



# Notice of variation and consolidation with introductory note

## The Environmental Permitting (England & Wales) Regulations 2010

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SembCorp Utilities (UK) Limited

Wilton No.2 Gas Turbine  
SembCorp UK Headquarters  
PO Box 1985  
Wilton International  
Wilton  
Middlesbrough  
Redcar and Cleveland  
TS90 8WS

### **Variation application number**

EPR/XP3839XV/V003

### **Permit number**

EPR/XP3839XV

# Wilton No.2 Gas Turbine

## Permit number EPR/XP3839XV

### Introductory note

#### **This introductory note does not form a part of the notice.**

Under the Environmental Permitting (England & Wales) Regulations 2010 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies that all the conditions of the permit have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made and contains all conditions relevant to this permit.

The requirements of the Industrial Emissions Directive (IED) 2010/75/EU are given force in England through the Environmental Permitting (England and Wales) Regulations 2010 (the EPR) (as amended).

This Permit, for the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the Industrial Emissions Directive (IED), is varied by the Environment Agency to implement the special provisions for LCP given in the IED, by the 1 January 2016 (Article 82(3)). The IED makes special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V.

As well as implementing Chapter III of IED, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issued. It also modernises all conditions to reflect the conditions contained in our current generic permit template.

The Operator has chosen to operate this LCP under the ELV compliance route.

The variation notice uses an updated LCP number in accordance with the most recent DEFRA LCP reference numbers. The LCP references have changed as follows:

- LCP 429 is changed to LCP 320

The net thermal input of the LCP is as follows: LCP 320 – one 133.1MWth Combined Cycle Gas Turbine (CCGT).

The rest of the installation is unchanged and continues to be operated as follows:

This is a natural gas-fired combined heat and power (CHP) plant located within the Wilton International site boundary, centred on Grid Reference NZ571 219. This installation is intended to supply electrical power, high pressure (HP) and intermediate pressure (IP) steam into the various Wilton International distribution systems.

This 133.1 MW<sub>th</sub> Wilton No.2 Gas Turbine incorporates a gas turbine and a single pressure heat recovery steam generator (HRSG) which is capable of 162 tonnes/hr of IP steam at 18 barg and 300 °C or 100 tonnes/hr of HP steam at 96 barg and 320 °C. The turbine runs on natural gas and vents through a 50m high single stack. Boiler feedwater will come from the Wilton site demineralised water ring main, as will a supply of low pressure steam.

Emissions to air from the installation are oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO) and Sulphur Dioxide (SO<sub>2</sub>). NO<sub>x</sub> is minimised by dry low NO<sub>x</sub> (DLN) burners, and good combustion control is used to minimise NO<sub>x</sub> and CO. Sulphur Dioxide is minimised by the use of natural gas as a fuel. Emissions to sewer are from a continuous boiler blowdown which is cooled using raw water from the site ring main. The emissions to sewer discharge under an internal consent to the SembCorp Utilities controlled Wilton drainage system and then under a Water Resources Act discharge consent to Dabholme Gut and the River Tees.

There are no Sites of Special Scientific Interest (SSSI's) within 2km of the installation although there are Special Areas of Conservation (SAC) and Special Protection Areas (SPA) habitats sites within 10km of the

site. These include Teesmouth and Cleveland Coast which is the closest at 3.6km, and North Yorkshire Moors.

The site does not have an Environmental Management System accredited to ISO14001 but does have an EMS that is integrated into the other SembCorp Utilities sites on Wilton.

A variation in 2010 added a natural gas supply pipeline from the Egdon Resources UK Limited refining facility at Kirkleatham, near Wilton. Natural gas is also supplied by National Grid.

The schedules specify the changes made to the permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application received	Duly made 14/03/28	
Additional Information received	03/07/08	Requested 23/06/08
Additional Information received	09/07/08	
Permit determined EPR/XP3839XV	03/10/08	Permit issued to SembCorp Utilities (UK) Limited
Variation determined EPR/XP3839XV/V002	Duly made 05/07/10	
Permit EPR/XP3839XV/V002 issued	17/09/10	
Regulation 60 Notice sent to the Operator	31/10/14	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions
Regulation 60 Notice response	31/03/15	Response received from the Operator.
Additional information received	07/08/15	Response to request for further information (RFI) dated 25/06/15.
Additional information received	18/12/15	Response to request for further information (RFI) dated 15/12/15
Variation determined EPR/XP3839XV/V003 (Billing ref: KP3334XK)	23/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/16.

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

### Permit number

**EPR/XP3839XV**

### Issued to

**SembCorp Utilities (UK) Limited** (“the operator”)

whose registered office is

**Sembcorp UK Headquarters  
Wilton International  
Wilton  
Middlesbrough  
Redcar and Cleveland  
TS90 8WS**

company registration number 4636301

to operate a regulated facility at

**Wilton No.2 Gas Turbine  
SembCorp UK Headquarters  
PO Box 1985  
Wilton International  
Wilton  
Middlesbrough  
Redcar and Cleveland  
TS90 8WS**

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

Name	Date
Anne Nightingale	23/12/2015

Authorised on behalf of the Environment Agency

## **Schedule 1**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2010

### Permit number

**EPR/XP3839XV**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/XP3839XV/V003 authorising,

**SembCorp Utilities (UK) Limited** (“the operator”),

whose registered office is

**Sembcorp UK Headquarters  
Wilton International  
Wilton  
Middlesbrough  
Redcar and Cleveland  
TS90 8WS**

company registration number 4636301

to operate an installation at

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Redcar and Cleveland  
TS90 8WS**

to the extent authorised by and subject to the conditions of this permit.

Under regulation 27(2) of the Regulations, standard rules [number(s)] are conditions of this permit.

Name	Date
<b>Anne Nightingale</b>	<b>23/12/2015</b>

Authorised on behalf of the Environment Agency

# Conditions

## 1 Management

### 1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

### 1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;
- (c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (d) take any further appropriate measures identified by a review.

### 1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

### 1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 7 to this permit,

### **2.3 Operating techniques**

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” revision 1 dated February 2015 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.5 The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5
- 2.3.6 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
  - (b) the composition of the waste;
  - (c) the handling requirements of the waste;
  - (d) the hazardous property associated with the waste, if applicable; and
  - (e) the waste code of the waste.
- 2.3.7 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

### **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.



- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

## **2.5 Pre-operational conditions**

- 2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

## **3 Emissions and monitoring**

### **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits; and
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

### **3.3 Odour**

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
  - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.4 Noise and vibration**

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

### **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1 and S3.2; and
  - (b) annual limits specified in table S3.3.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continuous), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.

### **3.6 Monitoring for the purposes of the Industrial Emissions Directive Chapter III**

- 3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.
- 3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:
- (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
  - (b) implement the approved proposals.
- 3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.
- 3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.

- 3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:
- (a) for the continuous measurement systems fitted to the LCP release points defined in Table S3.1 the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
  - (b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;
  - (c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
  - (d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
  - (e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and
  - (f) any day, in which more than three hourly average values are invalid shall be invalidated.

## **4 Information**

### **4.1 Records**

- 4.1.1 All records required to be made by this permit shall:
- (a) be legible;
  - (b) be made as soon as reasonably practicable;
  - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
  - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
    - (i) off-site environmental effects; and
    - (ii) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

### **4.2 Reporting**

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;

- (b) the resource efficiency metrics set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

### 4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
  - (i) inform the Environment Agency;
  - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident; and
  - (iii) take the measures necessary to prevent further possible incidents or accidents.
- (b) of a breach of any permit condition the operator must immediately—
  - (i) inform the Environment Agency; and
  - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time.
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 (a)(i), 4.3.1 (b)(i) where the information relates to the breach of a condition specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and

- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (c) any change in the operator's name or address; and

- (d) any steps taken with a view to the dissolution of the operator.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before making the change; and

- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;

- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and

- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

## **4.4 Interpretation**

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately" in which case it may be provided by telephone.

# Schedule 1 – Operations

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
A1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP 320: Operation of a 133.1MWth gas turbine and heat recovery steam generator (HRSG) fuelled by natural gas for the production of electricity and steam.	From receipt of raw materials, generation of electricity and steam to despatch of electricity/ steam to Wilton site distribution systems and the National Grid, and the handling and despatch of any exhaust gases and waste.
<b>Directly Associated Activity</b>			
A2	Directly associated activity	Surface water collection	Handling and storage of surface water until discharge to site sewer
A3	Directly associated activity	Operation of cooling systems	Operation of cooling systems for the cooling of boiler blowdown.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	Sections 2.1, 2.2 and 2.9.4 in the Application.	14/03/08
Original permit XP3839XV	The venting of steam during start up shall be minimised between the hours of 22:00hrs and 08:00hrs on any calendar day, except where it is essential to maintain plant security.	03/10/08
Original permit XP3839XV	The inspection and maintenance of silencing equipment as described in permit application section 2.9.4.1, to be used on all equipment listed in Table 2.9-3 of the IPPC application.	03/10/08
Receipt of additional information to the application	Response to Improvement Condition IC2, a Noise Management Plan.	27/05/09
Receipt of information supporting variation application EPR/XP3839XV/V002	All sections of the variation application.	05/07/10

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance route(s) and operating techniques identified in response to questions 2 (compliance route), 4 (LCP configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9i,iii (Proposed ELV's, ELV between MSUL/MSDL and 70% load)	Received 31/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 25/06/15	Compliance route and operating techniques identified in response to 4 (LCP configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9i,iii (Proposed ELV's, ELV between MSUL/MSDL and 70% load), 11 (monitoring requirements).	Received 07/08/15

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC1	The operator shall submit the monitoring data for the continuous monitoring of particulates from emission point A6. A report should be sent to the Agency at the reporting address.	Complete
IC2	The operator shall produce a noise management plan with reference to the Environment Agency H3 guidance for Noise. A copy of the noise management plan should be sent to the Agency at the reporting address.	Complete
IC3	The operator shall undertake an H1 environmental assessment of the emissions to air from the continuous monitoring of A6. The H1 report shall be sent to the Agency at the reporting address.	Complete
IC4	The operator shall take representative samples of the effluent discharged from S7. The samples shall be analysed for: Oil, BOD, COD, pH, suspended solids, chlorine (as hypochlorite) or chloride, ammoniacal nitrogen, nitrates, sulphates, phosphates, metals suite (arsenic, barium, boron, cadmium, chromium, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium and zinc). The measurement methods should follow Appendix 1 of Sector Guidance Note S4.01 and the Agency document M18, unless otherwise agreed in writing with the Agency. The temperature and flow of the discharge to W1 should also be obtained. The data should be used to undertake an environmental impact assessment of the releases from S7. A written report shall be sent to the Agency at the reporting address.	Complete
IC5	The operator shall undertake noise surveys according to the requirements of BS4142:1997. These background noise surveys should be undertaken quarterly for a period of 12 months. The location and timing for the noise monitoring shall be at the points specified in Table 2.9-2 of the IPPC. A written report of the monitoring shall be sent to the Environment Agency at the reporting address.	Complete
IC6	The operator shall carry out a water minimisation audit with regard to section 2.4.3 of the sector guidance note S4.01. The report should include the methodology used and a comparison against the indicative BAT found in the sector guidance. The report shall include a water flow diagram, water mass balance and water efficiency objectives. Where improvements can be made that are considered BAT a timetable for their inclusion should be included. The written report should be sent to the Agency at the reporting address.	Complete

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC7	<p>The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP 320. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised).</p> <p>Evidence to support this figure, in order of preference, shall be in the form of:-</p> <ol style="list-style-type: none"> <li>Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes),</li> <li>Performance test results after a significant modification (quoting the specified standards or test codes),</li> <li>Manufacturer's contractual guarantee value,</li> <li>Published reference data, e.g., Gas Turbine World Performance Specifications (published annually);</li> <li>Design data, e.g., nameplate rating of a boiler or design documentation for a burner system;</li> <li>Operational efficiency data as verified and used for heat accountancy purposes,</li> <li>Data provided as part of Due Diligence during acquisition,</li> </ol> <p>*Performance test results shall be used if these are available.</p> <p>Use this IC where you are not satisfied with the Operator's evidence for the Net Thermal input figure(s) they have given.</p>	31/12/16
IC8	<p>The operator shall write to the Environment Agency for approval if an increase in the ELV limits set in table S3.1 of this permit is sought to the allowable limits set out in IED Annex V, Part 1, and paragraph 6.</p> <p>The written submission from the operator shall contain :-</p> <ul style="list-style-type: none"> <li>Verification of the efficiency quoted for the plant;</li> <li>An assessment of any efficiency gains that may be gained through the limit increase together with detailed proposals for validating this figure;</li> <li>An assessment of the impact of those increased emission limits from site on any air quality objectives;</li> <li>Any impact the increased emissions might have on local receptors.</li> </ul>	6 months from permit issue date.
IC9	<p>The Operator shall submit a report in writing to the Environment Agency for acceptance. The report shall define and provide a written justification of the "minimum start up load" and "minimum shut-down load", for each unit within the LCP as required by the Implementing Decision 2012/249/EU in terms of:</p> <ol style="list-style-type: none"> <li>The output load (i.e. electricity, heat or power generated) (MW); and</li> <li>This output load as a percentage of the rated thermal output of the combustion plant (%).</li> </ol> <p>And / Or</p> <ol style="list-style-type: none"> <li>At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU.</li> </ol>	31/01/16



<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC10	The operator shall provide a report, in writing, to the Environment Agency for acceptance, which identifies a daily emission limit value (ELV) for MSUL/MSDL to baseload. The written submission shall include a summary of relevant data with reference to the data sets used and a justification for the proposed ELV. The report shall also include an assessment of the impacts emissions at the proposed ELV using our H1 guidance equivalent methodology.	31/01/16
IC11	For LPCD LCP 429 (now LCP 320 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LPCD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.	28/01/16

<b>Table S1.4 Pre-operational measures</b>		
<b>Reference</b>	<b>Pre-operational measures</b>	<b>Date</b>
1	The operator shall submit a report before the start of operation demonstrating that the necessary procedures are in place for the operation of the Gas Turbine and staff have received the necessary training.	Complete
2	The operator shall submit a report demonstrating that all bulk liquid storage tanks, pipelines and secondary containment have been leak-tested before the start of operations.	Complete
3	The operator shall submit a report before the start of operation detailing the methods to be used and the frequency for all monitoring points for the emissions to sewer in accordance with Agency guidance M18.	Complete
4	The operator shall submit a report before the start of operation detailing the methods to be used for the continuous monitoring of temperature; pressure and water vapour content from release point A6.	Complete

<b>Table S1.5 Start-up and Shut-down thresholds</b>		
<b>Emission Point and Unit Reference</b>	<b>“Minimum start up load” Load in MW and as percent of the GT rated power output</b>	<b>“Minimum shut-down load” Load in MW and as percent of the GT rated power output (%)</b>
A6 LCP 320 Unit1	Equal to or greater than 4 MW; 10% (further parameters subject to IC9)	Less than 4 MW; 10% (further parameters subject to IC9)

## Schedule 2 – Waste types, raw materials and fuels

<b>Table S2.1 Raw materials and fuels</b>	
<b>Raw materials and fuel description</b>	<b>Specification</b>
Natural gas from Egdon Resources	Less than 50 mg/m <sup>3</sup> total sulphur content

## Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air from the gas turbine						
Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Oxides of Nitrogen (NO and NO2 expressed as NO2)	LCP No. 320 Gas turbine fired on natural gas	50mg/m3 70% to base load <sup>1</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Oxides of Nitrogen (NO and NO2 expressed as NO2)	LCP No. 320 Gas turbine fired on natural gas	55mg/m3 70% to base load <sup>1</sup>  (subject to IC10) MSUL/MSDL to base load <sup>2</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Oxides of Nitrogen (NO and NO2 expressed as NO2)	LCP No. 320 Gas turbine fired on natural gas	100mg/m3 70% to base load <sup>1</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Carbon Monoxide	LCP No. 320 Gas turbine fired on natural gas	100mg/m3 70% to base load <sup>1</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Carbon Monoxide	LCP No. 320 Gas turbine fired on natural gas	100mg/m3 70% to base load <sup>1</sup>  (subject to IC10) MSUL/MSDL to base load <sup>2</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Carbon Monoxide	LCP No. 320 Gas turbine fired on natural gas	200mg/m3 70% to base load <sup>1</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

<b>Table S3.1 Point source emissions to air from the gas turbine</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Sulphur Dioxide	LCP No. 320 Gas turbine fired on natural gas	10 mg/m <sup>3</sup>		6 monthly	BS EN 6069-4.4:1993 (ISO 7935:1992 or BSEN 14791) Or other method agreed by the Environment Agency
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Oxygen	LCP No. 320 Gas turbine fired on natural gas	-		Continuous As appropriate to reference	BS EN 14181
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Water Vapour	LCP No. 320 Gas turbine fired on natural gas	-		Continuous As appropriate to reference	BS EN 14181
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Stack gas temperature	LCP No. 320 Gas turbine fired on natural gas	-		Continuous As appropriate to reference	Traceable to national standards
A6 Point A6 on site plan in Figure 2.2-1 of the application]	Stack gas pressure	LCP No. 320 Gas turbine fired on natural gas	-		Continuous As appropriate to reference	Traceable to national standards
A6 Point A6 on site plan in Figure 2.2-1 of the application]	As required by the Method Implementation Document for BS EN 15259	LCP No. 320 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Note 1: This ELV applies when the load is >70% throughout the reference period.

Note 2: This ELV applies when the load varies between MSUL/MSDL and base load during the daily reference period. MSUL and MSDL are defined in Table S1.5.

<b>Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site–emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
S7 [Point S7 on site plan in Figure 2.2-1 of the application]	Not applicable	Boiler Blowdown	Not applicable	Not applicable	Not applicable	Not applicable

<b>Table S3.3 Annual limits to sewer (Note: 1)</b>		
<b>Substance</b>	<b>Medium</b>	<b>Limit (including unit)</b>
Cadmium	Sewer	155 g/yr
Mercury	Sewer	16 g/yr

Note 1: Compliance to be based on a mass balance calculation from mercury and cadmium content of raw materials, amount used and the annual flow from emission point S7.

<b>Table S3.4 Process monitoring requirements</b>				
<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
S7 [Point S7 on site plan in Figure 2.2-1 of the application]	pH	Continuous	Note 1	
S7 [Point S7 on site plan in Figure 2.2-1 of the application]	Flow	Continuous	Note 1	
S7 [Point S7 on site plan in Figure 2.2-1 of the application]	TOC	Continuous	Note 1	
S7 [Point S7 on site plan in Figure 2.2-1 of the application]	Temperature	Continuous	Note 1	

Note 1: The methods will be supplied as per pre operational condition 3.

## Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Oxides of nitrogen	A6	Every 3 months	1 January, 1 April, 1 July, 1 October
Carbon Monoxide	A6	Every 3 months	1 January, 1 April, 1 July, 1 October
Sulphur Dioxide	A6	Every 6 months	1 January, 1 July,
Mass release of cadmium to sewer	S7	Every 12 months	1 January
Mass release of mercury to sewer	S7	Every 12 months	1 January

<b>Table S4.2: Annual production/treatment</b>	
<b>Parameter</b>	<b>Units</b>
Power generated	GWhr

<b>Table S4.3 Chapter III Performance parameters for reporting to DEFRA and other Performance parameters</b>		
<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Thermal Input Capacity for LCP 320	Annually	MW
Annual Fuel Usage for LCP 320	Annually	TJ
Total Emissions to Air of NO <sub>x</sub> for LCP 320	Annually	t
Total Emissions to Air of SO <sub>2</sub> for LCP 320	Annually	t
Total Emissions to Air of dust for LCP 320	Annually	t
Operating Hours for LCP 320 (Load Factor)	Annually	hr

<b>Table S4.4 Reporting forms</b>				
<b>Media/ parameter</b>	<b>Reporting format</b>	<b>Starting Point</b>	<b>Agency recipient</b>	<b>Date of form</b>
Air & Energy	Form IED AR1 – SO <sub>2</sub> , NO <sub>x</sub> and dust mass emission and energy	01/01/16	National	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	National	31/12/15
Air	Form IED CON 2 – continuous monitoring	01/01/16	Area Office	31/12/15
CEMs	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15

<b>Table S4.4 Reporting forms</b>				
<b>Media/ parameter</b>	<b>Reporting format</b>	<b>Starting Point</b>	<b>Agency recipient</b>	<b>Date of form</b>
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/15
Sewer	Form sewer 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15

# Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

## Part A

Permit Number	<b>EPR/XP3839XV</b>
Name of operator	<b>SembCorp Utilities (UK) Limited</b>
Location of Facility	<b>Wilton No. 2 Gas Turbine</b>
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	



Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

## **Part B – to be submitted as soon as practicable**

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“background concentration” means such concentration of that substance as is present in:

for emissions to surface water, the surface water quality up-gradient of the site; or

for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

“calendar monthly mean” means the value across a calendar month of all validated hourly means.

“CEN” means Comité Européen de Normalisation.

“Combustion Technical Guidance Note” means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

“disposal”. Means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“DLN” means dry, low NO<sub>x</sub> burners.

“Energy efficiency” the ISO base load net plant efficiency means the performance value established by acceptance testing following commissioning or performance testing following improvements made to the plant that could affect the efficiency.

“Energy efficiency” the annual net plant energy efficiency means the value calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input, excludes individual combustion plants with a rated thermal input below 15MW.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“MCR” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

“Natural gas” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

“ncv” means net calorific value.

“operational hours” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

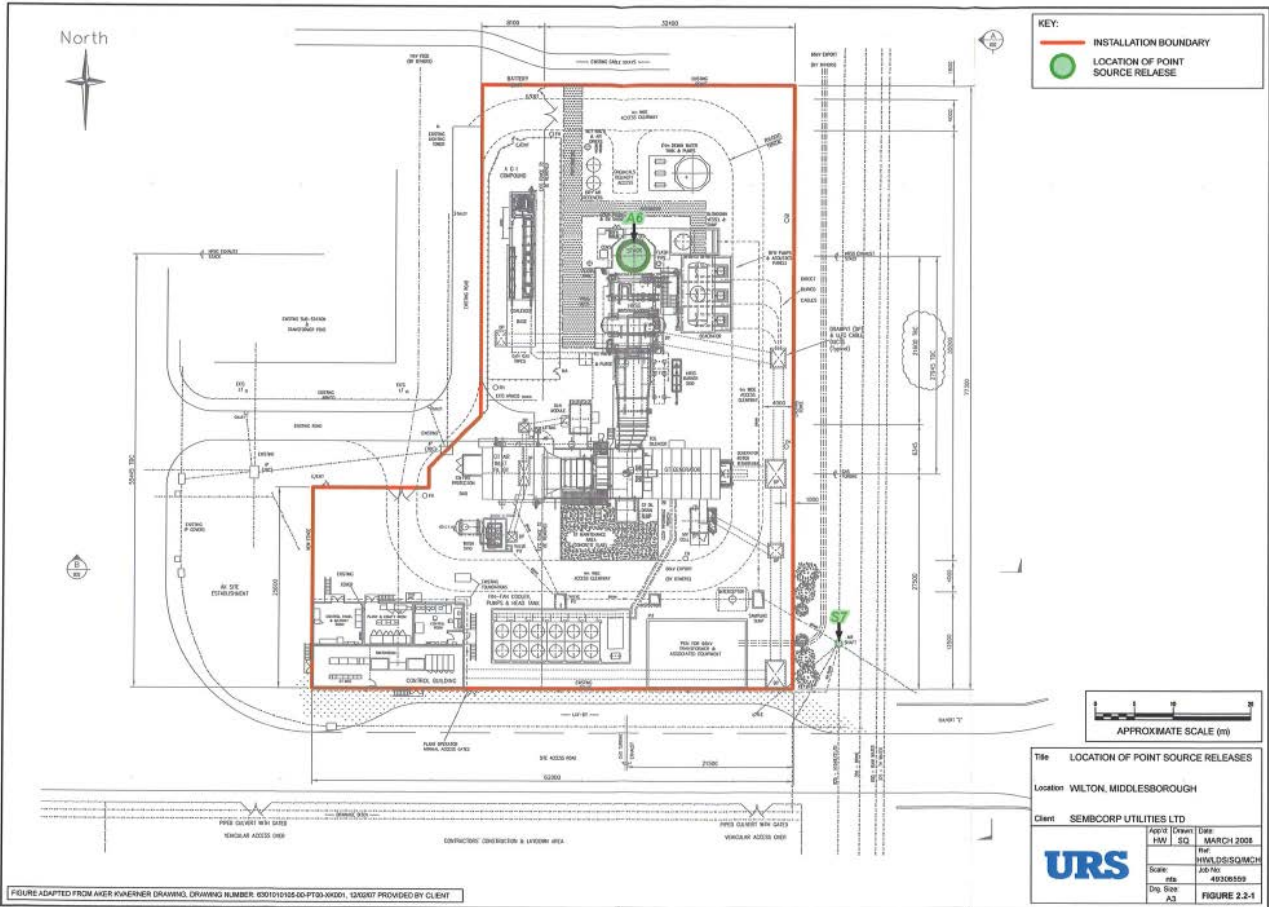
in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or

- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

# Schedule 7 – Site plan

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