated materials. The general provisions of the *Environmental Protection Act 1986* with respect to the causing of pollution and environmental harm also apply. As contaminated soils are effectively separated from the environment through bunding and hardstanding, the regulation of how soils are remediated is not required. The Licensee will still be required to effectively treat contaminated soils prior to disposal or have contaminated soils removed by a licensed contractor.

#### Risk Assessment

*Consequence: Minor*  
*Likelihood: Rare*  
*Risk Rating: Low*



## Appendix B

### Fugitive Emissions

#### Emission Description

*Emission:* Fugitive dust may result from the daily operation of Greater Tom Price where sources of dust can be attributed to stockpiles, materials handling and crushing, and vehicle movements on dirt roads.

*Impact:* Dust emissions can be harmful to human health and the environment. Elevated total suspended particulates (TSP) can impact ambient environmental quality resulting in amenity impacts and can smother vegetation. The nearest sensitive receptor is the town of Tom Price approximately 5 km north-east providing a sufficient buffer distance to minimise impacts.

*Controls:* The increased capacity for Category 5 has the potential to cause further dust emissions from the Premises. However the Licensee has stipulated that no change to dust emissions will occur onsite to what has been previously assessed through the Part V approval processes.

Existing dust controls which will continue to be implemented include:

- Spraying working surfaces with water using water carts;
- Stockpile water sprays;
- Water sprays on crushing plants;
- Dust collection systems such as baghouses, coverings on conveyors / transfer points and dust filters;
- Sealing of working surfaces where practicable; and
- Rehabilitation of disturbed areas where possible.

#### Risk Assessment

*Consequence:* Insignificant

*Likelihood:* Possible

*Risk Rating:* Low

#### Regulatory Controls

Given the Licensee's regulatory controls, the siting of the Premises (5 km from Tom Price) and excess of water onsite (dewatering water), the risk of fugitive dust emissions was assessed as low. Consequently, previous conditions L1 and L2 were removed in accordance with Departmental reform as published on DER's website under "*Administrative changes implemented within the Department of Environment Regulation*" [www.der.wa.gov.au](http://www.der.wa.gov.au). Dust emissions can be sufficiently regulated under Section 49 of the *Environmental Protection Act 1986*.

#### Risk Assessment

*Consequence:* Insignificant

*Likelihood:* Possible

*Risk Rating:* Low



## Appendix C

### Improvements

Condition L27 (previously L16) was amended to remove reference to completed tasks and include three additional Improvement Requirements (IR).

#### IR1 - Dewatering and site-specific trigger values (SSTVs)

An improvement program was added to the Licence in May 2015 to allow the Licensee to develop and evaluate site-specific trigger values (SSTVs) for dewatering at Western Turner Syncline 2 (WTS2) B1 deposit to a local watercourse to the north of B1 and the Beasley River. The intent was to develop these SSTVs over a 12 month period, with a progress report to be provided to DER by 30 October 2015. The progress report required for this condition was provided, and hence this component of the improvement program was completed as required. The Licensee will continue their hazard analysis of the dewatering discharge for an additional 6 months.

Upon completion of the hazard analysis, as per IR1, the Licensee will provide the CEO with a revised version of the '*Western Turner Syncline Stage 2 Water Quality Management Plan*' specifying applicable SSTVs. Licence conditions will be reviewed upon receiving the updated management plan.

#### IR2 - Seepage issues with the tailings storage facility (TSF)

IR2 has been added to condition L27, Table 3, in relation to the Greater Tom Price TSF. On 15 July 2015 the Licensee notified DER of seepage linked to the TSF. Water associated with this seepage had extended beyond the Premises for L4762/1972/14. On 10 September the Licensee provided DER with an investigation report compiled by Bruce Brown (Rio Tinto) titled '*Tom Price TSF Seepage Investigation*' (10 September 2015) which identified that the seepage was due to the supernatant pond being in contact with natural ground.

DER requires further information relating to the potential environmental risk of this seepage to ensure appropriate actions are being undertaken to rectify this issue. Consequently, IR2 has been included on the Licence requiring a future report on the Greater Tom Price TSF seepage. The report will evaluate the seepage extent, water quality parameters and potential environmental risks of identified concentrations and extent, including proposed corrective measures and timeframes. The report should reference the '*Tom Price TSF Seepage Investigation*' report and corrective actions undertaken in line with the recommendation(s) of that report.

The report is required to be submitted to the CEO of DER by Friday, 27 May 2016.

#### IR3 – MOC and Beneficiation Plant WWTPs

As discussed in Appendix B, a review of the Licence has identified that the MOC and Beneficiation Plant WWTPs do not discharge to the Reclaim Dam as specified by condition L3.

These WWTPs have been assessed as posing a moderate environmental risk due to:

- poor treatment performance (i.e. target exceedances) and a lack of information to determine whether sufficient controls were applied to improve the quality of the effluent discharged; and
- misinformation on the discharge point environmental siting and therefore the discharge locations have not been assessed and are not correctly represented in the Licence.

Consequently, IR4 has been included in condition L27 requiring the Licensee to submit a report on the MOC and Beneficiation Plant WWTPs including information on, but not limited to, the following:

- a review of treatment performance against the manufacturers specifications and appropriate guidelines (e.g. NWQMS 1997);
- a review of nutrient loading rates to the discharge points depicted in Attachment 4;
- a risk analysis of the discharge locations (e.g. soil type and permeability, vegetation type, depth to groundwater and neighbouring sensitive receptors); and
- a statement of environmental risk of current operations and, where found to be unacceptable, actions proposed to mitigate environmental risk (with set timeframes).