SCOTTISH ENVIRONMENT PROTECTION AGENCY

POLLUTION PREVENTION AND CONTROL ACT 1999

POLLUTION PREVENTION AND CONTROL (SCOTLAND) REGULATIONS 2012 ("THE REGULATIONS")

SCHEDULE TO NOTICE OF VARIATION UNDER REGULATION 46(8)

Operator:	EARLS GATE ENERGY CENTRE LIMITED
Permit Number:	PPC/A/1157446
Date of Permit:	7 MARCH 2018
Variation No:	VN02

Permit number PPC/A/1157446 has been varied as follows:

1. In the "Interpretation of terms", the following new terms shall be added:

   "System Stress Event" – an event declared by the National Grid Electricity Service Operator (ESO) triggered by a national shortage of generation resources;

2. In Schedule 1, paragraph 1.1.4, sub-paragraph b) shall be deleted and replaced with the following new sub-paragraph b):

   1.1.4b) incineration of waste at temperatures above 850^{0}C with a minimum 2 second residence time in a CNIM-MARTIN reverse moving grate incinerator and associated combustion chamber. Two dual-fuel gas oil/ gas-fired low NOX auxiliary burners support the combustion temperature. Incinerator bottom ash is quenched in a water bath prior to conveying to an ash storage hall. The single line is capable of burning up to 274,000 tonnes per annum of non-hazardous residual refuse derived fuel based on 8000 hours operation. The incinerator is fed from a water-cooled waste feeding chute from where a hydraulically driven feed ram feeds the waste onto the grate via a feed table; primary air feed is drawn from the waste reception area and fed via the underside of the grate; secondary air feed is injected above the flame body on the grate;

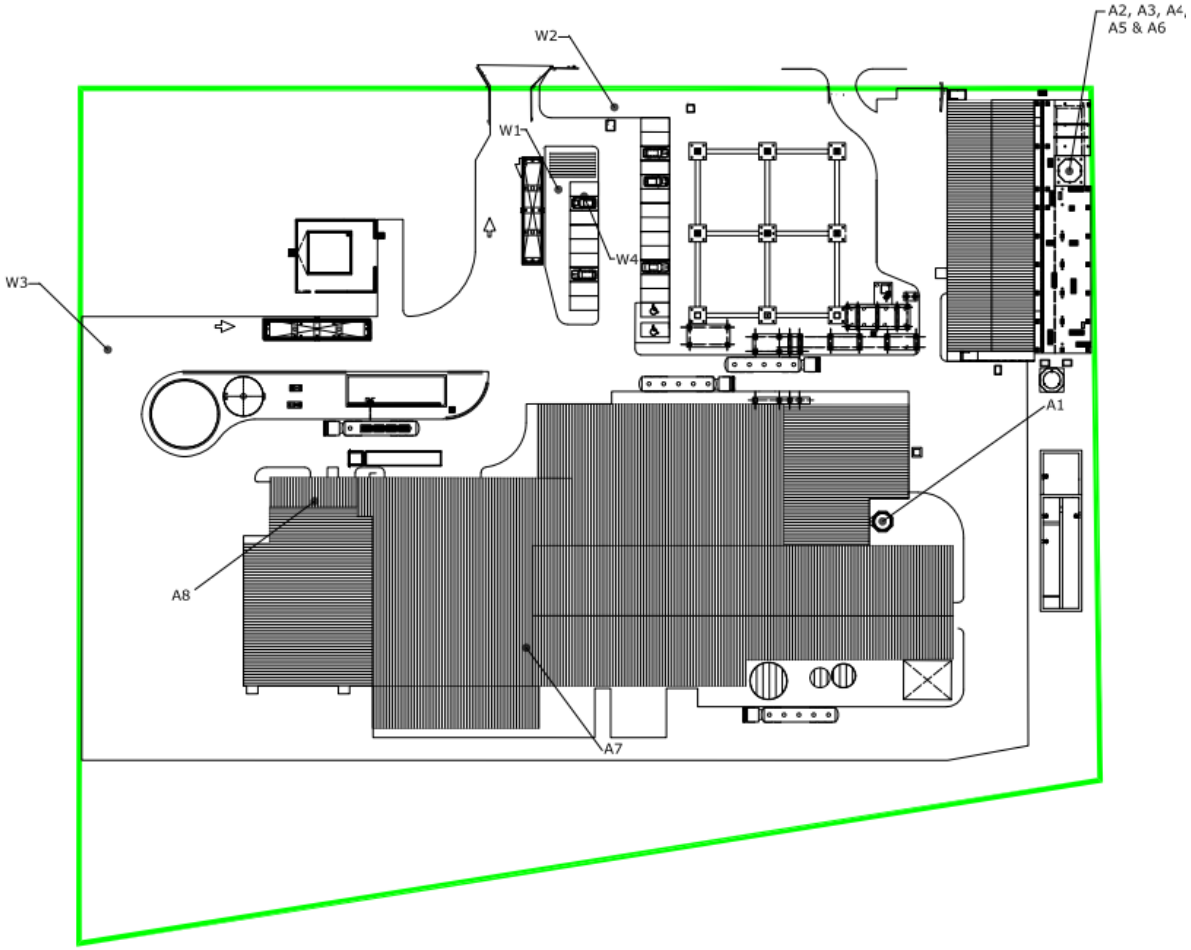
3. In Schedule 1, paragraph 1.1.4 sub-paragraph j) shall be deleted and replaced with the following new sub-paragraph j):

   j) Excess reject effluent from the reverse osmosis plant and the water softener, blowdown from the heat recovery boiler, described in c) above, and excess boiler blowdown and condensate from the economisers from the five back up boilers, described in k) below, will be discharged into the Calachem Weak Stream downstream of a 400m^3 capacity surface water attenuation tank. All other process effluent undergoes pH treatment and settlement in an underground decantation pit prior to reuse in the bottom ash quench with any excess being collected and recycled again in a closed loop.

4. In Schedule 1, paragraph 1.1.4 sub-paragraph k) shall be deleted and replaced with the following new sub-paragraph k):

   k) five 12MWth input gas-fired low NOX back-up boilers, venting via a common 35 metre stack to provide steam during peak demand and System Stress Events, during Start up or Shut Down of the incinerator, or when the incinerator is off-line; and

5. In Schedule 1, in paragraph 1.2, the Site Plan shall be deleted and replaced with the following new site plan:



6. In Schedule 2, in Condition 2.8.14, the words “Emission Point W1” shall be replaced with the words “Emission Points W1 and W2….”

7. In Schedule 2, Condition 2.8.25, sub-condition d) shall be deleted and replaced with the following new sub-condition d)

   d) conditions 2.8.21b), 2.8.22, 2.8.23 and 2.8.26

8. In Schedule 2, new Condition 2.8.26 shall be inserted after Condition 2.8.25.

   By 6 months before commissioning of the Incineration Plant, update the noise modelling provided in the ‘Sound Level Assessment Report’ by Sharps Redmore Acoustic Consultants, dated 28 November 2017 and accompanying maps for the site to include any changes to the design which could materially affect the noise emissions, including changes to structures, fan and emission point locations, alongside proposed changes to HGV movements and the construction of a bund along the southern boundary.

9. In Schedule 2, in Table 2.1, the following new rows shall be inserted:

Summary of information to be recorded/reported	**Condition**	**Review Frequency**	**Date first record due to be completed**	**Date reports due**
Updated Water Quality Assessment (WQA) of 12 month sampling	7.1.8	N/A	Following cessation of commissioning	Within 2 months of final sample being taken.
Upgrade options assessment (BUBs water re-use)	7.7.1	N/A	N/A	12 months after first operation of BuBs.
System stress Notification	10.2.3	N/A	As required by Condition 10.2.3	Within 1 day of Notification
System Stress Quarterly Record	10.2.4	N/A	Following cessation of commissioning of BuBs	First date of 31 January, 30 April, 31 July or 31 April following cessation of commissioning and quarterly thereafter

10. In Schedule 2, in Table 2.1, the row relating to Condition 7.1.5 shall be deleted and replaced with the following new row:

Revised Emissions to water sampling plan	7.1.5	Annually for forthcoming reporting period 1 January to 31 December	N/A	By 31 October 2021

11. In Schedule 3, in Condition 3.1.5, after the words “dated 28 November 2017” the words “and the updated modelling required by Condition 2.8.26” shall be added.

12. In Schedule 3, in Condition 3.1.10, the days and times for accepting waste shall be amended as follows:

Monday to Friday	0700 hours to 2200 hours
Saturday	0700 hours to 1700 hours

13. In Schedule 4, Condition 4.2.2, shall be deleted and replaced with the following new Condition 4.2.2:

4.2.2 The aggregated amount of the waste specified in Condition 4.1.1 that may be incinerated in the Permitted Installation shall not exceed 274,000 tonnes in any calendar year, and shall not exceed 34.223 Tonnes in any one hour.

14. In Schedule 7, Condition 7.1.5 shall be deleted and replaced with the following new Condition 7.1.5:

7. 1 .5 By 31 October 2021, a revised monitoring and sampling plan for every discharge (W1, W2, W3 and W4), shall be agreed in writing with SEPA based on the report required by Condition 2.8.14, and shall be maintained and reviewed annually. Said sampling plan shall detail the discharges to be sampled and monitored; the sampling point numbers, the NGR and description; the pollutants to be sampled; the method of sampling (spot or composite); the frequency of sampling; and how measurements for the determination of concentrations of water polluting substances shall be carried out representatively. The reviewed sampling plan shall be reported to SEPA each year for the forthcoming calendar year.

15. In Schedule 7, the following new Condition 7.1.8 shall be inserted after Condition 7.1.7.

7.1.8 Following the first 12 months of sampling of each of the effluent discharges W1 and W2, as required by Condition 7.1.5, and Tables 7.1 and 7.2, an updated assessment report on all effluent volumes and pollutant concentrations (as specified by the relevant ELV to each discharge), shall be made to confirm the composition assumptions used in the Water Quality Assessment (WQA) v4 dated 09 July 2021. Said report shall be submitted to SEPA within two months of the final sample being taken.

16. In Schedule 7, the following new Condition 7.7 and its sub-paragraphs shall be added after Condition 7.6.11:

7.7 UPGRADE CONDITION

7.7.1 No later than 12 months following First Operation of the back-up boilers, identified in Schedule 1, paragraph 1.1.4 sub-paragraph k), the Operator shall review the operation of said boilers to assess options to further minimise the projected mains water consumption requirements and associated effluent arisings. A report on the said review shall be submitted in writing to SEPA with details of any changes proposed to the design and operation, and a proposed timescale for implementation of those changes. The report shall include:

a) the potential for reducing further the volume of boiler blow down effluent from the back-up boilers, or re-using the effluent and condensate as far as is practicable, including when the CHP plant is offline; and

The report shall provide details of all options considered, including any limitations, together with a cost benefit analysis to identify potential cost savings.

17. In Schedule 7, Table 7.1 shall be deleted and replaced with the following new Table 7.1:

Table 7.1: Emissions to Water/Sewer ELVs

Required by Condition 7.1 3

Source of Emission	**Emission number point Location on site plan**	**W1**	**W2**	**W3**	**W4**
	Emission source	CHP plant effluent	Back-up boilers effluent	Uncontaminated surface water from attenuation tank	Domestic effluent
	Destination	Firth of Forth estuary via Calachem "Weak Stream"	Firth of Forth estuary via Calachem "Weak Stream"	Firth of Forth estuary via Calachem "Weak Stream"	Firth of Forth estuary via Calachem "Weak Stream"
	NGR	E291791 N681246	E291796, N681268	E291791, N681246	E291791, N681246
Monitoring Details	**Sampling location**	E291791 N681246	E291796, N681268	E291777, N681249	E291791, N681246
Limits For Parameters From Emission Source	**Basis of limit value**	**Emission Limit Value (ELV) (mg/l unless otherwise specified)**	**Emission Limit Value (ELV) (mg/l unless otherwise specified)**	**Emission Limit Value (ELV) (mg/l unless otherwise specified)**	**Emission Limit Value (ELV) (mg/l unless otherwise specified)**
	pH	No less than 6 and no greater than 9	No less than 6 and no greater than 9	None set	None set
	Temp	25°C	25°C	None set	None set
	Flow	300 m^3/d (3.4L/s)	195 m^3/d (2.25 L/s)	None set	None set
	Total suspended solids	None set	None set	None set	None set
	Chemical Oxygen Demand (COD)	100mg/l (A)	100mg/l (A)	None set	None set
	Dissolved Mercury	0.3 ug/l (A)	0.3 ug/l (A)	None set	None set
	Dissolved Cadmium	1ug/l (A)	1ug/l (A)	None set	None set
	Reactive Aluminium	None set	1700ug/l (A)	None set	None set

Dissolved Arsenic	2ug/l (A)	2ug/l (A)	None set	None set
Antimony and its compounds as Sb	0.5ug/l (A)	0.5ug/l (A)	None set	None set
Dissolved Lead	67ug/l (A)	500ug/l (A)	None set	None set
Total Boron	None set	16,000ug/l (A)	None set	None set
Dissolved Chromium VI	5ug/l (A)	5ug/l (A)	None set	None set
Dissolved Copper	None set	325ug/l (A)	None set	None set
Dissolved Iron	None set	700ug/l (A)	None set	None set
Manganese and its compounds as Mn	None set	400ug/l	None set	None set
Dissolved Nickel	10ug/l (A)	10ug/l (A)	None set	None set
Dissolved Zinc	500ug/l (A)	500ug/l (A)	None set	None set
Hydrogen cyanide	10ug/l (A)	10ug/l (A)	None set	None set
Selenium	3ug/l	3ug/l	None set	None set
Fluoride*(0 - 50 mg/l CaCO 3 dissolved*)	400ug/l (A)	None set	None set	None set
Unionised ammonia as NH3	300ug/l (A)	300ug/l (A)	None set	None set
Total organic carbon	10mg/l	10mg/l	None set	None set
Poly-cyclic aromatic hydrocarbons (as benzo-a-pyrene)	None set	None set	None set	None set
Phosphorus pentoxide	None set	25,000ug/l (A)	None set	None set

18. In Schedule 7, Table 7.2 shall be deleted and replaced with the following new Table 7.2

Table 7.2: Emissions to Water Monitoring Requirements

Required by Condition 7.1.6

Emission Point	Parameter	Monitoring frequency	Monitoring device type	Monitoring standard or method
W1 and W2	pH	Continuous	Instantaneous analyser	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Temperature	Continuous	Instantaneous analyser	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Flow	Continuous	Flow meter	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Total suspended solids	Daily	Spot Grab sample or Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA..
W1 and W2	Total organic carbon	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Chemical Oxygen Demand	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Unionised ammonia as NH3	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.

W1 and W2	Hydrogen cyanide	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Dissolved Mercury Dissolved Cadmium Antimony Dissolved Arsenic Dissolved Lead Dissolved Chromium VI Dissolved Nickel	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Dissolved Zinc	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W2 only	Reactive Aluminium	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Dissolved Copper	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Total Boron	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Manganese and its compounds as Mn	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.

W1 and W2	Dissolved Iron	Monthly	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W2 only	Fluoride	One sample every three months for First Year of Operation then once every six months	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Selenium	One sample every three months for First Year of Operation	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W1 and W2	Poly-cyclic aromatic hydrocarbons (as benzo-a-pyrene)	One sample every three months for First Year of Operation	Flow proportional composite sample over 24 hours	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.
W2 only	Phosphorus pentoxide	One sample every three months for First Year of Operation then once every six months	Spot Grab sample	Latest standard from Environment Agency (EA) M18 document or as otherwise agreed in writing with SEPA.

Note: All analysis shall be undertaken on unfiltered samples.

19. In Schedule 10, Condition 10.2.1 shall be deleted and replaced with the following new condition 10.2.1

    10.2.1 When the CHP Plant is operational, no more than two back-up boilers may be operated at the same time, unless there is a System Stress Event, or when the CHP Plant is transitioning from either start-up or shutdown, in which case up to five back-up boilers and the waste incineration line may be operated simultaneously.

20. In Schedule 10, Condition 10.2.2 shall be deleted and replaced with the following new Condition 10.2.2:

    10.2.2 The Operator shall record which back-up boilers are in operation whenever the incineration line is operational, including when transitioning from either start up or shut down.

21. In Schedule 10, the following new Conditions 10.2.3 and 10.2.4 shall be inserted after Condition 10.2.2:

    10.2.3 Whenever a System Stress Event occurs, EGEC shall notify SEPA within 24 hours, and shall record all such periods, including details of which back-up boilers were used for the duration of the event.

    10.2.4 The records required by 10.2.3 shall be reported to SEPA on a quarterly basis.