



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Centrica Storage Limited
Easington Gas Terminal
Rough Facilities
Dimlington Road
Easington
HU12 0SX

Variation application number

EPR/AP3833LW/V005

Permit number

EPR/AP3833LW

Easington Gas Terminal

Permit number EPR/AP3833LW

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 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. All the conditions of the permit have been varied and are subject to the right of appeal.

Purpose of this variation

Review permit conditions

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 09 October 2014.

We have set improvement conditions to track progress against compliance for BAT Conclusions 6, 43, 49, 55 & 56.

We have also take the opportunity to set improvement conditions that will deliver compliance with the Water Framework Directive and to update the permit for the operation of the Rough Compressor in production mode, to withdraw gas from Rough offshore reservoir.

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

The main features of the installation

The installation comprises a gas terminal located on the northern edge of the village of Easington on the East coast of Yorkshire, just North of Spurn Point. Centrica Storage Limited (CSL) operates the facility comprising two gas processing facilities which service the Rough gas field and the York gas field and operates 24 hours per day, 365 days per year.

Incoming natural gas is separated from associated liquids (a mixture of condensates, formation water, methanol and corrosion inhibitor) in the inlet area. Spherical pigs are used to collect pooled liquids from the incoming sea-lines. Dewpoint control is achieved by one of two methods: adsorption on silica gel with regeneration using hot natural gas; or adiabatic pressure reduction through a Joule-Thomson valve. Gas meeting NTS dewpoint specifications is filtered, metered and exported to the NTS via a manifold that connects the CSL Easington Gas Terminal, Perenco UK Ltd Easington and Dimlington Terminals and Langeded gas reception facilities to the NTS; this manifold is situated on an adjacent site operated by National Grid Gas.

The Rough Compressor is an aero-derivative natural gas fired turbine (LCP 58, emission point A2) and is used to support the extraction of natural gas from the Rough gas field. The Rough turbine, a Rolls Royce RB211 fitted with dry low NO_x burner technology (DLN), has an input capacity of 72 MWth. Other natural gas fired combustion equipment include:

- three regeneration gas heaters: two at 22 MWth each for Rough (emission points A10 and A11) and one at 5 MWth for York (emission point A21);
- one methanol reboiler at 1.15 MWth (emission points A12 and A13);
- condensate flash heater at 1.5 MWth (emission point A14); and
- one diesel powered standby generator at 18.4 MWth (emission point A19).

Rough and York condensate is stabilised using one of two systems: a hot flash system, and a cold flash system. Rough and York un-stabilised condensate is co-mingled upstream of the existing Condensate Pre-Heater and processed through a shared Condensate Stabilisation System. Two main condensate stabilisation routes are currently available for operation - referred to as the Hot Flash and Cold Flash routes respectively. A Stabiliser Column was used in the past but is now isolated. The primary stabilisation route is the Hot Flash System. The co-mingled liquid is heated using the Flash Heater before entering the low-pressure Flash Vessel – a vertical flash vessel fitted with a demister pad to prevent liquid carry over. The hot stabilised condensate is cooled in the Condensate/Condensate Exchanger and then pumped from the bottom of the vessel to storage.

The secondary condensate stabilisation route is the Cold Flash System. The co-mingled liquid from the Hold Up Vessel is let down in pressure to the Cold Flash Vessel. The Cold Flash system cannot achieve a sufficiently low true vapour pressure to meet the requirements for operation of the floating roof tanks under all operating conditions. This route is therefore limited for use with the fixed roof storage tanks. Flash gas from the cold flash system is routed to the ground flare. Stabilised condensate is stored in three fixed roof and two floating roof tanks. The vents from the fixed roof tanks are routed to the ground flare. There are potential fugitive losses of vapour from the rim seals on the floating roof tanks. A pipeline from the Easington Gas Terminal connects to the neighbouring Perenco Easington Gas Terminal for onward transmission to BP Saltend or Simon Storage Ltd at Immingham.

Waste water (water of condensation, condensate, hydrate inhibitor (methanol) and corrosion inhibitor) from the Rough and York sea-lines is road tankered off the site for treatment. Rain water is collected in a surface water retention pond. Process releases to an oily water drainage system pass to the surface water retention pond via an oil interceptor. This pond discharges to a public storm sewer drain operated by Yorkshire Water, which in turn discharges into a ditch to the south of Easington village. Water deluge and foam systems are present to provide immediate response in the event of a fire.

A gas pipeline from the offshore Amethyst gas field is routed through the Easington Gas Terminal to the neighbouring Perenco Dimlington Site. Above ground Amethyst pig trap / receiving facilities (associated with emission point A8) are operated by Centrica Storage Limited. Therefore this is included in Table S1.1 of the permit as a Directly Associated Activity (DAA) to the activity authorised by permit EPR/PP3237CR for the Perenco Dimlington Site.

The site environmental management system is certified to ISO14001 standards. The site is a top tier COMAH (Control of Major Accident Hazards) site. The facility is a participant in the European Union Emission Trading Scheme and holds a greenhouse gas permit.

The nearest potentially affected sensitive location to the gas terminal is the coastal path which lies to the east of the site, just beyond the eastern site boundary. The nearest potentially affected residential receptors to the gas terminal are Holderness Cottages, which are within 250 metres to the south-west of the installation boundary. Dimlington Cliff Site of Special Scientific Interest (SSSI) runs along the coast of the North Sea, approximately 500 metres north of the site. The Lagoons SSSI lies approximately 1.5 km south east of the installation. The Humber Flats, Marshes and Coast Ramsar and Special Protection Area (SPA) lies approximately 2.9 km to the south of the installation.

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.

Status log of the permit		
Description	Date	Comments
Application received (EPR/AP3833LW/A001)	Duly made 21/08/06	Application for natural gas refining and combustion greater than 50 MWth input.
Additional information received	15/02/07	Requested 30/01/07
Additional information received	22/02/07	Requested 15/02/07
Additional information received	12/06/07	Requested 07/06/07
Additional information received	19/07/07	Requested 05/07/07
Permit determined EPR/AP3833LW	20/08/07	Permit issued to Centrica Storage Limited.
Variation Application EPR/AP3833LW/V002	Duly made 04/09/12	Application to vary and update the permit to modern conditions. Varied and consolidated permit issued in modern condition format.
Additional Information received	20/11/12	Revised Table 2.8: Accident matrix to include risk of flooding.
Additional information received in response to Schedule 5 Notice	30/11/12	In relation to flaring and venting during normal and emergency operations.
Variation determined EPR/AP3833LW/V002	07/12/12	Varied and consolidated permit issued in modern condition format.
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	22/06/15	Response to request for further information (RFI) dated 15/05/15.
Additional information received	30/11/15	Email with further information on start-up/shut-down criteria and emissions variation with ambient temperature.
Variation determined EPR/AP3833LW/V003	24/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/16.
Administrative Variation EPR/AP3833LW/V004	04/04/16	Administrative variation issued to correct errors.
Variation application EPR/AP3833LW/V006	Duly made 15/09/17	Application for a variation to change the pH range of emission point reference W2.
Variation determined EPR/AP3833LW/V006 (Billing reference: ZP3233JM)	21/09/17	Varied permit issued. NOTE 1

Status log of the permit		
Description	Date	Comments
Regulation 60 Notice dated 05/11/15 (Notice requiring information for statutory review of permit) (EPR/AP3833LW/V005)	Response Dated 29/02/16	Technical standards provided in response to the information notice. Information to demonstrate that relevant BAT conclusions are met for the refining activity.
Request for further information sent 06/10/17	12/10/17	Response to request for further information received. Updated technical standards provided in spreadsheet format in response to the request for further information. Supersedes previous spreadsheet submission.
Request for further information sent 11/04/18	18/04/18	Additional information received, including flaring and cold venting.
Additional information received	02/05/18	Temperature limit/monitoring letter dated 02/05/18
		Email confirming details of standby generators
		ESOS Phase 1 report
Additional information received	11/05/18	Notification of a minor operational change for the Rough Compressor
Variation determined EPR/AP3833LW/V005 (Billing ref: VP3237RV)	15/05/18	Statutory review of permit - BAT Conclusions published 09 October 2014 Varied and consolidated permit issued. NOTE 1

Note 1: Two variations were being determined at the same time, we issued variation EPR/AP3833LW/V006 before EPR/AP3833LW/V005.

Other Part A installation permits relating to this installation (Amethyst pipeline connection)		
Operator	Permit number	Date of issue
Perenco UK Limited	EPR/PP3237CR	Original permit EPR/QP3133LR issued to BP Exploration Operating Company Limited 27/06/07
	Dimlington Gas Terminal	Permit transferred in full to Perenco UK Limited 08/08/12

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/AP3833LW

Issued to

Centrica Storage Limited (“the operator”)

whose registered office is

Woodland House

Woodland Park

Hessle

United Kingdom

HU13 0FA

company registration number **03294124**

to operate a regulated facility at

Easington Gas Terminal

Rough Facilities

Dimlington Road

Easington

Hull

HU12 0SX

to the extent set out in the schedules.

The notice shall take effect from 15/05/2018

Name	Date
Anne Nightingale	15/05/2018

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 2016

Permit number

EPR/AP3833LW

This is the consolidated permit referred to in the variation and consolidation notice for application **EPR/AP3833LW/V005** authorising,

Centrica Storage Limited (“the operator”),

whose registered office is

**Woodland House
Woodland Park
Hessle
United Kingdom
HU13 0FA**

company registration number **03294124**

to operate an installation at

**Easington Gas Terminal
Rough Facilities
Dimlington Road
Easington
Hull
HU12 0SX**

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

Name	Date
Anne Nightingale	15/05/2018

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) 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 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 For the following activities referenced in schedule 1, table S1.1: LCP 58. 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 December 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 For the following activities referenced in schedule 1, table S1.1: LCP 58. The end of the start-up period and the start of the shut-down period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4.

- 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.

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;
 - (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, S3.2 and 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, S3.2 and S3.3 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 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.

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;
 - (c) the performance parameters set out in schedule 4 tables S4.3 and S4.4 and using the forms specified in table S4.5 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 S4.5; 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 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

Table S1.1 Activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	Section 1.2 Part A(1)(a) Primary activity Refining gas where this is likely to involve the use of 1,000 or more tonnes of gas in any 12-month period.	Refining natural gas from the Rough and York gas fields before transmission into the National Transmission System (NTS).	From receipt of natural gas fluids and raw materials to dispatch of treated gas, condensate and wastes.
AR2	Section 1.2 Part A(1)(e)(i) The loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil.	Condensate treatment and storage – storage and stabilisation of raw condensate.	From treatment of raw condensate to storage and dispatch of stabilised condensate.
AR3	Section 1.1 Part A(1)(a) Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP 58 Combustion in 72 MWth Rolls Royce RB211 open cycle gas turbine for provision of energy to support the removal of natural gas from the Rough gas field.	From receipt of fuels and raw materials to release of combustion products to air (emission point A2 in Table S3.1 of this permit), despatch of products and waste.
Directly Associated Activity			
AR4	Directly associated activity	Storage, treatment and recovery of methanol.	From storage of untreated methanol to storage and dispatch of treated methanol.
AR5	Directly associated activity	Subsurface import and export pipelines-methanol and corrosion inhibitor injection line and condensate export lines.	Pipelines within the installation boundary.
AR6	Directly associated activity	Utility systems including process monitoring and control, compressed air, nitrogen, fuel gas, firewater and electricity, including back-up supply.	Utility and services within the installation boundary.
AR7	Directly associated activity	Surface water, oily water and process drainage systems.	Handling and storage of site drainage and effluent until discharge off-site.

Table S1.1 Activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR8	Directly associated activity to the activity authorised by permit to adjacent Perenco Dimlington site (EPR/PP3237CR)	Pig trap / receiving activities for the Amethyst gas pipeline.	Amethyst pig trap / receiving activities on the Amethyst gas pipeline including the Amethyst pig trap vent (emission point A8 in Table S3.1 of this permit)
AR9	Directly associated activity	Two Regeneration gas heaters at 22 MWth each. One Regeneration gas heater at 5 MWth One methanol reboiler at 1.15 MWth Condensate flash heater at 1.5 MWth One diesel standby generator 18.4 MWth	From receipt of fuels to release of combustion products to air ((emission points A10, A11, A12 to A14, A19 and A21 in Table S3.1 of this permit)

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application EPR/AP3833LW/A001	The response to section 2.1 in the Application.	21/08/06
Response to Request for Further Information dated 30/01/07.	Response to questions 3, 4, 5, 7 and 10 relating to materials storage and handling.	15/02/07
Response to Request for Further Information dated 05/07/07.	Response to questions 1(a), 1(b) and 2, relating to releases to air and discharge arrangements for the sea outfall.	19/07/07
Response to Improvement condition IC01	Letter sent outlining proposals in relation to monitoring method for particulate matter and sulphur dioxide.	06/11/07
Response to Improvement condition IC02	Report relating to all point source emissions to air.	28/04/08 and email dated 03/06/08
Response to Improvement condition IC03	Drawing 1111/04/02/00/0033 Rev C – Easington Onshore Terminal Underground Services Surface Water Drainage System issued 18/03/08. Drawing 1111/04/02/00/0034 Rev B – Easington Onshore Terminal Oily Water Drainage System issued 18/03/08.	28/04/08 and email dated 03/06/08
Response to Improvement condition IC17	Written Site Closure Plan, Rev 1 dated March 2013 (DOC-CSL-HSE-ENV-019) and Appendix A1, decommissioning table.	March 2013
Response to Improvement condition IC05	Review of Hardstanding, Kerbing and Containment Report.	29/05/08
Response to Improvement condition IC11	Report on Energy Management at CSL.	27/11/08
Response to Improvement condition IC12	Waste Minimisation Report	01/11/08
Response to Improvement condition IC13	Review of BAT for NOx and CO emissions and release points A1 and A2.	26/02/09
Response to Improvement condition IC14	A Study Report – Waste Heat Recovery Feasibility Study Waste Heat Recovery Feasibility Study – Additional Information.	26/02/09 and March 2010.
Variation Application EPR/AP3833LW/V002	Main application document and associated appendices ref: 440343/AH/July 2012	04/09/12
Response to request for information dated 15/11/12	Revised Table 2.8: Accident Matrix to include risk of flooding	20/11/12
Response to Schedule 5 Notice dated 21/11/12	In relation to flaring and venting during normal and emergency operations.	30/11/12
Receipt of resubmitted information to the regulation 60(1) Notice. requested by letter dated 15/05/15	Compliance route and operating techniques identified in response to questions 2 (compliance route), 4 (LCP configuration), 5 (net rated thermal input), 6 (start up and shut down), 9ii (ELV limits), 11 (monitoring requirements).	22/06/15

Table S1.2 Operating techniques		
Description	Parts	Date Received
Receipt of information to the regulation 60(1) Notice. Initial request by letter dated 05/11/15 and final request by email sent 06/10/17 EPR/AP3833LW/V005	Technical standards detailed in response to BAT conclusions of the notice provided under Regulation 60 of Environmental Permitting Regulations. Best available techniques as described in BAT conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for the refining of mineral oil and gas.	29/02/16 12/10/17 (spreadsheet submission)
Receipt of additional information EPR/AP3833LW/V005	Letter confirming notification of a minor operational change for the Rough Compressor	11/05/18

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The Operator shall submit in writing to the Agency for approval, details of the method for the determination of particulate matter and sulphur dioxide released from emission point A2 including details of the verification of the suitability of such a method.	COMPLETE
IC2	The Operator shall conduct a survey of all point source emissions to air to ensure that all release points have been correctly identified and characterised as emitting directly to air, in terms of emission parameters and quantified releases, having regard for Agency Sector Guidance Note IPPC S1.02 version 03. Releases shall be characterised by monitoring, where appropriate, and monitoring methods shall be agreed with the Agency. A written report shall be submitted to the Agency for approval which identifies those release points which actually emit directly to air in order that the list of release points to air may be rationalised as appropriate.	COMPLETE
IC3	The Operator shall submit an updated site drainage plan to the Agency.	COMPLETE
IC4	A written Site Closure Plan shall be prepared in accordance with Section 2.11 of TGN S1.02. Upon completion of the Plan, a summary of the document shall be submitted in writing to the Agency. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan summary.	COMPLETE
IC5	A written plan shall be submitted to the Agency for approval detailing the results of a survey of hard-standing, kerbing, below-ground drainage and secondary containment for raw material, intermediate, product and waste storage areas and the measures to comply with the requirements of section 2.2.5 of SGN S1.02. Where appropriate the plan shall contain dates for the implementation of individual measures, prioritised as appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the Operator from the date of approval by the Agency.	COMPLETE
IC6	A written report shall be submitted to the Agency detailing the characterisation of the waste water from the Rough sealine, including proposed volumes and pollutant concentrations to be	Now incorporated into IC15

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	discharged to foul sewer via release point S2 and an assessment of the environmental impact of such a discharge.	
IC7	A written plan shall be submitted to the Agency for approval detailing the results of an options review for replacement of R22 refrigerant. The review shall take account of BAT as given in SGN IPPC S1.02. Where appropriate the plan shall contain dates for the implementation of measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval by the Agency.	COMPLETE
IC8	A written procedure shall be submitted to the Agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme and other monitoring shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency.	COMPLETE
IC9	The operator shall carry out an investigation into the reduction of natural gas and VOC emissions to air from both fugitive and point sources at the installation, taking account of BAT as given in SGN IPPC S1.02. A written report outlining the outcome of the investigation, together with dates for the implementation of improvement measures, shall be submitted to the Agency for approval. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Proposed measures shall be implemented by the operator following approval in writing from the Agency.	COMPLETE N/A as now incorporated into the variation application EPR/AP3833LW/V002
IC10	The Operator shall undertake a Direct Toxicity Assessment of releases to controlled waters from release point W1 with the purpose of evaluating the potential for impact and/or harm to the aquatic environment, having regard for the Agency Guidance Note "The Use of Direct Toxicity Assessment in PPC Impact Assessments". A report on the results, with interpretation, conclusions and proposed actions to prevent any acute toxic effects in the receiving waters, with timescales for implementation, shall be supplied to the Agency for approval. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Proposed measures shall be implemented by the operator following approval in writing from the Agency.	No longer applicable as Amethyst Effluent no longer discharged to sea.
IC11	An energy efficiency plan shall be submitted to the Agency, detailing the energy management techniques relevant to the installation. The plan shall be produced in accordance with TGN IPPC H2 on Energy Efficiency. Where appropriate the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval in writing by the Agency.	COMPLETE

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC12	<p>A written plan shall be submitted to the Agency for approval outlining the results of a waste minimisation audit and an environmental assessment of waste disposal methods at the installation. The plan shall include dates for implementation of improvement measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>Proposed measures shall be implemented by the operator following approval in writing from the Agency.</p>	COMPLETE
IC13	<p>The Operator shall undertake a review of the BAT listed within the Combustion Sector TGN IPPC S1.01 Section 2 for oxides of nitrogen and carbon monoxide which will enable them to achieve the ELV given within the TGN for the releases to air from release points A1 and A2. The review shall include, but not be limited to, all of the relevant techniques listed within the TGN, the reduction in the level of pollutants (for each option) and the costs of achieving the reduction (for each option). The report shall include:</p> <ul style="list-style-type: none"> • an evaluation of the potential impact of the proposed releases of oxides of nitrogen and carbon monoxide from all release points listed in Table S4.01; • a timetable to implement any proposed improvement works. <p>The Operator shall implement the proposals as agreed in writing with the Environment Agency.</p>	COMPLETE
IC14	<p>The Operator shall investigate the feasibility of recovering and utilising energy from the Amethyst and Rough gas turbine exhausts. A written plan shall be submitted to the Agency for approval detailing the outcome of the investigation together with dates from implementation of improvement measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The plan shall be implemented by the operator from the date of approval in writing by the Agency.</p>	COMPLETE
IC15	<p>The Operator shall submit the proposed process effluent monitoring programme for the generation of methanol/water from the existing Methanol Recovery facilities to the Environment Agency for approval. The monitoring programme shall consist of a minimum of 12 individual sampling results for a range of List 1/Priority Substances and List 2 Substances/Specific Pollutants as necessary - so that the combined process effluent can be appropriately characterised.</p>	COMPLETE
IC16	<p>Monitoring shall be carried out in accordance with the monitoring programme agreed in accordance with IC15 above. Following completion of the monitoring programme, the Operator shall review all of the sampling data and submit a written report to the Environment Agency for approval. The report shall include a H1 risk assessment and an options appraisal for discharge to sea and to sewer for the installation process effluent. This is required to demonstrate that the discharge of process effluent will not have a significant impact on water quality in the receiving water. Also as part of the report the Operator shall identify any substances present in the effluent which are considered significant and submit proposed emission limit values for these substances as necessary.</p> <p>The notification requirements of condition 2.4.2 shall be deemed to have been complied with on submission of the report.</p>	Prior to requesting Environment Agency agreement to discharge

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	The Environment Agency will assess the data and report and, once agreed, any emission limit values shall be incorporated into table S3.2 of this permit.	
IC17	Update the Site Closure Plan to incorporate the existing York gas processing facility and remove references to Amethyst gas processing.	COMPLETE
IC18	Update the site environmental management systems and procedures to incorporate the existing York gas processing facility and remove references to Amethyst gas processing.	COMPLETE
IC19	The Operator shall submit a written report to the Environment Agency on the commissioning of the York gas processing facility. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	COMPLETE
IC20	For LCPD LCP 123 (now LCP 58 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 LCPD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.	COMPLETE
IC21	The Operator shall undertake an assessment of the potential release and impacts of formaldehyde, in line with our H1 guidance or equivalent methodology. A written report detailing the assessment of the impacts at this limit should be submitted to the Environment Agency.	COMPLETE
IC22	Unless otherwise agreed with the Environment Agency, the Operator shall carry out LCP emissions monitoring across the load range when the ambient air temperature is below 5 degrees centigrade. A report on the monitoring results shall be submitted to the Environment Agency. If necessary the Rough compressor can be run in recycle during the period of monitoring.	28/02/19 (subject to operation and ambient temperature)
IC23	The Operator shall carry out air dispersion modelling of the environmental impact of the LCP emissions using the data from emissions monitoring across the load range when the air temperature is below 5 degrees centigrade.	Within 6 months of completion of IC 22

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC24	<p><u>BAT Conclusion 6</u></p> <p>The Operator shall submit a diffuse volatile organic compounds (VOCs) monitoring plan to the Environment Agency for written approval. This shall include but not be limited to:</p> <ul style="list-style-type: none"> • The nature of the material handled; • The sources of emissions and associated risks; • Justification of the monitoring techniques selected; and • How the monitoring data will be recorded and reviewed. <p>The plan shall take into account the appropriate techniques for VOC monitoring specified in BAT Conclusion 6 for the Refining of Mineral Oil and Gas.</p> <p>The Operator shall implement the approved plan and produce and submit an annual report on the results of the monitoring undertaken under the plan.</p>	31/05/19
IC25	<p><u>BAT Conclusion 43</u></p> <p>The Operator shall carry out an assessment of the impact of emissions of mercury present in raw natural gas. The report shall include:</p> <ul style="list-style-type: none"> • The measures used to remove the mercury; • Mercury emissions to air from handling and treating the raw natural gas; • How the mercury containing sludge/absorbent is recovered and handled; and • The final fate of any mercury containing waste streams. <p>A written report summarising the findings shall be submitted to the Environment Agency for review.</p>	28/10/18
IC26	<p><u>BAT Conclusion 49</u></p> <p>The Operator shall undertake an assessment of measures to reduce point source and fugitive emissions of VOCs from the storage of liquid hydrocarbons. The assessment shall take into account the techniques identified in BAT Conclusion 49 for the Refining of Mineral Oil and Gas, together with any other suitable reduction techniques.</p> <p>A written report summarising the findings shall be submitted to the Environment Agency, along with a timetable for implementing improvements. The Operator shall implement the improvements identified to a timetable agreed with the Environment Agency.</p>	28/10/18

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC27	<p><u>BAT 55 & BAT 56</u></p> <p>The Operator shall submit a written gas management improvement plan to the Environment Agency for approval, which shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> • Identification of all gas vented from the installation; • Maximum quantity of gas released from each vent source (and how this measured) during each type of event, over three years or a representative period of operation; • The feasibility of recovering, reducing and/or treating the gas vented, including cost benefit analysis, of all available options to minimise environmental impacts as far as practicable. Options shall include, but not necessarily be limited to: <ul style="list-style-type: none"> - Vapour recovery; - Scrubbing; - Adsorption; and - Flaring. <p>The plan shall contain dates for the implementation of any improvement measures identified.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p>	31/05/19
IC28	<p><u>BAT 55 & BAT 56</u></p> <p>The Operator shall carry out a study of their flaring system and flare sources for the purpose of reducing base-line flaring. The study shall include but not necessarily be limited to:</p> <ul style="list-style-type: none"> • Options to quantify flare flow from individual sources; • Options to reduce arising of gases requiring flaring , giving consideration to the requirements of BAT Conclusions 55 and 56; and • Assessment of the feasibility of installing a flare gas recovery system to minimise the base load to current flare systems, including arising from planned shutdowns. <p>The Operator shall submit a written report to the Environment Agency providing details of the findings of the study and a timetable for implementation of any improvements identified.</p>	31/05/19
IC29	<p><u>WFD sewer</u></p> <p>The Operator shall submit a written monitoring plan to the Environment Agency for approval that includes:</p> <p>Proposals to undertake representative monitoring of hazardous pollutants (as set out in the Environment Agency's Surface Water Pollution Risk Assessment guidance) in the discharge to sewer from emission point S2 including the parameters to be monitored, frequencies of monitoring and methods to be used.</p> <p>The Operator shall carry out the monitoring in accordance with the Environment Agency's written approval.</p>	Within 6 months of any discharge agreed under IC16
IC30	<p><u>WFD sewer</u></p> <p>The Operator shall submit a written report to the Environment Agency for approval that includes:</p>	Within 6 months of completion of IC29

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	<p>The results of an assessment of the impact of the emissions to surface water from the site following the treatment of the effluent at the Yorkshire Water treatment works in accordance with the Environment Agency's Surface Water Pollution Risk Assessment Guidance available on our website. The report shall:</p> <ul style="list-style-type: none"> (a) be based on the parameters monitored in IC29 above; and (a) include proposals for appropriate measures to mitigate the impact of any emissions where the assessment determines they are liable to cause pollution, including timescales for implementation of individual measures. 	

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	"Minimum start-up load" when two of the criteria listed below for the LCP have been met.	"Minimum shut-down load" when two of the criteria listed below for the LCP have been met.
A2 (LCP 58 Rough gas turbine)	N3 power turbine shaft output >13 MW; 50% load.	N3 power turbine shaft output <12MW; 46% load
A2 (LCP 58 Rough gas turbine)	Switch over to Pre mix DLE mode	Switch over to Diffusion mode (none DLE)
A2 (LCP 58 Rough gas turbine)	N1 (gas generator) speed greater than 5784 rpm	N1(gas generator) speed less than 5740 rpm

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Diesel for standby generators and firewater pumps	Not exceeding 0.1% w/w sulphur content

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency (Note 4)	Monitoring standard or method
A2 [Ref A2 in application]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	LCP 58 Rough RB211 Gas turbine fired on natural gas	82 mg/m ³ 70% to base load (Note 1) 160 mg/m ³ MSUL/MSDL to base load (Note 2)	-	At least every 6 months	BS EN 14792
A2 [Ref A2 in application]	Carbon Monoxide	LCP 58 Rough RB211 Gas turbine fired on natural gas	100 mg/m ³ 70% to base load (Note 1) 440 mg/m ³ MSUL/MSDL to base load (Notes 2 & 3)	-	At least every 6 months	BS EN 15058
A2 [Ref A2 in application]	Sulphur Dioxide	LCP 58 Rough RB211 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation as agreed with the Environment Agency
A2 [Ref A2 in application]	Oxygen	LCP 58 Rough RB211 Gas turbine fired on natural gas	-	-	Periodic As appropriate to reference	BS EN 14789
A2 [Ref A2 in application]	Water Vapour	LCP 58 Rough RB211 Gas turbine fired on natural gas	-	-	Periodic As appropriate to reference	BS EN 14790

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency (Note 4)	Monitoring standard or method
A2 [Ref A2 in application]	As required by the Method Implementation Document for BS EN 15259	LCP 58 Rough RB211 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A3 [Ref A3 in application]	-	Rough process cold vent stack X1801	-	-	-	-
A4 [Ref A4 in application]	-	Compressor vent stack X1802	-	-	-	-
A5, A6 [ref A4, A5 in table 3-1 of application]	-	T2601, T1305 Methanol storage tank vents	-	-	-	-
A7 [Ref A6 in Table 3-1 of application]	-	22m Rough pig trap vent	-	-	-	-
A8 [Ref A27 in Table 3-1 of application]	-	Amethyst pig trap vent	-	-	-	-
A9 [Ref A25 in Table 3-1 of application]	-	Ground flare X1601	-	-	-	-
A10 [Ref A9 in Table 3-1 of application]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Rough regeneration gas heater stack H0702	200 mg/m ³	-	Every 6 months	BS EN 14792
A11 [Ref A10 in Table 3-1 of application]	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Rough regeneration gas heater stack H0802	200 mg/m ³	-	Every 6 months	BS EN 14792

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency (Note 4)	Monitoring standard or method
A12, A13 [Ref A14,A15 in table 3-1 of application]	-	Methanol reboiler stacks H2601B	-	-	-	-
A14 [Ref A21 in table 3-1 of application]	-	Condensate flash heater stack H1501	-	-	-	-
A19	-	One standby diesel generator	-	-	-	-
A21	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	York regeneration gas heater stack	200 mg/m ³	-	Every 6 months	BS EN 14792
A22	-	York cold vent stack X1824	-	-	-	-
A23	-	York pig trap vent	-	-	-	-

Note 1: Whenever the load goes above the 70% threshold, then the emission should be taken and an average of all such data should be used to assess compliance with the ELV.

Note 2: This ELV applies where the load varies between MSUL/MSDL and base load during the sampling period. MSUL and MSDL are defined in Table S1.4 of this permit.

Note 3: The carbon monoxide MSUL/MSDL to base load limit applies when the ambient air temperature is 5 degrees centigrade or above for the duration of the monitoring period. No limit applies when the ambient air temperature is below 5 degrees centigrade for any part of the monitoring period.

Note 4: Monitoring is only required if plant is operating. Equipment should not be run just to enable monitoring to be carried out.

Table S3.2 Point source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 North Sea via sea outfall – no discharge unless agreed in accordance with IC16	No discharge unless agreed in accordance with IC16	No discharge of installation wastewater (following methanol recovery) unless agreed in accordance with IC16	No discharge unless agreed in accordance with IC16	-	-	-
W2 [Ref S1 in original application] emission to field drains via Yorkshire Water surface water sewer	pH	Uncontaminated surface water retention pond pumped discharge	6-9	Spot sample	Prior to any discharge	BS ISO 10523
W2 [Ref S1 in original application] emission to field drains via Yorkshire Water surface water sewer	Chemical oxygen demand	Uncontaminated surface water retention pond pumped discharge	50 mg/l	Spot sample	Prior to any discharge	BS ISO 15705
W2 [Ref S1 in original application] emission to field drains via Yorkshire Water surface water sewer	Methanol	Uncontaminated surface water retention pond pumped discharge	20 mg/l	Spot sample	Prior to any discharge	To be agreed with the Environment Agency, or in accordance with the Environment Agency's M18 guidance.
W2 [Ref S1 in original application] emission to field drains via Yorkshire Water surface water sewer	Total Neutralised solid	Uncontaminated surface water retention pond pumped discharge	20 mg/l	Spot sample	Prior to any discharge	BS EN 872

Table S3.2 Point source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W2 [Ref S1 in original application] emission to field drains via Yorkshire Water surface water sewer	Oil	Uncontaminated surface water retention pond pumped discharge	None visible	Spot sample	Prior to any discharge	To be agreed with the Environment Agency, or in accordance with the Environment Agency's M18 guidance.

Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1	None specified	Contaminated surface water from the surface water retention pond to the Yorkshire Water foul sewer.	None specified	-	-	-
S2 Yorkshire Water Easington Sewage Treatment Works	No discharge unless agreed in accordance with IC16	Wastewater from the installation processes	No discharge unless agreed in accordance with IC16	-	-	-

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Oxides of nitrogen	A2, A10, A11, A21	Every 6 months	1 January, 1 July
Carbon monoxide	A2	Every 6 months	1 January, 1 July
Sulphur dioxide	A2	Every 6 months	1 January, 1 July
Surface water monitoring Parameters as required by condition 3.5.1	W1 and W2	Every 12 months	1 January

Table S4.2: Resource Efficiency Metrics	
Parameter	Units
Hazardous Waste Transferred for Disposal at another installation	t
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t

Table S4.3 Chapter III Performance parameters for reporting to DEFRA		
Parameter	Frequency of assessment	Units
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	Tj
Total Emissions to Air of NO _x for each LCP	Annually	T
Total Emissions to Air of SO ₂ for each LCP	Annually	T
Total Emissions to Air of dust for each LCP	Annually	t
Operating hours for each LCP	Annually	hr

Table S4.4 Other Performance parameters		
Parameter	Frequency of assessment	Units
Primary carbon dioxide production	Annually	Tonnes/million Sm ³ gas exported Note 1
Energy consumption	Annually	MWh/million Sm ³ gas exported Note 1
Natural gas exported	Annually	Kg and Sm ³ Note 1
Unburned hydrocarbons lost as a % of total gas exported	Annually	%
Electricity Conversion factor for delivered electricity to primary energy = 2.4	Annually	MWh
Natural Gas	Annually	MWh
Gas Oil	Annually	tonnes
Recovered Fuel Oil	Annually	tonnes
Cold vent usage emission points A3 and A22	Annually	Number of occasions and cumulative quantity of gas vented (in kg and Sm ³) during “normal operation” for current calendar year. Note 1
		Number, cause and cumulative quantity of gas vented (in kg and Sm ³) during “other than normal operating conditions” and action taken to minimise duration and impact for current calendar year. Note 1
Flare usage emission point A9	Annually	Number of occasions and cumulative quantity of gas flared (prior to combustion) (in kg and Sm ³) during “normal” operation for current calendar year. Note 1

Note 1: Standard temperature and pressure 15°C and 1.01325 BarA (dry)

Table S4.5 Reporting forms				
Media/ parameter	Reporting format	Starting Point	Agency recipient	Date of form
LCP	Form IED HR1 – operating hours	01/01/16	National	As specified by the Environment Agency
Air & Energy	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy	01/01/16	National	As specified by the Environment Agency
Air	Form IED PM1- discontinuous monitoring for SO ₂ , NO _x , PM and load	01/01/16	National	As specified by the Environment Agency
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	Area Office	As specified by the Environment Agency
Air	Form Air 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	2018
Water	Form Water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area office	2018
Sewer	Form Sewer 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	2018
Performance parameters	Form Performance 1 or other form as agreed in writing by the Environment Agency	01/01/18	Area Office	2018

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	

(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	
To be notified within 24 hours of detection	
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) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
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.

“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.

“BAT” means best available techniques, as defined in Article 3 of the Industrial Emissions Directive.

“BAT AEL” means the achievable emission level associated with application of the best available techniques.

“breakdown” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

“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_x burners.

“emissions to land” includes emissions to groundwater.

“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 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.

“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.

“Normal operation” means the range of process conditions that can occur when a process unit is performing its intended duty.

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

“Other than normal operating conditions” means process conditions that would not occur during the normal operation of a process unit.

“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.

“The BREF” means the BAT Reference Document for the Refining of Mineral Oil and Gas published by the European commission 2014/738/EU.

“year” means calendar year ending 31 December.

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 combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% 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.

Schedule 7 – Site plan



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