Decision Report

Application for Works Approval

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

Works Approval Number	W6555/2021/1
Applicant	Pilbara Iron Pty Ltd
ACN	107 216 535
File number	DER2021/000245
Premises	Ti Tree Rail Camp Wastewater Treatment Plant WEST PILBARA Legal description Miscellaneous Licence L47/47 As defined by the coordinates in Schedule 2 of the works approval As defined by the premises maps attached to the issued works approval
Date of report	05 June 2022
Decision	Works approval granted

Steve Checker

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Steve Checker
MANAGER WASTE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6555 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) 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 and overview of premises

On 28 April 2021, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction works relating to the proposed construction and operation of a 97 cubic metres per day wastewater treatment plant and spray field at the premises. The premises is located at the 177.5-kilometre point (kp) on the Tom Price mainline in the Pilbara region of Western Australia (refer to fig 1 below).

The premises relates to the category and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6555. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6555.

2.2.1 WWTP and sprayfield

The construction and operational aspects as outlined within the works approval application supporting document are detailed below:

The application details that the proposed WWTP is a Modified Ludzack-Ettinger MLE Activated Sludge Process WWTP. The camp at full capacity (306 persons) will deliver around 95 kL per day of effluent to the WWTP.

Currently Ti Tree Camp has a 48-room capacity however the applicant is proposing to expand the camp with the addition of 258 new rooms, associated amenities and infrastructure. The expansion of Ti Tree Camp is to support the ongoing essential maintenance across Pilbara Iron's rail network.

The applicant is proposing to decommission the existing 13 kL WWTP which currently services the 48 rooms and replaced by a new Modified Ludzack-Ettinger (MLE) WWTP. The existing spray field will be expanded.

Basic components and operation of the MLE system is shown in Figure 2 below and will include:

- Raked Screen
- Balance Tank
- Anoxic Tank
- Aeration Tank
- Clarifier

- Effluent sterilization (chlorination) unit;
- Treated effluent tank;
- Spray field irrigation; and
- A series of pumps, screens, diffusers, blowers and mixers to transfer and process the wastewater. The works also includes the construction of a treated water discharge pipeline to the irrigation field and sewer pipelines from the camp buildings. A number of pump stations will be constructed to enable the wastewater to be pumped between the camp, WWTP and the irrigation field.

The existing sprayfield is proposed to be extended to cover 5.5 ha and will be bunded to ensure no interaction with surface water. The sprayfield will consist of sprinklers spaced uniformly to provide an even distribution of wastewater across the entire area. The application rate of wastewater will be 3.5mm – 4mm/day. Wastewater will be treated to the Risk Category C specifications as outlined in *Water Quality Protection Notice 22: Irrigation of nutrient rich wastewater (2008)* prior to disposal.

Based on the soil type and location the recommended range of nutrient application would be at 300 kg Nitrogen/ha/year and 50 kg Phosphorus/ha/year. The expected annual nutrient loading based on the information provided below in Table 1 and a spray field area of 5.5 ha will be 83.684 kg/ha/year for total nitrogen and 9.656 kg/ha/year for total phosphorus.

Table 1: Effluent specifications and spray field sizing

Item	Units	Value
Nitrogen load		
Daily flow rate	m^3/ day	97
TN in effluent	mg/L	<13
Total TN allowed per ha (soil category C)	kg TN/ha/year	300
Irrigation area	ha	5.5
Phosphorous load		
Daily Flow rate	m^3/ day	97
TP in effluent	mg/L	1.5
Total TP allowed per ha (soil category C)	kg P/ha/year	50
Irrigation area required	ha	5.5

The applicant has indicated that commissioning and time limited operation of the WWTP is proposed to commence immediately for six months upon the completion of construction to allow for the assessment and determination of a licence application.

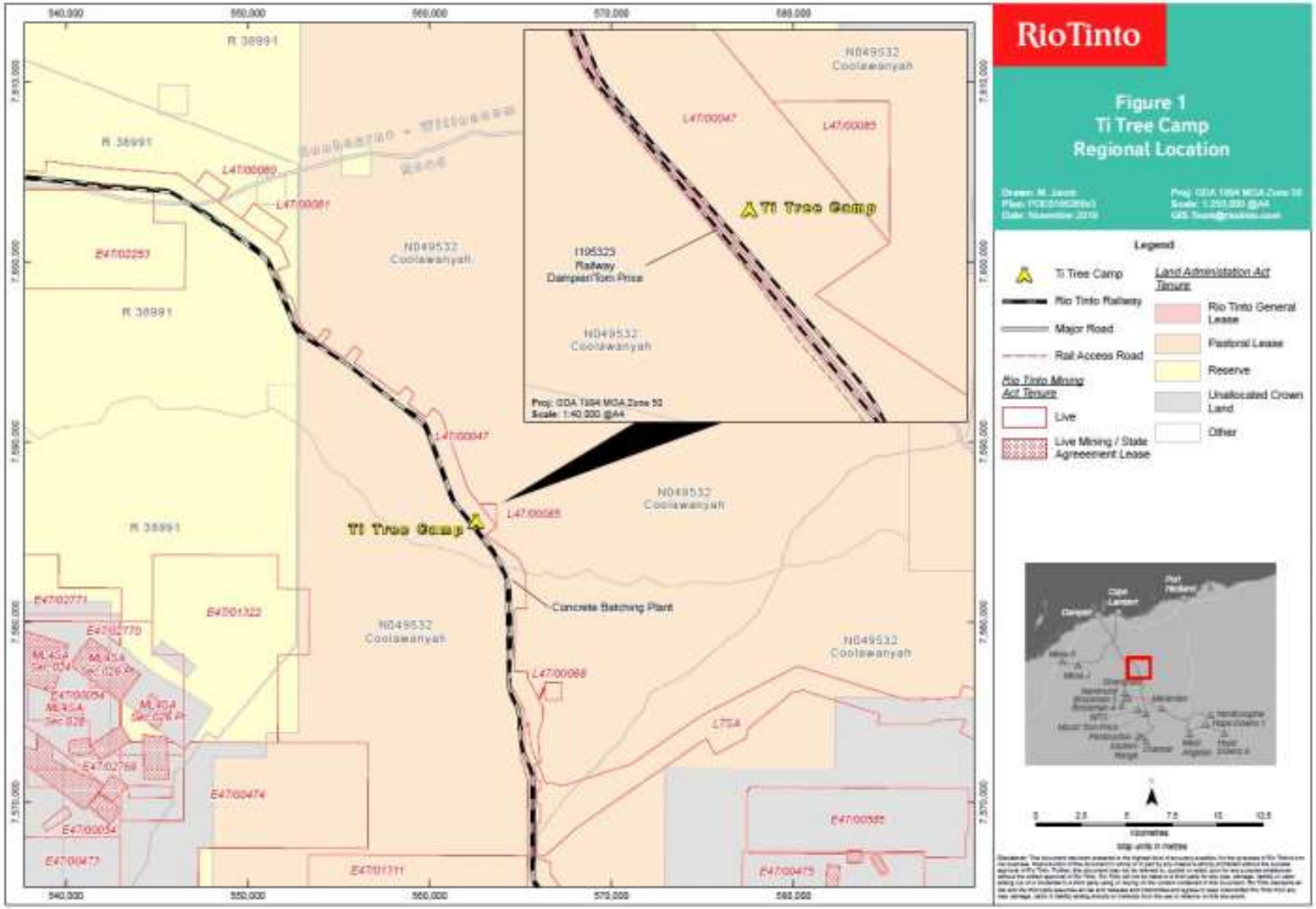

Figure 1: Tree Ti Camp Locality Map

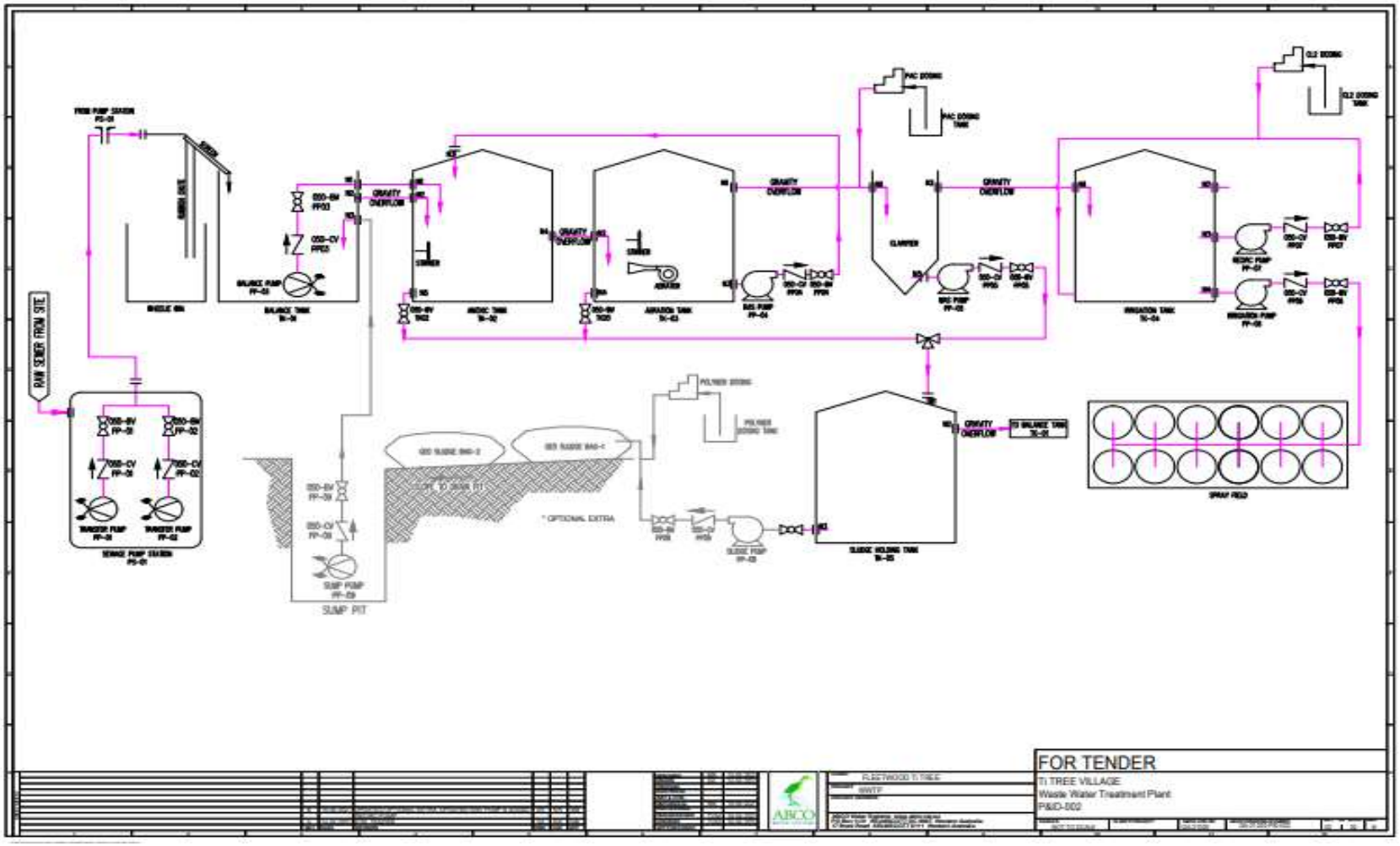

Figure 2: Tree Ti Camp WWTP Process Flow Diagram

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

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction, commissioning and time limited operation which have been considered in this decision report are detailed in Table 2 below. Table 2 also details the proposed control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 2: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Earthworks, vehicle movements, installation of infrastructure and equipment and ground disturbing activities including clearing of vegetation.	Air / windborne pathway causing impacts to health and amenity	No human receptors present within 5km. No Threatened or Priority flora have been recorded within or in close proximity to the Ti Tree Camp. Clearing during construction will be restricted to only areas required for construction activities. Construction areas to be maintained in a damp state using water carts, speed restrictions during construction. Rehabilitation of disturbed areas.
Noise			Applicant will adhere to the Environmental Protection (Noise) Regulations 1997
Spills and breach of hydrocarbon containment area	Storage and use of hydrocarbons	Direct discharges to land	Storage will be managed in accordance Australian Standard AS1940 – Storage and handling of flammable and combustible liquids. Hydrocarbons will be managed via standard operating procedures, including: • storage in bunded areas / secondary containment; • appropriate labelling of storage areas; and • provision of spill response

Emission	Sources	Potential pathways	Proposed controls
			equipment. • Regular maintenance of hydrocarbon storage facilities will be undertaken. • Standard hydrocarbon and spill management procedures are expected to effectively mitigate the risk of hydrocarbon contamination.
Commissioning, time limited operation and operation of the WWTP			
Odour	Sewage treatment	Air / wind dispersion	Will operate under the requirements of Ministerial Statement 514. The WWTP has been designed as a containerised system with enclosed balance tank and treated effluent/ irrigation tank to ensure odour levels are kept to a minimum. The WWTP will be appropriately designed and operated to mitigate the risk of odour emissions. Inspection and maintenance will be undertaken. Standard maintenance procedures are expected to effectively mitigate the risk of odour emissions.
Raw sewage spill	Sewage pipes, plant or holding tanks failure and overtopping	Direct discharge	All pipelines will be HDPE with welded joints; Pipelines will be inspected daily to identify leaks, spills or failures; The treatment plant will have remote monitoring and control capabilities; Standby pumps, during emergencies; The WWTP will be installed as per manufacturer specifications and filled with fresh water prior to filling with wastewater to test for leaks; WWTP tanks will be installed on an impermeable pad; The WWTP includes process alarms and volumetric meters to notify the operator of system upsets; Any incident involving a spill of untreated sewage will be responded to immediately with contaminated soil removed and taken by a licensed transporter to a licensed

Emission	Sources	Potential pathways	Proposed controls
			facility. Remediation actions will be taken to minimise the risk of reoccurrence; Sufficient freeboard will be maintained within each tank to ensure overtopping does not occur; and WWTP will be located on a compacted earthen pad within an earthen bund connected to an overflow pond with a minimum capacity of one day hydraulic loading.
Irrigation of excessive nutrient or pathogen levels	Irrigation of treated effluent water	Direct discharge	Will operate under the requirements of Ministerial Statement 514 and the Robe River Mining Co Pty Ltd Robe River Agreement Act 1964. Effluent from the WWTP will be treated to a Risk Category C specification as outlined in *Water Quality Protection Notice 22: Irrigation of nutrient rich wastewater (2008)* prior to disposal and to comply with a Low Exposure Risk Level (level of human contact) in accordance with DoH, 2011, with effluent achieving the specifications detailed in Table 1. Sprayfield bunds have been redesigned to withstand a 1 in 100 AEP flood event to ensure no interaction with surface water. Flood modelling results will be used to guide bund and drainage design. Results from hydrogeological modelling showed discharge from spray field is likely to take longer than 100 years to reach the Fortescue River. Results from sensitivity analysis using low hydraulic conductivity and low storage coefficients indicated that groundwater flow would reach the Fortescue River in about 50 years. The modelling also showed limited groundwater flow towards the camp production bores, with particle tracking showing no flow-paths reaching more than half the distance to the bores.
Spills and breach of hydrocarbon	Storage and use of hydrocarbons	Direct discharges to land	Storage will be managed in accordance Australian Standard AS1940 – Storage and handling of flammable and

Emission	Sources	Potential pathways	Proposed controls
and chlorine containment area			combustible material. Hydrocarbons will be managed via standard operating procedures, including: • storage in bunded areas / secondary containment; • appropriate labelling of storage areas; • provision of spill response equipment; • Regular maintenance of hydrocarbon storage facilities will be undertaken; • Standard hydrocarbon and spill management procedures are expected to effectively mitigate the risk of hydrocarbon contamination; The Microclor On-Site Hypochlorite Generation Unit (OSHG) will be housed within a 40-foot container along with the chlorine storage container (a 2.5m³ poly tank); • The chemicals will be loaded using a forklift and placed on a spill containment tray within the enclosure; and • Procedures for bringing chemicals to site will be followed including ensuring a Materials Safety Data Sheet (MSDS) are available.
Solid waste spillages and disposal	Sewage treatment- Geobags	Direct discharges to land	Solid waste produced onsite will be directed to two geobags which will be installed on an impervious base with external and internal bund walls for sludge drying purposes. The dried sludge will be removed from site by a licensed contractor and disposed at a suitable licensed facility.

3.2 Potential impact to water resources and sensitive receptors

The Delegated Officer sought internal Water Source Protection advice on the suitability of the proposal from DWER's Northwest Region given its location within the Priority 2 Millstream Water Reserve and advice from the Department of Health.

The advice received are summarised below:

North West Planning Advice

The applicant has identified the appropriate Water Quality Protection Notes (WQPNs) outlined and has committed to carrying out construction and operation of the premise in line with the Departments WQPNs guidelines and that the proposal occurs within the Millstream Public Drinking Water Source Area (PDWSA). PDWSA. However, the applicant should adhere to the following additional WQPNs:

- WQPN 6: Vegetation buffers to sensitive water resources;
- WQPN 10: Contaminant spills – emergency response; and
- WQPN 84: Rehabilitation of disturbed land in PDWSA's.

The applicant must utilise best management practices when operating the WWTP and irrigation field, to minimise potential contamination events and/or water quality exceedances. The North West Region recommends monitoring to be undertaken to ensure surface ponding will not occur and implement management measures to reduce surface ponding. Suggested management measures could include operating the spray field in alternate halves, with spraying rotated weekly to enable them to dry out.

The North West region considers the WWTP and spray field low risk to surface or groundwater resources in the Millstream P2 water protection area based on the following evidence:

- Depth to groundwater is greater than 15 m across the tenement;
- The spray field is located greater than 30m from the nearest ephemeral drainage line (A bund will be created to ensure no mixing of surface water) and 1km to the Fortescue River. Limited flooding potential due to the position of the Ti Tree Camp is such that it is beyond the 1:100 Annual Exceedance Probability (AEP) flood event for the Fortescue River;
- The proponent has appropriately resized the irrigation spray field to cater for the increased effluent output from the upgraded WWTP. The hydraulic loading rate of 3.5-4mm a day is low enough to ensure effluent spray largely evaporates in the arid Pilbara environment before ponding or movement into the underlying water table;
- There are no public drinking water supply bores / sources in the immediate vicinity of the spray field, with the proposal being located on the edge of the designated P2 area and over 50km from the nearest Public Water Supply bore near Deep Reach Pool; and
- The WWTP and sprayfield needs to be operated under Ministerial Statement 514 and the Robe River Mining Co Pty Ltd Robe River Agreement Act 1964.

Legislative requirements

The proposed works are located within the proclaimed Pilbara groundwater and surface water areas and are subject to licensing requirements under the Rights in Water and Irrigation Act 1914. The applicant has an existing groundwater licence (GWL156125) for 300,000kL/a, valid until 2023. If the applicant requires additional groundwater or surface water, the company will need to amend/apply for a 5C licence to take water and a 26D licence to construct any new water supply bores.

Department of Health Advice

DoH initially advised the proponent that in accordance with the Department of Water and Environments Drinking Water Protection Priority system the development of onsite wastewater systems within a Priority 2 drinking water protection area is incompatible.

To ensure that drinking water resources are adequately protected the Department of Health expects onsite wastewater systems to be moved outside the drinking water source protection area.

The applicant was asked to provide a response regarding the issues raised by DoH relating to DWER *Water Quality Protection Note (WQPN) #25 – Land use compatibility tables for public drinking water source areas (DWER, 2021b)* which specifies that a WWTP is a land use incompatible with P2 areas.

In response to a request from the Department, Pilbara Iron Pty Ltd submitted a numerical modelling (hydrological and hydrogeological) and a risk assessment report prepared by Advisian Pty Ltd to support the works approval application including consideration of options to move the spray field outside of the P2 PDWSA area. DoH granted approval for the proposal on 4 April 2022

Key findings: The Delegated Officer has considered the following advice from the Applicant:

1. The proposal will operate under the requirements of Ministerial Statement 514 and the Robe River Mining Co Pty Ltd Robe River Agreement Act 1964.
2. The findings of the modelling and risk assessment report are reasonable and are accepted.
3. The following alternative options for disposing of treated effluent were investigated:
    i. trucking the treated effluent from the camp to an offsite facility was not a feasible option due to costs and implementation.
    ii. use of another facility such as Pelican Camp was not an option as it was being demobilised.
    iii. moving the spray field outside of the P2 PDWSA area was difficult as there were no optimal sites within tenure. Option of moving the spray field northeast where a communications tower is located was not feasible as the land is sloped with the likelihood of the water flowing/draining in to the P2 PDWSA area. Moving the spray field to the southeast would move it in to a 1:100 AEP flood zone and increase risk to the P2 PDWSA.
4. A 2D hydraulic model was developed using the software TUFLOW to simulate rainfall-runoff across the study area using the rain-on-grid methodology to estimate probable concentrations of contaminants (E. coli) reaching the receptors either through surface water or groundwater flow.
5. The range of annual exceedance probability (AEP) events were modelled to simulate the hydrology within the study area, extract peak flows and determine when and where overtopping of the proposed bunds would occur.
6. A modelling approach was implemented that involved the development of a three-dimensional groundwater numerical model. The model was developed using FEFLOW modelling software.
7. Groundwater modelling simulation for 200 years indicate that the Contaminant movement within groundwater does track towards the south-west and mounds locally initially, however it is estimated to take over 100 years for seepage from the sprayfield to reach the Fortescue River. Furthermore, Escherichia coli (E. coli) are expected to be attenuated after treated wastewater is discharged indicating unlikely impacts after 100 years.
8. Results from sensitivity analysis using low hydraulic conductivity and low storage coefficients indicated that groundwater flow would reach the Fortescue River in about 50 years.

9. Groundwater affected flow from the sprayfield is not expected to reach the abstraction bores within the short- or long-term operation of the sprayfield (The modelling showed limited groundwater flow towards the camp production bores, with particle tracking showing no flow-paths reaching more than half the distance to the bores).
10. Surface water modelling for a 1 in 50 annual exceedance probability (AEP) event that was used to identify bund heights to contain a 1 in 50-year flood event, indicated that Several bunds at the sprayfield are at risk of overtopping, therefore bunds have been redesigned to withstand a 1 in 100 AEP flood event which would reduce the risk of treated wastewater discharging beyond the sprayfield.
11. Overtopping of bunds may cause bund failures leading to additional sediment and nutrient transport downstream therefore bunds should be monitored and may require regular maintenance.

3.2.1 Receptors

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

Table 33 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**
The nearest town of Tom Price	Is approximately 97 km south of the Premises.
Coolawanyah Station Lease LPL N049532 – Homestead	Approximately 21km east of Ti Tree Camp
Environmental receptors	**Distance from prescribed activity**
Public Drinking Water Source Area	Within the Priority 2 Millstream Water Reserve
Groundwater	17.4 to 17.5 mbgl
Groundwater abstraction for use on Premises operations	1.2 km north
Fortescue River Basin	Approximately one kilometre from the lower Fortescue River

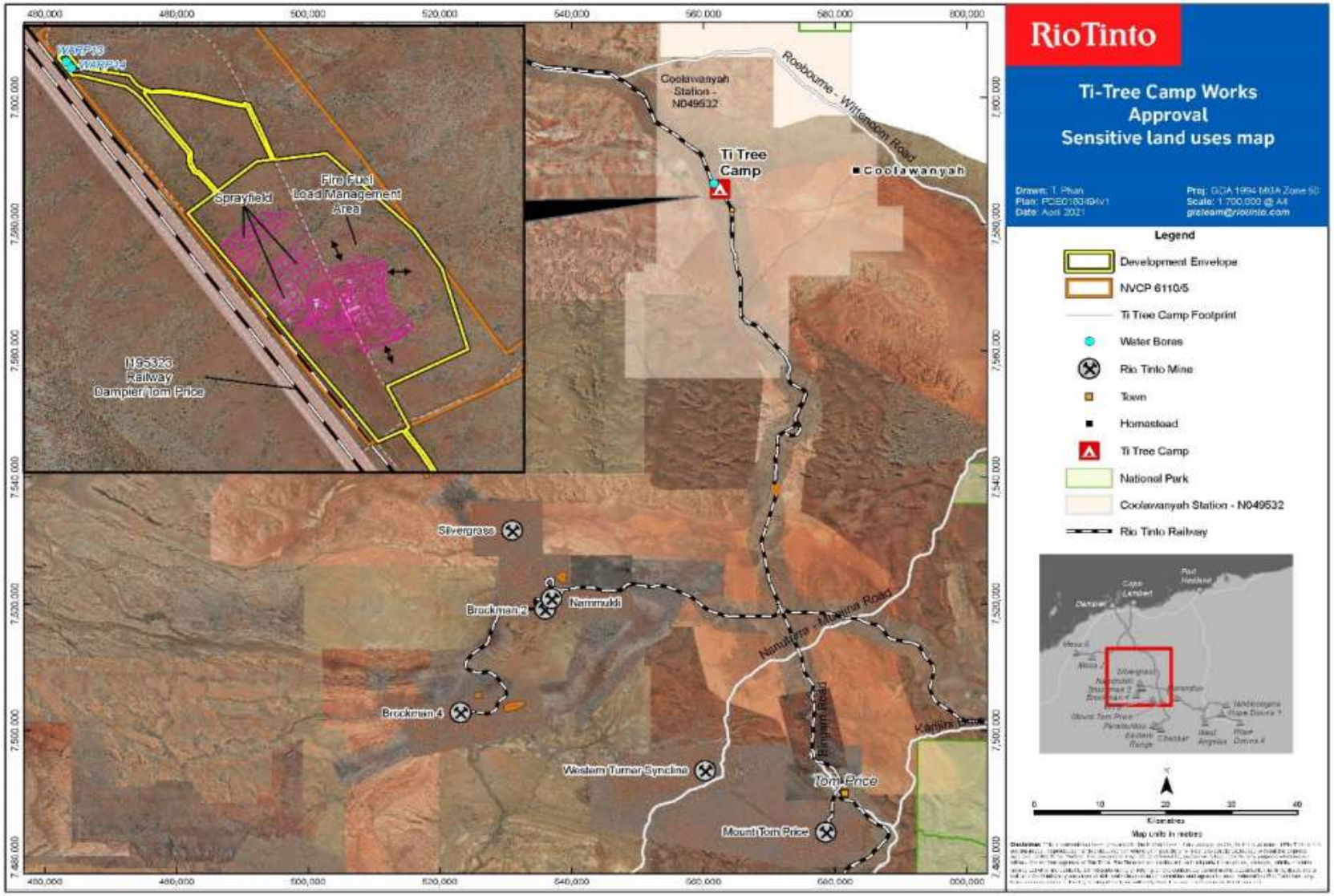

Figure 3: Distance to sensitive receptors

3.3 Risk ratings

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

Where the applicant 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 applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

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

Works approval W6555 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 4 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence or a Registration is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 4: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Construction								
Construction, mobilisation and positioning of infrastructure and vehicle movements on unsealed access roads	Dust	Air / windborne pathway causing impacts to health and amenity	No receptor in proximity	Refer to Section 3.1	N/A	Y	N/A	N/A
	Noise			Refer to Section 3.1	N/A	Y	N/A Noise are also regulated under the Environmental Protection (Noise) Regulations 1997	N/A
	Spills/ unintended releases of hydrocarbons or chemicals	Direct discharge to ground causing Soil contamination inhibiting vegetation growth and survival. Discharge via infiltration to groundwater may impact quality within the P2 area	Priority 2 Millstream Groundwater Reserve 1km to the Fortescue River	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1	N/A
Operation								

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
(including commissioning, time-limited-operations operations and discharge to the spray field)								
Operation of WWTP including discharge to irrigation spray field and storage of chemicals	Odour	Air / windborne pathway causing impacts to health and amenity	No residence in proximity	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 2, 3, 4, 5, 8, 10, 12, 13, 14, 15, 16, 17 and 18	N/A
	Rupture of pipes, overtopping of holding tanks, WWTP or storage tank failure resulting in sewage discharge to land	Direct discharge- Contaminated stormwater runoff with elevated nutrients can result in eutrophication of waterways and ecosystem disruption Soil contamination inhibiting vegetation growth and survival Discharge via infiltration to groundwater may impact quality within the P2 area	Vegetation adjacent to discharge area Priority 2 Millstream Groundwater Reserve	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 1, 2, 3, 4, 5, 8, 9, 10, 14, 15, 16, 17 and 18	Will operate under the requirements of Ministerial Statement 514 and the Robe River Mining Co Pty Ltd Robe River Agreement Act 1964.

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
	Breach of containment causing chlorine discharge to land	Inhalation, Ingestion and dermal contact	No receptor in proximity	Refer to Section 3.1	N/A	Y	N/A	N/A
	Treated effluent discharged to spray field for irrigation containing elevated Nitrogen and Phosphorous	Direct discharge-causing Facilitated growth of weeds; Increase in nutrient levels in soil; Change in soil chemistry; Ponding in the irrigation area; Impacts to surrounding vegetation; and Impact to groundwater quality within the P2 area	Terrestrial ecosystems Priority 2 Millstream Groundwater Reserve	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18	N/A

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

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

4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

Table 5: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 24 June 2021	*None received.*	*N/A*
Shire of Asburton advised of proposal on 6 July 2021	*None received.* *Consultation period closed on 30 July 2021.*	*The delegated officer has determined that it is the applicant's responsibility to ensure all relevant approvals are in place prior to commencing works, in line with the Industry Regulation: Guide to Licensing.*
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal on 6 July 2021	*DMIRS replied on 8 July advising that they have no comments to provide.*	*Noted.*
Department of Health (DoH) advised of proposal 6 July 2021	*DoH replied on 3 August advising that:* • *in accordance with the Department of Water and Environments Drinking Water Protection Priority system the development of onsite wastewater systems within a Priority 2 drinking water protection area is incompatible.* • *To ensure that drinking water resources are adequately protected the Department of Health expects onsite wastewater systems to be moved outside the drinking water source protection area.*	*The delegated officer has determined that it is the applicant's responsibility to ensure all relevant approvals are in place, in line with the Industry Regulation: Guide to Licensing.* *The applicant was asked to provide a response including outcomes of any discussions with DoH.*
Department of Jobs, Tourism, Science and Innovation advised of proposal on 6 July 2021	*Replied on 6 July 2021 advising that they have no comments to make.*	*Noted*
Internal referral to the North West Regional Team on 9 June 2021	*Replied on 18 June 2021 that the North West region considers the WWTP and spray field low risk to surface or groundwater resources in the Millstream P2 water protection*	*Noted. The Delegated Officer considers the works approval conditions adequately address these concerns.*

	area and the applicant should adhere to the following additional WQPNs: *• WQPN 6: Vegetation buffers to sensitive water resources.* *• WQPN 10: Contaminant spills – emergency response.* *• WQPN 84: Rehabilitation of disturbed land in PDWSA's.*	
The applicant was asked to provide a response regarding the issues raised by DoH including outcomes of any discussions.	*In response to a request from the Department and DoH, Pilbara Iron Pty Ltd submitted a numerical modelling (hydrological and hydrogeological) and a risk assessment report to address the concerns raised. Key findings from the modelling are as follows:* *• Groundwater modelling simulation for 200 years indicate that the Contaminant movement within groundwater does track towards the south-west and mounds locally initially, however it is estimated to take over 100 years for seepage from the sprayfield to reach the Fortescue River. Furthermore, Escherichia coli (E. coli) are expected to be attenuated after treated wastewater is discharged indicating unlikely impacts after 100 years;* *• Groundwater affected flow from the sprayfield is not expected to reach the abstraction bores within the short- or long-term operation of the sprayfield;* *• Groundwater affected flow from the sprayfield is not expected to reach the abstraction bores within the short- or long-term operation of the sprayfield; and* *• Surface water modelling for a 1 in 50 annual exceedance probability (AEP) event was used to identify bund heights to contain a 1 in 50-year flood event, indicated that Several bunds at the sprayfield are at risk of overtopping, therefore bunds have been redesigned to withstand a 1 in 100 AEP flood event which reduces the risk of treated wastewater discharging beyond the sprayfield.*	*Noted*
Applicant provided evidence of Department of Health	*DoH approval granted 4 April 2022*	*N/A*

(DoH) approval		
Applicant was provided with draft documents on 23 May 2022	*Refer to appendix 2*	*NA*

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

MANAGER WASTE INDUSTRIES
Delegated Officer under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY					
Application type					
Works approval	☒				
Licence	☐	Relevant works approval number:		None	☐
		Has the works approval been complied with?		Yes ☐ No ☐	
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes ☐ No ☐ N/A ☐	
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes ☐ No ☐	
		Date Report received:			
Renewal	☐	Current licence number:			
Amendment to works approval	☐	Current works approval number:			
Amendment to licence	☐	Current licence number:			
		Relevant works approval number:		N/A	☐
Registration	☐	Current works approval number:		None	☐
Date application received		28 April 2021			
Applicant and Premises details					
Applicant name/s (full legal name/s)		Pilbara Iron Pty Ltd			
Premises name		Ti Tree Rail Camp			
Premises location		Miscellaneous Licence for Railway L47/00047			
Local Government Authority		Shire of Ashburton			
Application documents					
HPCM file reference number:		DER2021/000245			
Key application documents (additional to application form):		Ti Tree Camp WWTP Application Package			
Scope of application/assessment					

Summary of proposed activities or changes to existing operations.	Works Approval application to construct and carry out time limited operations of a Wastewater Treatment Plant including spray irrigation of the treated wastewater. There is an existing 13 kL/day WWTP at the Premises which will be decommissioned and replaced by the new WWTP.

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	**Proposed production or design capacity**
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	97 m^3 per day

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes ☐ No ☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☐ No ☒	
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	Certificate of title ☐ General lease ☐ Expiry: Mining lease / tenement ☒ Expiry: 27/09/2022 Other evidence ☐ Expiry:
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☒ N/A ☐	Exemption from Planning Approval granted by the Shire of Ashburton Need to confirm DoH approval? Need to confirm JTSI approval under Iron Ore (Robe River) Agreements Act 1964 (WA) Need to confirm DMIRS approval under Mining Act 1978

Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☒ No ☐	CPS No: CPS 6110
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	Licence not required
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☒ No ☐	Licence/permit No: GWL156125
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☒ No ☐	Name: Pilbara Surface Water Area and Pilbara Ground Water Area Type: Proclaimed Groundwater Area and Surface Water Area Has Regulatory Services (Water) been consulted? Yes ☐ No ☒ N/A ☐ Regional office: North West
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☒ No ☐	Name: Millstream Water Reserve Priority: P2 Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☒ N/A ☐
Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*)	Yes ☐ No ☐	*Iron Ore (Robe River) Agreements Act 1964 (WA) (JTSI)* *Mining Act 1978 (DMIRS)*
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	

Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☐ No ☒	

Direct interest stakeholders	
Shire of Ashburton	Letter to be sent Yes ☒ No ☐
DMIRS	Letter to be sent Yes ☒ No ☐
JTSI	Letter to be sent Yes ☒ No ☐
DoH	Letter to be sent Yes ☒ No ☐

SECTION 2: RECEPTORS

The nearest town of Tom Price	Is approximately 97 km south of the Premises.

Human receptors	**Distance from activity / prescribed premises**
Coolawanyah Station Lease LPL N049532 – Homestead	Approximately 21km east of Ti Tree Camp
Environmental receptors	**Distance from activity / prescribed premises**
Public Drinking Water Source Area	Within the Priority 2 Millstream Water Reserve
Groundwater	17.4 to 17.5 mbgl
Groundwater abstraction for use on Premises operations	1.2 km north

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
Condition 6 - Table 2: Infrastructure and equipment requirements during time limited operations Row 1 item c Treated effluent will not be disposed of unless the measured parameters comply with the expected wastewater quality as required in Table 1	Typographical changes requested. The Applicant requested that condition 6 is split into two sub-conditions as follows: 6ci. Discharge to the sprayfield will only commence after the WWTP has met discharge criteria as verified during environmental commissioning. 6cii. If discharged treated effluent quality exceeds the listed operational discharge criteria during time limited operations, the proponent shall notify DWER in writing within 14 calendar days of sample receipt. The notification shall include the proposed measures and timeframes to improve the WWTP discharge criteria.	The Delegated Officer has removed the requirement in condition 6 for irrigation discharge to have to comply with treatment criteria prior to each discharge. The Delegated Officer considers that the averaged daily nutrient loading rates as required under Condition 6 will provide a better control over longer term discharge impacts.