Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Unilever UK Limited

Port Sunlight Sulphonation Plant
Wood Street
Port Sunlight
Wirral
CH62 2EL

Variation application number

EPR/NP3532UG/V004

Permit number

EPR/NP3532UG

Port Sunlight Sulphonation Plant
Permit number EPR/NP3532UG

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.

Changes introduced by this variation notice/statutory review

This variation has been issued to update some of the conditions following a statutory review of the permits in the industry sector for the production of large volume organic chemicals. The opportunity has also been taken to consolidate the original permit and subsequent variations.

The Industrial Emissions Directive (IED) came into force on 7th January 2014 with the requirement to implement all relevant Best Available Techniques (BAT) conclusions as described in the Commission Implementing Decision. The BAT conclusions for production of large volume organic chemicals were published on 07 December 2017 in the Official Journal of the European Union (L323) following a European Union wide review of BAT, implementing decision 2017/2117/EU of 21 November 2017.

Where appropriate, we also considered other relevant BAT Conclusions published prior to this date but not previously included in a permit review for the Installation:-
Common waste water and waste gas treatment/management systems in the chemical sector. Published 09 June 2016

The BAT Conclusions for this installation which apply from 7th December 2021 are:
Production of Large Volume Organic Chemicals:
BATc 2, 8, 10-12, 14-19

Common waste water and waste gas treatment/management systems in the chemical sector:
BATc 1-5, 7-13, 15, 16, 19, 21

The schedules specify the changes made to the permit.
Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Brief Description of the process

The installation is located at Port Sunlight on the Wirral Peninsula in an area of mixed domestic, commercial and industrial land use. The Dibbinsdale and New Ferry SSSIs are within 2km of the installation, as well as the Mersey Estuary (SPA, Ramsar and SSSI) at 1.7km, Liverpool Bay (SPA) at 3km, Dee Estuary (SPA, Ramsar and SSSI) at 8.3km and Mersey Narrows and North Wirral Foreshore (SPA) at 9km. There is also the Brotherton Park and Dibbinsdale Local Nature Reserve at 0.7km. The nearest residential receptors are approximately 200m from the installation.

The installation forms part of a large manufacturing facility for detergents, the majority of which is not regulated under the Environmental Permitting Regulations. The primary purpose of the installation is the production of organic sulphonates for use in detergent manufacture under scheduled activity 4.1A(1)(a)(xi) using sulphur trioxide produced under 4.2A(1)(a)(i).

Sulphur is burnt in a furnace to produce sulphur dioxide. The sulphur dioxide is then fed to catalyst tower where it is converted to sulphur trioxide. By-product fuming sulphuric acid (oleum) is also produced, which is condensed and neutralised. The sulphur trioxide is reacted in a falling film reactor with other raw materials

such as linear alkyl benzene or lauric acid to produce the principal products linear alkyl benzene sulphonic acid or, after an additional neutralisation step, sodium lauryl ether sulphonate respectively.

The largely continuous process has a capacity of 45,000 Tonne per annum.

Steam and other services are supplied from the larger manufacturing site.

The main emissions from the process are oxides of sulphur, which are abated by a multistage exhaust gas treatment plant.

There are no releases to surface water, land or groundwater from the installation. Liquid effluent is predominantly water and is collected in an effluent tank before transfer to the effluent treatment plant on the larger manufacturing site or for off-site disposal. From there the effluent is released to sewer under consent. Potentially contaminated rainwater from bunds, is tested before collection for treatment with the effluent or transfer to the larger site drainage interceptor for discharge to sewer under consent.

The installation operates a bespoke Environmental Management System as part of the wider site's system.

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/NP3532UG/A001	Duly made 10/09/07	Application Installation
Additional information request		Received 04/09/07, 05/09/07, 10/09/07, 13/9/07, 09/10/07
Permit determined EPR/NP3532UG/A001	21/11/07	.
Variation determined EPR/NP3532UG/V002	05/12/08	Deletion of pH limits on aqueous effluent from the installation to allow greater use for neutralisation in the manufacturing site effluent treatment plant
Variation Application EPR/NP3532UG/V003	Duly Made 05/06/14	
Request for further information		Received 13/06/14 re: extent of site boundary and registered address.
Variation determined EPR/N3532UG/V003	20/06/14	
Regulation 61 Notice dated 04/05/18 (Notice requiring information for statutory review of permit)	Response Received 10/08/18	
Request for further information dated 20/02/20	Response received 17/04/20	Request for clarification and further detail for Reg 61 notice response.
EPR/NP3532UG/V004 (variation and consolidation)	Environment Agency Initiated Variation	Statutory review of permit occasioned by LVOC BAT Conclusions published 07 December 2017
Variation determined EPR/NP3532UG/V004 (Billing Ref: NP3538QE)	13/07/21	Varied and consolidated permit issued

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

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

Permit number

EPR/NP3532UG

Issued to

Unilever UK Limited ("the operator")

whose registered office is

Unilever House
Springfield Drive
Leatherhead
Surrey
KT22 7GR

company registration number 00334527

to operate a regulated facility at

Port Sunlight Sulphonation Plant
Wood Street
Port Sunlight
Wirral
CH62 2EL

to the extent set out in the schedules.

The notice shall take effect from 13/07/2021

Name	Date
Philip Lamb	**13/07/2021**

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/NP3532UG

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/NP3532UG/V004 authorising,

Unilever UK Limited ("the operator"),

whose registered office is

Unilever House
Springfield Drive
Leatherhead
Surrey
KT22 7GR

company registration number 00334527

to operate an installation at

Port Sunlight Sulphonation Plant
Wood Street
Port Sunlight
Wirral
CH62 2EL

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

Name	Date
Philip Lamb	**13/07/2021**

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.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Total annual emissions from the emission point(s) set out in schedule 3 tables S3.1 and S3.2 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.

3.1.4 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 S3.1and S3.2;

(b) off-site monitoring of effluent treatment plant specified in table S3.4

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site (or at the operator's adjoining manufacturing 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 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.

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.

4.4 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 4.1 A(1)(a)(xi) Producing organic chemicals such as surface-active agents	Manufacture of surfactant organic sulphonates	From receipt or raw materials to storage of final products
AR2	Section 4.2A(1)(a)(i) Producing organic chemicals such as gases	Production of SO_3 from sulphur	From receipt of sulphur to the furnace to transfer of SO_3 from the catalyst tower to the Sulphonation system reactors, including neutralisation of oleum.
	Directly Associated Activity		
AR3		Exhaust cleaning plant	From receipt of SO_2 / SO_3 to exhaust from emission point A1
AR4		Cooling water supply	Including the Sulphonation plant cooling tower and associated equipment and circulation pipework
AR5		Air raising, cooling and drying	From the suction of the air blowers through the chillers and driers to delivery to the furnace and catalyst tower
AR6		Collection and storage of Sulphonation plant effluent	From receipt of effluent in process drains to discharge to road barrel from Sulphonation effluent tank

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/NP3532UG/A001	Sections B2.3, B2.5 and B2.9 Sections B2.1 and B2.2 Sections B2.4 and B2.6 Sections 2.7 (excluding the energy survey, B2.8, B2.10, B2.11	30/07/07 04/09/07 05/09/07 10/09/07
Amendments to application	All Section B2.3	13/09/07 09/10/07
Additional information	Supplement to Application Site Report Information relating to effluent discharges to Unilever effluent treatment plant	22/10/07 22/10/07
Variation EPR/NP3532UG/V004 Regulation 61 Notice – dated 04/05/18	Technical standards in relation to 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 Production of Large Volume Organic Chemicals BAT Conclusions Numbers 1-6, 8, 10-12, 14-19	10/08/18

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
	Common waste water and waste gas treatment/management systems in the chemical sector BAT Conclusions 1-5, 7-13, 15, 16, 19, 21	
Request for further detail and clarification of Reg 61 Notice response dated 20/02/20	Response to query about Process heaters definition about sulphur furnace LVOC BATc1 Recovery /reuse of solvents rework of 100% 16R1 and ~40% of 26R! waste streams LVOC BATc 8,10,12,16 Predictive maintenance programme details LVOC BATc18 Removal of toxic gases on shutdown LVOC BATc19 Handling of spent scrubber liquor CWW BATc2	17/04/20

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC10	The operator shall confirm to the Environment Agency the operational details of the more fully integrated oxides of sulphur vent monitoring data system (relates to emission point A1)	Within 3 month of the completion of implementation
IC11	The operator shall submit to the Environment Agency for approval a survey of the need to monitor diffuse VOC emissions (CWW BAT19). The assessment should include, but not be limited to: • Consideration of fugitive emissions from all potential sources on the installation including material storage and effluent handling. • Methods to be used (in accordance with CWW BAT 5). • Timescales for an initial survey. • Proposals for frequency of monitoring if the initial survey identifies a not insignificant VOC emission. Unless the Environment Agency agrees that no monitoring is necessary the monitoring shall be carried out to the methods and timescales in the approved proposal.	30/09/21
IC12	The operator shall make available to the Environment Agency for approval, in an agreed manner, evidence of a Waste Management Plan as part of an Environmental Management System to meet the requirements of CWW BAT13 (and CWW BAT1).	30/09/21
IC13	The operator shall submit to the Environment Agency for approval an inventory of waste water and waste gas streams demonstrating all the features that are relevant from CWW BAT 2 and evidence of how the inventory is maintained. The quantitative values in the inventory should address the apparent disparity between disposal and retained effluent sample analyses.	30/09/21
IC14	The operator shall submit to the Environment Agency for approval details of the analytical method for Chemical Oxygen Demand in effluent and	31/08/21

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	how it meets the requirement to be in accordance with recognised ISO, national or international standards (CWW BAT 4)	
IC15	The operator shall submit to the Environment Agency for approval a report on the fate of waste water from the installation including, but not limited to: a) whether all waste water from the installation (other than the bund water sent to the interceptor) is consigned for off-site disposal (after neutralisation primary treatment) as individually analysed waste loads. and b) If waste water is sent to a waste water treatment facility (e.g. under sewer consent) an assessment of the removal effected by any further treatment for the substances in the CWW. (CWW BAT 12)	29/10/21
IC16	The operator shall submit to the Environment Agency for approval an updated site plan (based on the one in Schedule 7) including the installation boundary in red and the location of emissions points A1, E1, OS1 and the bunds that can discharge to the site interceptor (dock)	31/08/21
IC17	The operator shall submit to the Environment Agency for approval an update (if required) of the Introduction section of this permit and a review for accuracy of the operational techniques references in Table S1.2.	30/09/21
IC18	The operator shall submit a water pollution risk assessment to the Environment Agency for approval, which shall assess the impact of discharges of hazardous pollutants to surface water and/or sewer from the installation. The risk assessment shall include, but not be limited to the following: a) representative emissions data for any identified relevant substances discharged from the installation. Any emissions monitoring required should be carried out using the methods and standards described in Environment Agency guidance “Monitoring discharges to water:environmental permits” https://www.gov.uk/government/collections/monitoring-discharges-to-water-environmental-permits; and b) a risk assessment in accordance with the screening procedures in Environment Agency guidance “Surface water pollution risk assessment for your environmental permit”, using the representative emissions data obtained in (a) above. https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit	29/10/21

Schedule 2 – Waste types, raw materials and fuels

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

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 Main stack [Point A1 in the application] Note 3	Exhaust gas cleaning plant	Oxides of Sulphur (expressed as SO_2)	30 mg/m^3 Note 2	60 minute average	Continuous	EN 14181
		Oxides of Sulphur (expressed as SO_2) From 07/12/21	30 mg/m^3 Note 2	Average of at least 3 x 30 minute Note 4	Annual Note 1	EN 14791
		Total Volatile Organic Compounds (expressed as toluene)	None	Spot sample	Annual	EN 12619
A2 Sulphur storage tank vent [Point A5 in the application]	Sulphur bulk storage tank	Sulphur	None	-	-	-

Note 1: Monitoring frequency is monthly if continuous monitoring of oxides of sulphur with annual validation is not used.

Note 2: Reference condition dry at STP

Note 3: Permanent means of access is not required to emission point A1. The operator will erect a suitable scaffold when access to the stack is required.

Note 4: The reference period shall relate to a period of stable operation under normal conditions.

Table S3.2 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[Note 3]**
E1- sample point on Sulphonation effluent storage tank	Process Effluent	Chemical Oxygen Demand	250,000 mg/l Note 1	Spot sample	Every batch discharged to road tanker	Spectro-photometry
		pH	5-9 Note 2	Spot sample	Every batch discharged to road tanker	pH meter
		Active detergent	No limit set	Spot sample	Every batch discharged to road tanker	In-house method
Each relevant bund	Bund water for discharge to site	Chemical Oxygen Demand	No limit set	Spot sample	Each discharge	Spectro-photometry

Table S3.2 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[Note 3]**
	interceptor (dock)	pH	No limit set	Spot sample	Each discharge	pH meter
		Active detergent	No limit set	Spot sample	Each discharge	In-house method
		Total Daily Flow	No limit set	24 hours	Each discharge	MCERTS

Note 1: This limit is complied with if no more than 1 batch per month exceeds this limit

Note 2: This limit does not apply to effluent sent to the operator's on-site effluent treatment plant

Note 3: Or otherwise as agreed in writing with the Environment Agency

Table S3.3 Annual limits		
Substance	Medium	Limit (including unit)
Chemical Oxygen Demand	To Unilever on-site effluent treatment plant	150 Tonnes

Table S3.4 Off-site monitoring of effluent treatment plant				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method[Note 1]**	**Other specifications**
OS1 Outflow of Unilever site effluent treatment plant to Unilever internal sewer	Chemicals Oxygen Demand	Quarterly	Spectro-photometry	
OS1 Outflow of Unilever site effluent treatment plant to Unilever internal sewer	pH	Quarterly	pH meter	
OS1 Outflow of Unilever site effluent treatment plant to Unilever internal sewer	Active detergent	Quarterly	In-house method	

Note 1: Or otherwise as agreed in writing with the Environment 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**
Oxides of sulphur	A1	Every 6 months	1 January, 1 July
Total Volatile Organic Compounds (expressed as toluene)	A1	Every 6 months	1 January, 1 July
Chemical Oxygen Demand (mg/l)	E1, OS1, W1	Every 6 months	1 January, 1 July
pH	E1, OS1, W1	Every 6 months	1 January, 1 July
Active detergent (mg/l)	E1, OS1, W1	Every 6 months	1 January, 1 July
Total Daily Flow	W1	Every 6 months	1 January, 1 July

Table S4.2: Annual production/treatment	
Parameter	**Units**
Quantity of sulphonates produced	tonnes
Quantity of sulphur trioxide produced	tonnes

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Steam usage	Annually	tonnes
Electricity usage	Annually	GWh
Gas Usage	Annually	GWh
Water Usage	Annually	m^3
Number of start-ups of sulphur furnace	Annually	Events/yr
Total quantity of effluent transferred to the Unilever effluent treatment plant	Annually	m^3
Total quantity of effluent for off-site disposal	Annually	m^3
Quantity of active detergent transferred to the Unilever effluent treatment plant	Annually	tonnes
Quantity of active detergent for off-site disposal	Annually	tonnes
Quantity of active detergent discharged from bunds to the site interceptor	Annually	tonnes
Total quantity of COD transferred to the Unilever effluent treatment plant	Annually	tonnes

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Total quantity of COD for off-site disposal	Annually	tonnes
Total quantity of COD discharged from bunds to the site interceptor	Annually	tonnes

Table S4.4 Reporting forms		
Media/parameter	**Reporting format**	**Date of form**
Emissions to Air	Form Air1 or other form as agreed in writing by the Environment Agency	01/06/21
Emissions to Effluent treatment plant	Form ETP 1 or other form as agreed in writing by the Environment Agency	01/06/21
Emissions to off-site	Form Offsite 1 or other form as agreed in writing by the Environment Agency	01/06/21
Water Usage	Form WaterUsage 1 or other form as agreed in writing by the Environment Agency	01/06/21
Energy Use	Form Energy 1 or other form as agreed in writing by the Environment Agency	01/06/21
Performance and production indicators	Form Perform 1 or other form as agreed in writing by the Environment Agency	01/06/21

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	**NP3532UG**
Name of operator	**Unilever UK Limited**
Location of Facility	**Port Sunlight, Wirral**
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 breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) 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 every 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.

“BAT-AELs” means BAT-associated emission levels, i.e. the emission levels associated with the best available techniques for emissions to air and/or water, as set out in

“Common waste water and waste gas treatment/management systems in the chemical sector BAT Conclusions or CWW” means Commission Implementing Decision (EU) 2016/902 of 30 May 2016 establishing Best Available Techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for Common Waste Water And Waste Gas Treatment/ Management Systems in the Chemical Sector

“diffuse emissions” means non-channelled emissions which can result from ‘area’ sources (e.g. tanks) or ‘point’ sources (e.g. pipe flanges).

“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.

“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.

“fugitive emissions” means diffuse VOC emissions from ‘point’ sources.

“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 Volume Organic Chemicals BAT Conclusions or LVOC” means The Commission Implementing Decision (EU) 2017/2117 of 21 November 2017 establishing Best Available Techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the Production of Large Volume Organic Chemicals.

“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.

“Total Organic Carbon” means Total Organic Carbon. In respect of releases to air this means the gaseous and vaporous organic substances, expressed as TOC.

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.

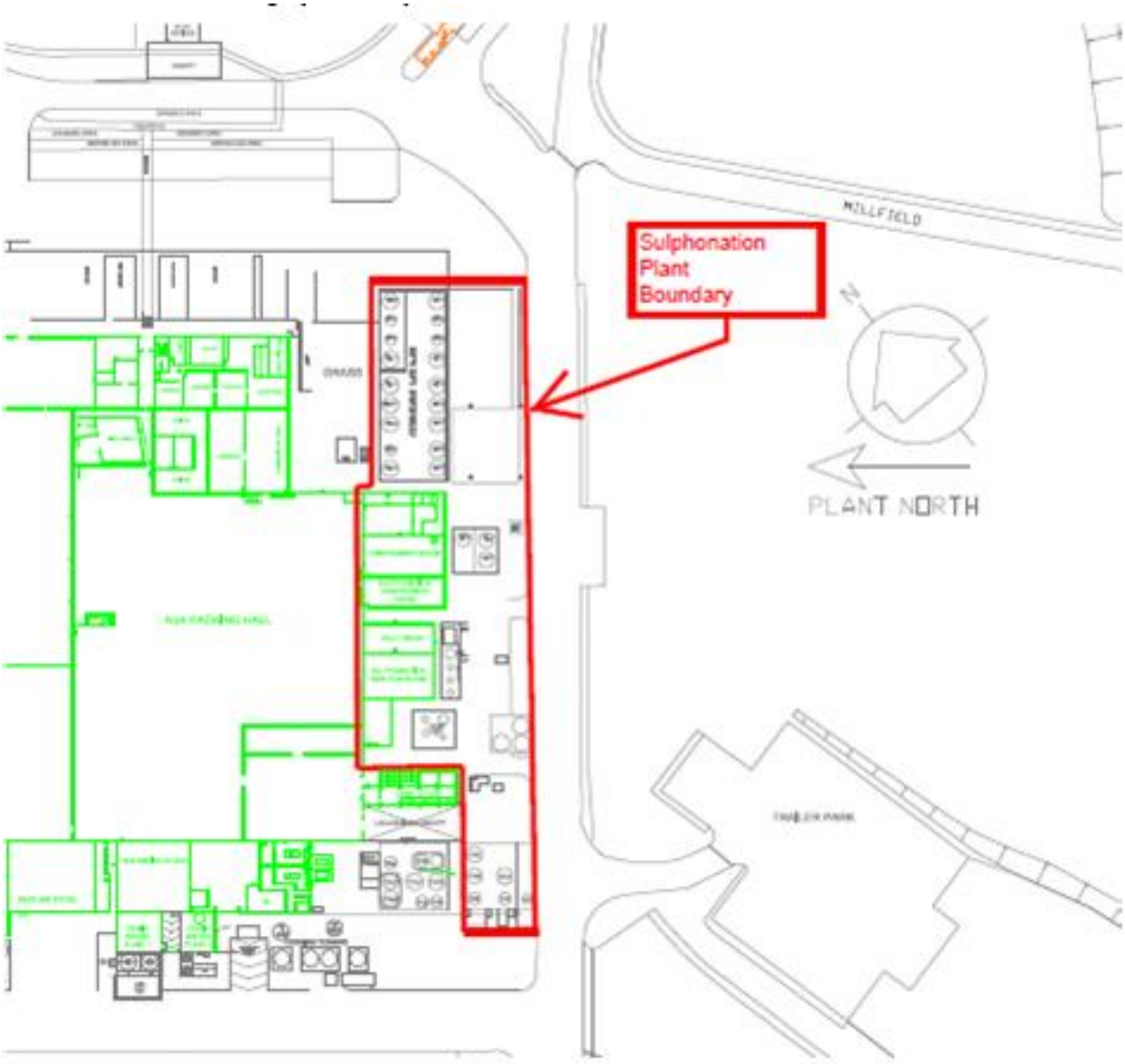
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- 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.

“yearly average” means the average over a period of one year of validated hourly averages obtained by continuous measurements.

Schedule 7 – Site plan



Installation Boundary in Red

END OF PERMIT

Permit Number: NP3532UG **Operator: Unilever UK Ltd**

Facility: Port Sunlight Sulphonation Plant **Form Number: Air1 01/06/21**

Reporting of emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result	Test Method [3]	Sample Date and Times [4]	Uncertainty [5]
A1	Oxides of Sulphur (Continuous)	30 mg/m^3	60 minute period maximum value(1)		In line analyser EN 14181		+/- 2% of scale (0-90ppm)
A1	Oxides of Sulphur (Continuous)	30 mg/m^3	60 minute period average value(2)		In line analyser EN 14181		+/- 2% of scale (0-90ppm)
A1	Oxides of Sulphur (Periodic)	30 mg/m^3	3 x 30 minute period average value(2)		In line analyser EN 14791		+/- 2% of scale (0-90ppm)
A1	Total VOC's expressed as Toluene	-	Spot Sample		BS EN 12619		1.8 expressed expanded k=2

1. The result given is the maximum value obtained during the reporting period, expressed in the same terms as the emission limit value.
2. The result given is the mean value of the results obtained during the reporting period, expressed in the same terms as the emission limit value.
3. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
4. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
5. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed ……. Date……..

(Authorised to sign as representative of Operator)

Permit Number: NP3532UG **Operator: Unilever UK Ltd**

Facility: Port Sunlight Sulphonation Plant **Form Number: ETP1 01/06/21**

Reporting of emissions from Effluent Treatment Plant for the period from DD/MM/YYYY to DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
E1	pH	5-9(5)	Maximum(1) Minimum(1)		pH meter		+/- 0.1 pH unit
E1	COD	250,000 mg/l (6)	Maximum(1) Average(1)		Spectrometry		+/- 98mg/l on sample diluted down to be in range 1000-10000mg/l
E1	Active detergent	None	Maximum(1) Average(1)		In House Method		+/- 2%

1. The result given is the maximum, minimum or average value of the spot samples taken from every batch transferred to the effluent treatment plant during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

3. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
4. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.
5. This limit does not apply to effluent sent to the operator's on-site effluent treatment plant
6. This limit is complied with if no more than 1 batch per month exceeds this limit

Signed …… Date……..

(Authorised to sign as representative of Operator)

Permit Number: NP3532UG **Operator: Unilever UK Ltd**

Facility: Port Sunlight Sulphonation Plant **Form Number: Offsite1 01/06/21**

Reporting of emissions for offsite treatment for the period from DD/MM/YYYY to DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result	Test Method [1]	Sample Date and Times [2]	Uncertainty [3]
OS1	pH	None	Spot samples		pH meter		+/- 0.1 pH unit
OS1	COD	None	Spot samples		Spectrometry		+/- 9.6mg/l using
OS1	Active detergent	None	Spot samples		In House Method		+/- 2%

1. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
2. Average of 6 months (daily samples).
3. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed ……. Date……..

(Authorised to sign as representative of Operator)

Permit Number: NP3532UG **Operator: Unilever UK Ltd**

Facility: Port Sunlight Sulphonation Plant **Form Number: WaterUsage1 01/06/21**

Reporting of Water Usage for the year YYYY

Water Source	Usage (m^3/year)	Specific Usage (m^3/unit output)
Mains water		
Site borehole		
River abstraction		
Other (specify)		
TOTAL WATER USAGE		

Trends in Mains Water Usage		
Year	**Total Water Usage**	**Specific Usage (m^3/unit output)**

Operator's comments:

Signed ……. Date……..

(authorised to sign as representative of Operator)

Permit Number: NP3532UG **Operator: Unilever UK Ltd**

Facility: Port Sunlight Sulphonation Plant **Form Number: Energy1 01/06/21**

Reporting of Energy Usage and Energy Efficiency for the year YYYY

Energy Source	Quantity Used	Primary Energy Usage (MWh)	CO2 produced (tonnes)
Electricity*	MWh		
Natural gas	t		
Diesel	t		
Imported Steam	**t**		
Other (Specify)	**t**		
Total	**--**		

* Conversion factor for delivered electricity to primary energy = 50.89%

Year	Production (tonnes)	Primary Energy usage (MWh)	Total Primary Energy usage per unit output (MWh/t)	Primary Energy Electricity Usage per unit output (MWh/t)	Primary Energy Gas Usage per unit output (GJ/t)*	CO2 produced (tonnes)	CO2 tonnes per tonne unit output

* Energy in natural gas conversion factor used = (GJ/t)

Operator's comments:

Signed ……. Date……..

(authorised to sign as representative of Operator)

Permit Number: **NP3532UG** **Operator:** **Unilever UK Ltd**

Facility: **Port Sunlight Sulphonation Plant** **Form Number:** **Performance1 01/06/21**

Reporting of Environmental Performance for the year YYYY

Parameter	Unit	Result
Quantity of sulphonates produced	tonnes	
Quantity of sulphur trioxide produced	tonnes	
Number of start-us of sulphur furnace	Events/yr	
Total quantity of effluent transferred to the Unilever effluent treatment plant	m^3	
Total quantity of effluent for off-site disposal	m^3	
Quantity of active detergent transferred to the Unilever effluent treatment plant	tonnes	
Quantity of active detergent for off-site disposal	tonnes	
Quantity of active detergent discharged from bunds to the site interceptor	tonnes	
Total quantity of COD transferred to the Unilever effluent treatment plant	tonnes	
Total quantity of COD for off-site disposal	tonnes	

Total quantity of COD discharged from bunds to the site interceptor	tonnes	

Operator’s comments:

Signed ……. Date…….. (authorised to sign as representative of Operator