Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

Part V Division 3 of the *Environmental Protection Act 1986*

Licence Number	L8967/2016/1
Licence Holder	Roy Hill Infrastructure Pty Ltd
ACN	130 249 633
File Number	DER2016/000615
Premises	Roy Hill Port Bulk Handling Facility and Screening Plant Legal description – Lot 370 on Deposited Plan 35619 Certificate of Title Volume LR3118 Folio 753 Reserve 50892: Lots 1199, 1200, 1201, 1203, 1279, 1280, 1281, 1301, 1302, 1303 and 1304 on Deposited Plan 70562 Lot 372 on Deposited Plan 35620 Certificate of Title Volume LR3118 Folio 755 As defined by the coordinates in Schedule 1 of the Revised Licence
Date of Report	6 September 2024
Decision	Revised licence granted

Michael Greenslade

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MANAGER, PROCESS INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L8967/2016/1 is held by Roy Hill infrastructure Pty Ltd (Licence Holder) for the Roy Hill Port Bulk Handling Facility and Screening Plant (the Premises), located in Port Hedland.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L8967/2016/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 31 October 2023, the Licence Holder submitted an application to the department to amend Licence L8967/2016/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Updates to existing bulk material loading activities:
    - Bulk handling of up to 5 million tonnes per annum (Mtpa) of iron ore using a front end loader (FEL) to load road trains in a quad configuration at the stockyard.

      No changes to total approved material loading or unloading capacity is proposed (Cat 58 – Bulk material loading or unloading currently approved up to 70,000,000 tons of iron ore per annual period).
- Re-direction of untreated wash water from the screenhouse sumps to sedimentation pond (SB1-01); and
- Provisions to relocate dust monitors and the weather station to new locations within the prescribed premises.

No further changes to the aspects of the existing Licence relating to Category 5 or 58 have been requested by the Licence Holder.

Updates to prescribed premises tenure

Prescribed premises tenure has been updated as part of this Licence Amendment. The Licence holder has provided proof of occupancy for these leases. There are no changes required to prescribed premises boundary.

Additional bulk material loading activities

The proposal involves reclaiming iron ore from dead ore canyons (i.e. Canyon A & D) – shown in Figure 2. This will involve bulk handling of lump, fine and blended ore product. Dead ore stockpiles/canyons are described as those stockpiles that are out of reach of the reclaimers and therefore will be front-end loaded to the active stockpiles for reclamation. The reclaiming of dead ore is an ongoing requirement and does not have a defined reclaiming timeframe.

There is no expected change in the product quality or source from what is currently being produced and exported at the premises. The stockpiled ore is expected to meet dust extinction moisture (DEM) specification and where it is required, dust control measures such as water sprays and restrictions on loading in specific wind conditions will be implemented.

Operations will involve approximately four trucks per hour over a 24hr period. It was advised that only one front end loader will be utilised at any one time.

For noting, the department will only regulate the loading of iron ore and haulage of iron ore within the extent of the prescribed premises boundary and haulage outside of this boundary falls under the jurisdiction of the local government.

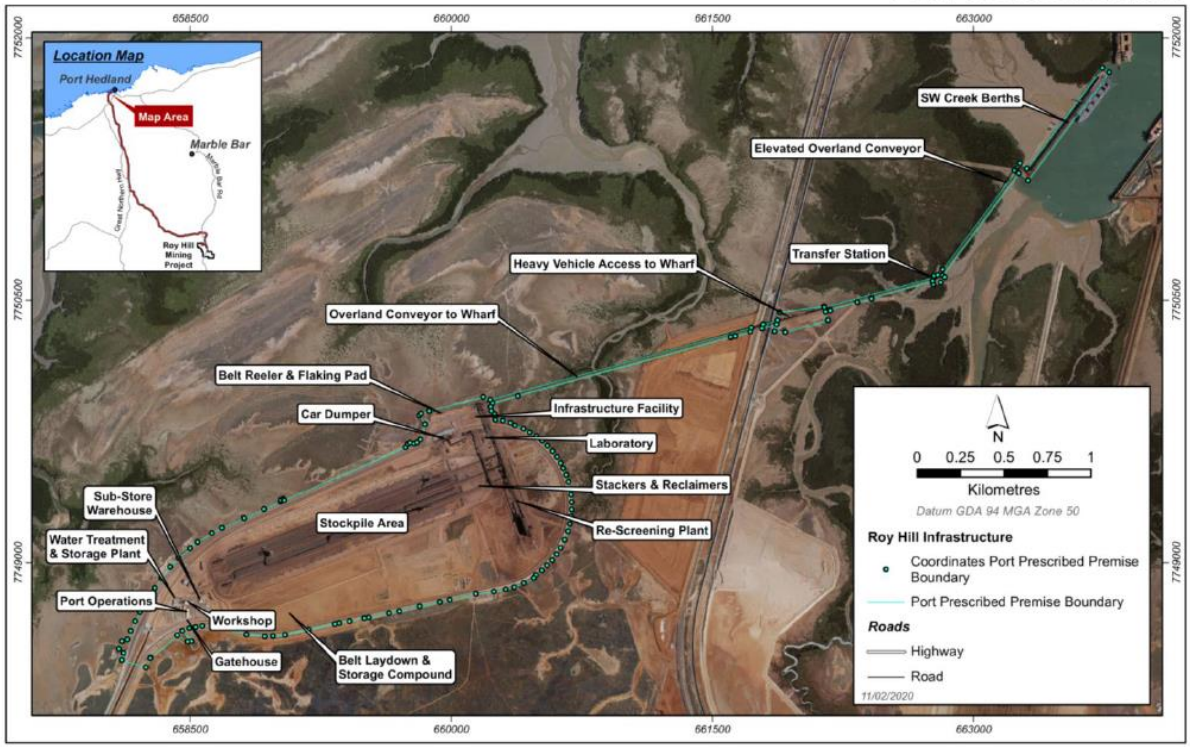

Figure 1 – Roy Hill Infrastructure

Figure 2 – Ore from dead canyons A and D proposed to be reclaimed.

Potential dust source locations within the stockyard and dead canyons are shown in Figure 3, and location of sealed and unsealed sections of road used by the road trains in shown in Figure 4.

Figure 3 - Location of bulking activities and potential dust sources

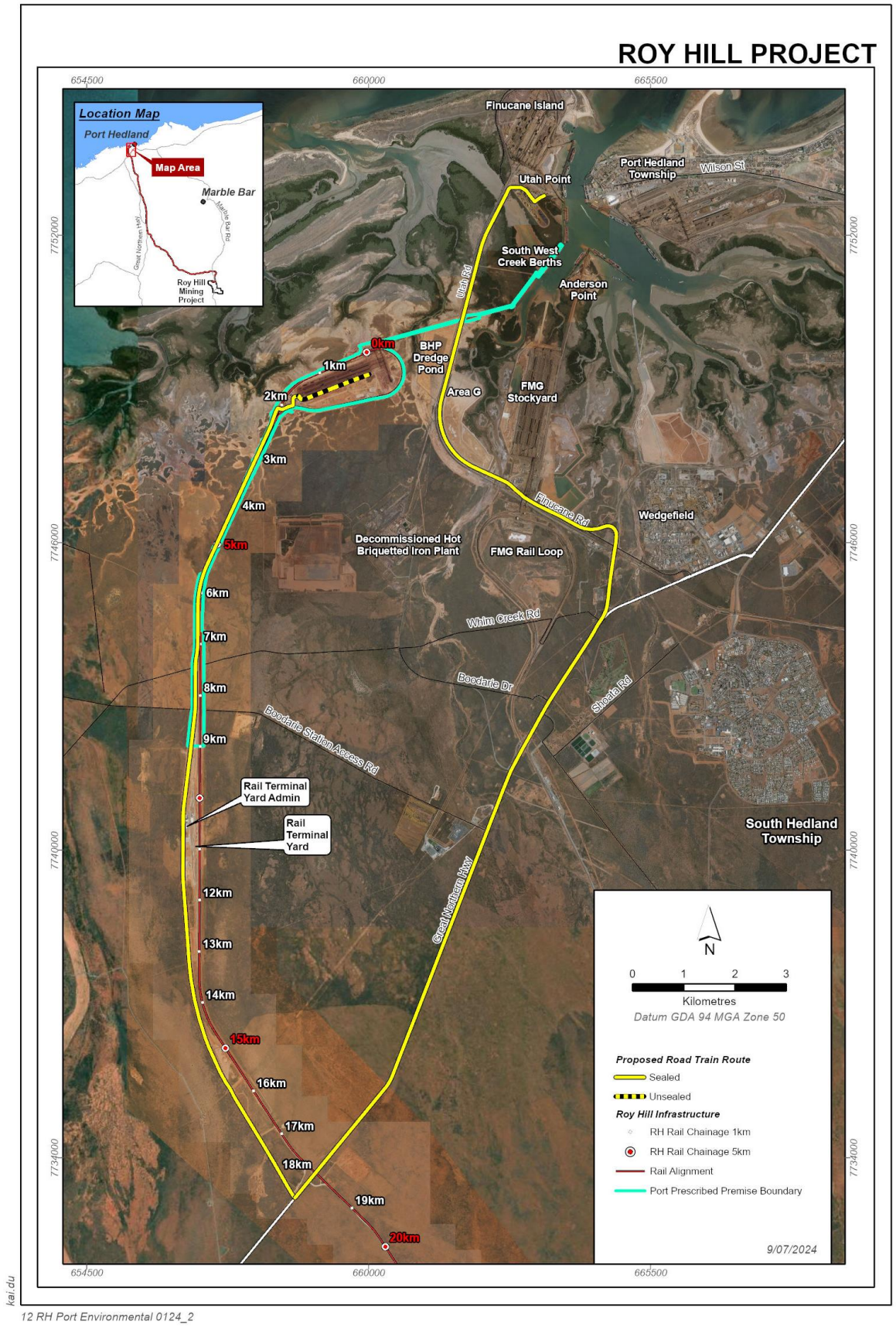

Figure 4 - Proposed road train route

As part of the amendment proposed, the Licence Holder engaged consultant Environmental Technologies & Analytics (ETA) to undertake an air quality assessment to assess the potential increase of dust emissions associated with bulking via front end loading and hauling an additional 5Mtpa of iron ore from the RHI port facility to Utah Point Port.

The ETA (2023) air quality modelling included the following scenarios:

(i) Base case – Roy Hill at 70 Mtpa

(ii) Bulking scenario – 5 Mtpa bulking with 70 Mtpa incoming and 65 Mtpa outgoing from the Roy Hill Port Facility.

ETA used the dispersion model AERMOD for its air quality assessment. The model was configured in accordance with the work undertaken as part of the PHIC Cumulative Air Model (CAM).

The dispersion modelling study incorporated site-specific metrological data, emissions information, source characteristics, and the location of model receptors.

Potential cumulative emissions were also modelled as part of the assessment incorporating emission sources from BHP operations at Nelson Point and Finucane Island, Pilbara Ports Authority (PPA) Utah Point (multiple user) operations, and the Fortescue Metals Group operations at Anderson Point.

Table provides a comparison of the predicted modelled in-isolation (no background) and cumulative (with background) 24-hr ground level concentrations of PM_{10} at Taplin St for the base case for the currently approved Roy Hill operations at 70 Mtpa and the bulking scenario (with dust abatement).

Table 1 - Predicted 24-hour ground level concentrations of PM_{10} at Taplin St reproduced from the Roy Hill application (µg/m³).

	70Mtpa Scenario (Base case)		Bulking Scenario	
	Roy Hill – no background	Cumulative – with background	Roy Hill – no background	Cumulative – with background
Maximum	10	200	8	199
99th Percentile	7	74	6	73
95th Percentile	4	57	4	55
90th Percentile	3	51	2	50
75th Percentile	1	43	1	42
Average	1.0	34.4	1.0	33.8
Count >70 µg/m³	0	7	0	7

For the bulking scenario an emission reduction of 80% was applied to account for the application of chemical treatment on the unsealed sections of the road used by the road trains.

Roy Hill notes that the dispersion modelling predicted no increases of 24-hour ground level concentrations of PM_{10} at Taplin St for both the isolation and cumulative scenarios. However the model predicted a potential additional excursion of the PM_{10} 24-hour air guideline value of 70µg/m³, for the cumulative bulking scenario.

DWER technical review of air quality

A technical review of the air quality impact assessment was conducted by the department and determined that:

- Port Hedland Industries Council (PHIC) Cumulative Air Model (CAM) metrological dataset was used for this modelling, which is acceptable.
- The modelling performed met the Departments *Air Quality's Modelling Guidance Notes* (DoE, 2006).
- The modelling results for Taplin Street indicate that increasing production by 5 Mtpa makes a negligible difference to daily concentrations and guidelines exceedances. However, the estimation of fugitive dust emissions is a source of significant uncertainty. Consequently, fugitive dust modelling results should not be relied upon as primary evidence when assessing a proposal.

Re-direction of untreated wash water from screenhouse sumps

Untreated wash water from the Screenhouse sumps will be re-directed to the sedimentation pond (SB1-01 – Figure 5), this will bypass the current sump which would have involved the water passing through an oil water separator (OWS) prior to discharge. From the sedimentation pond, the water will overflow during high rainfall events to land via the culvert 3 which discharges to the tidal mangrove flats adjacent to the bulk handling and screening plant.

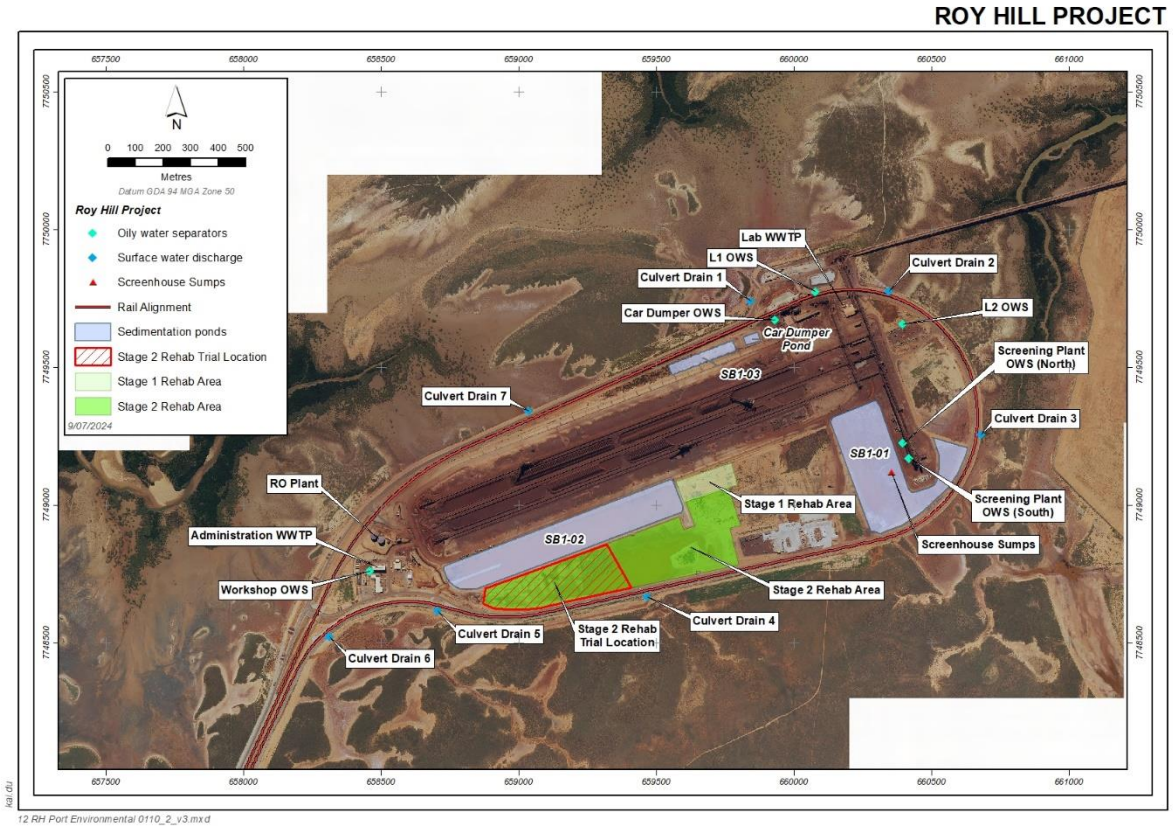

Figure 5 – SB1-01 and Culvert Drain 3 location.

The Licence Holder has advised that the reasoning for this change is that the current screenhouse south OWS is unable to process the volume of sediment laden wash water being collected from the screenhouse resulting in a high level of sediment blocking the filters within a

couple days of operation. The water being processed through the OWS is from the work area washdown within the plant, rainfall events that inundate bunds and runoff from infrastructure surrounding the screenhouse. The Licence Holder has advised that although it is heavy with sediment, due to the nature (source) of this wash down water is bears low risk of hydrocarbon contamination and that the proposed redirection will not result in contamination of the environment. Sampling of the untreated wash water has been conducted over a four-month period with all results recording a total recoverable hydrocarbon (TRH) levels below 15 mg/L.

Proposed controls by the Licence Holder include monitoring of hydrocarbon levels in water discharged into SB1-01. If results identify elevated TRH C6-C40 level above 15 mg/L, the relevant system will be isolated, and the event / wash water will be captured as an incident. Additionally, it will trigger an investigation to determine the extent of contamination and for cleanup required.

The sediment in the wash water entering SB1-01 will be allowed to settle before regularly being emptied by a FEL prior to it drying out. The culvert drains are designed to only allow discharge during rainfall events with a capacity of 160,000m^3.

Provisions to relocate dust monitors and the weather station to new locations within the prescribed premises boundary

There are currently six dust monitors (DM1-6) and one weather station located at the premises. The Licence Holder has advised that future port upgrades have the potential to impact the location of this infrastructure, but as designs are yet to be finalised, the final locations cannot be confirmed at this time. The interim proposed locations are provided in Figure 6. Due to this uncertainty the Licence Holder is requesting flexibility to relocate this infrastructure and has advised that this will not result in any impact to the environment. The requested changes to the licence conditions are for the final relocated dust monitors to be consistent with Australia Standard AS3580.1.1 Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment (AS3580.1.1), and the calibration of relocated dust monitor and meteorological station will be conducted by an experienced technician in accordance with manufacturers specifications.

As per the proposed locations in Figure 6, DM1 and DM5 will not be relocated and DM2, DM3 and DM4 will be moved approximately 20 metres from the existing location. Licence Holder has advised that as the move is less than 50 metres apart, it will not affect the wind direction vectors and that the data collected from these new locations are still representative of historical data from existing locations / data. The Licence Holder has advised that to support this move, they will undertake a comparison of the wind direction vectors and provide any proposed changes as part of the compliance report that will be submitted to confirm relocation of monitors. DM6 will need to be relocated 1km from the current location, as the new upgraded designs would prevent dust monitors from being relocated near the original location. Unlike the other relocations, DM6 will not have continuity with historical data due to the significant change in location, however the new location (on the western edge of the prescribed premises) may be used as a background monitor. The Licence Holder suggests that while the move of DM6 will not allow for continued monitoring, that emissions from the sedimentation basin SB1-02 and rehabilitation areas will be monitored by DM4 and DM5.

The Licence Holder has advised that the monitors will be relocated in a manner that would ensure minimal impact to the monitoring network including: (1) only one to be relocated and confirmed as calibrated and operational at a time and, (2) if the dust monitor is offline for longer than 24 hours, the Licence Holder has committed to installing a temporary dust monitor adjacent to existing location which will be of the same type/technology used for the existing monitor to minimise the potential for variation in monitoring data.

The weather station is also proposed to be relocated 20 metres from the existing locations and the Licence Holder has advised that they will engage an air quality expert to ensure the new

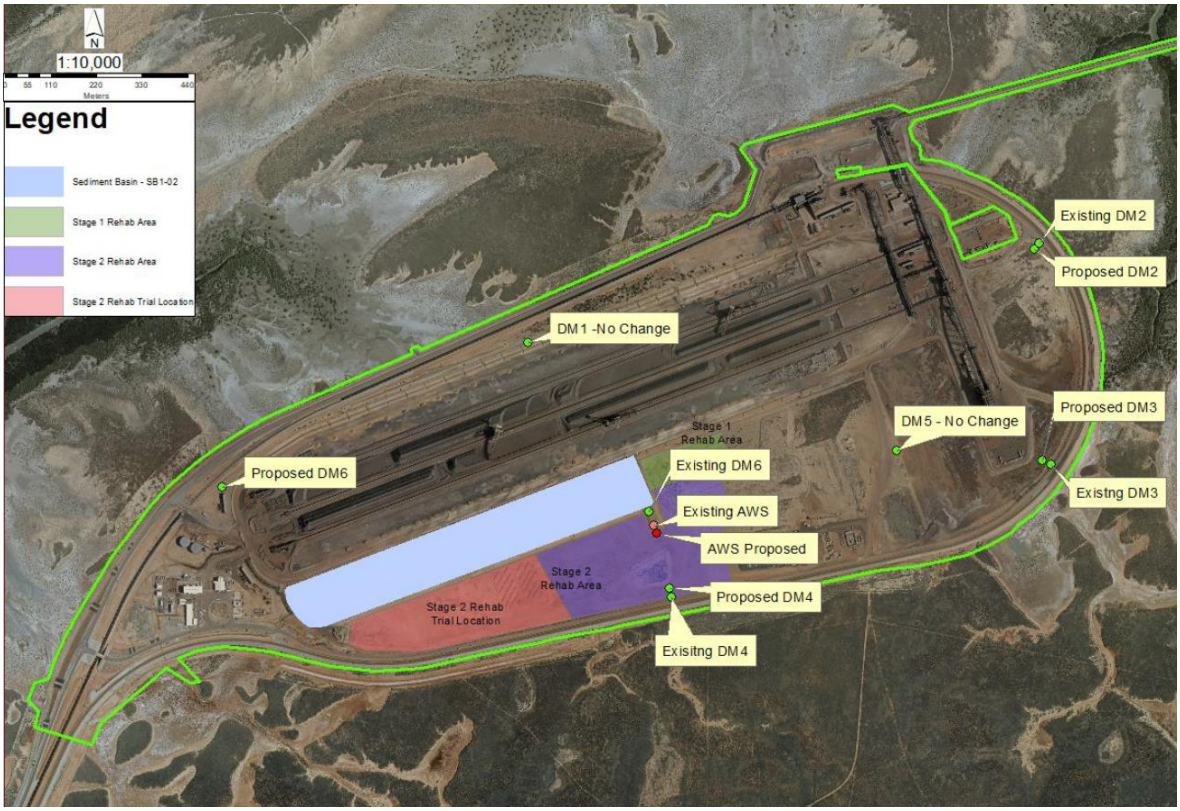

Figure 6 – Existing and proposed location of dust monitors and weather station.

locations for the station meets the relevant Australian standards. Unlike the dust monitors, a temporary station will not be installed during the expected 2 weeks relocation time, and instead the Licence Holder will rely on the use of BOM and Yule monitoring stations to obtain wind data (speed and direction) and this will be compared against the equipment on the dust monitors to see if the observations at the premises appear consistent with the BOM and Yule data. The Licence Holder has suggested that this method will not result in significant risk in their ability to monitor dust emissions or implement dust management controls in response to dust level exceedances.

The Licence Holder acknowledges that the upgrades to the ports activities (which will trigger the need to relocate the dust monitors/weather station) will require an air quality assessment and should this investigation indicate that additional monitoring locations are required, approvals will be sought under Part V of the *Environmental Protection Act.*

DWER technical review of proposed air quality monitor re-location

A technical review of the proposed alteration to the premises air quality monitoring network was conducted by the department and determined that:

- The relocation of monitors DM2, DM3 and DM4 would be unlikely to impact the existing dust monitoring network or comparison with historical data, nor would it require changes to the management trigger arcs.
- The proposed location of DM6 could offer advantages as an upwind boundary monitor when the wind blows towards the port, while also providing coverage of the western side of the proposed activities.
- Consideration has been given to the justification for allowing flexibly to move monitoring stations, provided that:

- the purpose of the monitoring remains the same,
- the wind arcs of influence are reassessed,
- comparisons with historical data are not impacted.

- It is recommended that the licence holder uses BOM wind data during the AWS 2-week offline period.

The technical review also noted that the historical data from the relocated DM6 monitor would not be compatible for time series analysis comparison with data from the new location. It is recommended that the management triggers and reportable event values for DM6 in the licence be reviewed. Future data reports should include the new location details to avoid confusion for data analysis.

2.3 Part IV of the EP Act

The Roy Hill Port Expansion Project has been assessed under Part IV of the EP Act by the Environmental Protection Authority (EPA). It is subject to the requirements of Ministerial Statement 1206 (MS 1206), which was published on 31 July 2023.

Included in the statement are conditions to:

- Manage disposal of dewatered groundwater to South West Creek.
- Manage terrestrial vegetation, ground and mangrove disturbance.
- Ensure no adverse impacts on the marine environmental values of Ecosystem Health, Fishing and Aquaculture, Recreation and Aesthetics, Industrial Water Supply, Cultural and Spiritual.
- Ensure that for Ecosystem Health the following levels of ecological protection are to be achieved:
  - Moderate Ecological Protection Area; and
  - High Ecological Protection Area.

MS 1206 requires the implementation of management plans with monitoring and reporting protocols to manage the above sensitive receptors. Consequently, these sensitive receptors have not been considered as part of the Part V risk assessment for this licence amendment application.

The Delegated Officer notes that there are no specific conditions listed within MS 1206 that directly relate to the management or control of Part V prescribed activity emissions and discharges. Therefore, all emissions and discharges related to the proposed changes to Part V prescribed activities will be considered and risk assessed under this licence amendment application.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table 2 below. Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	Source: • operation of mobile equipment (FEL and road trains) Activities: • reclaiming iron ore from dead ore canyons (i.e. Canyon A & D); • direct loading of iron ore (using a single FEL) into road trains; and • transport of iron ore via haul road (within prescribed premises boundary)	Air/windborne pathway	The Licence holder is committed to achieving no net increase to dust emissions in Port Hedland and to maintain product at above Dust extinction moisture (DEM) levels. The stockpile surface moisture content is managed by an automated water cannon activation system, using wind anemometer and manual intervention capability, to prevent fugitive dust generation. These stockyard water cannons will have an average monthly availability rate of 90% or more. All dust equipment installed will be maintained and verified to ensure the dust emission reductions are being achieved. A chemical dust suppressant will be applied to: • roads used during FEL activities; and • haul road route on the unsealed sections of the road. Application of water within the FEL operational area. **Dust Monitoring** Dust will continue to be monitored at the premises as per current licence requirements, however dust monitors and weather station are proposed to be relocated due to port upgrades. The dust monitors will not be relocated until the new locations have been confirmed to meet the relevant Australian standards for siting dust monitors in consultation with a competent technical person in dust monitoring siting. Roy Hill proposes to submit a compliance document to confirm the final dust monitor locations, compliance against AS3580.1.1 and calibration certificates. Licence holder is committed to continue to manage dust as per current licence conditions.
		Air/Wind dispersion If dust monitors are not appropriately relocated, adequacy/quality	• Only one dust monitor relocated at a time and confirmed as calibrated and operational before the next dust monitor being relocated. • Should a dust monitor is offline for longer than 24 hours (one day), Roy Hill will install temporary dust monitors adjacent to the current approved dust monitor location. Ecotech has advised Roy

Emission	Sources	Potential pathways	Proposed controls
		and reliability of monitoring of dust impacts to human health (residential properties) and vegetation can be compromised.	Hill that the timeframe required to relocate and recalibrate each dust monitor would be approximately 1 day. • Where temporary dust monitors are installed, they will be of the same type/technology used for the existing approved dust monitors to minimise the potential for variation in monitoring data. • Utilising a temporary dust monitor will support continuous monitoring during the relocation of each monitor. • Dust monitors and meteorological stations will be linked to existing technology platforms envirosuite and envirosys to: • maintain real time dust monitoring to allow for dust management controls to be implemented in the event of a trigger criteria/threshold exceedance; and • collate and store raw and validated dust monitoring data. The relocation of dust monitors DM2, DM3 and DM4 will not affect the wind direction vectors associated with 'management trigger criteria' and 'reportable event criteria' given the monitors are to be relocated 20 meters from current location. DM6 will be relocated approximately 1 km west of its current location. However Roy Hill considers, that the current wind direction vectors will remain relevant for with 'management trigger criteria' and 'reportable event criteria'. DM6 will be utilised as a background monitor, however the relocation of DM6 will not impact Roy Hills ability to measure dust emissions from the sedimentation basing SB1-02 and rehabilitation areas given that dust monitors DM4 and DM5 will remain in similar locations to currently approved.
Noise	Source: • operation of mobile equipment (FEL and road trains) Activities: • reclaiming iron ore from dead ore canyons (i.e. Canyon A & D); • direct loading of iron ore (using a single FEL) into road trains; and • transport of iron ore via haul road (within prescribed premises boundary)	Air/Wind dispersion	No new controls are proposed as part of this licence amendment. The applicant indicates proposed amendments under this application will not increase operational noise emissions above that modelled for the current operation. The results from the Talis (2023) noise assessment indicated that noise levels predicted are within acceptable limits (<2dB) and given the location of the Licence Holder's port facility away from the harbour and residential areas, the impact on sensitive receptors within the residential area is not expected to be significant from the proposed activities.

Emission	Sources	Potential pathways	Proposed controls
Sediment laden water Water contaminated with Hydrocarbons (e.g. hydraulic oil or diesel) and chemicals	Source: • untreated wash water from the screenhouse sumps Activities: re-direction of untreated wash water from the screenhouse sumps directly to sedimentation pond (SB1-01), which then overflows to land via culvert 3	Direct discharge to land	**Sediment** The sediment in the wash water entering SB1-01 will be allowed to settle before regularly being emptied by a FEL prior to it drying out. The sediment will be reclaimed for reintroduction into the process plant and used as export product. It is expected that with the facility design, the level of sediment remaining in the discharged water will be negligible and unlikely to impact sensitive receptors due to distance and culvert drains designed to only allow discharge during rainfall events. **Hydrocarbons** Monitoring hydrocarbon levels in the water Should monitoring results identify any elevated Total Recoverable Hydrocarbons (TRH) C6-C40 level above 15mg/L, the relevant system will be isolated, the event captured as an incident in RHI's event management system and an investigation to determine the extent, if any, of contamination and clean-up required. All water discharges will be undertaken in accordance with RHI's Water Discharge Management Procedure including the provision that there can be no visible sign of contamination (e.g., oily sheen) when discharging.
		Seepage of contaminated wash water through base and walls of sedimentation pond (SB1-01) to soil and groundwater	No controls proposed. Depth to groundwater – 0.9 to 1.5 in the immediate surrounds of this infrastructure. The aquifer is saline and not suitable for construction or operational purposes. No groundwater receptors identified. Groundwater salinity greater than seawater and unlikely to support groundwater dependent ecosystems.

Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 3 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Residential properties	• Town of Port Hedland located approximately 5.5 km north of the proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D); and • Town of Wedgefield located approximately 6 km east-south-east proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D).
Roads (residents and tourists driving along roads)	• Whim Creek Road located adjacent to haulage route and approximately 5 km south of proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D); and • Boodarie Station Access Road located adjacent to haulage route and approximately 6 km south of proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D).
Environmental receptors	**Distance from prescribed activity**
Threatened or Priority flora	The following conservation significant flora species may occur within 1 km along the proposed iron ore haulage route: *Eragrostis crateriformis* (Priority 3) and *Gomphrena leptophylla* (Priority 3)
Native vegetation	Located between 300-380 m north, west and south of proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D). Located approximately 50 m north and south of sedimentation pond (SB1-01). Located adjacent to proposed iron ore haulage route.
Threatened or Priority fauna	The following conservation significant fauna species have been sighted (DWER Geocortex): • Little leopard ctenotus (*Ctenotus angusticeps*) Priority 3 (considered Vulnerable at a Federal level) approximately 450 m north-north-west of proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D). Sighting from 2012. Osprey (*Pandion haliaetus*) P3 (considered Specially Protected – Migratory at a State level and MI at a Federal level) approximately 1 km west-south-west and south-east of proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D). Sightings from 2012 and 2015.
Groundwater	Premises is located within the Pilbara Groundwater Area proclaimed under *Rights in Water and Irrigation Act 1914*. Water is not suitable for potable or operational purposes. Groundwater system linked to marine ecosystem with mangrove community located on the boundary of the premises. No groundwater receptors identified. Groundwater salinity greater than seawater.

Aboriginal Site: South West Creek 1,2,3 (ID 12069) Type: Engraving, Midden / Scatter, Mythological, Camp, Water Source	Surface Drainage located approximately 370 m north of the proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D).
PORP21038 (ID 30388) Type: Midden / Scatter, Arch Deposit	Located approximately 190 m west of the proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D). Aboriginal site is not deemed to be impacted during operations and therefore not further considered in the risk assessment.
PORP21046 (ID 30389) Type: Midden / Scatter, Arch Deposit	Located approximately 250 m west-south-west of the proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D). Aboriginal site is not deemed to be impacted during operations and therefore not further considered in the risk assessment.

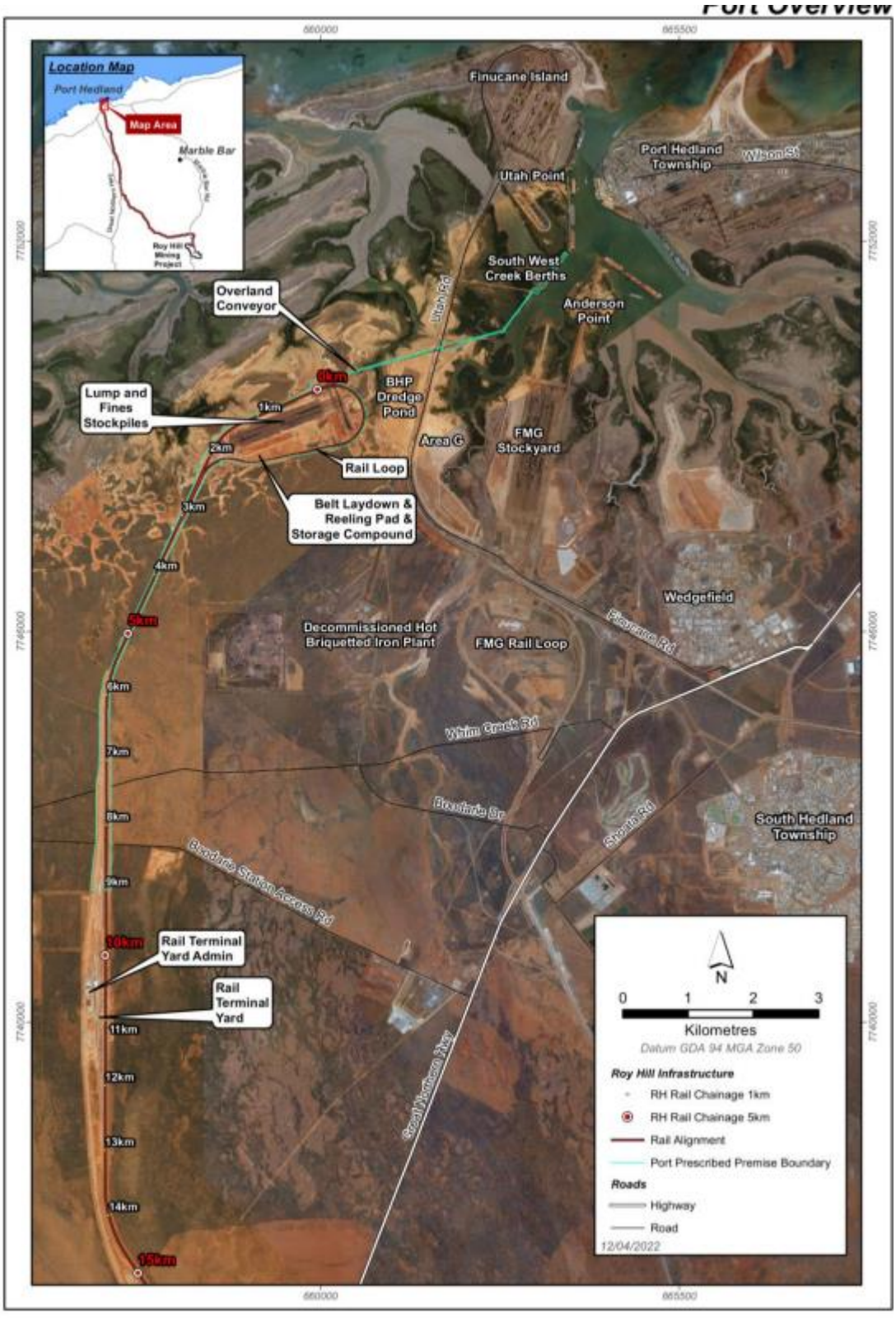

Figure 7: Distance to sensitive receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The Revised Licence L8967/2016/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 4: Risk assessment of potential emissions and discharges from the Premises during operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operation								
Source: • operation of mobile equipment (FEL and road trains) Activities: • reclaiming iron ore from dead ore canyons (i.e. Canyon A & D); • direct loading of iron ore (using a single Source: • operation of mobile equipment (FEL and road trains)	Dust	**Pathway:** Air/Wind dispersion **Impacts:** Impacts to human health (residential properties) Impacts to priority flora and native vegetation health	Residential receptors (Port Hedland and Wedgefield residents – located approximately 5.5 km north-east and 6 km east-south-east of the proposed reclaiming of iron ore) Priority flora (may occur within 1 km along the proposed iron ore haulage route) Native vegetation: • Located between 300-380 m north, west and south of proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D). • Located approximately 50 m north and south of sedimentation pond (SB1-01). Located adjacent to proposed iron ore haulage route.	Refer to Section 3.1. Table 3	C = Major L = Likely **High Risk**	Y	Condition 1 specifies dust control infrastructure and general requirements for premises activities; Conditions 2 to 3 limits ore loading volumes; Condition 5 requires applicant to maintain static stockpiles above DEM level for that stockpile or ensure a physical barrier or chemical stabiliser is used on the surface of the stockpile to prevent dust emissions. Condition 8 Table 2 requires continuous moisture content monitoring. Conditions 9 to 12 ensure dust control infrastructure and equipment are adequately maintained at the premises. Conditions 20 to 24 specify requirements for ongoing dust monitoring and management. Condition 26 and 27 – Reporting conditions. Condition 33 – requires the Licence Holder, where visible dust is generated, to cease all reclamation of Dead Ore Stockpiles during strong wind conditions and/or where average wind directions are between 180º and 300º for three or more ten minute periods during the hour.	The delegated officer considers that the existing management actions conditioned on the licence regarding dust control infrastructure and the reclamation of dead ore stockpiles, along with those controls proposed as part of this amendment will likely be sufficient to manage dust emissions associated with the proposed activities. Conditions updated where relevant to include additional controls.
	Noise	**Pathway:** Air/Wind dispersion **Impacts:** Impacts to human health (residential properties)	Humans (Port Hedland and Wedgefield residents – located approximately 5.5 km north-east and 6 km east-south-east of the proposed reclaiming of iron ore	No controls proposed.	C = Minor L = Unlikely **Medium Risk**	Y	No conditions specified.	The delegated officer considers that adverse noise impacts from the proposed operations are not expected on the basis that: - the proposed hauling operations are relatively small in scale compared to the overall operations in the area, and - the distance to the nearest noise sensitive receivers in Port Hedland's West End and South Hedland is over 5.5 kms. Environmental noise screening assessment undertaken by the Licence Holder's consultant indicate proposed activities do not increase the overall Roy Hill facility noise impacts received in Port Hedland.
Source: • untreated wash water from the screenhouse sumps Activities: re-direction of untreated wash water from the screenhouse sumps directly to sedimentation pond (SB1-01), which then overflows to land via culvert 3	Sediment Hydrocarbons (e.g. hydraulic oil or diesel) and chemicals	**Pathway:** Overtopping of sedimentation pond (SB1-01) **Impacts:** Reduced quality or contamination of soil, sediment, groundwater and/or surface water Impacts to native vegetation health	Groundwater (0.9 to 1.5 mbgl) and marine ecosystem Surface water (located immediately east (within 55 m) of sedimentation pond (SB1-01)) Native vegetation (located approximately 50 m north and south of sedimentation pond (SB1-01)	Refer to Section 3.1. Table 3	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 1, 9 and 34	Existing licence controls and Licence holder's commitments related to sediment settlement, maintenance of sedimentation ponds (regular removal of sediment) and continued monitoring of Total Recoverable Hydrocarbons (TRH) is considered adequate to manage risks. Table 7 and 11 of Licence have been modified to specify monitoring and management requirements for SB-01.
		Pathway: Seepage of contaminated wash water through base and walls of sedimentation pond (SB1-01) to soil and groundwater **Impacts:** Reduced quality or contamination of groundwater	Groundwater (0.9 to 1.5 mbgl) and marine ecosystem	No controls proposed.	C = Minor L = Unlikely **Medium Risk**	N/A	No conditions specified.	Groundwater salinity greater than seawater and unlikely to support groundwater dependent ecosystems. No additional controls are deemed required.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Change in location of the dust monitors	Dust	**Pathway:** Air/Wind dispersion **Impacts:** relocation of monitors can compromise reliability and adequacy of dust monitoring.	Residential receptors (Port Hedland and Wedgefield residents – located approximately 5.5 km north-east and 6 km east-south-east of the proposed reclaiming of iron ore) Priority flora (may occur within 1 km along the proposed iron ore haulage route) Native vegetation: • Located between 300-380 m north, west and south of proposed reclaiming of iron ore from dead ore canyons (i.e. Canyon A & D). • Located approximately 50 m north and south of sedimentation pond (SB1-01). Located adjacent to proposed iron ore haulage route.	Refer to Section 3.1. Table 3	C = Major L = Possible **High Risk**	Y	Conditions 20 to 24 specify requirements for ongoing dust monitoring and management. Condition 26 and 27 – Reporting conditions.	The delegated officer considers that the existing licence controls and licence holder commitments related to changing the locations of dust monitors to manage fugitive dust emissions from the site is adequate to manage the risks. To ensure the re-location the air quality monitors meet the ongoing requirements of the licence, new condition 25 is inserted into the licence specifying the requirements for the re-location activities.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 1 provides a summary of the consultation undertaken by the department.

Table 1: Consultation

Consultation method	Comments received	Department response
Town of Port Hedland Via letter sent out on 23 January 2024	No comments received.	N/A
Department of Planning, Lands and Heritage (DPLH) Via letter sent out on 23 January 2024	From the information provided with the application, it is DPLH understanding that these proposals will not create any new impact to what has already been disturbed and will take place within areas where section 18 consents have been granted. If any of the proposed works reveal any previously unknown Aboriginal heritage, Roy Hill Infrastructure Pty Ltd will be required to report this information to the Department and the Minister under the *Aboriginal Heritage Act 1972* (AHA). The applicant is to refer to the DPLH website at Aboriginal Heritage Approvals (www.wa.gov.au) for information on 'Land use under the *Aboriginal Heritage Act 1972'* for the types of approvals available under the AHA and how to apply. DPLH encourage continued communication between Roy Hill and the Kariyarra Aboriginal Corporation to achieve the best heritage outcomes for the proposed works.	Noted.
Kariyarra Aboriginal Corporation Via letter sent out on 23 January 2024	No comments received	N/A
Licence Holder was provided with draft amendment on 30 July 2024	The Licence Holder provided comments on 20 August 2024. Refer to Appendix 1	Refer to Appendix 1

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 2 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 2: Summary of licence amendments

Condition no.	Proposed amendments
Cover page	• Updating location of ACN to be consistent with current licence format; • Premises tenure updated. • Under 'Premises details' the following text has been included: o 'As defined by the' included; o 'Legal description –' included; • New table for the prescribed premises categories.
Licence history	New Licence History table to include previous and current amendments.
Interpretation	Updated for current licence format, specifically section (d).
Condition and table numbers	Updated throughout to reflect amendments to numbering.
Condition 8 Table 2	Include moisture content monitoring for Canyons A and D
Condition 20, Table 4	Footnote inserted
Condition 21	Footnote inserted regarding ongoing use of DM6
Condition 25 (new) and Table 6 (new)	Specifications for Monitoring Station re-location
Condition 34 Table 7	Updated to include monitoring of TRH from wastewater discharged to SB1-01
Schedule 1, Figure 2	Updated to Existing and proposed location of dust monitors and weather station
Schedule 1 Figure 7	Included new figure – Dead Ore canyon locations
Schedule 2 General Description	Updated to include loadout activities from dead ore stockpiles via road train.
Schedule 3, Table 11 Infrastructure and Equipment Table	Updates to Table 11, row 3 (stockyard), row 9 (unsealed roads) to reflect additional controls to manage load out activities. Updates to row 11, 12 and 13 (Sedimentation Ponds) to reflect changes to wash down water controls and overflow discharge points.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Item	Condition / Reference	Summary of Licence Holder's comment	Department's response
1	Moisture content monitoring and management (page 5)	See the below line (Item 2) response.	Noted.
2	Table 2: Moisture content monitoring	Roy Hill proposes to conduct DEM sampling averaged for each Quad Configuration Road Train loaded using the sample methodologies aligned to AS1141.1.1:2021 and analytical procedures within ISO03087:2020/ ATS5621:2012. Also includes a requested inclusion of a 96 hour parameter for testing: Roy Hill's iron ore wet processing and continuous DEM monitoring conducted prior to in-loading at the Port (included in Table 2) the application of dust suppression on cannons, and water cart operations at the Port is expected maintain DEM for approximately 96 hours (Port operational observations). Roy Hill proposes that DEM monitoring for out-loading activities as part of the 5Mtpa bulking activities and averaging for each Ultra Quad Configuration Road Train loaded only be required for activities associated with dead ore stockpiles that have been static stockpiles for greater than 96 hours. Additionally, post the bulking of ore to Utah Port, dust management and sampling for DEM would occur prior to out-loading to the vessel. This will not be managed or reported by Roy Hill as it is not within Roy Hill's operational control.	The Australian Standard for Methods for sampling and testing aggregates (AS1141.3.1:2021) and the International Standard ISO3087:2020 has been included in the requirements for Table 2. Subsidiary information was provided by the applicant on 4/09/2024 providing supporting evidence that demonstrated the 96-hour sampling frequency is acceptable.
3	Table 2: Moisture content monitoring	Updates to standard referencing	Noted and updated.
4	Infrastructure and equipment (page 6)	Replace Table 10 with Table 11 in Condition 9	Updated.
5	Table 3: Construction and installation requirements (page 7)	Requested update to referenced date.	Updated.

Item	Condition / Reference	Summary of Licence Holder's comment	Department's response
6	Dust monitor relocations. Table 6: Air quality monitor relocation DM2, DM3, DM4 & DM6	Requested minor amendment to the wording within the condition to allow for operational flexibility.	This request has been accepted, noting that the general specifications within Table 6 require the Licence Holder to meet a number of obligations as part of the proposed relocation, and these requirements are considered sufficient to enable a degree of operational flexibility.
7	Dust monitor relocations. Table 6: Meteorological Station relocation.		This change has been updated as per the licence holder's request.
8	Table 7: Wash water and Stormwater Monitoring	Minor updates to condition wording for clarity.	This change has been updated as per the licence holder's request.
9	Schedule 1: Coordinates and maps Figure 2	Roy Hill requests amendment to the wording within Figure 2 to align with the request within Item 6 and 7 above.	Updated as requested.
10	Schedule 3: Infrastructure and equipment Table 11: Infrastructure Controls Table	Roy Hill requests amendment to the wording within this table to better align with the proposed controls as provided in the amendment application.	Updated as requested.
11	Infrastructure and Equipment – Condition 9 and 11	Replace Table 10 with Table 11 in Condition 9.	Updated as requested.
12	Table 2: Licence Holder controls – Dust (page 10)	Refer to Item 2. The sample methodology within AS1141.3.1:2021 includes a number of methods based on the stockpile and availability of plant and equipment. Roy Hill cannot specify the exact sampling method contained within the standard that will be used but refers to the practices within Section 6.1, 6.2, 6.3, 8.4 including 8.4.1, 8.4.3 and 8.4.4 and also 9.3 that provide the procedures for physical sampling, sample size, frequency, locations etc.	Noted. Method included within the requirements of Table 2 as per the response to Item 1. The Department notes that ore out-loaded from the premises is required to meet moisture content requirements, including for dead ore removed via bulking activities. Methods for obtaining samples and determining moisture content is required to align with the relevant requirements within these standards.