Government of Western Australia
Department of Water and Environmental Regulation

# Works Approval

| | |
|---|---|
| **Works Approval Number** | W6196/2018/1 |
| **Works Approval Holder** | East Rockingham RRF Project Co Pty Ltd |
| **ACN** | 623 495 278 |
| **Registered business address** | 26 Office Road<br>EAST ROCKINGHAM WA 6168 |
| **File Number** | DER2018/001625 |
| **Duration** | 23/07/2019 to 22/07/2027 |
| **Date of issue** | 23/07/2019 |
| **Date of amendment** | 17/04/2025 |
| **Prescribed Premises** | Category 52 – Electric power generation<br>Category 60 – Incineration<br>Category 61A – Solid waste facility |
| **Premises** | East Rockingham Waste to Energy Facility<br>26 Office Road, EAST ROCKINGHAM WA 6168<br>Legal description:<br>Lot 1 on Diagram 62220<br>Certificate of Title: Volume 1608 / Folio 741 |

This amended Works Approval is granted to the Works Approval Holder, subject to the following conditions, on 17 April 2025, by:

Richard Wilson

Digitally signed by Richard Wilson
Date: 2025.04.17 13:02:04 +08'00'

**Manager, Process Industries**
**Regulatory Services**
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

# Works approval history

| Date | Ref Number | Summary of Changes |
|---|---|---|
| 23/07/2019 | W6196/2018/1 | Works Approval granted |
| 24/11/2023 | W6196/2018/1 | Amendment to extend duration |
| 17/04/2025 | W6196/2018/1 | Amend to extend duration to 22 July 2027 |

# Explanatory notes

These explanatory notes do not form part of this Works Approval.

## Defined terms

Definition of terms used in this Works Approval can be found at the start of this Works Approval. Terms which are defined have the first letter of each word capitalised throughout this Works Approval.

## Department of Water and Environmental Regulation

The Department of Water and Environmental Regulation (DWER) is established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the *Environmental Protection Act 1986* (WA) (EP Act). The Department also monitors and audits compliance with licences and works approvals, takes enforcement action and develops and implements licensing and industry regulation policy.

## Works Approval

Section 52 of the EP Act provides that an occupier of any premises commits an offence if any work is undertaken on, or in relation to, the premises which causes the premises to become, or to become capable of being, Prescribed Premises, except in accordance with a works approval.

Section 56 of the EP Act provides that an occupier of Prescribed Premises commits an offence if Emissions are caused or increased or permitted to be caused or increased, or Waste, noise, odour or electromagnetic radiation is altered or permitted to be altered from Prescribed Premises, except in accordance with a works approval or licence.

Categories of Prescribed Premises are defined in Schedule 1 of the *Environment Protection Regulations 1987* (WA) (EP Regulations).

This Works Approval does not authorise any activity which may be a breach of the requirements of another statutory authority including, but not limited to, the following:

- conditions imposed by the Minister for Environment under Part IV of the EP Act;
- conditions imposed by DWER for the clearing of native vegetation under Part V, Division 2 of the EP Act;
- any requirements under the *Waste Avoidance and Resource Recovery Act 2007;*
- any requirements under the *Environmental Protection (Controlled Waste) Regulations 2004*; and
- any other requirements specified through State legislation.

It is the responsibility of the Works Approval Holder to ensure that any action or activity referred to in this Works Approval is permitted by, and is carried out in compliance with, statutory requirements.

The Works Approval Holder must comply with the Works Approval. Contravening a Works Approval Condition is an offence under s.55 of the EP Act.

## Responsibilities of Works Approval Holder

Separate to the requirements of this Works Approval, general obligations of Works Approval Holders are set out in the EP Act and the regulations made under the EP Act. For example, the Works Approval Holder must comply with the following provisions of the EP Act:

- the duties of an occupier under s.61; and
- restrictions on making certain changes to Prescribed Premises unless the changes are in accordance with a Works Approval, Licence, closure notice or environmental protection notice (s.53).

Strict penalties apply for offences under the EP Act.

## Reporting of incidents

The Works Approval Holder has a duty to report to the Department all Discharges of Waste that have caused or are likely to cause Pollution, Material Environmental Harm or Serious Environmental Harm, in accordance with s.72 of the EP Act.

## Offences and defences

The EP Act and its regulations set out a number of offences including:

- Offence of emitting an Unreasonable Emission from any Premises under s.49.
- Offence of causing Pollution under s.49.
- Offence of dumping Waste under s.49A.
- Offence of discharging Waste in circumstances likely to cause Pollution under s.50.
- Offence of causing Serious Environmental Harm (s.50A) or Material Environmental Harm (s.50B).
- Offence of causing Emissions which do not comply with prescribed standards (s.51).
- Offences relating to Emissions or Discharges under regulations prescribed under the EP Act, including materials discharged under the *Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA).*
- Offences relating to noise under the *Environmental Protection (Noise) Regulations 1997 (WA).*

Section 53 of the EP Act provides that a Works Approval Holder commits an offence if Emissions are caused, or altered, from a Prescribed Premises unless done in accordance with a Works Approval, Licence or the requirements of a closure notice or an environmental protection notice.

Defences to certain offences may be available to a Works Approval Holder and these are set out in the EP Act. Section 74A(b)(iii) provides that it is a defence to an offence for causing Pollution, in respect of an Emission, or for causing Serious Environmental Harm or Material Environmental Harm, or for discharging or abandoning Waste in water to which the public has access, if the Works Approval Holder can prove that an Emission or Discharge occurred in accordance with a Works Approval.

This Works Approval specifies the Emissions and Discharges, and the limits and Conditions which must be satisfied in respect of specified Emissions and Discharges, in order for the defence to offence provision to be available.

## Authorised Emissions and Discharges

The specified and general Emissions and Discharges from the Works authorised through this Works Approval are authorised to be conducted in accordance with the Conditions of this Works Approval.

## Amendment of Works Approval

The Works Approval Holder can apply to amend the Conditions of this Works Approval under s.59 of the EP Act. An application form for this purpose is available from DWER.

The CEO may also amend the Conditions of this Works Approval at any time on the initiative of the CEO without an application being made.

## Duration of Works Approval

The Works Approval will remain in force for the duration set out on the first page of this Works Approval or until it is surrendered, suspended or revoked in accordance with s.59A of the EP Act.

## Suspension or revocation

The CEO may suspend or revoke this Works Approval in accordance with s.59A of the EP Act.

# Definitions and interpretation

## Definitions

In this Works Approval, the terms in Table 1 have the meanings defined.

**Table 1: Definitions**

| Term | Definition |
|---|---|
| As | means arsenic |
| Cd | means cadmium |
| CEO | means Chief Executive Officer.<br>CEO for the purposes of notification means:<br>Director General<br>Department Administering the *Environmental Protection Act 1986*<br>Locked Bag 10<br>JOONDALUP DC WA 6919<br>info@dwer.wa.gov.au |
| CEMS Code | means the guideline Continuous Emission Monitoring System (CEMS) Code for Stationary Source Air Emissions, Version: Final March 2016, DER2016/000490. |
| CFR | means the Code of Federal Regulations |
| CO | means carbon monoxide |
| Condition | means a condition to which this Works Approval is subject under s.62 of the EP Act. |
| Commissioning Period | means the period of operation where the plant is first brought online and permits the Works Approval Holder to have emissions from the premises. It commences after the Works have been completed and when Engineering certification (Condition 3) is provided and ceases eight (8) months later or sooner as and when this Works Approval expires. |
| Cr | means chromium |
| Cu | means copper |
| Department | means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act. |
| Department Request | means a request for Books or other sources of information to be produced, made by an Inspector or the CEO to the Works Approval Holder in writing and sent to the Works Approval's address for notifications, as described at the front of this Works Approval, in relation to:<br>(a) compliance with the EP Act or this Works Approval;<br>(b) the Books or other sources of information maintained in accordance with this Works Approval; or<br>(c) the Books or other sources of information relating to Emissions from the Premises. |
| 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 the WHO 2005 toxic equivalency factors from the World Health Organisation's document "The International Programme on Chemical Safety (IPCS)" WHO, Geneva, 2005 (WHO 2005 TEF) |
| DWER | Department of Water and Environmental Regulation |
| EP Act | means the *Environmental Protection Act 1986* (WA). |
| EP Regulations | means the *Environmental Protection Regulations 1987* (WA). |
| HCl | means hydrogen chloride |
| Hg | means mercury |
| HF | means hydrogen fluoride |
| HZI | means Hitachi Zosen Inova (a manufacturer of waste to energy plants) |

| Term | Definition |
|---|---|
| Inspector | means an inspector appointed by the CEO in accordance with s88 of the EP Act. |
| $mg/m^3$ | means milligrams per Normal cubic metre on a dry bases at 11% oxygen |
| Mn | means manganese |
| $ng/m^3$ | means nanograms per Normal cubic metre on a dry bases at 11 % oxygen |
| $NH_3$ | means ammonia |
| Ni | means nickel |
| NO | means nitrogen oxide |
| $NO_2$ | means nitrogen dioxide |
| $NO_x$ | means oxides of nitrogen |
| Normal cubic metre ($m^3$) | means one cubic metre at the reference conditions of 273.15ºK (0ºC) temperature and 101.3 kPa pressure |
| Pb | means lead |
| Premises | refers to the premises to which this Works Approval applies, as specified at the front of this Works Approval and as shown on the map in Schedule 1 to this Works Approval. |
| Sb | means antimony |
| $SO_2$ | means sulfur dioxide |
| Tl | means thallium |
| USEPA | refers to the United States Environmental Protection Agency. |
| V | means vanadium |
| VOCs | means Volatile Organic Compounds |
| Works | refers to the Works described in Schedule 2, at the locations shown in Schedule 1 of this Works Approval to be carried out at the Premises, subject to the Conditions. |
| Works Approval | refers to this document, which evidences the grant of the works approval by the CEO under s.54 of the EP Act, subject to the Conditions. |
| Works Approval Holder | refers to the occupier of the Premises being the person to whom this Works Approval has been granted, as specified at the front of this Works Approval. |

## Interpretation

In this Works Approval:

(a) the words ‘including’, ‘includes’ and ‘include’ will be read as if followed by the words ‘without limitation’;
(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 in this Works Approval means the version of the standard, guideline or code of practice in force at the time of granting of this Works Approval and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the Works Approval; and
(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act.

# Conditions

## Infrastructure and equipment

**1.** The Works Approval Holder must install and undertake the Works for the infrastructure and equipment:

(a) specified in Column 1;
(b) to the requirements specified in Column 2; and
(c) at the location specified in Column 3;

of Table 10 of Schedule 2.

**2.** The Works Approval Holder must not depart from the requirements specified in Column 2 of Table 10 of Schedule 2 except:

(a) where such departure does not increase risks to public health, public amenity or the environment; and
(b) all other Conditions in this Works Approval are still satisfied.

**3.** Subject to Condition 2 and within seven (7) days after completion of the Works specified in Column 1 of Table 10 of Schedule 2, the Works Approval Holder must provide to the CEO a report by an Engineer that certifies each item of infrastructure or component of infrastructure specified in Column 1 of Table 10 of Schedule 2 has been constructed with no material defects and to the requirements specified in Column 2 of Table 10 of Schedule 2.

**4.** Where a departure from the requirements specified in Column 2 of Table 10 of Schedule 2 occurs and is of a type allowed by Condition 2(a) the Works Approval Holder must provide to the CEO a description of, and explanation for, the departure along with the certification required by Condition 2(b).

## Emissions

**5.** The Works Approval Holder must not cause any emissions from the Works authorised through this Works Approval except for specified emissions and general emissions described in Table 2, subject to the exclusions, limitations or requirements specified in Table 2.

**Table 2: Authorised Emissions Table – Exclusions and Limitations**

| Emission type | Exclusions/Limitations/Requirements |
|---|---|
| **Specified Emissions** | |
| Emissions authorised by Conditions 6, 7 and 8. | Subject to compliance with Conditions 6, 7 and 8. |
| **General Emissions (excluding Specified Emissions)** | |
| Emissions which arise from undertaking the Works set out in Schedule 2. | Emissions excluded from General Emissions are:<br>• Unreasonable Emissions; or<br>• Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or<br>• Discharges of Waste in circumstances likely to cause Pollution; or<br>• Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or<br>• Emissions or Discharges which do not comply with an Approved |

| Emission type | Exclusions/Limitations/Requirements |
|---|---|
| | Policy; or<br>• Emissions or Discharges which do not comply with prescribed standard; or<br>• Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or<br>• Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the Environmental P*rotection (Unauthorised Discharges) Regulations 2004*. |

## Specified Emissions

**6.** The Works Approval Holder must ensure that emissions from the main stack comply with the emission limits specified in Table 3.

**Table 3: Authorised Emissions table – Parameters measured with CEMS**

| Parameter | Units | Half hourly Emission Limit | Daily Emission limit | Annual Emission Limit | Source |
|---|---|---|---|---|---|
| Particulates | $mg/m^3$ | 30 | 10 | 10 | Main stack |
| VOCs as Total Organic Carbon | $mg/m^3$ | 20 | 10 | 10 | Main stack |
| HCl | $mg/m^3$ | 60 | 10 | 10 | Main stack |
| $SO_2$ | $mg/m^3$ | 200 | 50 | 50 | Main stack |
| $NO_x$ (NO and $NO_2$) | $mg/m^3$ | 400 | 200 | 200 | Main stack |

(a) At the daily emission limit value level, the values of the 95% confidence intervals of a single measured result shall not exceed the percentages of the emission limit values in Table 4.

**Table 4: Percentage of emission limit value that the values of the 95% confidence interval shall not exceed**

| Parameter | Percentage |
|---|---|
| CO | 10% |
| $SO_2$ | 20% |
| $NO_x$ (NO and $NO_2$) | 20% |
| Particulates | 30% |
| VOCs as Total Organic Carbon | 30 % |
| HCl | 40% |

(b) The half-hourly averages and the 10-minute averages shall be determined within the effective operating time (excluding the start-up and shut-down periods if no waste is being incinerated) from the measured values after having subtracted the value of the confidence interval specified in Note 2 above. The daily average values shall be determined from those validated average values.

(c) 97% of all half hourly averages over the Annual Period must be below the limit as specified.

(d) The terms Half hour, Daily and Annual Emission Limits are defined in Table 5.

**Table 5: Emission limit period definitions**

| Period | Definition |
|---|---|
| Half hourly | 30 minutes, starting from the 1st and 31st minute of every hour of the day |
| Daily | Each calendar day of a calendar year |
| Annual | Each calendar year |

**7.** The Works Approval Holder must ensure that emissions from the main stack comply with the emission limits specified in Table 6.

**Table 6: Authorised Emissions Table – Parameters measures by stack testing**

| Parameter | Units | Emissions limit | Source |
|---|---|---|---|
| Cd and TI | $mg/m^3$ | Total 0.05[*1] | Main stack |
| HF | $mg/m^3$ | 4 | Main stack |
| Hg | $mg/m^3$ | 0.05 | Main stack |
| Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V | $mg/m^3$ | Total 0.5[*1] | Main stack |
| Dioxins and Furans as I-TEQ | $ng/m^3$ | 0.1 | Main stack |

*[*1] Total means monitoring results of all parameters in the row combined*

**8.** For carbon monoxide, the Works Approval Holder must ensure that carbon monoxide emissions from the main stack comply with the limits specified in Column 5 and Column 3 or Column 4 of Table 7.

**Table 7: Authorised Emission Table – Carbon monoxide [*1, *2, *3]**

| Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | Column 6 |
|---|---|---|---|---|---|
| **Parameter** | **Units** | **10 minute Emission Limit[*4]** | **Half hourly Emission limit[*5]** | **Daily Emission Limit[*3]** | **Source** |
| CO | $mg/m^3$ | 150 | 100 | 50 | Main stack |

[*1] At the daily emission limit value level, the values of the 95% confidence intervals of a single CO result shall not exceed the percentages of the emission limit values in Table 4.

[*2] The half-hourly average values and the 10-minute averages shall be determined within the effective operating time (excluding the start-up and shut-down periods if no waste is being incinerated) from the measured values after having subtracted the value of the confidence interval specified in [*1]. The daily average values shall be determined from those validated average values.

*3 At least 97% of the daily average values over the year are not to exceed 50mg/m$^3$.
*4 At least 95% of all 10-minute average values taken in any 24-hour period are not to exceed 150mg/m$^3$ (in the same 24-hour period as *5).
*5 All of the half hourly average values taken in any 24-hour period are not to exceed 100mg/m$^3$ (in the same 24-hour period as *4).

## Emission monitoring

**9.** From the start of the Commissioning Period, the Works Approval Holder must continuously monitor emissions from the main stack as specified in Table 8.

**Table 8: Continuous emission monitoring**

| Location | Parameter | Reportable averaging periods | Reporting Units | Frequency | Method/Standard the system has to meet. |
|---|---|---|---|---|---|
| Main stack | Particulates | 30 minutes and 24 hours | mg/m$^3$ | Continuous monitoring, once CEMS has been commissioned, verified and calibrated (to occur within 500 operational hours of initial waste processing) | CEMS Code |
| | $NO_x$ (NO and $NO_2$) | 30 minutes and 24 hours | mg/m$^3$ | | |
| | CO | 10 minutes; 30 minutes and 24 hours | mg/m$^3$ | | |
| | $SO_2$ | 30 minutes and 24 hours | mg/m$^3$ | | |
| | HCl | 30 minutes and 24 hours | mg/m3 | | Location: CEMS Code<br>Calibration and operation as per USEPA CFR 40: Part 60 and relevant performance specifications |
| | VOCs as Total Organic Carbon | 30 minutes and 24 hours | mg/m3 | | |
| | $NH_3$ | 30 minutes and 24 hours | mg/m$^3$ | | |

**10.** From the start of the Commissioning Period, the Works Approval Holder must periodically monitor emissions from the main stack as specified in Table 9.

**Table 9: Periodic emission monitoring**

| Location | Parameter | Stack testing period | Reporting Units | Frequency | Method |
|---|---|---|---|---|---|
| Main stack | HF | >=60 minutes per test | mg/m$^3$ | Quarterly, conducted to represent stable operation conditions under full or near-full load.<br><br>Each sampling event to be conducted in duplicate (non-concurrent). | USEPA Method 26A |
| | Group I Metals - Cd and Tl | >=120 minutes per test | mg/m$^3$ | | USEPA Method 29 or 30B |
| | Group II Metals – Hg | >=30 minutes per M30B test | mg/m$^3$ | | |
| | Speciated (Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V) and total metals | >=120 minutes per test | mg/m$^3$ | | USEPA Method 29 |
| | Dioxins and Furans | >=360 minutes per test | ng/m$^3$ | | USEPA Method 23 |

**11.** The Works Approval Holder must if, the CEMS, as required in condition 9, has stopped providing accurate monitoring results (as per the CEMS Code) for longer than four consecutive hours, take the following actions:

(a) cease adding waste to the incinerator;
(b) notify the CEO within 24 hours that the CEMS has failed to provide accurate monitoring results for 4 hours;
(c) repair the CEMS so that it provides accurate monitoring results (as per the CEMS Code);
(d) notify the CEO within 24 hours that it has repaired the CEMS; and
(e) notify the CEO within 24 hours that it has recommenced incineration of waste.

**12.** The Works Approval Holder must ensure that the CEMS, as required in condition 9, produces accurate data for more than 90% of the operating time per calendar month.

## Record-keeping

**13.** The Works Approval Holder must maintain accurate Books including information, reports and data in relation to the Works and the Books must:

(a) be legible;
(b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
(c) be retained for at least 3 years from the date the Books were made; and
(d) be available to be produced to an Inspector or the CEO.

**14.** The Works Approval Holder must comply with a Department Request within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

**15.** The Works Approval Holder must record the following information in relation to complaints received by the Works Approval 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 Works Approval Holder to investigate or respond to any complaint.

## Reporting

**16.** The Works Approval Holder must submit to the CEO a Commissioning Report which includes:

(a) details of the CEMS specifications and location, as determined prior to the initial operation of the incinerator (i.e. incinerator offline) in accordance with Phase I and II of the CEMS Code;
(b) the Quality Assurance plan, as required under Section 2 of the CEMS Code;
(c) details of the successful calibration and verification of the CEMS, as conducted within 500 operational hours of the incinerator initially processing waste feedstock, (i.e. incinerator online) in accordance with Phase III of the CEMS Code;
(d) details of the ongoing calibration and verification of the CEMS, as conducted in accordance with Phase IV of the CEMS Code;
(e) a summary of the techniques and method used to reduce $NO_x$ emissions;
(f) results of the emission monitoring as required per conditions 9 and 10; and

(g) comparison of emission monitoring results as per conditions 9 and 10 with emission data used for modelling of air emissions in the Works Approval application and the emission limits in this Works Approval.

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

(a) waste source at time of incineration;
(b) incinerator waste feed rate (tonnes/hr);
(c) incineration chamber temperature profile (ºC, one minute average);
(d) incinerator gas residence time (sec);
(e) ammonia injection rate and $NO_x$ emission concentration (kg/min and mg/m$^3$, one minute average, respectively);
(f) boiler economiser flue gas inlet temperature (ºC, one minute average);
(g) boiler economiser flue gas exit temperature (ºC, one minute average);
(h) bag filter inlet flue gas exit temperature (ºC, one minute average);
(i) activated carbon injection rate and VOC emission concentration (kg/min and mg/m$^3$, 1-minute average respectively); and
(j) hydrated lime or sodium bicarbonate injection rate and acid gas emission concentration (kg/min and mg/m$^3$, 1-minute average respectively).

**18.** The Commissioning Report is to be received by the CEO within 90 calendar days of the completion of the Commissioning Period and, where applicable, in conjunction with an application for a licence if not already submitted.

**19.** The Works Approval Holder must notify the CEO in writing within seven (7) calendar days for each of the following events:

(a) commencement of construction;
(b) commencement of the Commissioning Period;
(c) provisions of management plans to the EPA;
(d) first 24 hours of full rate operation (>90% nominal plant rate); and
(e) completion of commissioning and commencement of time limited operations.

**20.** The Works Approval Holder must, within seven (7) days of becoming aware of any non-compliance with any condition of this Works Approval, notify the CEO in writing of that non-compliance and include in that notification the following information:

(a) which condition was not complied with;
(b) the time and date when the non-compliance occurred;
(c) if any environmental impact occurred as a result of the non-compliance and if so what that impact is and where the impact occurred;
(d) the details and result of any investigation undertaken into the cause of the non-compliance;
(e) what action has been taken and the date on which it was taken to prevent the non-compliance occurring again; and
(f) what action will be taken and the date by which it will be taken to prevent the non-compliance occurring again.

## Commissioning and time limited operation

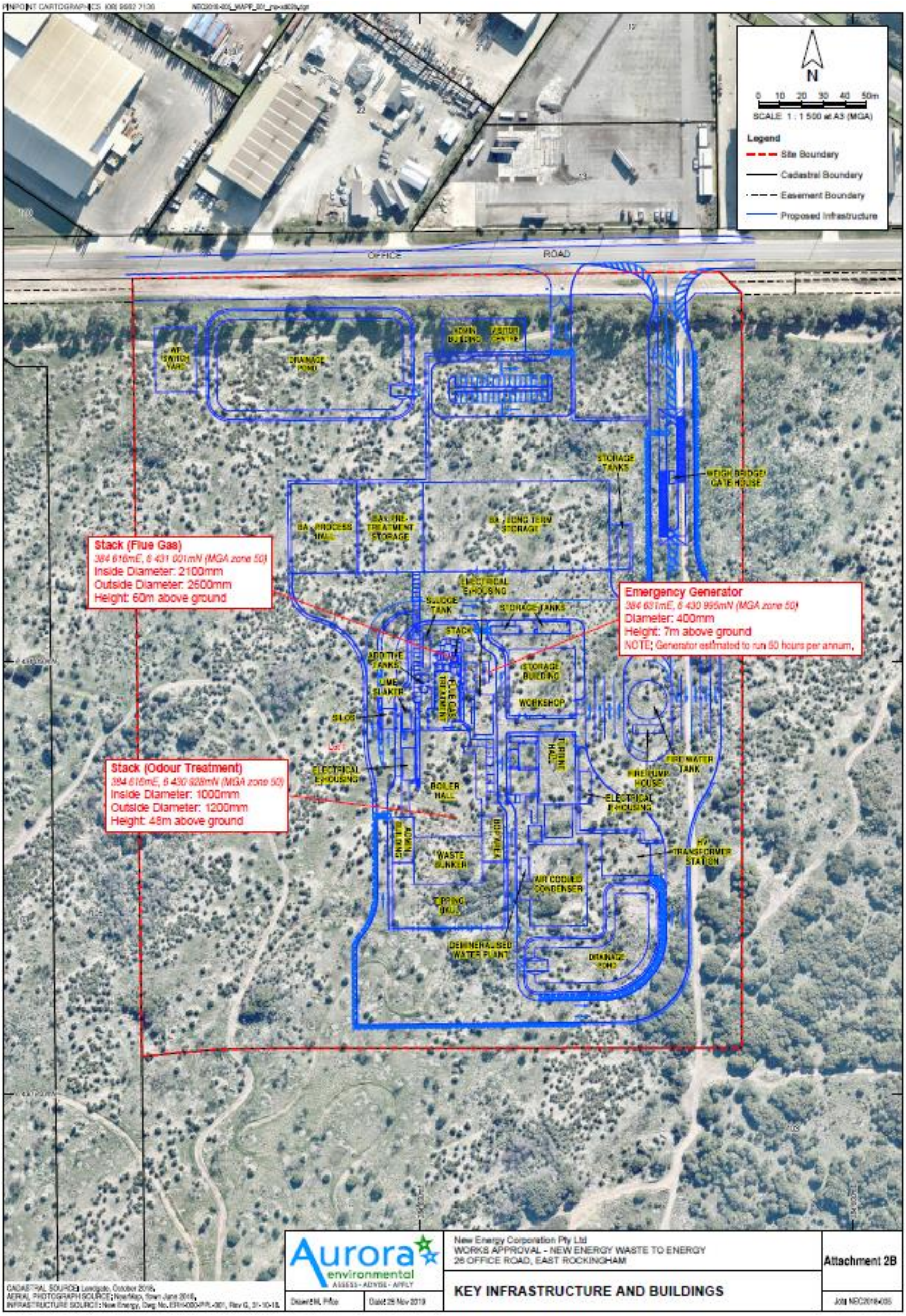
**21.** The Works Approval Holder must ensure that the Commissioning Period is no greater than eight (8) calendar months.

**22.** The Works Approval Holder must ensure that the works are only operated for a maximum period of ten (10) calendar months after the end of the Commissioning Period under this Works Approval.

# Schedule 1: Maps

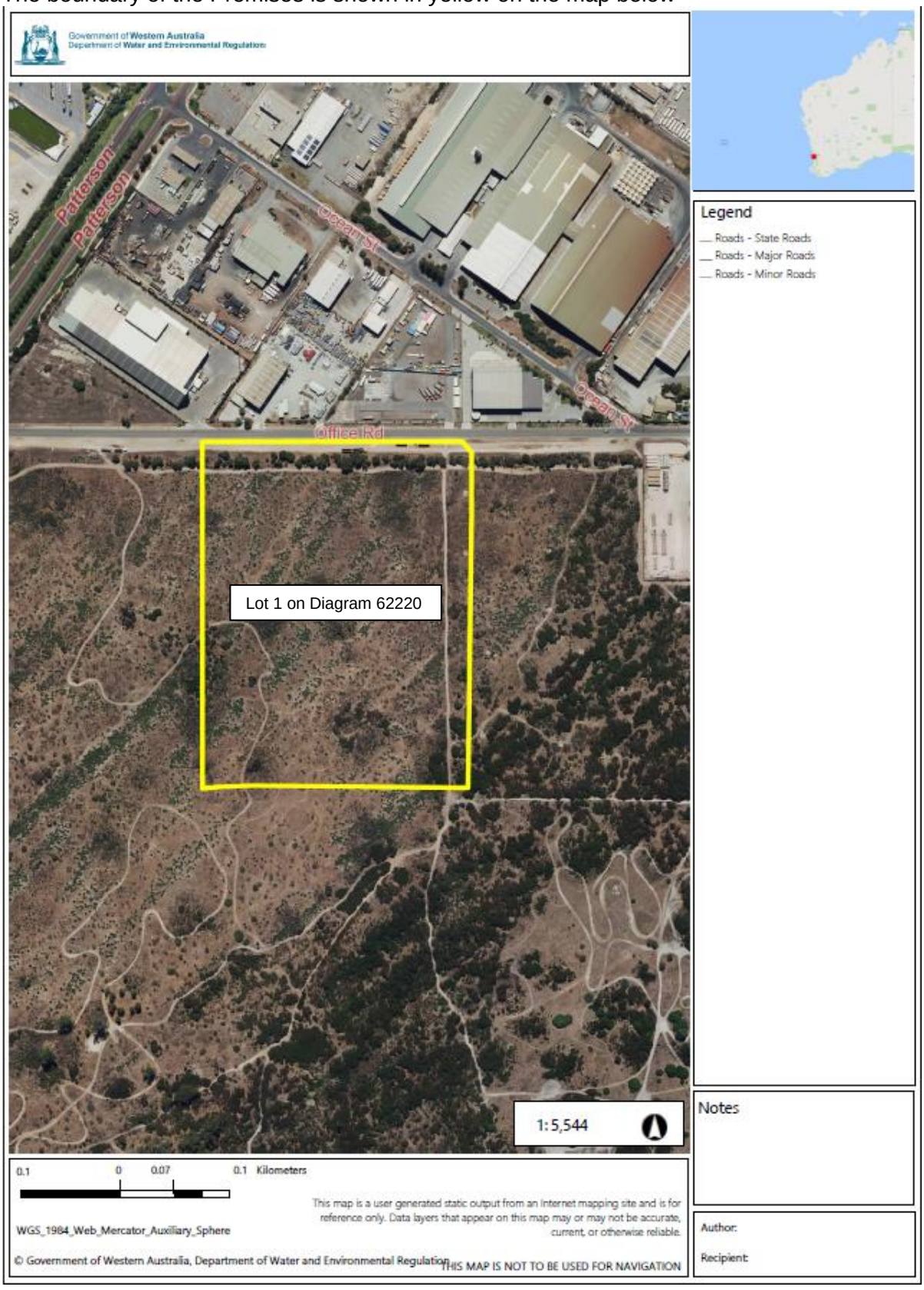
## Premises map

The Premises lay-out is shown in the map below.



## Boundary of the Premises

The boundary of the Premises is shown in yellow on the map below



# Schedule 2: Works

At the time of assessment, Emissions and Discharges from the Works listed in Table 10 were considered in the determination of the risk and related Conditions for the Works Approval.

**Table 10: Infrastructure and equipment requirements table**

| Column 1 | Column 2 | Column 3 |
|---|---|---|
| **Infrastructure/ Equipment** | **Requirements (design and construction)** | **Premises Map Reference** |
| Waste Acceptance area: Weighbridge | - Weigh bridge capable of measuring the weight of all incoming trucks to determine the amount of waste being processed by the plant;<br>- Radiation detection equipment to determine the presence of radioactive material | Weigh Bridge/Gate House |
| Waste receiving area: Tipping hall | - Rapid opening and closing roller doors and louvres;<br>- Negative air pressure that prevents the exit of air from the Tipping Hall whenever doors are open;<br>- Concrete flooring within the Tipping Hall to ensure that no waste or wastewater will be discharged to the environment from these areas; and<br>- CCTV and large object detection system, designed to identify and facilitate removal of large objects which are unsuitable for incineration | Tipping Hall |
| Waste Receiving Area: Waste Bunker | - The waste bunker to be equipped with automatic doors, designed to ensure the bunker remains sealed while no waste is being deposited;<br>- Mixing cranes to mix the waste to ensure a suitably homogenous feedstock for incineration to meet all emission limits;<br>- An air extraction system from the primary air fan for the incinerator, located above the waste bunker to ensure negative pressure within the waste bunker;<br>- A ventilation stack with a discharge point a minimum 48m above ground level for air extracted from the waste receiving area when the incinerator is not operating; and<br>- Concrete flooring within the Waste Bunker to ensure that no waste or wastewater will be discharged to the environment from these areas | Waste Bunker<br>Stack (Odour Treatment) |
| Waste incineration | - Single combustion line, containing a furnace using HZI grate technology;<br>- Startup burners, capable of firing as auxiliary burners to maintain incineration temperature in the incineration chamber such that minimum burning temperatures (850°C) and residence times (2 seconds) are maintained at all times during operation;<br>- Temperature sensors to be installed which are capable of the representative measurement across the entire incineration chamber and waste gases produced therein;<br>- Oxygen sensors to be installed which facilitate the measurement of combustion efficiency;<br>- Ammonia solution injection system capable of minimizing $NO_x$ emissions to below 400 $mg/m^3$; and<br>- Incineration gas recirculation fan, capable of recirculating flue gases from down stream of the fabric filter to the overfire nozzles for the purpose of minimisation of NOx emissions | Boiler Hall |
| Automated Combustion Control System (ACCS) | - Automated monitoring and control system capable of collecting CEMS (Continuous Emission Monitoring System) output data and using this data to control the grate boiler combustion and APCS parameters | - |
| Boiler Economiser | - Boiler Economiser capable of reducing flue gas temperature to below 150°C | - |

| Column 1 | Column 2 | Column 3 |
|---|---|---|
| **Infrastructure/ Equipment** | **Requirements (design and construction)** | **Premises Map Reference** |
| Air Pollution Control System (APCS) | - Hydrated Lime Injection System capable of injecting dry hydrated lime or sodium bicarbonate into the flue gas stream and reducing:<br>• $SO_2$ emissions to below 200 mg/m$^3$<br>• HF emissions to below 4 mg/m$^3$; and<br>• HCl emissions to below 60 mg/m$^3$.<br>- Activated Carbon Injection System capable of injecting activated carbon into the flue gas and reducing:<br>• VOC emissions to below 20 mg/m$^3$<br>• Dioxin and furan emissions to below 0.1 ng/m$^3$ as I-TEQ<br>• Mercury emissions to below 0.05 mg/m$^3$.<br>- Bag filter capable of:<br>- Minimising particulate matter emissions to below 30 mg/m$^3$<br>- Capturing activated carbon, sodium bicarbonate and/or lime for the purposes of treating flue gas emissions; and<br>- Quick detection and isolation of broken bags, without requiring a baghouse bypass situation to exchange or replace the broken bag | Flue Gas Treatment |
| CEMS | - CEMS capable of accurately measuring the following pollutants from the waste gas emissions:<br>• Particulate matter;<br>• NOx;<br>• $SO_2$;<br>• HCl;<br>• $NH_3$;<br>• CO; and<br>• VOCs. | - |
| Stack and associated ducting | - Flue stack of minimum 60m above ground level; and<br>- Sampling ports for emissions monitoring that are compliant with AS4323.1 | Stack (Flue Gas) |
| Bottom Ash Treatment, Storage and Maturation Area | - Concrete flooring with the Bottom Ash Bunker to ensure that no waste or wastewater will be discharged to the environment;<br>- Concrete flooring within the Bottom Ash Treatment, Storage and Maturation Area to ensure that no waste or wastewater will be discharged to the environment; and<br>- Covered conveyors to transport bottom ash, fly ash, and APC residues | BA – Process Hall<br>BA – Pre-Treatment Storage<br>BA – Long Term Storage |