



Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

SNF Oil and Gas Ltd
Billingham Emulsion Plant
Belasis Avenue
Billingham
TS23 1QY

Permit number

EPR/VP3439YG

Billingham Emulsion Plant

Permit number EPR/VP3439YG

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

The Billingham Emulsion Plant is located in the Billingham area of Stockton-On-Tees, centred at National Grid Reference NZ 47246 22780. The site is located in a predominately industrial area in the vicinity of other chemical sites. It covers approximately 16.7 hectares and is situated on land previously used for chemicals manufacture.

The site will produce up to 160,000 tonnes of anionic, distilled anionic and cationic polymer emulsions per year. A number of intermediate products for use in the emulsion production process are also made at the site; acrylamide, sodium acrylate and a surfactant (polymère surfactant maison (PSM)). While some of these products may be suitable for direct sale, there are no plans to do so and it is expected that all will be used for production of emulsion at the installation.

The plant will be developed in a number of phases. As far as possible the permit covers the processes that will be undertaken in the fully developed installation. In the first phase, there will be one cationic and two anionic polymer production lines installed. During the first phase, acrylamide monomer will be imported and no acrylonitrile will be stored or used on site. Once the installation is fully developed, there will be a total of 16 emulsion production lines and acrylamide will be produced on site.

Emissions to air from the site can be divided into two categories, emissions from the production processes and emissions from combustion. Process emissions will be abated by wet scrubbing prior to discharge through stacks on top of buildings or on top of the scrubbers serving storage tanks. Combustion gases will be emitted from the temporary diesel generators and boilers. As there is no connection to the National Grid the plant will need to commence operation with electricity supplied from temporary diesel generators burning low sulphur fuel. The diesel generators will be operated on a temporary basis until a permanent electricity supply line can be installed.

There is one emission to surface water from the site. Uncontaminated rain water and purge water from the cooling towers will be discharged to the Billingham Industrial Complex combined sewer system and subsequently to the River Tees via a discharge point RT01 (discharge point NGR NZ4809421900). This is an existing discharge point used by the wider industrial estate.

There is also one point source emission to foul sewer from the site. The discharge will consist of process effluent, chiller unit purge water and contaminated rainwater. The discharge to sewer will be under a trade effluent consent from Northumbrian Water Limited prior to treatment at the Bran Sands Treatment Works.

There are no emissions to ground or groundwater from the installation.

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

Status log of the permit		
Description	Date	Comments
Application EPR/VP3439YG/A001	Duly made 25/05/17	Application for emulsion plant.
Permit determined EPR/VP3439YG (PAS Billing ref. VP3439YG)	17/11/17	Permit issued to SNF Oil and Gas Ltd.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/VP3439YG

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

SNF Oil and Gas Ltd (“the operator”),

whose registered office is

Solutions House

Ripley Close

Normanton Industrial Estate

Normanton

West Yorkshire

WF6 1TB

company registration number **01954444**

to operate an installation at

Billingham Emulsion Plant

Belasis Avenue

Billingham

TS23 1QY

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

Name	Date
M Bischer	17/11/2017

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 red on the site plan at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 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.

2.5 Pre-operational conditions

2.5.1 The operations specified in schedule 1 table S1.4A shall not commence until the measures specified in that table have been completed.

2.5.2 The operations specified in schedule 1 table S1.4B shall not commence until the measures specified in that table have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

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

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
 - (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (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 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, S3.2 and S3.3 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

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	S4.1 A(1)(a)(viii)	Producing organic chemicals such as plastic materials: Polymer emulsion production 16 production lines	From receipt and storage of raw materials to the reaction and storage and dispatch of finished product.
AR2	S4.1 A(1)(a)(ii)	Production of organic compounds containing oxygen: Sodium acrylate production	From receipt and storage of raw materials to the reaction and the use of sodium acrylate in on site emulsion production (activity AR1).
AR3	S4.1 A(1)(a)(iv)	Production of organic compounds containing nitrogen: Acrylamide monomer production	From receipt and storage of raw materials to the reaction and the use of acrylamide monomer in onsite emulsion production (activity AR1). Includes filtration and pH adjustment of acrylamide monomer.
AR4	S4.1 A(1)(a)(xi)	Producing organic chemicals such as surface-active agents: Polymère Surfactant Maison (PSM) production	From receipt and storage of raw materials to the reaction and the use of PSM emulsion production (activity AR1).
Directly Associated Activity			
AR5	Storage and handling of ancillary materials and intermediates.	Storage and handling of ancillary materials and intermediates.	From receipt to use onsite.
AR6	Storage and handling of process by-products and wastes	Storage and handling of process by-products and waste (including packaging) from onsite activities.	From receipt to dispatch off site.
AR7	Electricity generation	Electricity generation using diesel generators with an aggregated capacity of <2MW.	Use of diesel generators prior to site connection to the National Grid.
AR8	Steam generation	Operation of a maximum of three boilers with a capacity of <5MW each to produce steam	Operation of boilers to produce steam for use on site.
AR9	Water demineralisation	Use of skid mounted demineralisation units for treatment of process water.	Demineralisation of process water for use in acrylamide monomer production.
AR10	Water filtration and disinfection	Filtration of process water and disinfection by hydrogen peroxide	Treatment of process water for use in cooling towers.

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
		dosing and UV treatment for biological control.	
AR11	Control and abatement systems for emissions to air, releases to a sewer and releases to controlled waters	Operation of site abatement systems for the control of releases to air, sewer and controlled waters.	Extraction and collection of waste gases and treatment in scrubbers. Collection of process effluent, chiller unit purge water and contaminated rainwater, and all treatment including pH adjustment, oil/water separation, and biocide and anti-scalant treatment of chiller unit purge water. Collection of cooling system purge water and uncontaminated rainwater and all treatment including settling to remove suspended solids.
AR12	Discharge to surface water	Discharge to controlled waters of cooling system purge water and uncontaminated rainwater.	Discharge of cooling system purge water and uncontaminated rainwater to River Tees via site drainage system and combined sewer outfall from the Billingham Industrial Complex (discharge point RT01).
AR13	Discharge of process effluent to sewer	Discharge to sewer of process effluent, chiller unit purge water and contaminated rainwater.	Discharge of process effluent, chiller unit purge water and contaminated rainwater to sewer under a trade effluent consent from Northumbrian Water Limited.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application EPR/VP3439YG/A001	Application forms B2 and B3 and all supporting documentation supplied with these parts.	Duly made 25/05/2017

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The Operator shall submit a written report to the Environment Agency on the commissioning of each phase of the installation. Each report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The reports shall also include a review of	Within 4 months of the completion of

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	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 and confirm that the Environmental Management System (EMS) has been updated accordingly.	commissioning of each phase.
IC2	<p>The Operator shall conduct a review of emissions to air from the Installation using emissions monitoring data obtained during the first year of operation. The review shall include, but not be limited to, a comparison of actual emissions against Emission Limit Values (ELVs) set within Table S3.1 of the permit.</p> <p>A report detailing the review and its findings shall be submitted to the Environment Agency.</p> <p>The findings shall be used to determine whether changes to the frequency of air emissions monitoring is appropriate. The findings may also be used as justification to propose any changes to the ELVs included in Table S3.1 of the permit. Any changes to monitoring requirements and/or limits must have a supporting environmental impact assessment and be agreed in writing by the Environment Agency.</p>	15 months from commencement of the operation of each emission point.
IC3	<p>The Operator shall carry out an assessment of the environmental impact of ammonia emissions from the site to demonstrate that the emissions will not result in a significant impact on site of conservation within relevant screening distances. The assessment shall use the results of monitoring runs taken over a 12 month period from each emission point associated with the post-hydrolysed anionic emulsion production process.</p> <p>A written report shall be submitted to the Environment Agency which shall include details of the monitoring results and findings of the environmental impact assessment. The report shall also outline any improvements proposed to reduce the impact if identified as necessary.</p>	13 months from commencement of the operation of each emission point.
IC4	<p>The Operator shall conduct a review of the discharge from emission point W1 using monitoring data obtained during the first year of operation. The review shall be used to validate the description of the discharge provided with the application. The monitored parameters shall include any relevant parameters as having been identified as potentially present within the discharge.</p> <p>A written report shall be submitted to the Environment Agency which shall include details of the monitoring results and review. If any pollutants are identified at levels above those that would be expected to be found in uncontaminated water, the origins of these contaminants shall be investigated and their levels considered through an environmental impact assessment. Additional management controls or ELVs should be proposed if identified as appropriate.</p> <p>The report shall be submitted to the Environmental Agency for approval and shall outline any changes to operational techniques or proposed limits for agreement.</p>	15 months from commencement of the operations

Table S1.4A Pre-operational measures	
Reference	Pre-operational measures
1	<p>The Operator shall notify the Environment Agency in writing at least four weeks before they start operation of any of the activities listed in Schedule 1 Table S1.1 for the first time. For all subsequent production lines relevant to the activity, the Operator shall notify the Environment Agency in writing a minimum of two weeks before the start of operations.</p> <p>This notification shall include details of any deviations from the commissioning reports approved under IC1. Any changes must be agreed in writing by the Environment Agency prior to commencement of the activities.</p>

Table S1.4B Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
1	Boilers	<p>3 months prior to installation of the boilers, the Operator shall submit a written report to the Environment Agency for approval, the report shall include the following:</p> <ul style="list-style-type: none"> i. Detailed design(s) for the new boiler(s) including any proposed abatement, a finalised location plan and proposed operating regime. ii. A review of the final detailed design/ plans for the new boiler(s) to ensure they will meet the requirements of BAT. iii. An assessment of the environmental impact of emissions from the proposed boiler(s) to demonstrate that the emissions will not result in a significant impact on air quality. iv. A proposal of suitable emission limit values in line with relevant legislation and the conclusions of the environmental impact assessment.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
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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) <small>Note 1, Note 2</small>	Reference period	Monitoring frequency <small>Note 1, Note 2</small>	Monitoring standard or method
A1 (ST4 on drawing ref 276_00_1023)	Caustic water scrubber	Acrylic acid vapour	25 mg/m ³	Hourly average	Monthly	BS EN 13649
A2 (ST51 on drawing ref 276_00_1023)	Scrubber – Emulsion production building 5	Acrylamide vapour	0.1 mg/m ³	Hourly average	Monthly	BS EN 13649
		Sulphur dioxide	10 mg/m ³			BS EN 14791
		Ammonia	10 mg/m ³			BS EN 14791
A3 (ST52 on drawing ref 276_00_1023)	Standby diesel generator	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	None set	--	--	--
		Particulates	None set	--	--	--
		Carbon monoxide	None set	--	--	--
A4 (ST53 on drawing ref 276_00_1023)	500kVA Diesel generator	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	None set	--	--	--
		Particulates	None set	--	--	--
		Carbon monoxide	None set	--	--	--
A5 (ST54 on drawing ref 276_00_1023)	500kVA Diesel generator	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	None set	--	--	--
		Particulates	None set	--	--	--
		Carbon monoxide	None set	--	--	--
A6 (ST55 on drawing ref 276_00_1023)	Backup diesel generator	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	None set	--	--	--
		Particulates	None set	--	--	--
		Carbon monoxide	None set	--	--	--
A7 (ST61 on drawing ref 276_00_1023)	Scrubber – Emulsion production building 6	Acrylamide vapour	0.1 mg/m ³	Hourly average	Monthly	BS EN 13649
		Sulphur dioxide	10 mg/m ³			BS EN 14791
		Ammonia	10 mg/m ³			BS EN 14791

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) <small>Note 1, Note 2</small>	Reference period	Monitoring frequency <small>Note 1, Note 2</small>	Monitoring standard or method
A8 (ST91 on drawing ref 276_00_1023)	Caustic water scrubber	Acrylic acid vapour	25 mg/m ³	Hourly average	Monthly	BS EN 13649
A9 (ST92 on drawing ref 276_00_1023)	Water scrubber - Acrylamide storage tank	Acrylamide vapour	0.1 mg/m ³	Hourly average	Monthly	BS EN 13649
A10 (ST101 on drawing ref 276_00_1023)	Combined discharge stack - Acrylamide production building 10	Acrylamide vapour	0.1 mg/m ³	Hourly average	Monthly	BS EN 13649
		Acrylonitrile vapour	5 mg/m ³			BS EN 13649
A11 (ST102 on drawing ref 276_00_1023)	Standby diesel generator	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	None set	--	--	--
		Carbon monoxide	None set	--	--	--
		Particulates	None set	--	--	--
A12 (ST103 on drawing ref 276_00_1023)	Backup diesel generator	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	None set	--	--	--
		Carbon monoxide	None set	--	--	--
		Particulates	None set	--	--	--
A13 (ST104 on drawing ref 276_00_1023)	200kVA Diesel generator	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	None set	--	--	--
		Carbon monoxide	None set	--	--	--
		Particulates	None set	--	--	--
A14 (ST111 on drawing ref 276_00_1023)	Scrubber – Emulsion production building 11	Acrylamide vapour	0.1 mg/m ³	Hourly average	Monthly	BS EN 13649
		Sulphur dioxide	10 mg/m ³			BS EN 14791
		Ammonia	10 mg/m ³			BS EN 14791
A15 <small>(Note 3)</small>	Boiler(s)	Products of combustion	Note 3	Note 3	Note 3	Note 3
<p>Note 1: Or as otherwise agreed in writing by the Environment Agency.</p> <p>Note 2: Monitoring frequencies and limits may be altered after 12 months of operation subject to validation of the predicted emissions and agreement by the Environment Agency in accordance with Improvement Condition 2 (IC 2).</p> <p>Note 3: As agreed under pre-operational measure for future development 1</p>						

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements

Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 Discharge via site drainage system final discharge to the River Tees at outfall RT01 ^[1] shown on drawing reference 276_00_1023	Cooling system purge water and uncontaminated rainwater tank	Flow	None set	24 hour total	Continuous during batch discharge	MCERTS self-monitoring of effluent flow scheme

Monitoring parameters, frequencies and limits may be altered after 12 months of operation subject to agreement by the Environment Agency in accordance with Improvement Condition 4 (IC 4).

^[1] Combined sewer outfall from the Billingham industrial complex at discharge point RT01 (discharge point National Grid reference NZ 48094 21900).

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	Source	Parameter	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1 discharge point shown on drawing reference 276_00_1023 emission to Northumbrian Water Limited Bran Sands Treatment Works	Process effluent, chiller unit purge water and contaminated rainwater	--	In compliance with Northumbrian Water Limited discharge consent	--	--	In accordance with M18 methodology unless otherwise agreed in writing by the Agency.

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
Emissions to air Parameters as required by condition 3.5.1.	ST4, ST51, ST52, ST53, ST54, ST55, ST61, ST91, ST92, ST101, ST102, ST103, ST104, ST111 and boiler(s)	Every 3 months or as otherwise agreed in writing by the Environment Agency	1 January, 1 April 1 July, 1 October
Emissions to water Parameters as required by condition 3.5.1	W1	Every 3 months or as otherwise agreed in writing by the Environment Agency	1 January, 1 April 1 July, 1 October

Table S4.2: Annual production/treatment	
Parameter	Units
Total site production	Tonnes of saleable product

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Water usage	Annually	m ³ or tonnes per tonne of saleable product
Energy usage	Annually	MWh per tonne of saleable product
Total raw material used	Annually	tonnes per tonne of saleable product

Table S4.4 Reporting forms		
Media/parameter	Reporting format	Date of form
Air	Form air 1 or other form as agreed in writing by the Environment Agency	06/10/2017
Water	Form water 1 or other form as agreed in writing by the Environment Agency	06/10/2017
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	06/10/2017

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	
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.

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

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

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

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

“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 or background concentration limit.

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

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

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

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

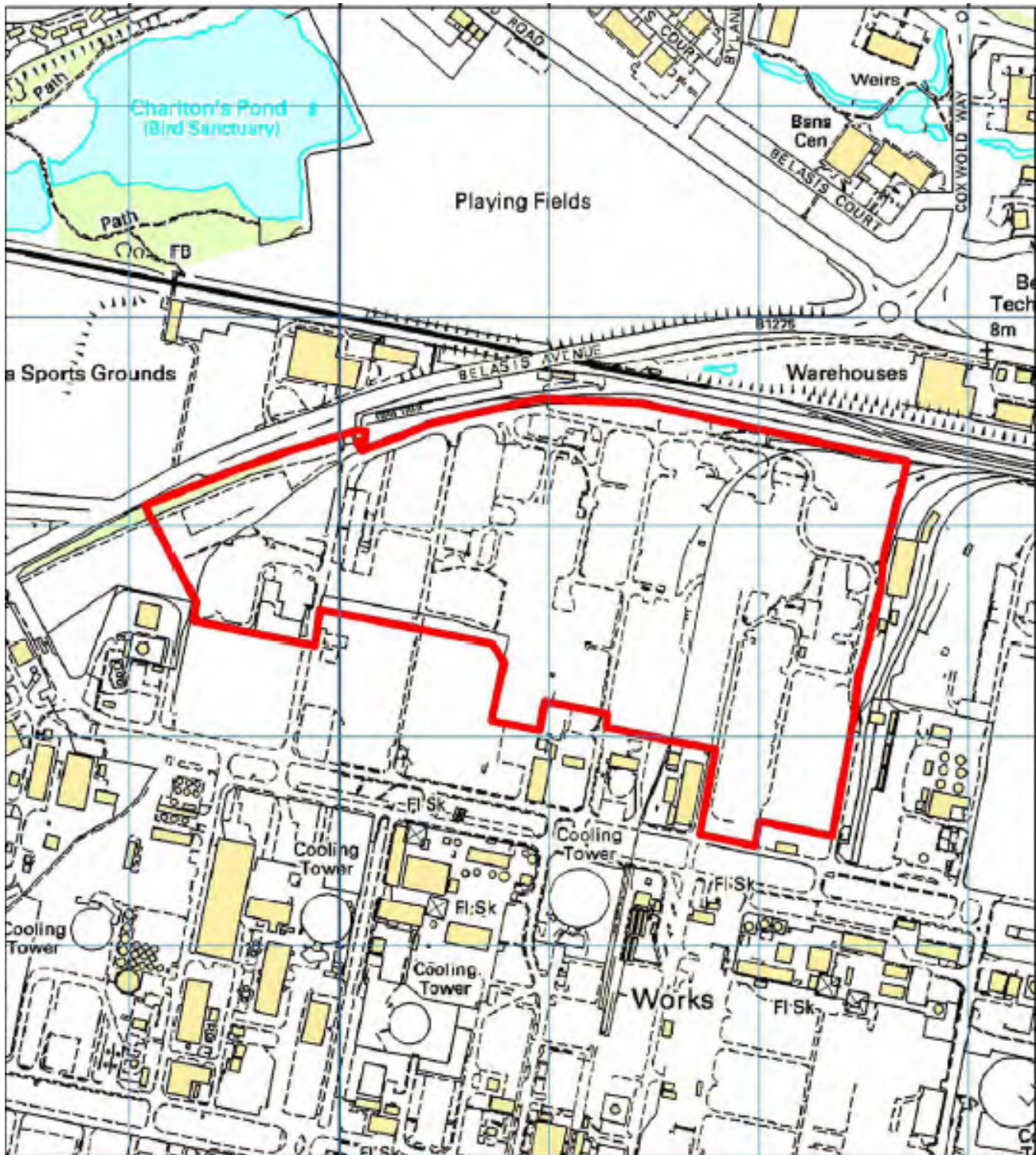
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

“year” means calendar year ending 31 December.

Schedule 7 – Site plan



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END OF PERMIT