Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L9003/2016/1
Licence holder	Eastern Metropolitan Regional Council
Registered business address	226 Great Eastern Highway BELMONT WA 6104
DWER file number	DER2016/002031
Duration	14/11/2016 to 13/11/2036
Date of issue	14/11/2016
Date of amendment	25/07/2024
Premises details	Hazelmere Resource Recovery Park 77 Lakes Road HAZELMERE WA 6104 Being Lot 100 on Plan 4553, Lot 301 on Plan 405273 and Lot 814 on Plan 410889 as depicted in Schedule 1

Prescribed premises category description (Schedule 1, Environmental Protection Regulations 1987)	**Assessed production capacity**
Category 37: Char manufacturing: premises on which wood, carbon material or coal is charred to produce a fuel or material of a carbonaceous nature or of enriched carbon content	5,000 tonnes per annual period
Category 60: Incineration: premises on which waste, excluding clean paper and cardboard, is incinerated	2,500 kg/hour
Category 61A: Solid waste facility: premises (other than premises within category 67A) on which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land	50,000 tonnes per annual period
Category 62: Solid waste depot: premises on which waste is stored, or sorted, pending final disposal or reuse	215,000 tonnes per annual period
Category 67: Fuel burning: premises on which gaseous, liquid or solid fuel is burnt in a boiler for the supply of steam or in power generation equipment	3,000 kg/hour

This amended licence is granted to the licence holder, subject to the attached conditions, on 25 July 2024, by:

Melissa Chamberlain

Digitally signed by Melissa Chamberlain
Date: 2024.07.25 16:44:25 +08'00'

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

Premises instrument history

Date	Reference number	Summary of changes
28/01/2016	W5923/2015/1	Works Approval for construction of C&I facility
10/11/2016	L9003/2016/1	Licence granted for operation of C&I facility and existing waste timber and mattress processing operations
03/06/2016	W5916/2015/1	Works Approval for the construction of a Wood Waste to Energy Plant within the premises
17/06/2020	L9003/2016/1	Amended Licence to include the Wood Waste to Energy Plant
21/08/2020	W6360/2020/1	Works Approval for construction of a waste transfer station and community recycling centre.
24/09/2020	L9003/2016/1	Amended Licence to allow acceptance, processing and temporary storage of treated power poles.
15/06/2021	L9003/2016/1	Amended Licence to increase acceptance of treated power poles.
25/07/2024	L9003/2016/1	Amended Licence to include the waste transfer station, increase mattress storage capacity to 750 and extend the wood waste facility commissioning period to 12 months.

Interpretation

In this licence:

(a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean “including but not limited to”, and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice means the version of the standard, guideline, or code of practice in force at the time of granting of this licence and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the licence;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

The licence holder must ensure that the following conditions are complied with:

Infrastructure and equipment

1. The licence holder must ensure that the site infrastructure and equipment listed in Table 1 and located at the corresponding infrastructure location has been or will be constructed, is maintained and operated in accordance with the corresponding operational requirement set out in Table 1.

Table 1: Infrastructure and equipment requirements

	Site infrastructure and equipment	Operational requirement		Infrastructure location
1.	Stormwater Storage Basins	Capable of storing all stormwater from the premises during a 72-hour, 5% AEP rainfall event.		As labelled in Schedule 1, Figure 2
2.	HAAS Primary Crusher (HDWV-E 700x2.000)	a) Maximum capacity of 35 tonnes/hour b) Fitted with a dust suppression spray system and an integrated automatic dust extraction system		Located in the "timber processing" area labelled in Schedule 1, Figure 2
3.	HAAS Hammer mill (HSZ-V 1.6000)	Maximum capacity of 35 tonnes/hour		
4.	Wood Waste to Energy plant (WWtE plant)	Pyrolysis Kiln	a) Maximum capacity of 4 tonnes per hour feed stock b) Low NOx burners for the heating of the tube capable of running on natural gas and cleaned syngas c) Capable of being shut down within 30 minutes of a bypass event occurring	As labelled in Schedule 1, Figure 2
5.		Staged Air Cyclonic Thermal Oxidiser (SACTO)	a) A Staged Air Cyclonic Thermal Oxidiser capable of thermal destruction of Volatile Organic Compounds prior to release to the environment b) Capable of gas residence time of 2 seconds at 850°C	
6.		Syngas Reformer	Capable of removing tar from the raw syngas and separating the syngas and bio-char	
7.		Syngas Scrubbing System	a) Dual stage scrubbing system capable of removing light paraffins, light aromatics, ammonia, acid gases and tar/PAHs from the raw syngas prior to use in the kiln combustion chamber, the Gas Engines or SACTO	

	Site infrastructure and equipment	Operational requirement		Infrastructure location
			b) Design capacity of the scrubbers allows operation on raw syngas (rather than partially cleaned syngas exiting the Syngas Reformer) c) Sampling points to be installed in the scrubbing and dehumidifier circuits to allow for the collection of gaseous samples to determine scrubber efficiency d) Syngas Scrubbing System to be monitored for: i. pH levels; ii. syngas temperature prior to and after the Syngas Scrubbers; and iii. Scrubbing water flow to the scrubbers	
8.		Biochar Transport and Storage	a) Closed conveyors to transport bio-char b) Storage of Biochar such that it will not blow off-site	
9.		Wastewater Treatment Plant including 2x 43,000L (86,000L total) wastewater storage tanks	a) Single dissolved air flotation unit b) Bulk storage tank of minimum capacity 25m^3 for storage of wastewater prior to disposal c) The wastewater storage tank and associated pipework must be maintained free of leaks and defects; d) No discharge of treated wastewater within the premises	
10.		Gas Engines	Maximum of eight (8) spark-ignition engine generator sets (includes gas engines, alternators and ancillary equipment such as safety valves, pipe-work, cooling system, control panel, ignition system and air-fuel ratio control system)	
11.		CEMS	CEMS to be compliant with the CEMS Code or EN 14181:2014	
12.		Stack and associated ducting	a) Two stacks each with a minimum stack height of 18m above ground level; and b) Sampling ports for emissions monitoring that are compliant with AS4323.1 c) Acoustic silencers or enclosures on both combustion fans as a form of noise control.	

	Site infrastructure and equipment	Operational requirement		Infrastructure location
13.	Waste Transfer Station (WTS)	Transfer station warehouse	a) Uncontaminated stormwater must be prevented from entering the warehouse; b) Leachate must be contained within the warehouse unless being discharged to the leachate holding tank; c) Vehicle access doors must have a fast action open and shut cycle of 15 seconds; and d) Vehicle access doors must remain closed at all times unless in active use.	As labelled in Schedule 1, Figure 2 and Figure 3
14.		Air extraction system – four extraction stacks with ceiling mounted axial flow fans	a) Must maintain negative pressure within the transfer station at all times; b) Must achieve four complete air exchanges of the warehouse per hour; and c) Must maintain a constant stack exit velocity of 15 m/s.	As labelled in Schedule 1, Figure 2
15.		Primary leachate collection system (unloading area) – 23,000L below ground tank	a) Must divert all leachate from the WTS unloading and bulk load out areas to the leachate collection system; b) The leachate tank, sumps and associated pipework must be maintained free of leaks and defects; c) Drainage pipelines must be maintained free from blockages; d) Must regularly remove, for offsite disposal or Water Corporation sewer discharge[1], leachate from the leachate collection tank and sumps to prevent overflow; and e) Must maintain the functionality and connectivity of the high-level sensor within the primary leachate collection system tank and sewer pump sump.	Leachate collection tank and sewer pump station/sump labelled in Schedule 1, Figure 2
16.		Secondary leachate collection system (bulk load out area) – 4x 1,000L storage sumps		
17.		Sewer pump sump – 20,460L storage		

	Site infrastructure and equipment	Operational requirement		Infrastructure location
18.		Stormwater system	a) Uncontaminated stormwater must be directed away from areas of waste storage; b) Must be maintained free from blockages; c) Wastewater contained in stormwater ponds and stormwater drains must be pumped out for off-site disposal or Water Corporation sewer discharge[1] during fire events where contaminated firefighting water is generated.	As labelled in Schedule 1, Figure 3
19.	All on-site fire management and prevention equipment	a) All on-site fire management and prevention equipment must be stored so access is not impeded by infrastructure or equipment used in site operations. b) All on-site fire prevention equipment including, but not limited to the fire hydrant system, fire detection devices, fire sprinkler systems and mobile water truck must be maintained and in working order at all times.		As shown in Schedule 1, Figure 4

Note 1: All discharges of wastewater to Water Corporation sewer must only be done in accordance with a valid Water Corporation trade waste permit.

Premises operation

2. The licence holder must direct stormwater to the onsite Stormwater Storage Basin to ensure that stormwater is contained within the premises boundary.

3. The licence holder shall manage the stormwater storage basins such that:

(a) overtopping of the containment infrastructure does not occur; and

(b) the integrity of the containment infrastructure is maintained.

4. The licence holder must only accept waste on to the premises if:

(a) it is of a type listed in Table 2;

(b) the quantity accepted is below a quantity listed in Table 2; and

(c) it meets the relevant waste type specification listed in Table 2.

Table 2: Waste acceptance

Waste type	Quantity Limit	Specification
Inert waste type 1	50,000 tonnes per annual period	Waste containing visible asbestos, ACM, controlled waste or hazardous waste must not be accepted.
Putrescible waste (including FOGO)	165,000 tonnes (including up to 40,000 tonnes of FOGO) per annual period	
Paper and cardboard		

Waste type	Quantity Limit	Specification
Timber	50,000 tonnes per annual period combined for all timber waste (treated power poles limited to 15,000 tonnes per annual period)	Commercial and industrial waste only. Green waste timber is not to be accepted. Timber with markings H3 to H6 is not to be accepted.
Treated power poles		Pole mix coated, CCA and rod treated poles only

5. The licence holder must visually inspect all loads of material when they arrive at the premises prior to and during unloading to ensure they meet the specifications in Table 2.

6. Where waste does not meet the waste acceptance criteria set out in Table 2, the licence holder must:

(a) reject the waste;

(b) record the details of the:

(i) waste (type and description);

(ii) source of the waste load;

(iii) name of the waste carrier;

(iv) registration number of the delivery vehicle;

(v) date that the waste load was rejected

(c) maintain accurate and auditable records of all waste loads rejected from the premises.

(d) ensure the waste is removed from the premises by the delivery vehicle or, where that is not possible, stored in a quarantined storage area or container and removed to an authorised facility within 1 week of receipt.

7. The licence holder must ensure that any waste that does not meet the waste acceptance criteria set out in Table 2 due to asbestos content is covered and dampened thoroughly prior to handling, or bagged and kept within a clearly identified, labelled and segregated secure container prior to being removed off site to an appropriate licensed facility.

8. The licence holder must ensure that wastes accepted onto the premises are only subjected to the processes set out in Table 3 and in accordance with any process limits described in that table.

Table 3: Waste processing

	Waste type	Process	Process limits
1.	Inert Waste Type 1	Receipt, handling, sorting and temporary storage prior to off-site disposal	a) No waste material shall be landfilled on-site; b) Unloading of waste must only occur within the Unloading Area specified in Schedule 1, Figure 3;
	Putrescible waste (including FOGO)		

	Waste type	Process	Process limits
			c) Waste must be stored within the Waste Storage Bunker specified in Schedule 1 Figure 3; and d) Storage of FOGO and putrescible waste is limited to 48 hours from the time of receipt.
2.	Treated power poles	Receipt, handling, storage and processing via hydraulic timber shears to produce a decontaminated timber for further processing and residual waste for offsite disposal	a) No waste material shall be landfilled (buried) on-site; b) Unloading must be undertaken on an engineered hardstand; c) Storage must be undertaken within the C&I facility or within bulk bin receptacles located above an engineered hardstand; d) Bulk bin receptacles must be covered to prevent rainfall intrusion when not in use; and e) Decontaminated timber must be stored separate from pole mix coated pole butts and CCA treated power poles.
3.	Timber	Receipt, handling and storage prior to processing via an Integrated Outdoor HAAS timber processing system to produce wood fines and wood chips	a) Pole mix coated pole butts and CCA treated power poles must not be subject to this process; b) No waste material shall be landfilled (buried) on-site; c) Unloading shall be undertaken on an engineered hardstand; d) Timber stockpiles shall be located on an engineered hardstand and must not exceed 5m in height from the base of the stockpile; e) Dust collection and extraction system shall be operational when the HAAS timber processor is operational; f) Product (wood fines and wood chip) stockpiles shall be managed such that no visible dust lifts off from these stockpiles and leaves the premises;

	Waste type	Process	Process limits
			g) Product (wood fines) stockpiles shall be located on a hardstand; h) Product (wood fines and wood chip) stockpiles must not exceed 5m in height from the base of the stockpile; i) Product (wood fines and wood chip) stockpiles must be separated by at least 3m from the base of the stockpiles; and j) No more than 50,000 tonnes per annual period shall be processed.
4.	Dry commercial and industrial wastes	Receipt, handling and storage prior to separating into recyclable and non-recyclable waste.	a) No waste material shall be landfilled (buried) on-site; b) All loads shall be unloaded within the C&I facility; c) Sorted recyclable and non-recyclable wastes are to be stored in skip bins or undercover storage bays pending disposal to authorised facilities offsite; and d) No more than 50,000 tonnes per annual period may be accepted for sorting.
5.	Used mattresses	Receipt, handling and storage prior to processing via a Hammel shredder	a) No waste material shall be landfilled (buried) on the site; b) Mattresses shall be stored on a compacted gravel ferricrete surface; c) The mattress stockpile shall not exceed 750 items; d) The mattress stockpile shall not exceed 3 metres high; e) Shredded product shall be stored in skip bins pending disposal to an authorised facility; and f) No more than 20,000 mattresses per annual period shall be processed.

9. The licence holder must implement the following security measures at the premises:

(a) erect and maintain suitable fencing to prevent unauthorised access to the premises;

(b) ensure that any entrance gates to the premises are securely locked when the premises are unattended; and

(c) undertake regular inspections of all security measures and repair damage as soon as practicable.

10. The licence holder must install and maintain a sign at the entrance to the premises which clearly displays the following information:

(a) hours of operation;

(b) contact telephone number;

(c) warning indicating penalties for people lighting fires; and

(d) list of prohibited materials not accepted at the premises.

11. The licence holder must:

(a) ensure that any unauthorised fire on the premises is extinguished as soon as possible;

(b) ensure contaminated firefighting water is not discharged beyond the boundary of the premises in the event of a fire;

(c) contain contaminated firefighting water and other waste that may result from firefighting on the premises; and

(d) ensure that any firefighting wash-water is contained and removed without delay by a carrier licensed under the Environmental Protection (Controlled Waste) Regulations 2004 or discharged to Water Corporation sewer[1]; and

(e) ensure all fire impacted waste is disposed off-site to a suitably licensed premises.

Note 1: All discharges of wastewater to Water Corporation sewer must only be done in accordance with a valid Water Corporation trade waste permit.

12. The licence holder must take all reasonable and practicable measures to prevent stormwater run-off becoming contaminated by the activities and operations undertaken at the premises.

13. The licence holder must ensure that:

(a) all reasonable and practicable measures are taken to ensure that no windblown waste escapes from the premises; and

(b) any windblown waste is collected on at least a weekly basis and returned to the waste transfer station or otherwise appropriately contained.

Emissions and discharges

Fugitive emissions

14. The licence holder must maintain and operate the dust control equipment to manage fugitive dust emissions in accordance with Table 4.

Table 4: Fugitive emissions infrastructure requirements

	Infrastructure/Equipment	Requirements
1.	Integrated automatic dust extraction system for the HAAS timber processing system	a) Maintained in good working order to ensure it is operational whenever the Integrated Outdoor HAAS timber processing system is operating; b) Collected dust is removed on a daily basis and disposed to an appropriately licensed facility; and c) Dust extraction pipes are jet washed at least once every 14 days to remove built up dust.
2.	15,000L Water cart	Available for dust suppression of hardstands and timber, wood fines and wood chip stockpiles.

Point source emissions

15. The licence holder must not cause any emissions from the Main Stack except for specified emissions which are of the types, and within the limits, specified in Table 5 and Table 6.

Table 5: Main Stack specified Emission Limits (limit compliance assessed through continuous monitoring)

Main Stack Specified Emission Limits Table (CEMS Data)				
Location	**Analyte**	**Units**	**Emission Limit – 30 minute averages at 100% compliance (figure in brackets is 30 minute average at 97% compliance over a year, unless otherwise specified)**	**Emission limits – Average of 30 minute averages over a 24 hour day (100% compliance unless otherwise specified)**
Main Stack	NO_x	mg/m^3	400 (200)	400
	CO	mg/m^3	100 (150 for 95% of all 10 minute average measurements)	50 (for 97% of all daily averages over a year)
	Total VOCs (as Total Organic Carbon)	mg/m^3	20 (10)	10

Note 1: Concentration results to be provided on a dry basis, corrected to standard temperature (273.15K) and pressure (101.3 kPa) at 11% oxygen.
Note 2: At the daily emission limit value level, the values of the 95 % confidence intervals of a single measured result shall not exceed the following percentages of the emission limit values:

Analyte	*Units*
NOx	*20 %*
CO	*10 %*
Total VOCs	*30 %*

Table 6: Main Stack specified Emission Limits (limit compliance during stack testing)

Main Stack Specified Emissions Limit Table (Stack Testing Data)			
Location	**Analyte**	**Units**	**Emission Limit**
Main Stack	Particulates	mg/m^3	10
	HCl	mg/m^3	60
	HF	mg/m^3	4
	SO_2	mg/m^3	200
	Cd and TI	mg/m^3	Total 0.05
	Hg	mg/m^3	0.05
	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V	mg/m^3	Total 0.5
	Dioxins and Furans as I-TEQ	ng/m^3	0.1

Note 1: Concentration results to be provided on a dry basis, corrected to standard temperature (273.15K) and pressure (101.3 kPa) at 11% oxygen.

16. The licence holder must not cause any emissions from the Engine Exhaust Stack except for specified emissions which are of the types specified in Table 7 and Table 8.

Table 7: Engine Exhaust Stack specified Emission Target (Target compliance assessed through continuous monitoring)

Engine Stack Specified Emission Targets Table (CEMS Data)			
Location	**Analyte**	**Units**	**Emission Target – 30 minute averages at 97% (compliance over a year, unless otherwise specified)**
Engine Exhaust Stack	NO_x	mg/m^3	1200
	CO	mg/m^3	1200
	Total VOCs	mg/m^3	50

Note 1: Concentration results to be provided on a dry basis, corrected to standard temperature (273.15K) and pressure (101.3 kPa) at 11% oxygen.

Table 8: Engine Exhaust Stack specified Emission Limits (limit compliance during stack testing)

Engine Stack Specified Emission Limits Table (Stack Testing Data)			
Location	**Analyte**	**Units**	**Emission Limit**
Main Stack	Particulates	mg/m^3	10
	HCl	mg/m^3	60
	HF	mg/m^3	4
	SO_2	mg/m^3	200
	Cd and TI	mg/m^3	Total 0.05
	Hg	mg/m^3	0.05
	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V	mg/m^3	Total 0.5
	Dioxins and Furans as I-TEQ	ng/m^3	0.1

Note 1: Concentration results to be provided on a dry basis, corrected to standard temperature (273.15K) and pressure (101.3 kPa) at 11% oxygen.

Monitoring

17. The licence holder must record the total amount of waste accepted onto the premises, for each waste type listed in Table 9, in the corresponding unit, and for each corresponding time period, as set out in Table 9.

Table 9: Waste accepted onto the premises

Waste type	Unit	Time period
Inert Waste Type 1	tonnes[1]	Each load accepted at the premises.
Putrescible waste (excluding FOGO)		
FOGO		
Treated power poles		
Timber		
Dry commercial and industrial wastes		
Used mattresses	Number of mattresses and conversion to tonnes	

Note 1: If incoming waste is recorded in m^3, conversion from m^3 to tonnes to be calculated in accordance with *Approved procedure for estimation/calculation of annual return information methods by recycling and reprocessing facilities required under the Waste Avoidance and Resource Recovery Regulations 2008* (as amended)

18. The licence holder must record the total amount of waste removed from the premises, for each waste type listed in Table 10, in the corresponding unit, and for each corresponding time period, as set out in Table 10.

Table 10: Waste removed from the premises

Waste type	Unit	Time period
Inert Waste Type 1	tonnes[1]	Each load leaving the premises.
Putrescible Waste (excluding FOGO)		
FOGO		
Treated power poles		
Timber		
Dry commercial and industrial wastes		
Used mattresses (shredded)		
Non-conforming waste types	kilograms	Each load leaving or rejected from the premises.
WTS wastewater removed via tanker	litres	Each tankered batch or continuous via flow meter
WWtE plant wastewater removed via tanker		

Note 1: If outgoing waste is recorded in m^3, conversion from m^3 to tonnes is to be calculated in accordance with *Approved procedure for estimation/calculation of annual return information methods by recycling and reprocessing facilities required under the Waste Avoidance and Resource Recovery Regulations 2008* (as amended)

Commissioning of the WWtE plant

19. From the start of the Commissioning Period, the licence holder must continuously monitor the substances specified in Table 11 from the locations specified. Emissions must be calculated as an average over the period specified, in accordance with the frequency and method specified in Table 11.

Table 11: Continuous emission monitoring requirements

Location	Substance	Averaging Period	Frequency	Method
Main Stack and Engine Exhaust Stack	NO_x	30 minutes/ 24 hours	Continuous monitoring, once CEMS has been commissioned, verified and calibrated (to occur within 500 operational hours of initial waste input).	DER Guideline: Continuous Emission Monitoring System Code (CEMS Code) March 2016 or compliant with EN 14181:2014
	CO	30 minutes/ 24 hours		
	Total VOCs (as Total Organic Carbon)	30 minutes/ 24 hours		
	Volumetric flow	30 minutes/ 24 hours		
	Oxygen	30 minutes/ 24 hours		

Notes: Concentration results to be provided on a dry basis, corrected to standard temperature (273.15°K) and pressure (101.3 kPa) at 11% oxygen.

20. During the Commissioning Period, the licence holder must determine by stack test, the analytes specified in Table 12 from the locations specified therein. The minimum sampling time for the stack test and the frequency of the testing is specified in Table 12. Sampling is to be conducted during full-load or near to full-load, during stable operations. Sampling during combustion of controlled syngas stream in the SACTO is to be conducted at partial load conditions under stable operations.

Table 12: Stack testing requirements

Stack Testing Requirements Table				
Location	**Analyte**	**Minimum Sampling Time**	**Frequency**	**Method**
Main Stack and Engine Exhaust Stack (During normal operations)	Particulates	60 minutes per test	A total of two sampling events to be conducted during normal operations, to represent stable operational	USEPA Method 5 or 17
	HCl/HF	60 minutes per test		USEPA Method 26 or Method 26A

Stack Testing Requirements Table				
Location	**Analyte**	**Minimum Sampling Time**	**Frequency**	**Method**
And Main stack (While a controlled syngas stream is burned through the SACTO)	SO_2	60 minutes per test	conditions under full or near-full load, with all engines online. Sampling during combustion of controlled syngas stream in SACTO, is to be conducted at partial load conditions, under stable operations. Each sampling event to be conducted on separate days. Each sampling event to consist of two non-concurrent sampling runs.	USEPA Method 6 or 6C
	NH_3	60 minutes per test		USEPA Conditional Test Method 027
	Group I Metals - Cd and Tl	120 minutes per test		USEPA Method 29
	Group II Metals – Hg	120 minutes per test		
	Speciated (Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V) and total metals	120 minutes per test		USEPA Method 29
	Dioxins and Furans	360 minutes per test		USEPA Method 23
	Polyaromatic hydrocarbons	360 minutes per test		SW-846 Method 0010
	Speciated VOCs (inc. benzene, toluene, ethylbenzene and xylene)	30 minutes per test		USEPA Method 18
	H_2S	30 minutes per test		USEPA Method 11

Note 1: Concentration results to be provided on a dry basis, corrected to standard temperature (273.15°K) and pressure (101.3 kPa) at 11% oxygen.

Note 2: Testing for different analytes is allowed to be conducted at the same time as long as the sampling is conducted in compliance with the specified methods for the analytes in question.

21. During the Commissioning Period, the licence holder must determine the Syngas Scrubber efficiency by sampling and analysing for the substances specified in Table 13 at the locations specified therein. Sampling is to be conducted during full-load or near to full-load, during stable operations, during each stack testing event.

Table 13: Monitoring requirements to determine scrubber efficiency

Scrubber Efficiency Table		
Location	**Substance**	**Frequency**
Stage 1 Scrubber discharge syngas	Speciated VOCs: • Benzene • Toluene • Ethylbenzene • Xylenes (total) • Formaldehyde	During stack tests conducted under condition 20 (Normal operating conditions). Samples at the two locations to be taken concurrently.
	NH_3	
	Acid gases • HCl • HF • H_2S	
	Condensables/tars	
	PAHs as BaP-TEQ	
Dehumidifier discharge syngas	Speciated VOCs: • Benzene • Toluene • Ethylbenzene • Xylenes (total) • Formaldehyde	
	NH_3	
	Acid gases • HCl • HF • H_2S	
	Condensables/tars	
	PAHs as BaP-TEQ	

Commissioning reporting

22. The licence holder must notify the CEO in writing within 24 hours after the first firing of the WWtE plant.

23. The licence holder must notify the CEO in writing, the end of the Commissioning Period within 1 week after the end of the Commissioning Period.

24. The licence holder must submit to the CEO, a Commissioning Report for, which the licence holder will make publicly available, and which includes:

(a) a noise assessment, including the monitoring and modelling of noise, conducted in accordance with Part 3 of the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations).

(b) details of the CEMS specifications and location, as determined prior to the initial operation of the Pyrolysis Kiln in accordance with Phase I and II of the CEMS Code;

(c) the Quality Assurance plan, as required under Section 2 of the CEMS Code;

(d) details of the successful calibration and verification of the CEMS, as conducted within 500 operational hours of the Pyrolysis Kiln initially processing wood waste in accordance with Phase III of the CEMS Code;

(e) details of the ongoing calibration and verification of the CEMS, as conducted in accordance with Phase IV of the CEMS Code;

(f) a summary of the techniques and method used to minimise NOx emissions;

(g) emission monitoring data, in accordance with the Continuous Emissions Monitoring Table and the Stack Emissions Monitoring Table for both the Main Stack and the Engine Exhaust Stack; and

(h) data specified in the Scrubber Efficiency Table, together with interpretation of the data to demonstrate scrubber efficiency. Details of the methodologies used for sampling and analysis are to be provided.

25. The licence holder may replace the information under condition 24 (b), 24 (c), 24 (d) and 24 (e) with documentation demonstrating that the CEMS complies with EN14181:2014.

26. The Commissioning Report must also provide details of the following key parameters during each monitoring/sampling event:

(a) source of wood waste at the time of monitoring/sampling;

(b) feed rate of wood waste (tonnes/hr);

(c) Pyrolysis Kiln and SACTO chamber temperature profile (^{o}C, one minute average) supplied as tabulated raw data and a temperature profile plot;

(d) volumetric flowrate (Nm^3/s);

(e) SACTO gas residence time (sec);

(f) NO_x emission concentration (mg/m^3) (30-minute average);

(g) CO emission concentration (mg/m^3) (30-minute average); and

(h) Total VOCs emission concentration (mg/m^3) (30-minute average).

27. The licence holder must ensure that copies of the original stack testing reports and the analytical reports are provided with the Commissioning Report.

28. The licence holder must ensure that the Commissioning Report is to be received by the CEO within 90 calendar days of the end of the Commissioning Period.

Monitoring during operation of the WWtE Plant

29. Following the end of Commissioning Period, the licence holder must determine by stack test, the analytes specified in Table 14 from the locations specified therein. The minimum sampling time for the stack test and the frequency of the testing is specified in Table 14. Sampling is to be conducted during full-load or near to full-load.

Table 14: Stack testing requirements

Stack Testing Requirements Table				
Location	**Analyte**	**Minimum Sampling Time**	**Frequency**	**Method**
Main Stack and Engine Exhaust Stack	Particulates	60 minutes per test	Biannually, with at least five months between each test.	USEPA Method 5 or 17
	HCl/HF	60 minutes per test		USEPA Method 26 or Method 26A
	SO_2	60 minutes per test		USEPA Method 6 or 6C
	NH_3	60 minutes per test		USEPA Conditional Test Method 027
	Group I Metals - Cd and TI	120 minutes per test		USEPA Method 29
	Group II Metals – Hg	120 minutes per test		
	Speciated (Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V) and total metals	120 minutes per test		USEPA Method 29
	Dioxins and Furans	360 minutes per test		USEPA Method 23
	Polyaromatic hydrocarbons	360 minutes per test		SW-846 Method 0010
	Speciated VOCs (inc. benzene, toluene, ethylbenzene and xylene)	30 minutes per test		USEPA Method 18
	H_2S	30 minutes per test		USEPA Method 11

Note 1: Concentration results to be provided on a dry basis, corrected to standard temperature (273.15°K) and pressure (101.3 kPa) at 11% oxygen.

Records and reporting

30. The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:

(a) the calculation of fees payable in respect of this licence;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 1 of this licence;

(c) monitoring programmes undertaken in accordance with the conditions of this licence; and

(d) complaints received under condition 32 of this licence.

31. The books specified under condition 30 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the licence holder for the duration of the licence; and

(d) be available to be produced to an inspector or the CEO as required.

32. The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

33. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and

(b) prepare and submit to the CEO by no later than 31 March after the end of that annual period an Annual Audit Compliance Report in the approved form.

34. The licence holder must submit to the CEO by no later than 31 March after the end of each annual period, an Annual Environmental Report for that annual period for the conditions listed in Table 15 and which provides information in accordance with the corresponding requirement set out in Table 15.

Table 15: Annual Environmental Report

Condition	Requirements	Format of form[1]
N/A	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken.	None specified
Conditions 17 and 18	Monitoring of inputs and outputs	
Condition 32	Complaints summary	
Condition 33	Compliance	AACR[1]

Note 1: Form accessible on DWER website.

Definitions

In this licence, the terms in Table 16 have the meanings defined.

Table 16: Definitions

Term	Definition
ACN	Australian Company Number.
AEP	Annual Exceedance Probability
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
annual period	a 12-month period commencing from 1 January until 31 December of the same year.
approved form	the AACR Form template approved by the CEO for use and available via DWER's external website.
CCA	Copper chromium arsenate.
CEO	means Chief Executive Officer of the Department. "submit to / notify the CEO" (or similar), means either: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
Commissioning Period	means the period that starts with the first time the Pyrolysis Kiln is being fired up for processing and ends the latest twelve (12) months after the start or when the Licence Holder has notified the CEO that the commissioning of the WWtE plant has been completed.
condition	a condition to which this licence is subject under section 62 of the EP Act.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
Dioxins and Furans as I-TEQ	means Dioxins and Furans expressed in a single toxic equivalency, which is the result from the product of the concentration of the individual Dioxins and Furans toxic equivalency factor as compared to the most toxic form 2,3,7,8-Tetrachlorodibenzodioxin using Part 2 of Annex VI of the European Union's Directive 2010/75/EU.
EN14181:2014	means the European Standard from European Committee for Standardization titled "Stationary source emissions – Quality assurance of automated measuring system" as approved on 11 October 2014.
EP Act	*Environmental Protection Act 1986* (WA).

Term	Definition
EP Regulations	*Environmental Protection Regulations 1987* (WA).
FOGO	means a source separated mixture of food organics and garden organics collected from bins designated for this purpose.
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
Pole mix	means a mixture of 1.5% aldrin and 0.1% pentachlorophenol in a diesel-tar, used by the former State Energy Commission of Western Australia in the treatment of timber power pole butts to protect them from termite and fungal attack.
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map in Schedule 1 to this licence.
shut down (in relation to the Pyrolysis Kiln)	means that at the time of a bypass event the feed to the Pyrolysis Kiln is stopped, the gas feed to the Pyrolysis Kiln burners has been stopped and temperature within the Pyrolysis Kiln has dropped to below 250 Celsius degrees.
USEPA	refers to the United States Environmental Protection Agency.
WWtE plant	means all the equipment and infrastructure within the premises used for the conversion of wood chips to electricity and includes the infrastructure as shown in Table 1.

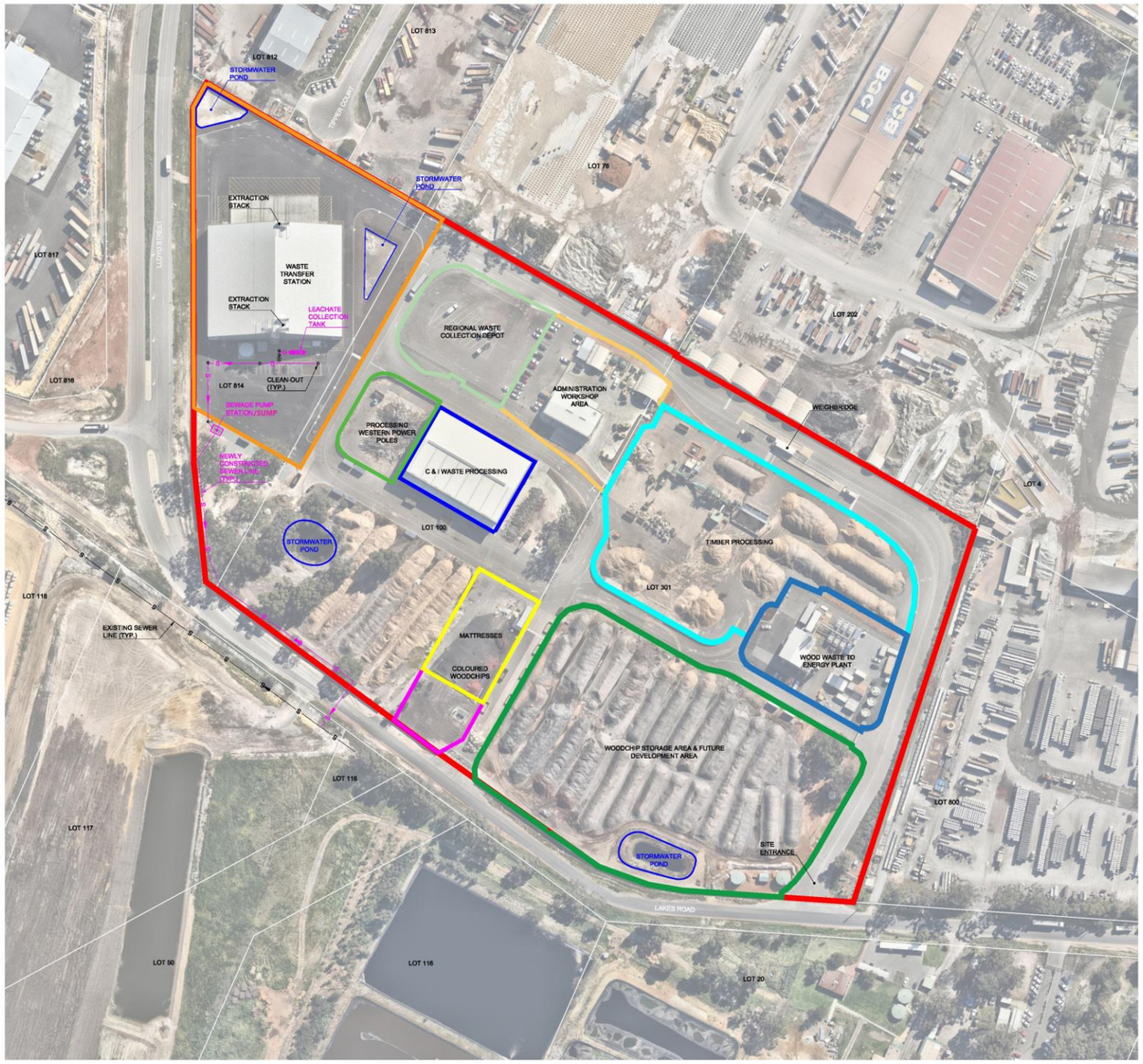
END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is outlined in red in the map below (Figure 1).

Figure 1: Premises boundary map



REV	DES	DRA	CHE	DATE	REVISION
E	SC	AS	SC	15/05/2024	MULTIPLE UPDATES
D	SC	AS	SC	24/10/2023	*PROPOSED HEAD OFFICE* DELETED
C	SC	AS	SC	23/10/2023	*PROPOSED HEAD OFFICE* DELETED
B	SC	AS	SC	10/10/2023	ADDED MATTRESSES & COLOURED WOODCHIPS
A	SC	AS	SC	21/09/2023	CONCEPT

Eastern Metropolitan Regional Council
1st Floor Ascot Place, 226 Great Eastern Hwy, Ascot, Western Australia 6104
PO Box 234 Belmont Western Australia 6984

APPROVED
MANAGER ENGINEERING
APPROVED
CHIEF OPERATING OFFICER

SITE: HAZELMERE RESOURCE RECOVERY PARK
ADDRESS: 77 LAKES ROAD HAZELMERE

PROJECT NAME: HAZELMERE DEVELOPMENT
DRAWING TITLE: DEVELOPMENT PLAN

SCALE: AS SHOWN
DRAWING NO: HZ004-03
SHEET: 1 OF 1
A1

Figure 2: Premises site plan

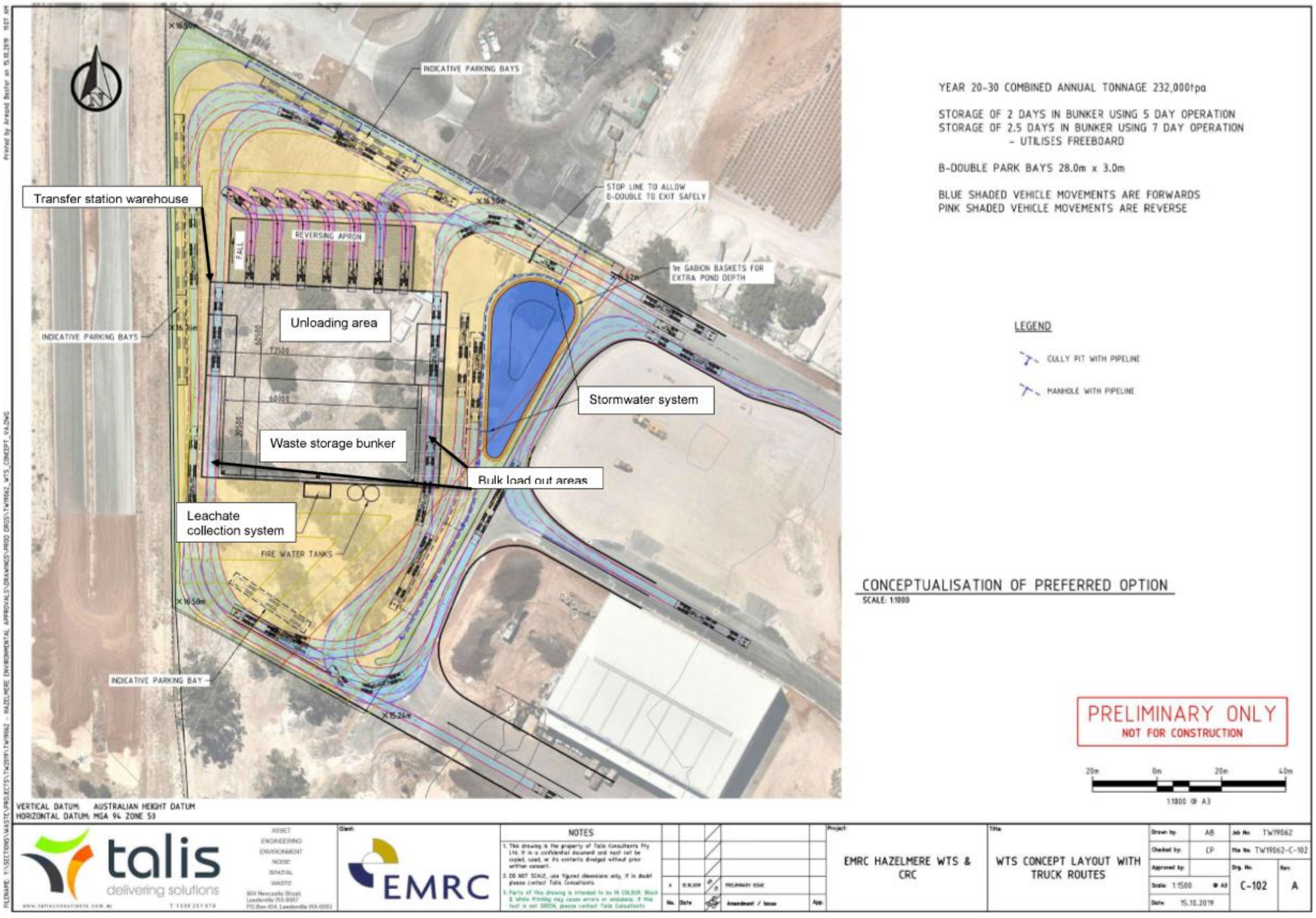


Figure 3: Waste transfer station layout with truck access routes

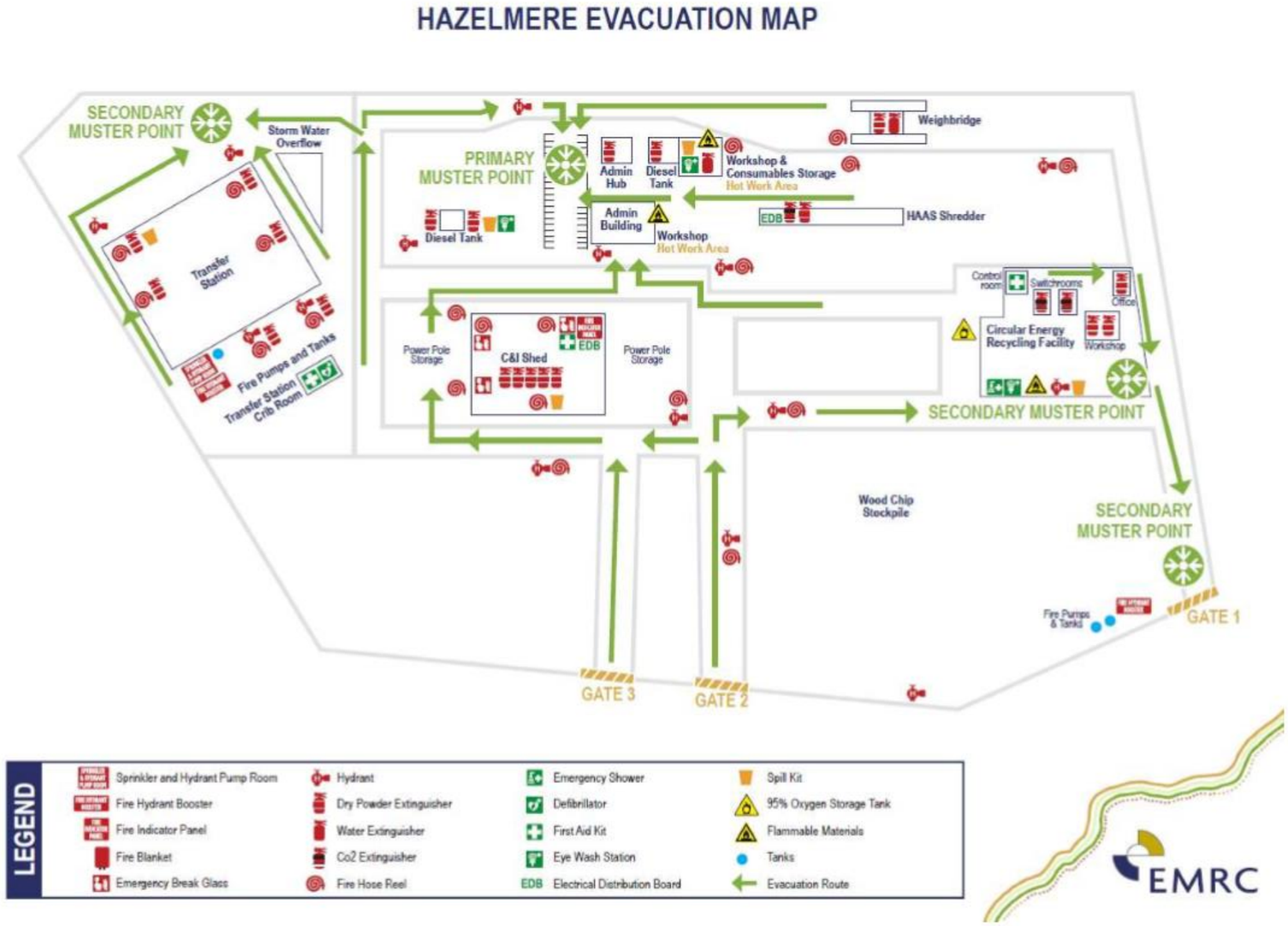


Figure 4: Fire and emergency equipment layout