

# Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

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px (TGPP) Limited

Teesside Gas Processing Plant

Seal Sands

Middlesbrough

Cleveland

TS2 1UB

## **Variation application number**

EPR/NP3133LV/V005

## **Permit number**

EPR/NP3133LV

# Teesside Gas Processing Plant

## Permit number EPR/NP3133LV

### Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2016 (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 the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions. We have reviewed the permit for this installation against the revised BAT Conclusions for the refining of mineral oil and gas industry sector published on 9<sup>th</sup> October 2014.

The main features of the permit are as follows.

The Schedule 1 listed activities are:

Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
Section 1.2 Part A(1) (a)	Refining natural gas where this is likely to involve the use of 1,000 tonnes or more of gas in any period of 12 months, including process gas heater 2 (19.5 MW), Breagh Process Heater No. 1 (3.5 MW) and Breagh Process Heater No. 2 (3.5 MW).	From receipt of natural gas and other raw materials to dispatch of products and disposal of waste. Loading & unloading activities of volatile liquid hydrocarbon compounds are limited to an annual throughput of <5000m <sup>3</sup> /year (and for sea going vessels <1 million m <sup>3</sup> /year) <sup>1</sup>  Note 1: from 09 October 2018
S1.1 B (a)(iii)	Burning of fuel in a gas turbine with a net rated thermal input of 24 megawatts to supply electricity for the compression of natural gas on site.	From receipt of raw materials to despatch of electricity and waste.

The Teesside Gas Processing Plant (TGPP) refines receives and processes natural gas from the Central North Sea (CNS) through Train 2 and the Southern North Sea (SNS) which is processed through the Breagh Train.

Both trains refine natural gas to produce methane and ethane, butane, propane and other liquid condensates.

The water content of the gas is reduced by contacting it with triethylene glycol (TEG) to prevent ice formation in the low temperature sections of the plant. Contaminated water is passed to a glycol regenerator where the water is extracted from the TEG. The TEG is recycled back into the process and the water is collected for off-site disposal as it is contaminated.

The natural gas passes through a filter coalescer which traps any remaining glycol prior to entering the extraction system.

The natural gas is cooled to extract Natural Gas Liquids (NGL) and then passed to a de-ethaniser to remove lighter components to leave stabilised NGL for storage. Gas from the de-ethaniser is re-compressed and can also be stored or transported.

In the fractionation section, stabilised NGL from two on-site storage vessels is fed to a de-propaniser fractionation column containing a series of trays heated by a gas-fired hot oil system. Propane is extracted from the top of the column and butane and condensate flow from the base into the de-butaniser. This removes butane from the top of the column and pentane and heavier condensates from the base.

The main process emissions to air are oxides of nitrogen and carbon dioxide due to burning of natural gas. There is a small continuous release from purges on the system and the burner pilot flame. Unburnt hydrocarbon releases come from the analysers, metering skid, oil tanks and the glycol regeneration system.

The SNS processing facility will be reconfigured with the addition of onshore compression facilities to allow depletion compression operation rather than free-flow to the gas National Transmission System. The onshore compression facility will include a single open cycle gas turbine drive compressor, two auxiliary gas driven electrical generators and auxiliary equipment for the compression unit including an air cooled bank of after coolers.

The gas turbine will have a thermal input of 24MW with a 15m high stack. The turbine will be fitted with low NOx burners to minimise emissions.

There are no process releases to controlled waters. The only release is uncontaminated rainwater and excess water from the firewater pond. The firewater pond contains water for using to put out any fires on site. Any surface water passes through an oil interceptor before collection within the pond. In periods of low rainfall the pond is topped up using raw mains water. There are no releases to sewer.

The raw materials used at the installation are flammable and therefore the standard of containment is high and fugitive losses are minimal. During shut down events some natural gas is purged for safety reasons. This has been quantified in the modelling and is insignificant.

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 NP3133LV	Duly made 18/09/06	
Additional information received	05/02/07	
Permit determined NP3133LV	19/04/07	Original permit issued to px (TGPP) Limited
Application BP3932UL (variation)	01/06/07	
Variation determined EPR/NP3133LV/V002	04/06/07	Variation notice issued.
Application CP3438FE (variation)	Duly made 20/07/12	Application to operate the Breagh Onshore Processing Facility in place of Train 1.
Additional information received	03/08/12	Clarification of heater capacities and removal of release point A7.
Variation determined EPR/NP3133LV/V003	15/08/12	Variation notice issued.
Application EPR/NP3133LV/V004 (variation and consolidation)	Duly made 06/10/15	Application to vary permit to add gas turbine.
Response to schedule 5 notice dated 19/10/15	23/10/15	Additional information about emission points and air impact assessment
Response to schedule 5 notice dated 19/10/15	26/10/15	Additional information about the air impact assessment

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Response to schedule 5 notice dated 19/10/15	03/11/15	Additional information about the air impact assessment
Variation determined EPR/NP3133LV/V004	15/12/15	Varied and consolidated permit issued in modern condition format.
Response to a Regulation 60 Notice dated 20/11/15	26/01/16	
Additional Information received by email	24/08/17	Additional information regarding combustion thermal input
Additional information received updating Regulation 60 Notice response	15/09/17	Whole response updates previous submission for identified BAT Conclusions
Environment Agency variation determined EPR/NP3133LV/V005 (PAS billing reference HP3731RP)	23/03/18	Permit review issued.

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates

### Permit number

EPR/NP3133LV

### Issued to

**px (TGPP) Limited** (“the operator”)

whose registered office is

**px House**

**Westpoint Road**

**Stockton on Tees**

**TS17 6BF**

company registration number 04416996

to operate an installation at

**Teesside Gas Processing Plant**

**Seal Sands**

**Middlesbrough**

**Cleveland**

**TS2 1UB**

to the extent set out in the schedules.

The notice shall take effect from 23/03/18

Name	Date
Martin Jenkins	23/03/2018

Authorised on behalf of the Environment Agency

## **Schedule 1**

All conditions have been varied by the consolidated permit EPR/NP3133LV 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 2016

### Permit number

**EPR/NP3133LV**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/NP3133LV/V005 authorising,

**px (TGPP) Limited** (“the operator”),

whose registered office is

**px House**

**Westpoint Road**

**Stockton on Tees**

**TS17 6BF**

company registration number 04416996

to operate an installation at

**Teesside Gas Processing Plant**

**Seal Sands**

**Middlesbrough**

**Cleveland**

**TS2 1UB**

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

Name	Date
Martin Jenkins	23/03/2018

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) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) 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; and
- (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 green 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 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.

2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.4 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.

2.3.5 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.

## **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 and S3.2.

- 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;
  - (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.
- 3.4.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
  - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

## **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.
- 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 continual), 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.

## **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 annual production /treatment data 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), or 4.3.1 (b)(i) where the information relates to the breach of a limit 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:
- (a) any change in the operator's name or address; and

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

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

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.

## **4.4 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 listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
Section 1.2 Part A(1) (a)	Refining natural gas where this is likely to involve the use of 1,000 tonnes or more of gas in any period of 12 months, including Process Heater 2 (19.5 MW), Breagh Process Heater No. 1 (3.5 MW) and Breagh Process Heater No. 2 (3.5 MW).	From receipt of natural gas and other raw materials to despatch of products and disposal of waste. Loading & unloading activities of volatile liquid hydrocarbon compounds are limited to an annual throughput of <5000m <sup>3</sup> /year (and for sea going vessels <1 million m <sup>3</sup> /year) <sup>1</sup>  Note 1: from 09 October 2018
Section 1.1 Part B (a)(iii)	Burning of fuel in a gas turbine (Breagh Compression Gas Turbine) with a net rated thermal input of 24 megawatts to supply electricity for the compression of natural gas on site including Breagh Gas Engine Generator 1 (1.8MWth) and Breagh Gas Engine Generator 2 (1.8MWth)	From receipt of raw materials to despatch of electricity and waste.
<b>Directly Associated Activity</b>		
Utilities	Operation of lubrication systems and a 1MW emergency diesel generator.	From receipt of raw materials to disposal of waste.
Auxiliary equipment for compression system	Two auxiliary gas driven electrical generators and auxiliary equipment for the compression unit including an air cooled bank of after coolers	From receipt of raw materials to despatch of electricity and waste.
Gas flaring	Flaring and venting of gas during shutdowns and emergency situations	The flaring and venting of natural gas from the specified emission points

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to section 2.1 and 2.2 in the Application.	18/09/06
Schedule 4 Notice Request dated 10/01/07	Response to question 1 detailing process control.	05/02/07
Variation application EPR/NP3133LV/V003	Description of Change Report 2011/NP3133LV/DOC dated July 2012 and Operational Techniques Report 2012/NP3133LV/OT dated July 2012.	20/07/12
Variation application EPR/P3133LV/V004	Parts C2 and C3 of the application and all referenced supporting documentation.	Duly made 06/10/15
Response to schedule 5 notice dated 19/10/15	Additional information about emission points and air impact assessment	23/10/15
Response to schedule 5 notice dated 19/10/15	Additional information about the air impact assessment	26/10/15
Response to schedule 5 notice dated 19/10/15	Additional information about the air impact assessment	03/11/15

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Response to a Regulation 60 Notice dated 20/11/15	Demonstration of compliance with BAT Conclusions	26/01/16
Additional Information received by email	Additional information regarding combustion thermal input	24/08/17
Additional information received	Whole response updates previous submission for specified BAT Conclusions	15/09/17

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC1	<p>The operator shall undertake an assessment of the primary, secondary and tertiary containment arrangements for raw material, product and waste storage areas against the requirements of section 2.2.5 of IPPC Sector Guidance Note S1.02 to identify and address any deficiencies.</p> <p>The review shall include, but not be limited to the implementation of a programme of leak detection and repair.</p> <p>A written report of the assessment, including corrective actions and timescales for implementation of the corrective actions shall be submitted to the Agency.</p>	Complete
IC2	<p>The Operator shall prepare and submit a comprehensive noise assessment report undertaken in accordance with the procedures given in BS4142:2014 (Methods for rating and assessing industrial and commercial sound). The assessment shall include the identification and assessment of the impact of noise emissions upon surrounding sensitive receptors arising from the operation of the gas turbine</p> <p>In the event that the report shows that noise could have a significant impact, the report shall include proposals for the further attenuation and/or management of noise and shall include a timescale, to be agreed with the Environment Agency, for the implementation of the proposed measures.</p>	3 months after completion of commissioning of the gas turbine

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

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
-	-

## Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1 on site plan in Schedule 7]	Heater 2	No parameters set	-	-	-	Permanent sampling access not required
A2a [Point A2A on site plan in schedule 7]	CNS (Train 2) Flare	No parameters set	-	-	-	Permanent sampling access not required
A2b [Point A2B on site plan in schedule 7]	SNS (Breagh) Flare	No parameters set	-	-	-	Permanent sampling access not required
A3 [Point A3 on site plan in schedule 7]	C202 lube oil tank	No parameters set	-	-	-	Permanent sampling access not required
A4 [Point A4 on site plan in schedule 7]	C204 lube oil tank	No parameters set	-	-	-	Permanent sampling access not required
A5 [Point A5 on site plan in schedule 7]	C101 lube oil tank	No parameters set	-	-	-	Permanent sampling access not required
A6 [Point A6 on site plan in schedule 7]	C103 lube oil tank	No parameters set	-	-	-	Permanent sampling access not required
A8 [Point A8 on site plan in schedule 7]	Effluent tank	No parameters set	-	-	-	Permanent sampling access not required
A9 [Point A9 on site plan in schedule 2]	Black start generator	No parameters set	-	-	-	Permanent sampling access not required



<b>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A10 [Point A10 on site plan in schedule 7]	Breagh Process Heater No. 1	No parameters set	-	-	-	Permanent sampling access not required
A11 [Point A11 on site plan in schedule 7]	Breagh Process Heater No. 2	No parameters set	-	-	-	Permanent sampling access not required
Miscellaneous process vents	Various	No parameters set	-	-	-	Permanent sampling access not required
A12 [Point A12 on site plan in schedule 7]	Breagh Compression Gas Turbine	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	50 mg/m <sup>3</sup> [note 1]	Hourly average	6 monthly	BS EN 14792
		Carbon monoxide	60 mg/m <sup>3</sup> [note 1]	Hourly average	6 monthly	BS EN 15058
A13 [Point A13 on site plan in schedule 7]	Breagh Gas Engine Generator 1	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	No limit set	-	-	Permanent sampling access not required
		Carbon monoxide	No limit set			Permanent sampling access not required
A14 [Point A14 on site plan in schedule 7]	Breagh Gas Engine Generator 2	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	No limit set	-	-	Permanent sampling access not required
		Carbon monoxide	No limit set	-	-	Permanent sampling access not required
Note 1: Emission limit values do not apply during start up and shut down.						

<b>Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1 on site plan in schedule 2 emission to Greatham Creek	Uncontaminated rainwater and surface run-off	Visible oil and grease	No visible emission	Spot Sample	Monthly	Visible check

## 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>
Emissions to air Parameters as required by condition 3.5.1	A12	6 monthly	1 Jan, 1 July
Emissions to water Parameters as required by condition 3.5.1	W1	Annually	01/01/07
Flaring events	A2a, A2b	Annually	01/01/19

<b>Table S4.2 Annual production/treatment</b>	
<b>Parameter</b>	<b>Units</b>
Annual throughput of natural gas	tonnes
Annual production of ethane	tonnes
Annual production of propane	tonnes
Annual production of butane	tonnes
Annual volume of process effluent tankered off site	tonnes

<b>Table S4.3 Performance parameters</b>		
<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Energy usage	Annually	MWh
Diffuse Volatile Organic Compounds	Annually	tonnes

<b>Table S4.4 Reporting forms</b>		
<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Emissions to Air - Combustion	Form air 1 or other form as agreed in writing by the Agency	15/12/15
Emissions to Air – VOCs	Form air 2 or other form as agreed in writing by the Agency	20/10/17
Flare events	As agreed in writing by the Agency	
Water	Form water 1 or other form as agreed in writing by the Agency	08/03/07
Energy usage	Form energy 1 or other form as agreed in writing by the Agency	08/03/07
Other performance indicators	Form performance 1 or other form as agreed in writing by the Agency	20/10/17

# 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	
Name of operator	
Location of Facility	
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	

<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>	
Measures taken, or intended to be taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>

<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.	

Name*	
Post	
Signature	
Date	

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

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

“annually” means once a year

“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.

“diffuse VOC emission” means non-channelled VOC emissions that are not released via specific emission points such as stacks. They can result from 'area' sources (e.g. tanks) or 'point' sources (e.g. pipe flanges)

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 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 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.

“hazardous property” has the meaning given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

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

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

“Nm<sup>3</sup>” means normal cubic meter (volume at 101.325 kPa, 273 K)

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

“VOC” means Volatile organic compounds as defined in Article 3(45) of Directive 2010/75/EU - ‘volatile organic compound’ means any organic compound as well as the fraction of creosote, having at 293,15 K a vapour pressure of 0,01 kPa or more, or having a corresponding volatility under the particular conditions of use.

“volatile liquid hydrocarbon compounds” means petroleum derivatives with a Reid vapour pressure (RVP) of more than 4 kPa, such as naphtha and aromatics (Best Available Techniques (BAT) Reference Document for the Refining of Mineral Oil & Gas, 2015, EU27140EN)

“WFD” means the Water Framework Directive (2000/60/EC).

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

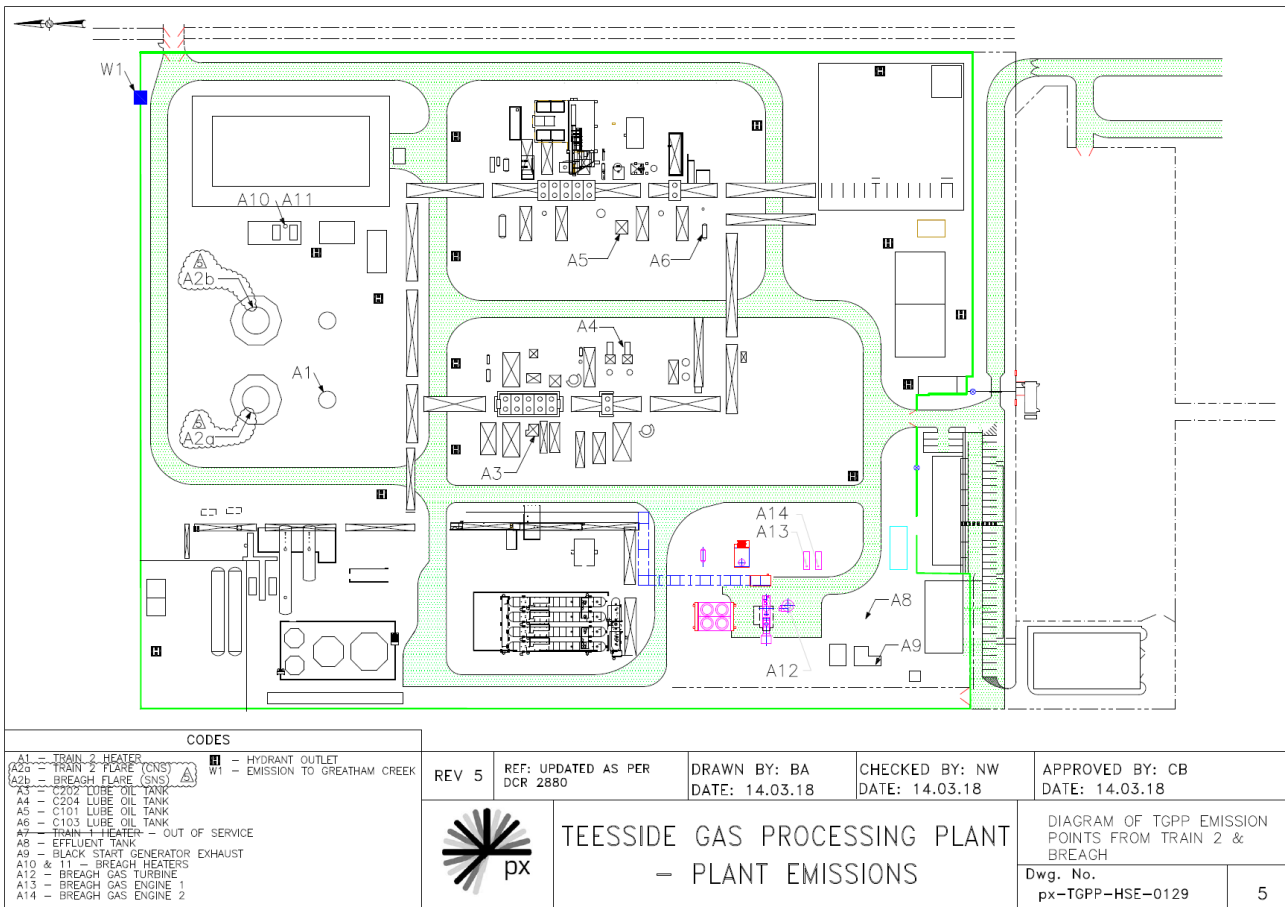
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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 gas turbines or compression ignition engines; an oxygen content of 15%, dry, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, for liquid and gaseous fuels.
- 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



END OF PERMIT