ENVIRONMENTAL PERMIT

Pollution Prevention and Control Act 1999
Environmental Permitting (England and Wales) Regulations 2016 (as amended)

Environmental Permit Reference:	EP 602-R2

High Peak Borough Council (hereafter referred to as "the Regulator"), in the exercise of its powers under regulation 13 of the Environmental Permitting (England & Wales) Regulations 2016: SI 1154 as amended, hereby permits;

Saica Flex UK Limited
("the Operator")
Company registration number is: **02484831**
Whose registered office is:
144 Manchester Road, Carrington, Manchester, England, M31 4QN

to operate a regulated facility

At: 1 Staden Park, Staden Lane, Buxton, Derbyshire, SK17 9RZ

as shown in Schedule 1 and within the regulated facility boundary outlined in red in Schedule 2, to the extent permitted by and subject to the conditions of this environmental permit:

Signed: **Dated 05 December 2024**

Christopher Humphreys
Pollution and Environment Officer

Authorised by High Peak Borough Council to sign in that behalf

Environmental Health
High Peak Borough Council, Town Hall, Market Place, Buxton, SK17 6EL
EnvHealth@highpeak.gov.uk 01298 28400

STATUS LOG

DETAIL	DATE
A2 Environmental Permit P02-SG6 first issued to Primopost Limited	01 October 2010
Variation Notice VN 149 served with amended Environmental Permit P02A-SG6	21 March 2013
Environmental Permit P02A-SG6 transferred to Saica Flex UK Limited on 06 August 2019, permit issued with no amendments to conditions 24 August 2023.	24 August 2023
Non-substantial variation application received	02 February 2024
Variation Notice EP 602-V2 served with Environmental Permit EP 602-R2	05 December 2024

For office use only:	High Peak permit template version: 2024-05-22-Rev9

High Peak Borough Council

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A. REGULATOR CONTACT DETAILS

Where it is necessary to contact the Regulator in relation to this Environmental Permit the following contact details or contact details supplied in writing by the Regulator shall be used:

Office hours:	Monday to Friday 9am to 5pm.
Address:	Environmental Health High Peak Borough Council Town Hall Market Place Buxton Derbyshire SK17 6EL
Telephone:	01298 28400
Email:	EnvHealth@highpeak.gov.uk
Out of hours:	A message must be left using the details above and contact made again at the start of the next working day.

In the event of emissions to water:

Environment Agency Incident Hotline: 0800 80 70 60
24 hours

B. DESCRIPTION OF PERMITTED ACTIVITY

This Environmental Permit is based on the following process/sector guidance notes (PG/SG Notes) published by the Department for Environment, Food and Rural Affairs (DEFRA) and Best Available Techniques (BAT) Reference Document listed below.

Reference	Description
PG 6/29(12)	Statutory Guidance for Di-isocyanate Processes
BAT Reference Document	Surface treatment using organic solvents including wood and wood products preservation with chemicals as published in the Official journal of the European Union on 09 December 2020

Installation and Activities

The manufacturing facility in Buxton occupies more than 5,950m^2 in Buxton, Derbyshire. From this purpose-built factory the company runs a seven day operation covering 168 hours per week, providing printed flexible packaging, film stockholding and associated services.

There are separate areas in the factory for print, lamination, finishing and warehousing. The Operator has installed an onsite testing laboratory to allow products to be tested to ensure they meet with customer requirements.

The installation produces printed products on OPP film and paper for the food industry by the Flexographic printing process, this involves three primary processes although not all three are used on all products, initially plain film or paper is printed, aqueous coatings (the capability exists for solvent coating but is not conducive to food packaging) and finally the product is finished by being slit down to the required widths and lengths for additional external processes (not undertaken at the installation).

Printing

Printing is by the Flexographic method and utilises solvent based inks. Flexographic printing uses flexible polymer relief plates (plates with a raised 'image' area) that are adhered to the printing cylinders with mounting tape. Ink is applied to the raised area of the plate via an engraved anilox (metering) roller which then transfers the ink to the substrate. The presses are of the 'central impression' type so rather than the substate passing through individual print units, the print units are positioned around a common impression cylinder. Substrates do not stretch as they move around the impression cylinder so the common impression cylinder press is a good choice for printing on substrates such as the thin plastics that we convert.

Printing plates are supplied by a third party and there are no facilities for producing photopolymer plates on site.

Inks are diluted with solvents to achieve the correct viscosity prior to being applied. During printing the ink must be heat dried prior to the printing of subsequent colours. After the

addition of the last colour all the residual solvents are removed in a final drying tunnel. After finishing a printing run it is necessary to clean the printing plates, anilox roller etc with solvent similar to those within the ink. Cleaning is carried out using a contained automated wash cycle, minimising fugitive emissions. Because of the high solvent content and the variety of solvents used, abatement of the exhaust gases from the printing (& cleaning) process is employed via a thermal oxidiser.

Lamination

To meet the requirements of the food industry, the Operator specialise in solvent-free lamination. This process allows the addition of an extra barrier for sensitive food products and so keeps products fresher, for longer. The process also protects inks from scuffing whilst adding a glossy finish to printed film which improves the impact of the finished product. The laminating machines use a solvent free two-part adhesive that cures through a chemical reaction, so there is no requirement for forced air drying. The two-part adhesive relies on a isocyanate component to initiate the curing of the adhesive.

Cold Seal Aqueous Coatings

Cold-seal allows the sealing of packs without the introduction of heat, this is commonly used forl packs containing products that would be damaged by conventional heat sealing and/or to increase packing speeds. Cold-seal is a water based product with approximately 50% solids content and is usually applied patterned to just cover only the seal areas of the final pack. The cold-seal is applied via a gravure cylinder which is engraved to the correct depth to apply the required amount of cold-seal to the substrate. The substate (with the applied) cold-seal then passes through a forced air drying oven to drive off the water from the coating. The substrate, with the cured cold-seal is then rewound.

Anti-mist coatings

The Operator can apply anti-mist coatings to packaging films for moisture sensitive products, such as salads, to add visual impact to the product and make it more attractive on the shelf

Perforation

Perforation is not currently undertaken at the installation.

Slitting

The final printed, laminated and/or coated material is then slit down to the required width on one of the slitting machines. Slitting is completed by running the full width reel over razor blades to ‘slit’ the material to the correct width. Sltting can also be carried out by using roatary (circular) blades that slot into a grove to perform a scissor cut. Once the material is slit, the final width material is wound onto two bars (top & bottom) so that they can easily be separated.

Abatement

A 12,000m^3/hr Euroclean Regenerative Thermal Oxidiser (RTO) was installed in 2022, with a solvent load of between 0.3 and 10kg/hr.

Plant, Equipment and Abatement Plant details

Table A1: Plant, Equipment and Abatement Plant details	
Plant and Equipment details	
2x Windmoeller & Hoelscher 'Mira Flex' Flexogrphic Printing Press comprising eight printing units @1270mm maximum width	
1x CL-750 off- line Coater / Laminating Machine @1200 mm maximum width	
1x CL-850 off- line Coater / Laminating Machine @1200 mm maximum width	
2x Universal X6 slitting and rewinding machines	
1x Cason Innova Matic SGPE (Twin Turret) slitting and rewinding machine	
Rexon 20 Head Automatic Colour Mixing Unit	
Flexo-Wash Anilox Cleaner	
Flexo-Wash Automated plate cleaner	
Wanson Kerosene hot oil heater	
VOC Abatement Plant Details	
Equipment type	12,000m^3/hr Euroclean Regenerative Thermal Oxidiser (RTO)
Maximum VOC input	40%

High Peak Borough Council

C. CONDITIONS

1 The Regulated Facility

1.1 Permitted activities

1.1.1 The Operator is only authorised to carry out the activities (the "activities") specified in Table 1.1 utilising the plant, equipment and arrestment equipment specified in Table A1.

Table 1.1 Activities and Directly associated activities (the "activities")

EP Regs Schedule Reference	Description of specified activity	Limits of specified activity
Schedule 1, Part 2, Chapter 6, Section 6.4, Part A2	flexographic printing onto impermeable substrates for the flexible packaging industry with solvent use of > 200 tonnes. The process of laminating impermeable substrates, the application of Anti-Mist Coatings, the application of Cold Seal overprinting coatings and varnishes in either aqueous or solvent based forms.	From ink blending facility to mixing room, and presses exhaust extract system for VOC laden air.
Schedule 1, Part 2, Chapter 4, Section 4.1, Part B(a)	Unless falling within Part A(1) of this Section, any activity where the carrying on of the activity by the person concerned at the location in question is likely to involve the use in any 12-month period of 5 or more tonnes of any di-isocyanate or of any partly polymerised di-isocyanate or, in aggregate, of both.	The process of laminating impermeable substrates, the application of anti-mist coatings, the application of cold seal overprinting coatings and varnishes in either aqueous or solvent based forms.
Directly associated activity		
VOC abatement plant	Regenerative Thermal Oxidiser. (Gas fired) and incorporating a bypass.	Extraction and collection of waste gases from press exhaust (and printing room), treatment of waste gases in RTO to final discharge stack.
Wanson Kerosene hot oil heater	Thermal oil heater for drying on the Miraflex 1 and Miraflex 2 presses and the CL-750 and CL-850 Combi laminator coater machines	From boiler house to Mirafles presses and Cl-750 and CL-850 combi laminator coaters.
Storage and Handling of raw materials	Usage and storage of materials such as fuels, inks and solvents, including the storage of solvents in a bulk tank or sealed drums.	Receipt and storage of raw materials and transfer to process areas.
Preparation of inks	Mixing of raw ink and solvent.	Production of ink to % viscosity required for coating activities.
Disposal of waste materials	Disposal of waste inks, solvents and printed substrates via licensed waste contractors	Management of waste produced on site via appropriate waste contractors, including storage in designated areas prior to collection by registered waste contractors and loading for disposal off site.

1.2 The site

1.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 2 to this permit.

1.3 Improvement programme

1.3.1 The Operator shall complete the improvements specified in Table 1.2 by the date specified in that table unless otherwise agreed in writing by the Regulator.

1.3.2 Except in the case of an improvement which consists only of a submission to the Regulator, the Operator shall notify the Regulator within 14 days of completion of each improvement.

Table 1.2 Improvement programme requirements

Reference	Requirement	Date
IP1	All aspects of the Environmental Management System required under condition 2.1.1 shall be fully implemented by the specified date unless otherwise agreed in writing by the Regulator.	31/03/2025
IP2	The Operator shall implement a fully enclosed flexo-parts washer. The system proposed shall be submitted to the Regulator for approval before it can be used and shall be implemented by the date specified in this table unless otherwise agreed in writing by the Regulator.	09/12/2025
IP2	The Operator shall review the feasibility of an energy recovery from hot gas streams system. The outcome of the review shall be submitted to the Regulator for approval. Where a scheme is deemed feasible, as agreed in writing by the Regulator, a project plan shall be prepared, identifying key stages of the project and implementation dates and be submitted to the Regulator for approval. The feasibility study shall be submitted to the Regulator for approval by: Where required, the project schedule shall be submitted to the Regulator by: The 'approved scheme' shall then be implemented within the agreed timeframes unless otherwise agreed in writing by the Regulator.	30/06/2025 30/09/2025

2 Management

2.1 General management

2.1.1 The Operator shall manage and operate the activities:

(a) in accordance with a written management system, which incorporates all the requirements of Schedule 5, and 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.

2.1.2 Records demonstrating compliance with condition 2.1.1 shall be maintained.

2.1.3 The Operator shall notify the Regulator of any changes to the EMS, or as otherwise agreed in writing by the Regulator.

2.1.4 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.

2.1.5 The best available techniques shall be used to prevent or, where that is not practicable, reduce emissions from the installation in relation to any aspect of the operation of the installation which is not regulated by any other condition of this permit.

2.2 Energy efficiency

2.2.1 The Operator shall:
(a) take appropriate measures to ensure that energy is used efficiently in the activities; and
(b) maintain records of energy used in the activities;
(c) not exceed the BAT-associated environmental performance level (BAT-AEPL) for energy consumption of 350 Wh/m^2 of printed area as a yearly average.

2.3 Efficient use of raw materials

2.3.1 The Operator shall:
(a) take appropriate measures to ensure that raw materials are used efficiently in the activities; and
(b) maintain records of raw materials used in the activities;

2.4 Avoidance, recovery and disposal of wastes produced by the activities

2.4.1 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.
(d) maintain records of waste generated by the activities, including quantities and treatment or disposal methods.

3 Operations

3.1 Operating techniques

3.1.1 For the activities referenced in Table 1.1 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 Table 3.1, unless otherwise specified by condition in this permit or agreed in writing by the Regulator.

Table 3.1 Operating techniques

Description	Parts	Date Received
BAT Reviews	Techniques as specified within the "Site Compliance" column of the BAT review contained in Schedule 9	04-12-2024
Environmental Management System	As per document reference B2.12 submitted as part of an application for variation of an Environmental Permit.	31-10-2024
	PPP040 Spill Procedure Spill kits and bunded areas (Description and site plan) PPP047 bulk solvent delivery procedure PPP049 kerosene delivery procedure Bulk Storage of Solvent (Document reference B2.1E) Maintenance (Document reference B2.1E.1) Control of fugitive emissions ((Document reference B2.1G)	28-11-2024 28-11-2024 04-12-2024 04-12-2024 16-06-2024 16-06-2024 16-06-2024
	RTO Pollution Control, (Document reference B2.3)	28-11-2024
	Energy Efficiency Plan (Document reference B2.7 and 2.7A)	31-10-2024
	Waste Management Plan (as per document reference B2.5A, B and C)	16-06-2024
	Environmental monitoring including the section on material handling (Document reference B2.10)	31-10-2024
	PPP050 - Odour management procedure Visual and olfactory monitoring	02-12-2024 16-06-2024

3.1.2 If notified by the Regulator that the activities are giving rise to pollution, the Operator shall submit to the Regulator for approval within the period specified, a revision of any plan or other documentation ("plan") specified in either Table 3.1, any of the Schedules 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 Regulator.

3.1.3 The Operator shall:

(a) maximise the availability and performance of equipment critical to the protection of the environment;
(b) record all periods of other than normal operation, their cause and duration and where possible their effect on emissions.

3.2 Raw Material Handling and Storage

3.2.1 The sulphur content of any fuel used in the hot oil heater or RTO shall not exceed 0.1% w:w (as S).

3.2.2 The use of organic solvents or preparations, which because of their VOC content are assigned Hazard Statements H340, H350, H350i, H360D or H360F, or which because of their halogenated VOC content are assigned Hazard Statements H341 or H351, shall not be permitted.

3.2.3 Materials detailed in Table 3.2 shall be stored in the location and manner specified in that table.

Table 3.2 Raw material storage

Material	Location of storage on site	Description of storage on site	Storage conditions
Solvents	Bulk storage within the solvent tank and in drums in the bunded solvent storage area, paint kitchen area and testing laboratory.	Secure storage areas bunded tanks and bunded areas within the solvent storage area, paint kitchen and testing laboratory.	Bulk storage tank, double skinned, bunded storage with high-level alarm, pressure relief valve and bank vented during delivery. Sealed drums or vented tanks, fully vented structure and in the storage area which is fully enclosed and bunded. All containers, storage and mixing drums shall be closed whenever possible.
Mineral oils	Oil store	Fully bunded	Sealed tank
Inks	External storage tanks, external storage area and within the ink kitchen and testing laboratory.	External fully enclosed store, or within bunded ink kitchen and testing laboratory.	Sealed containers, drums and buckets. All containers, storage and mixing drums shall be closed whenever possible.
Hot oil system (Kerosene)	Stored in the bulk kerosene tank	Stored within a bunded oil storage tank.	Bunded sealed oil tank fitted with high-level alarm.

3.2.4 All bunding shall be sealed and resistant to the chemicals in storage and shall be capable of holding 110% of the largest container to be stored in that area. Bunds shall not be fitted with drain points, but accumulated liquids pumped out. Storage areas shall be under cover and protected from the elements, unless stored materials are in suitable weatherproof containers. All bunded areas shall be subject to a weekly inspection.

3.2.5 The solvent store catchment sump shall be fitted with a high-level alarm, which shall be utilised to trigger sump-clearing operations.

3.2.6 Bulk storage tanks shall be fitted with high level alarms and shall be tested before every delivery. A record of the test shall be made.

3.2.7 The bulk solvent storage tank shall be fitted with a pressure relief valve (PRV) that shall be subject to no longer than a 6-monthly testing and examination for signs of corrosion, contamination, incorrect seating and shall be cleaned or corrected as necessary.

3.2.8 The transfer of solvent to the bulk storage tank shall be back-vented.

3.2.9 The delivery, handling, transport and storage of odorous, corrosive or solvent/oil based materials associated with the process shall be carried out in such a manner so as to prevent releases into the environment.

3.3 Waste Handling and Storage

3.3.1 Waste materials specified in Table 3.3 below shall only be stored on site in the location and manner specified in that table.

Table 3.3 Waste stored on site

Description of Waste	Location of storage on site	Manner of Storage	Storage conditions
Waste Film	External	Pallets	Recycled where possible unless required to be disposed of by licensed contractor.
Waste paper	External	Skip	Recycled where possible unless required to be disposed of by licensed contractor.
Waste inks and Solvents	Internal within bunded area - See Schedule 4	Sealed Containers	Distillation, Cleaning and Reuse All solvent/ ink containers shall be and kept closed, when not in use and all solvent containing waste materials shall be stored in sealed, labelled containers pending distillation or disposal.
General Waste	External	Skip	Landfill
Strapping and Wrapping	External	Baled	Recycled where possible unless required to be disposed of by licensed contractor.

3.3.2 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.

3.3.3 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.

3.4 Stacks

3.4.1 The height of the RTO exhaust stack serving the presses and the press bypass exhaust stacks shall be a minimum of 3 metres above the roof ridge height.

3.4.2 The efflux velocity from the outlet of the RTO exhaust stack and the bypass exhaust stack shall be greater than 15 metres per second at full load.

3.4.3 Stacks discharge points, identified in Table 4.1, shall not be fitted with any restriction at the final opening, such as plate, cap or cowl, with the exception of a cone, which may be necessary to increase the exit velocity of emissions.

3.5 Cleaning activities

3.5.1 Application of cleaning organic solvents shall be from a contained device or an automatic system when applied directly. Where wipes are used, solvent shall be dispensed onto the wipes from a pump dispenser or similar or be pre-impregnated. Used wipes shall be held in sealed, self-closing container pending disposal to laundering under contract; such containers shall be emptied at least daily.

3.5.2 General cleaning shall be undertaken with either water-based cleaners or solvents with a low volatility. Ink diluent solvents shall not be used.

3.6 Accident Prevention and Control

3.6.1 The Permitted Installation shall, subject to the conditions of this permit, prevent and limit the consequences of accidents. The Operator shall:

(a) As part of the EMS specified in condition 2.1.1, maintain a documented system (Accident Management Plan) to identify, assess and minimise the environmental risks and hazards associated with environmental accidents.
(b) In the event of an environmental accident either to land, air or water a report shall be made on an incident report form that shall be taken from the Incident Response Plan.
(c) In accordance with BAT, the Accident Management Plan shall implement the following; inventory of potentially polluting substances/activities including associated risk (hazard x probability) carried out at the installation; procedures to record near misses and implement corrective actions; define the roles of personnel to be contacted in the event of an environmental incident; safe shut down procedures; details of appropriate details including emergency services; and provision of adequate training for appropriate personnel.

3.6.2 The Operator shall make available the Accident Management Plan to the Regulator upon request. Any proposed changes to those areas mentioned in Condition 3.6.1 shall not be made unless agreed in writing by the Regulator

3.6.3 The Operator shall maintain a clear diagrammatic record of the routing of all installation drains, above and subsurface pipework, sumps and storage vessels including type and broad location of the receiving environment. All potential risk to the environment from the drainage systems shall be recorded and a maintenance and an inspection programme maintained, having regard to the nature and volume of waste waters, groundwater vulnerability and proximity of drainage systems to surface waters.

3.6.4 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.

3.6.5 Appropriate precautions shall be taken to prevent ignition of flammable materials.

3.6.6 Areas where flammable organic solvents and organic solvent containing materials are handled or used shall be suitably contained to minimise the potential spread of fire.

3.6.7 The auto ignition temperature shall not be exceeded in any organic solvent containing section of the process, with the exception of the combustion chamber of the thermal abatement plant.

3.6.8 Electrical zoning and static protection shall be provided in all areas where flammable organic solvents are stored used or handled.

3.6.9 Controlled shutdown procedures shall be in place for dealing with emergencies such as organic solvent levels entering the combustion plant at greater than 25% LEL. In this case dilution air can be added, an alarm and auto stop should be in place.

3.7 Decommissioning

3.7.1 The Operator shall maintain a site closure plan such that, upon definitive cessation of activities, the site can be decommissioned safely and that pollution risks from the site are minimised. The Operator shall ensure that:

(a) Operations during the life of the IPPC Permit do not lead to any further deterioration of the land or groundwater within the site boundary as set out in the site condition report submitted as part of the A2 permit application, reference B3, submitted 20-04-2010.

(b) As part of the EMS implementation programme (Condition 2.1.1) appropriate measures are established to control significant environmental risks which could lead to a pollution episode.

(c) The Regulator is informed in writing of proposals for ensuring satisfactory de-commissioning of the following areas:
   i. actions to be taken at Design and Build of new developments,
   ii. site closure arrangements for de-commissioning,
   iii. decontamination and
   iv. demolition

(d) A ‘Site Condition Report’ is submitted to the Regulator as part of any surrender application. As a minimum, the ‘Site Condition Report’ shall include:
   i. Site details
   ii. Details of the condition of the land at time of permit issue
   iii. Details of permitted activities and any changes to the activities.
   iv. Measures taken to protect land and waters.
   v. Pollution incidents that may have had an impact on soils/groundwaters and their remediation.
   vi. Details of any soil and water quality monitoring undertaken.
   vii. Decommissioning and removal of pollution risk.
   viii. Reference data and remediation.
   ix. Statement of site condition.

4 Emissions and monitoring

4.1 Emissions to water, air or land

4.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in Table 4.1.

Table 4.1 Emission points into air		
Source	**Emission description or type**	**Location of emission point (as shown in Schedule 4)**
RTO Outlet Stack	VOC	Discharge point 13
	Carbon monoxide	Discharge point 13
	NOx (as NO2)	Discharge point 13
CL 750 Exhaust	Ammonia	Discharge point 5, 6 & 7
	MDI	Discharge point 5, 6 & 7
CL 850 Exhaust	Ammonia	Discharge point 9
	MDI	Discharge point 9
Miraflex 1 by-pass Exhaust	VOC	Discharge point 1
Miraflex 1 Ozone Exhaust	Ozone	Discharge point 2
Miraflex 2 by-pass Exhaust	VOC	Discharge point 3
Miraflex 2 Ozone Exhaust	Ozone	Discharge point 4
CL 750 Ozone Exhaust	Ozone	Discharge point 8
CL 850 Ozone Exhaust	Ozone	Discharge point 10 & 11
Thermal transfer fluid heater exhaust	Particulate	Discharge point 12
	Combustion gases	Discharge point 12
Ink kitchen Extract	VOC	Discharge point 14
Testing Laboratory LEV	VOC	Discharge point 15

4.1.2 Fugitive annual emissions of volatile organic solvents from the activities shall not exceed the limit specified in Table 4.2.

Table 4.2 Annual limits for fugitive emissions		
Substance	**Medium**	**Limit (including unit)**
TVOC	Fugitive	< 12% of the solvent input

4.1.3 All emissions to air, other than steam or water vapour shall be colourless and free from persistent mist.

4.1.4 All emissions to air shall be free from persistent fume and free from droplets.

4.1.5 The emission limits given in Table 4.3 shall not be exceeded.

Table 4.3 Emission Limits, monitoring frequency and standards					
Discharge Point (shown on plan in Schedule 4)	**Substance**	**Emission Limit Value**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
13	VOC	20 mg/Nm^3 (measured as total carbon content excluding particulate matter)	Average over the sampling period	Minimum of once per year	Extractive to BS EN 12619
	Carbon monoxide	100 mg/Nm^3	Average over the sampling period	Minimum of once per year	Extractive to BS EN 15058
	NOx (as NO2)	100 mg/Nm^3	Average over the sampling period	Minimum of once per year	Extractive to BS EN 14792
1 and 3	VOC	20 mg/Nm^3 (measured as total carbon content excluding particulate matter)	Average over the sampling period	At the written request of the Regulator	Extractive to BS EN 12619
5, 6, 7 and 9	Ammonia (NH_3)	30 mg/Nm^3	Average over the sampling period	Minimum of once per year	Extractive to EN ISO 21877 or CEN TS 17337
	Diphenylmethane-4,4'-di-isocyanate (MDI)	0.1 mg/Nm^3	Average over the sampling period	Minimum of once per year	Extractive to US EPA CTM 36 for sampling and CTM 36A for analysis
1 and 12	Smoke	No visible smoke in normal operation, and in any case shall not exceed the equivalent of Ringelmann Shade 1 as described in BS2742:2009	Minimum two minute observations	Daily when the plant is in operation	Operator visual observations

4.2 Emissions of substances not controlled by emission limits

4.2.1 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.

4.2.2 The Operator shall:

(a) if notified by the Regulator that the activities are giving rise to pollution, submit to the Regulator 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 Regulator.

4.3 Monitoring: - Point source emissions

4.3.1 The Operator shall, unless otherwise agreed in writing by the Regulator, undertake the monitoring specified in Table 4.3 to this permit:

4.3.2 To demonstrate compliance with the emission limit values specified in Table 4.3, for periodic measurements, the average value of three consecutive measurements of at least 30 minutes each shall be used, unless otherwise agreed in writing by the Regulator.

4.3.3 The introduction of dilution air to achieve the emission limits stipulated in this Permit shall not be allowed.

4.3.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in Table 4.3 unless otherwise agreed in writing by the Regulator.

4.3.5 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme specified in Table 4.3, with the exception for monitoring requiring only Operator observations, shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Regulator.

4.4 Monitoring - RTO Temperature monitoring

4.4.1 The incineration temperature of the regenerative thermal oxidiser (RTO) abatement plant shall be continuously monitored and recorded as a surrogate for the measurement of VOCs.

4.4.2 The incineration temperature of the thermal oxidisers combustion chamber shall be maintained between 800°C – 960°C in normal operating conditions. The temperature shall be continuously measured and combined with an alarm system for temperatures falling below the optimised temperature window specified in Table 4.4.

4.4.3 The alarms and set-points detailed in Table 4.4 below shall be utilised at all times to prevent and minimise emissions of volatile organic compounds from the printing presses. All the alarms listed in Table 4.4 shall trigger an audible or visual alarm within the press hall or plant supervisor's office. Any alarm trigger shall be recorded together with all action taken to correct the alarm conditions.

Table 4.4 RTO Alarms	
Alarm	**Alarm Set point**
Low Temperature Combustion Chamber RTO	800°C
Low Temperature Combustion Chamber Shutdown RTO	800°C
LEL Shutdown RTO	15% Control 25% Alarm 30% Shut off

4.5 Monitoring – Continuous

4.5.1 Continuous monitoring required by this Permit shall be carried out as follows:

A. All continuous monitoring readings shall be on display to appropriately trained staff
B. Instruments shall be fitted with audible and visual alarms, situated appropriately to warn the operator of arrestment plant failure or malfunction
C. The activation of alarms shall be automatically recorded
D. All continuous monitors shall be operated, maintained and calibrated in accordance with the manufacturers' instructions, which shall be made available for inspection by the Regulator. The relevant maintenance and calibration shall be recorded.
E. All continuous monitoring equipment shall be designed for less then 5% downtime over any 3-month period.

4.6 Monitoring – Odour

4.6.1 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 Regulator, 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.

4.6.2 The Operator shall:

(a) if notified by the Regulator that the activities are giving rise to pollution outside the site due to odour, submit to the Regulator 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 Regulator.

4.7 Monitoring - Noise and vibration

4.7.1 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 Regulator, 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.

4.7.2 The Operator shall:

(a) if notified by the Regulator that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Regulator 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 Regulator.

4.8 Monitoring – soil and groundwater

4.8.1 From the date of this permit, 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.

4.8.2 Any periodic testing method in relation to condition 4.8.1, shall be submitted to the Regulator for approval at least 28 days before the propose monitoring is carried out.

4.9 Monitoring - Determination of solvent mass balance

4.9.1 The Operator shall, unless otherwise agreed in writing by the Regulator, monitor fugitive VOC emissions by compiling, at least on an annual basis, a solvent mass balance of the solvent inputs and outputs of the plant, as defined in Part 7(2) of Annex VII to Directive 2010/75/EU: The solvent mass balance shall include:

(a) identification and documentation of solvent inputs and outputs, (e.g. emissions in waste gases, emissions from each fugitive emission source, solvent output in waste);

(b) substantiated quantification of each relevant solvent input and output and recording of the methodology used (e.g. measurement, calculation using emission factors, estimation based on operational parameters);

(c) identification of the main sources of uncertainty of the aforementioned quantification, and implementation of corrective actions to reduce the uncertainty;

(d) regular update of solvent input and output data.

4.9.2 To minimise the uncertainty of the solvent mass balance data, the Operator shall use all of the techniques given in Table 4.5 below.

Table 4.5 Solvent mass balance

Technique	Description
Implementation of a solvent tracking system	A solvent tracking system aims to keep control of both the used and unused quantities of solvents (e.g. by weighing unused quantities returned to storage from the application area).
Monitoring of changes that may influence the uncertainty of the solvent mass balance data	Any change that could influence the uncertainty of the solvent mass balance data is recorded, such as: • malfunctions of the off-gas treatment system: the date and duration are recorded; • changes that may influence air/gas flow rates, e.g. replacement of fans, drive pulleys, motors; the date and type of change are recorded.

4.9.3 The Operator shall use the solvent mass balance calculation methodology detailed in Schedule 6, unless otherwise agreed in writing by the Regulator.

4.10 Monitoring – Adverse Results

4.10.1 Adverse results from any monitoring activity shall be investigated as soon as the monitoring data has been determined or received. The following items shall be undertaken:-

(a) The cause shall be identified and corrective action taken.
(b) A detailed record of the extent of the problem and action taken to rectify the situation.
(c) A re-test to demonstrate compliance shall be undertaken as soon as possible.

4.11 Monitoring – Records

4.11.1 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.

5 Reviews

5.1 Annual review of VOC and Energy

5.1.1 **T**he Operator shall:

(a) identify the process areas, sections or steps that make the greatest contribution to VOC emissions and energy consumption, which have the greatest potential for improvement;
(b) identify and implement actions to minimise VOC emissions and energy consumption;
(c) review progress and update actions on an annual basis.

5.2 Four year reviews

5.2.1 The Operator shall by 31 March 2025 and at least every four years from 01 January 2025 thereafter, review and record whether:

(a) there are suitable opportunities to improve the energy efficiency of the activities; and
(b) there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material; and
(c) whether changes to measures for the avoidance, recovery and disposal of wastes produced by the activities should be made; and
(d) make a copy of any review under this condition available to the Regulator on request.
(e) take any further appropriate measures identified by a review following agreement in writing by the Regulator.

5.2.2 Any change proposed according to condition 5.2.1 and agreed in writing by the Regulator, shall not be implemented until the Operator has given the Regulator prior written notice of the implementation date for the change, and any relevant documentation referred to in this Permit shall be deemed to be amended.

5.2.3 The Operator shall, unless notice under this condition has been served within the preceding four years, submit to the Regulator, 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.

6 Records, Reporting and Notifications

6.1 Records

6.1.1 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 Regulator, 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.

6.1.2 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 Regulator.

6.2 Reporting

6.2.1 The Operator shall send all reports and notifications required by the permit to the Regulator using the contact details in Section A to this Permit or as supplied in writing by the Regulator.

6.2.2 A summary of the RTO temperature range alarms triggered during each quarter of the year, shall be forwarded to the Regulator by the end of the month following the respective quarter. The summary shall specify the date and time of the alarm, a summary of the reason and where necessary, actions taken to return the RTO to the specified temperature range, the length of time the RTO was out of the temperature range (specified in condition 5.9) and the operational status of the activities that supply the RTO.

6.2.3 Reports relating to extractive monitoring shall be submitted to the Regulator within eight weeks of sampling and shall include a review of the results of the monitoring and assessment carried out, including an interpretive review of the data.

6.2.4 By the 31st March each year, the Operator shall submit to the Regulator in respect of the previous year's data:

a. The activities solvent mass balance calculations prepared utilising the methodology under condition 4.9.3; and,
b. The activities energy consumption, reported as Wh/m^2 of printed area (Watt hours per metre square of printed area) as a yearly average.

6.2.5 Each year, by the 31st March, the Operator shall produce an annual waste record for the previous year utilising data recorded under condition 2.4.1, which shall be made available to the Regulator on request.

6.2.6 Each year, by the 31st March, the Operator shall produce an annual energy balance record for the previous year which shall be made available to the Regulator on request. This shall provide a breakdown of the energy consumption and generation (including energy export) by the type of energy source of the activities. This shall include:

(a) Defining the energy boundary of the activities.
(b) Information on energy consumption in terms of delivered energy;
(c) Information on energy exported from the plant;
(d) Energy flow information showing how energy is used throughout the process.

6.3 UK Pollutant Release Transfer Register (UK-PRTR)

6.3.1 The Operator must respond to any request for information for the purposes of complying with the obligation to report pollution releases and off-site waste transfers, in accordance with the reporting requirements of the "UK Pollutant Releases Transfer Register" (UK-PRTR). Any failure to respond to the annual UK-PRTR Information Notice will constitute a breach of permit.

6.4 Notifications

6.4.1 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 Regulator,
  (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 Regulator, 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.

6.4.2 Any information provided under condition 6.4.1 shall be confirmed by sending the information listed in schedule 7 to this permit within the time period specified in that schedule.

6.4.3 Where the Regulator 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 Regulator when the relevant monitoring and/or spot sampling is to take place. The Operator shall provide this information to the Regulator at least 14 days before the date the monitoring is to be undertaken.

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

Where the operator is a registered company:

(a) any change in the Operator's trading name, registered name or registered office address; and
(b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

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

(c) any change in the Operator's name or address; and
(d) any steps taken with a view to the dissolution of the Operator.

6.4.5 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 Regulator 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.

6.4.6 The Regulator shall be given at least 14 days' notice before implementation of any part of the site closure plan.

6.4.7 Where the Operator has entered into a climate change agreement with the Government, the Regulator shall be notified within one month of:

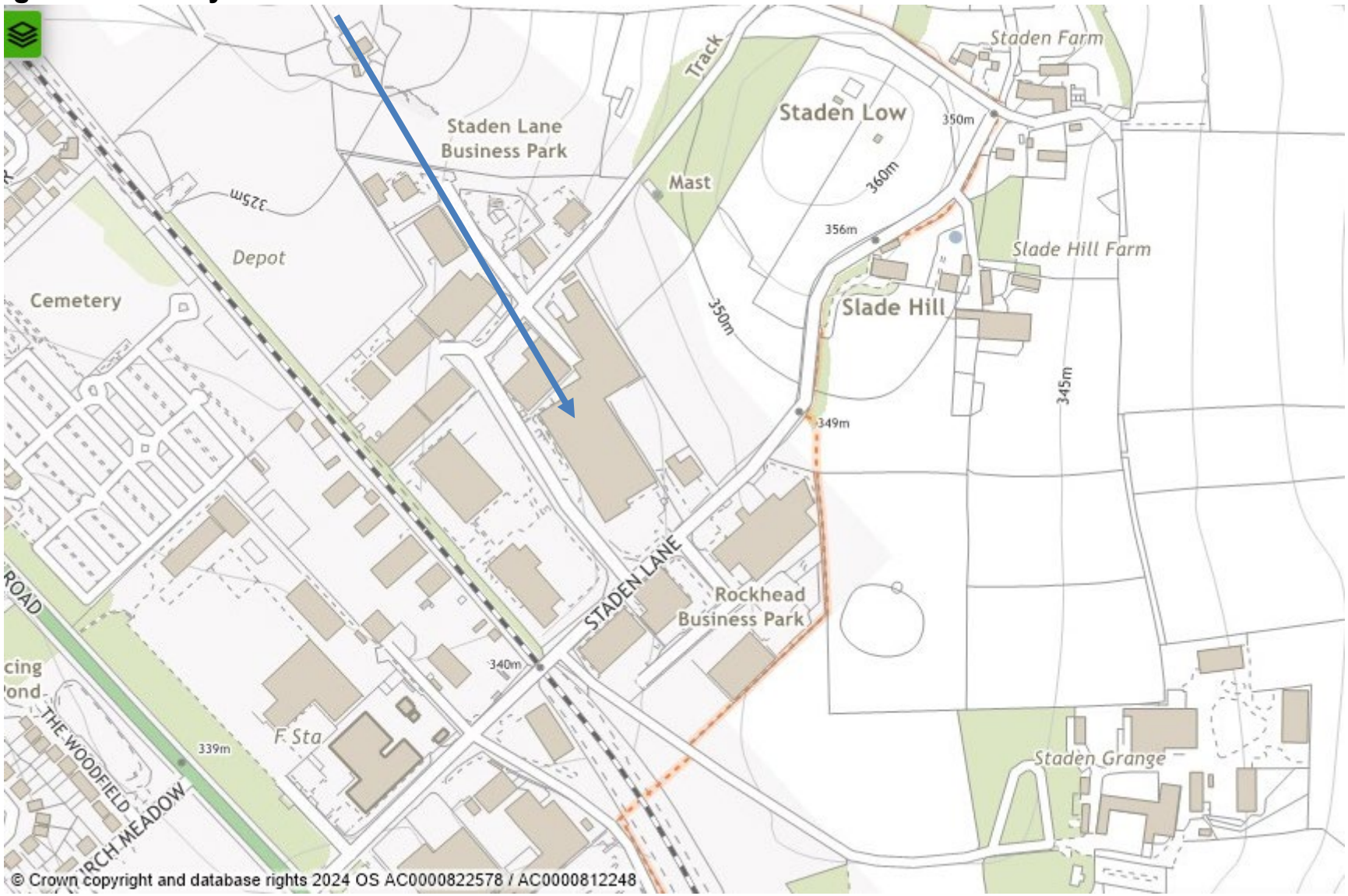
(a) a decision by the Secretary of State not to re-certify the agreement;
(b) a decision by either the Operator or the Secretary of State to terminate the agreement; and
(c) any subsequent decision by the Secretary of State to re-certify such an agreement.

7 Interpretation

7.1.1 In this permit the expressions listed in schedule 8 shall have the meaning given in that schedule.

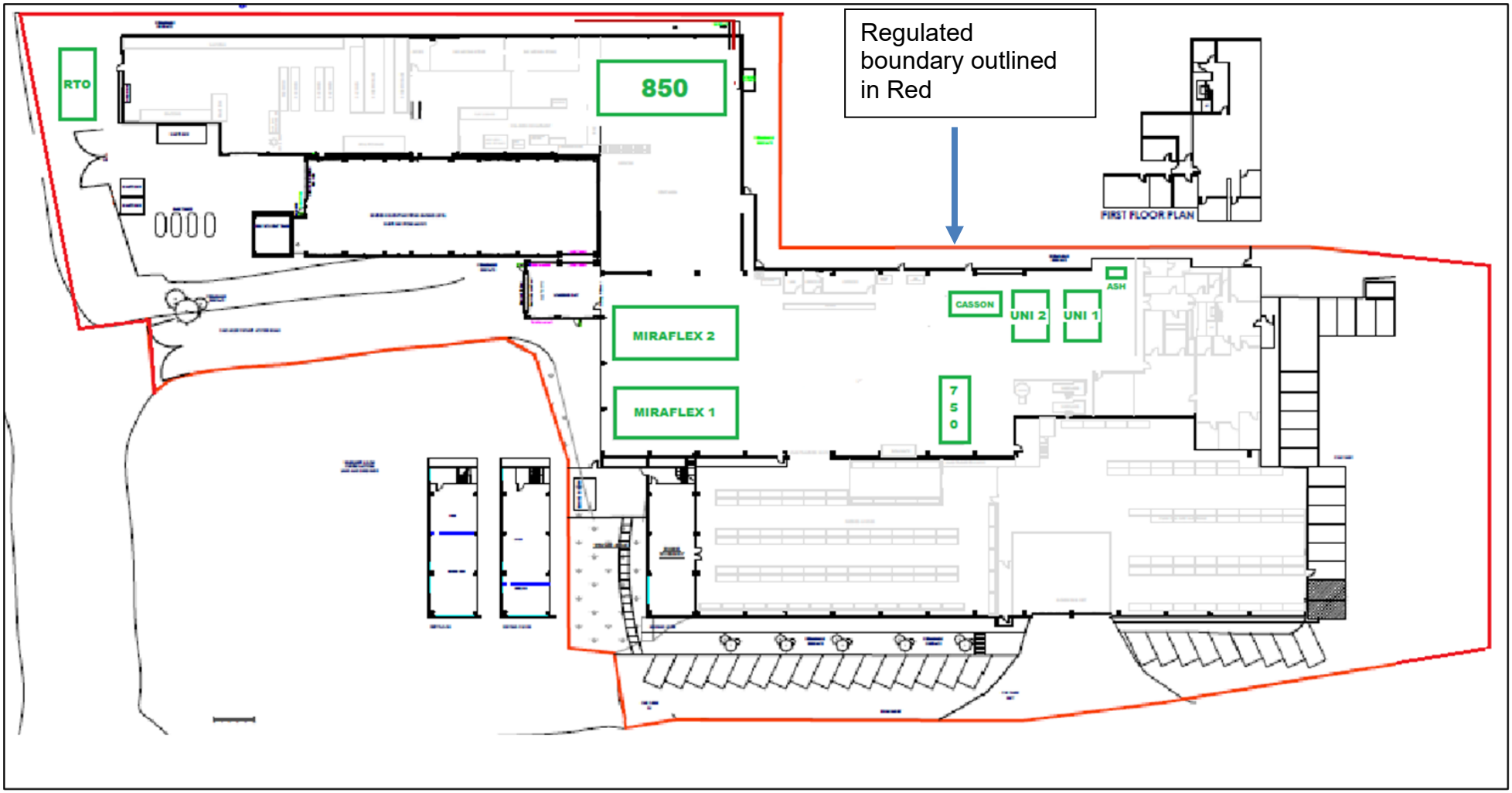
7.1.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “immediately” in which case it may be provided by telephone.

Schedule 1: Regulated Facility Location



High Peak Borough Council

Schedule 2: Regulated Boundary

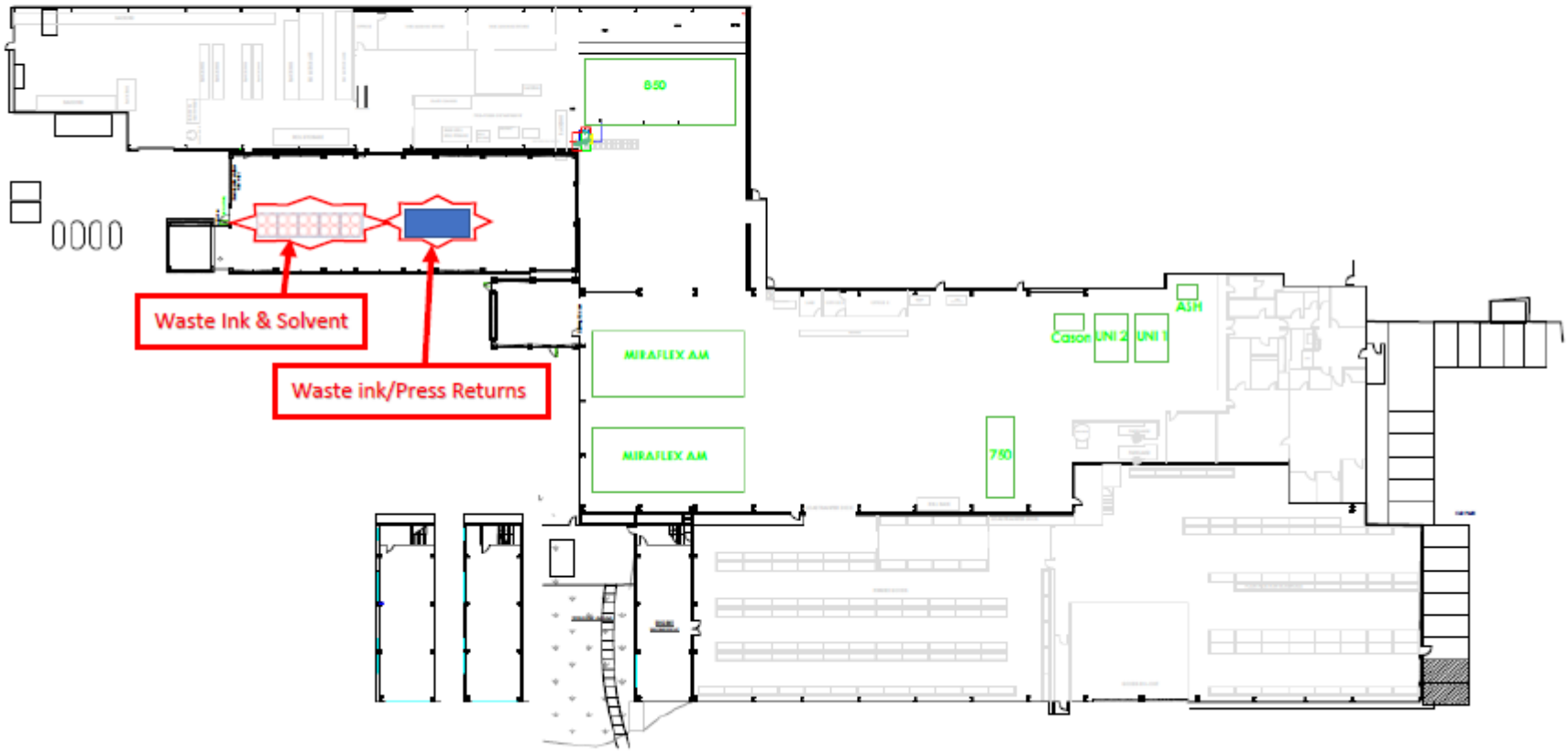


High Peak Borough Council

Schedule 3: Waste storage areas

Document Reference B2.1F

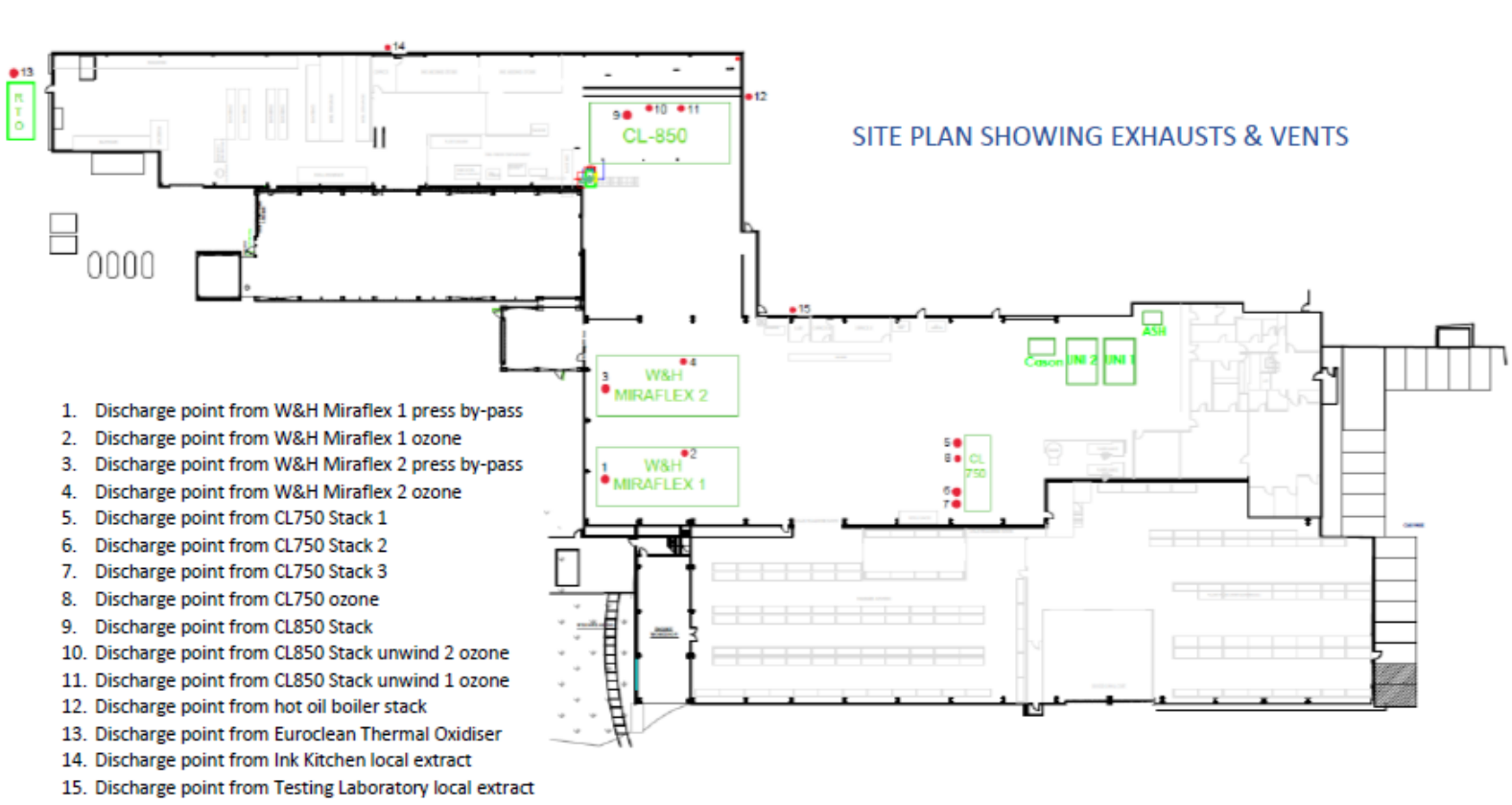
WASTE INK & SOLVENT STORAGE



SAICA LA_IPPC Part A2 Application

Schedule 4: Point source emissions to air

Document Reference B2.2(i) - Exhausts and vents



SAICA LA_IPPC Part A2 Application

Schedule 5: Environmental Management System

BAT 1. In order to improve the overall environmental performance, BAT is to elaborate and implement an Environmental Management System (EMS) that incorporates all of the following features:

(i) commitment, leadership, and accountability of the management, including senior management, for the implementation of an effective EMS;

(ii) an analysis that includes the determination of the organisation's context, the identification of the needs and expectations of interested parties, the identification of characteristics of the installation that are associated with possible risks for the environment (or human health) as well as of the applicable legal requirements relating to the environment;

(iii) development of an environmental policy that includes the continuous improvement of the environmental performance of the installation;

(iv) establishing objectives and performance indicators in relation to significant environmental aspects, including safeguarding compliance with applicable legal requirements;

(v) planning and implementing the necessary procedures and actions (including corrective and preventive actions where needed), to achieve the environmental objectives and avoid environmental risks;

(vi) determination of structures, roles and responsibilities in relation to environmental aspects and objectives and provision of the financial and human resources needed;

(vii) ensuring the necessary competence and awareness of staff whose work may affect the environmental performance of the installation (e.g. by providing information and training);

(viii) internal and external communication;

(ix) fostering employee involvement in good environmental management practices;

(x) establishing and maintaining a management manual and written procedures to control activities with significant environmental impact as well as relevant records;

(xi) effective operational planning and process control;

(xii) implementation of appropriate maintenance programmes;

(xiii) emergency preparedness and response protocols, including the prevention and/or mitigation of the adverse (environmental) impacts of emergency situations;

(xiv) when (re)designing a (new) installation or a part thereof, consideration of its environmental impacts throughout its life, which includes construction, maintenance, operation and decommissioning;

(xv) implementation of a monitoring and measurement programme; if necessary, information can be found in the Reference Report on Monitoring of Emissions to Air and Water from IED Installations;

(xvi) application of sectoral benchmarking on a regular basis;

(xvii) periodic independent (as far as practicable) internal auditing and periodic independent external auditing in order to assess the environmental performance and to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained;

(xviii) evaluation of causes of nonconformities, implementation of corrective actions in response to nonconformities, review of the effectiveness of corrective actions, and determination of whether similar nonconformities exist or could potentially occur;
(xix) periodic review, by senior management, of the EMS and its continuing suitability, adequacy and effectiveness;
(xx) following and taking into account the development of cleaner techniques.

Specifically for surface treatment using organic solvents, BAT is also to incorporate the following features in the EMS:

I. Interaction with quality control and assurance as well as health and safety considerations.
II. Planning to reduce the environmental footprint of an installation. In particular, this involves the following:
  (a) assessing the overall environmental performance of the plant (see BAT 2 Table S5.1);
  (b) taking into account cross-media considerations, especially the maintenance of a proper balance between solvent emissions reduction and consumption of energy (see BAT 19 Table S5.1), water (see BAT 20 Table S5.1) and raw materials (see BAT 6 Table S5.1);
  (c) reducing VOC emissions from cleaning processes (see BAT 9 Table S5.1).
III. The inclusion of:
  (a) a plan for the prevention and control of leaks and spillages (see BAT 5 (a) Table S5.1);
  (b) a raw material evaluation system to use raw materials with low environmental impact and a plan to optimise the use of solvents in the process (see BAT 3 Table S5.1);
  (c) a solvent mass balance (see BAT 10 Table S5.1);
  (d) a maintenance programme to reduce the frequency and environmental consequences of OTNOC (see BAT 13 Table S5.1);

Specifically for surface treatment using organic solvents, BAT is also to incorporate the following features in the EMS:
  (a) an energy efficiency plan (see BAT 19 (a) Table S5.1);
  (b) a water management plan (see BAT 20 (a) Table S5.1);
  (c) a waste management plan (see BAT 22 (a) Table S5.1);
  (d) an odour management plan (see BAT 23 Table S5.1).

BAT Conclusions referenced in BAT 1 (EMS):

<table>
<tr><th colspan="4">Table S5.1 EMS BAT Requirement Table</th></tr>
<tr><th>BAT Ref:</th><th colspan="3">BAT Requirement</th></tr>
<tr><td>BAT 2</td><td colspan="3">In order to improve the overall environmental performance of the plant, in particular concerning VOC emissions and energy consumption, BAT is to:
identify the process areas/sections/steps that represent the greatest contribution to the VOC emissions and energy consumption and the greatest potential for improvement (see also BAT 1);
identify and implement actions to minimise VOC emissions and energy consumption;
regularly (at least once per year) update the situation and follow up the implementation of the identified actions.</td></tr>
<tr><td>BAT 3</td><td colspan="3">In order to prevent or reduce the environmental impact of the raw materials used, BAT is to use both of the techniques given below.

<table>
<tr><th colspan="2">Technique</th><th>Description</th></tr>
<tr><td>a.</td><td>Use of raw materials with a low environmental impact</td><td>As part of the EMS (see BAT 1), systematic evaluation of the adverse environmental impacts of the materials used (in particular substances that are carcinogenic, mutagenic and toxic to reproduction as well as substances of very high concern) and substitution by others with no or lower environmental and health impacts where possible, taking into consideration the product quality requirements or specifications.</td></tr>
<tr><td>b.</td><td>Optimisation of the use of solvents in the process</td><td>Optimisation of the use of solvents in the process by a management plan (as part of the EMS (see BAT 1)) that aims to identify and implement necessary actions (e.g. colour batching, optimising spray pulverisation).</td></tr>
</table></td></tr>
<tr><td>BAT 5a</td><td colspan="3">In order to prevent or reduce fugitive emissions during storage and handling of solvent-containing materials and/or hazardous materials, BAT is to apply the principles of good housekeeping by using all of the techniques given below.

<table>
<tr><th colspan="2">Technique</th><th>Description</th></tr>
<tr><td colspan="3">Management Techniques</td></tr>
<tr><td>a.</td><td>Preparation and implementation of a plan for the prevention and control of leaks and spillages</td><td>A plan for the prevention and control of leaks and spillages is part of the EMS (see BAT 1) and includes, but is not limited to:
site incident plans for small and large spillages;
identification of the roles and responsibilities of persons involved;
ensuring staff are environmentally aware and trained to prevent/deal with spillage</td></tr>
</table></td></tr>
</table>

			incidents; • identification of areas at risk of spillage and/or leaks of hazardous materials and ranking them according to the risk; • in identified areas, ensuring suitable containment systems are in place, e.g. impervious floors; • identification of suitable spillage containment and clean-up equipment and regularly ensuring it is available, in good working order and close to points where these incidents may occur; • waste management guidelines for dealing with waste arising from spillage control; • regular (at least once per year) inspections of storage and operational areas, testing and calibration of leak detection equipment and prompt repair of leaks from valves, glands, flanges, etc. (see BAT 13).

BAT 6

In order to reduce raw material consumption and VOC emissions, BAT is to use one or a combination of the techniques given below.

	Technique	Description
a.	Centralised supply of VOC-containing materials (e.g. inks, coatings, adhesives, cleaning agents)	Supply of VOC-containing materials (e.g. inks, coatings, adhesives, cleaning agents) to the application area by direct piping with ring lines, including system cleaning such as pig cleaning or air flushing.
b.	Advanced mixing systems	Computer-controlled mixing equipment to achieve the desired paint / coating / ink /adhesive
c.	Supply of VOC-containing materials (e.g. inks, coatings, adhesives, cleaning agents) at the point of application using a closed system	In the case of frequent changes of inks/paints/ coatings/adhesives and solvents or for small-scale usage, supply of inks/paints/coatings/adhesives and solvents from small transport containers placed near the application area using a closed system.
d.	Automation of colour change	Automated colour changing and ink/paint/coating line purging with solvent capture.
e.	Colour grouping	Modification of the sequence of products to achieve large sequences with the same colour.
f.	Soft purge in spraying	Refilling the spray gun with new paint without intermediate rinsing.

BAT 9	In order to reduce VOC emissions from cleaning processes, BAT is to minimise the use of solvent-based cleaning agents and to use a combination of the techniques given below.

Technique		Description
a.	Protection of spraying areas and equipment	Application areas and equipment (e.g. spray booth walls and robots) susceptible to overspray and drips, etc. are covered with fabric covers or disposable foils where foils are not subject to tearing or wear.
b.	Solids removal prior to complete cleaning	Solids are removed in a (dry) concentrated form, usually by hand, with or without the aid of small amounts of cleaning solvent. This reduces the amount of material to be removed by solvent and/or water in subsequent cleaning stages, and therefore the amount of solvent and/or water used.
c.	Manual cleaning with pre-impregnated wipes	Wipes pre-impregnated with cleaning agents are used for manual cleaning. Cleaning agents may be solvent-based, low-volatility solvents or solvent-free.
d.	Use of low-volatility cleaning agents	Application of low-volatility solvents as cleaning agents, for manual or automated cleaning, with high cleaning power.
e.	Water-based cleaning	Water-based detergents or water-miscible solvents such as alcohols or glycols are used for cleaning.
f.	Enclosed washing machines	Automatic batch cleaning/degreasing of press/machine parts in enclosed washing machines. This can be done using either: (a) organic solvents (with air extraction followed by VOC abatement and/or recovery of the used solvents) (see BAT 15); or (b) VOC-free solvents; or (c) alkaline cleaners (with external or internal waste water treatment).
g.	Purging with solvent recovery	Collection, storage and, if possible, reuse of the solvents used to purge the guns/applicators and lines between colour changes.
h.	Cleaning with high-pressure water spray	High-pressure water spray and sodium bicarbonate systems or similar are used for automatic batch cleaning of press/machine parts.
i.	Ultrasonic cleaning	Cleaning in a liquid using high-frequency vibrations to loosen the adhered contamination.

	j.	Dry ice (CO_2) cleaning	Cleaning of machinery parts and metallic or plastic substrates by blasting with CO_2 chips or snow.
	k.	Plastic shot-blast cleaning	Excess paint build-up is removed from panel jigs and body carriers by shot-blasting with plastic particles.

BAT 10

BAT is to monitor total and fugitive VOC emissions by compiling, at least once every year, a solvent mass balance of the solvent inputs and outputs of the plant, as defined in Part 7(2) of Annex VII to Directive 2010/75/EU and to minimise the uncertainty of the solvent mass balance data by using all of the techniques given below.

	Technique	Description
a.	Full identification and quantification of the relevant solvent inputs and outputs, including the associated uncertainty	This includes: • identification and documentation of solvent inputs and outputs, (e.g. emissions in waste gases, emissions from each fugitive emission source, solvent output in waste); • substantiated quantification of each relevant solvent input and output and recording of the methodology used (e.g. measurement, calculation using emission factors, estimation based on operational parameters); • identification of the main sources of uncertainty of the aforementioned quantification, and implementation of corrective actions to reduce the uncertainty; • regular update of solvent input and output data.
b.	Implementation of a solvent tracking system	A solvent tracking system aims to keep control of both the used and unused quantities of solvents (e.g. by weighing unused quantities returned to storage from the application area).

	c.	Monitoring of changes that may influence the uncertainty of the solvent mass balance data	Any change that could influence the uncertainty of the solvent mass balance data is recorded, such as: • malfunctions of the off-gas treatment system: the date and duration are recorded; • changes that may influence air/gas flow rates, e.g. replacement of fans, drive pulleys, motors; the date and type of change are recorded.

BAT 13

In order to reduce the frequency of the occurrence of OTNOC and to reduce emissions during OTNOC, BAT is to use both of the techniques given below.

Technique		Description
a.	Identification of critical equipment	Equipment critical to the protection of the environment ('critical equipment') is identified on the basis of a risk assessment. In principle, this concerns all equipment and systems handling VOCs (e.g. off-gas treatment system, leak detection system).
b.	Inspection, maintenance and monitoring	A structured programme to maximise critical equipment availability and performance which includes standard operating procedures, preventive maintenance, regular and unplanned maintenance. OTNOC periods, duration, causes and, if possible, emissions during their occurrence are monitored.

BAT 19

In order to use energy efficiently, BAT is to use techniques (a) and (b) and an appropriate combination of the techniques (c) to (h) given below.

Technique		Description
Management techniques		
a.	Energy efficiency plan	An energy efficiency plan is part of the EMS (see BAT 1) and entails defining and calculating the specific energy consumption of the activity, setting key performance indicators on an annual basis (e.g. MWh/tonne of product) and planning the periodic improvement targets and related actions. The plan is adapted to the specificities of the plant in terms of process(es) carried out, materials, products, etc.
b.	Energy balance record	Drawing up on an annual basis of an energy balance record which provides a breakdown of the energy consumption and generation (including energy export) by the type of source (e.g. electricity, fossil fuels, renewable energy, imported heat and/or cooling). This includes:

			(i) defining the energy boundary of the STS activity; (ii) information on energy consumption in terms of delivered energy; (iii) information on energy exported from the plant; (iv) energy flow information (e.g. Sankey diagrams or energy balances) showing how the energy is used throughout the process. The energy balance record is adapted to the specificities of the plant in terms of process(es) carried out, materials, etc.
	Process-related techniques		
	c.	Thermal insulation of tanks and vats containing cooled or heated liquids, and of combustion and steam systems	This may be achieved for example by: • using double-skinned tanks; • using pre-insulated tanks; • applying insulation to combustion equipment, steam pipes and pipes containing cooled or heated liquids
	d.	Heat recovery by cogeneration – CHP (combined heat and power) or CCHP (combined cooling, heat and power)	Recovery of heat (mainly from the steam system) for producing hot water/steam to be used in industrial processes/activities. CCHP (also called tri-generation) is a cogeneration system with an absorption chiller that uses low-grade heat to produce chilled water.
	e.	Heat recovery from hot gas streams	Energy recovery from hot gas streams (e.g. from dryers or cooling zones), e.g. by their recirculation as process air, through the use of heat exchangers, in processes, or externally.
	f.	Flow adjustment of process air and off-gases	Adjustment of the flow of process air and off-gases according to the need. This includes reduction of air ventilation during idle operation or maintenance.
	g.	Spray booth off-gas recirculation	Capture and recirculation of the off-gas from the spray booth in combination with efficient paint overspray separation. Energy consumption is less than in the case of fresh air use.
	h.	Optimised circulation of warm air in a large volume curing booth using an air turbulator	Air is blown into a single part of the curing booth and distributed using an air turbulator which turns the laminar airflow into the desired turbulent flow.

BAT 20(a)	Water management plan and water audits A water management plan and water audits are part of the EMS (see BAT 1) and include: • flow diagrams and a water mass balance of the plant; • establishment of water efficiency objectives; • implementation of water optimisation techniques (e.g. control of water usage, water recycling, detection and repair of leaks). Water audits are carried out at least once every year.
BAT 22(a)	Waste management plan A waste management plan is part of the EMS (see BAT 1) and is a set of measures aiming to: 1) minimise the generation of waste, 2) optimise the reuse, regeneration and/or recycling of waste and/or the recovery of energy from waste, and 3) ensure the proper disposal of waste.
BAT 23	In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements: • a protocol containing actions and timelines; • a protocol for response to identified odour incidents, e.g. complaints; • an odour prevention and reduction programme designed to identify the source(s), to characterise the contributions of the sources, and to implement prevention and/or reduction measures.

Schedule 6: Solvent Mass Balance Methodology

This annex gives further guidance on how to make solvent mass balance calculations

1. What is a Solvent Mass Balance

The solvent mass balance is the method used for accounting for all the organic solvents entering and leaving a regulated process or activity. It is used in every Installation that comes within the scope of the STS BAT conclusions. It is also used in every Solvent Emission Activity or relevant Part B process.

The solvent mass balance is the method by which either the total emissions or the fugitive emissions from the process or activity are calculated.

The value of the total or fugitives emissions is then used to assess compliance with the relevant Emission Limit Value (ELV) or with the Solvent Reduction Scheme, where this is applicable.

The solvent mass balance comprises a set of standard equations, which are built up from a set of defined parameters.

This document gives guidance on how to measure, calculate or estimate these parameters with a sufficient level of accuracy, so that they can be used for assessing compliance with the relevant emission standard.

2. Determination of Fugitive Emissions

The fugitive emission (F) shall be calculated according to one of the two following equations:

$F = O2 + O3 + O4 + O9$ Equation 1

$F = I1 – O1 – O5 – O6 – O7 – O8$ Equation 2

3. Determination of Solvent Input

The solvent input, which shall be calculated according to equation 3 below:

$I = I1 + I2$ Equation 3

4. Determination of the Fugitive Emissions as a percentage of solvent input

The fugitive emission limit value is expressed as a percentage of the solvent input, where:

$(100 / I) \times F = \%$ (percentage fugitive emissions) Equation 4.

5. Equation definitions

The terms used in equations 1, 2, 3 and 4 are defined in Section 6 of this schedule.

More detailed guidance on how to measure, calculate or estimate each element in the above equations is given in Section 7 of this schedule. Not every element will need to be determined, depending on the calculation route chosen.

6. Solvent Mass Balance Definitions

Table S6.1 Solvent Mass Balance Definitions		
Parameter	**Description**	
E	Total emissions	
F	Fugitive emissions	
I = I1 + I2	Total input of organic solvents in the time frame over which the mass balance is being calculated	
	I1	The quantity of organic solvents or their quantity in mixtures purchased which are used as input into the process/activity (including cleaning solvents).
	I2	The quantity of organic solvents or their quantity in mixtures recovered and reused as solvent input into the process/activity. The recycled solvent is counted every time it is used to carry out the activity.
O	Outputs of Organic Solvents in the time frame over which the mass balance is being calculated	
O1 = O1.1 + O1.2	Emissions in waste gases	
	O1.1	Captured emissions which are treated, if appropriate taking into account waste gas treatment when calculating O5.1.
	O1.2	Captured emissions which are untreated.
O2	Organic solvents lost in water, if appropriate taking into account waste water treatment when calculating O5.2.	
O3	The quantity of organic solvents which remains as contamination or residue in products output from the process/activity.	
O4	Uncaptured emissions of organic solvents to air. This includes the general ventilation of rooms, where air is released to the outside environment via windows, doors, vents and similar openings.	
O5	compounds lost due to chemical or physical reactions.	
	O5.1 (air)	Organic solvents destroyed by thermal oxidation or other waste gas treatments
	O5.2 (water)	Organic solvents destroyed by biological oxidation or other waste water treatments
O6	Organic solvents contained in collected waste.	
O7	Organic solvents, or organic solvents contained in mixtures, which are sold or are intended to be sold as a commercially valuable product.	
O8	Organic solvents contained in mixtures 'recovered for reuse but not as input into the process/activity, as long as not counted under O7.	
O9	Organic solvents released in other ways. E.g. abnormal events or spillages if not included under O6.	

7. More Detailed Guidance on Solvent Mass Balance Calculations

Calculation of I

The total input of solvent is given by the simple equation: I = I1 + I2

Calculation of I1

This is the quantity of solvents used in the process. The quantity should be determined from the consumption of all solvent containing materials, this includes all coating materials, but also any thinners and cleaning materials used.

This requires a full and accurate record of all materials delivered to storage during this period. It also requires a stock take of materials in storage at the beginning and end of the mass balance period.

Consumption = Solvent in storage at start of mass balance + Solvent received during the mass balance period – Solvent in storage at the end of the mass balance.

To make this calculation, you will need to know the solvent content of each material used as well as the total quantity of each material used.

The solvent content may be available from the information provided by the supplier, e.g. quality control data, or possibly from the safety data sheet. Alternatively it could come from sampling and analysis of incoming raw materials.

Note, that for compliance with the requirements of IED Article 59.5 (ref 2) it is important to check the content of the applied solvents regarding CMR substances or other hazardous organic substances. It is recommended to ask the suppliers for a written confirmation and to check additionally the components data in Section 3 of the Safety Data Sheets.

It is very important to determine this figure with the highest level of accuracy possible. Calculating total or fugitive emissions often involves measuring the difference between two big numbers, thus the error in determining these numbers could drown out the effect that is being sought to detect.

The solvent content of each substance may only be available as a range. This introduces uncertainty into the mass balance calculation. In order to minimise uncertainty, it is preferable to base calculations on measured data provided by the manufacturer with each batch, rather than MSDS. If this is not available, it may be necessary that the operator measures the solvent content of some incoming raw materials.

Calculation of I2

This is the quantity of solvent that is recycled internally during the mass balance period. Any such material in storage at the beginning and end of the mass balance period must be included in the stock taking exercise used to determine I1.

Solvent might be recovered from condensers, adsorbent materials or spent scrubbing liquors used in air abatement systems. These may be sent offsite for further treatment and recovery

(see O7 and O8). However some may be reused, or used for a different purpose than that which was originally purchased. For example, solvents present in coatings recovered from condensers might be used as thinners
or for cleaning.

Calculation of O1

(Emissions in waste gases)

O1 has been sub-divided into O1.1 and O1.2 depending on whether the captured emission is treated or untreated.

The total is given by the simple equation: O1 = O1.1 + O1.2

Calculation of O1.1

(Emissions in waste gases, captured emissions which are treated)

All emissions which use abatement must be monitored. If emissions are greater than 10 Kg C/h, this monitoring must be continuous. Otherwise monitoring may be periodic, at least once per year. These emissions may also need to comply with a concentration based ELV. Compliance with concentration based ELVs is not considered in this guidance.

Where this is the case, periodic monitoring must be done under the conditions expected to coincide with the expected maximum release during normal operating conditions. However such monitoring could overestimate the actual emissions if used in mass balance calculations. Thus additional monitoring under a range of different operating conditions could be necessary to calculate the overall mass emission.

Use of emission limit values instead of real data is not recommended as this will overestimate the value of O1.1. This, in turn will result in an underestimate of other parameters that are determined by difference.

Measurement from a thermal or catalytic oxidiser or more rarely from a bio-reactor will normally be made using an FID device and will be measured as Total Volatile Organic Carbon (TVOC) and expressed as mgC/Nm^3. All measurements of TVOC should be carried out according to the standard BS EN 12619.

To convert this measurement to a mass emission of solvent will require firstly the ratio of the molecular weight of the solvent and that of the carbon content of the solvent. This assumes that the all TVOC is still present as the original solvent. Whilst this is almost certainly not the case, this assumption represents a worst case scenario from the point of constructing a mass balance.

Measurement from an adsorption bed or similar can be done in the same way. Here the solvent is not changed by the abatement. The solvent is not destroyed by abatement simply removed from the air and transferred into a liquid or solid medium. In these cases, it may be more appropriate to measure the solvent directly rather than convert from a measurement of TVOC.

Having measured or calculated the solvent concentration in the emission, the next step is to multiply the concentration by the volumetric flow of the air and the operating hours of the abatement equipment.

For mixed solvent streams, the ratio of solvents in the waste gas will not be the same as that consumed, due to their different volatilities and may vary over time due to production changes. To get a better under understanding of the solvents in the waste gas stream, it may be necessary to sample and used gas chromatography CEN/TS 13649:2014.

Practical experience has shown that after the completion of painting processes, the release of solvents does not abruptly return to zero. In particular, dissolved solvents are further released (stripped) from wet scrubbers or adsorbent beds over a longer period (1 to 2 hours). This must be respected in the mass balance calculation.

Measured emission mass flows from stacks must always be determined from the simultaneous measurement of substance concentrations and the flue gas volume. If the determination of solvent mass flows is part of the measuring task, the necessary parameters for the calculation of the exhaust gas volume flow will be simultaneously determined, in addition to the actual pollutant measurement. Therefore, solvent mass flows which are determined either continuously or periodically should be based on matching pairs of substance concentration and waste gas flow figures. It should be noted that the volumetric flow rate measurement is an important contributor to the uncertainty of the overall mass release calculation.

One way to cope with this intrinsic disadvantage of periodic monitoring, is to supplement each sampling and monitoring campaign for a specific release point by recording the throughput of the product units and/or the coating material /solvents used. This data could then be used to derive an emission factor for that specific process, which can then be used to calculate emissions based on production information. The advantage of this method is that a more realistic result of the annual emission is attained, especially if the factory operates with changing production levels.

Calculation of O1.2

(Emissions in waste gases, captured emissions which are untreated)

The extent to which emissions monitoring is carried out will not be less for untreated emissions than for treated emissions.

Any captured emission of 10 Kg/hr or more must be continuously monitored. But it is unlikely that any such emission would be unabated. If this is the case, BAT would be to treat that emission and so move the emission from O1.2 to O1.1.

Any captured emission of 0.3 Kg/hr or more must be monitored at least annually, regardless of whether there is abatement in place. For smaller emissions, calculations may be used. These emissions may also need to comply with a concentration based ELV. Compliance with concentration based ELVs is not considered in this guidance.

Note: the monitoring threshold is 10 g/hr where substances meeting the criteria of Article 58 are used and 100 g/hr where substances meeting the criteria of Article 59.5 are used.

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Calculation of O2

(Organic solvents lost in water)

If appropriate taking into account waste water treatment when calculating O5.2.

Solvents may be found in the circulating water of wet scrubbers, e.g. for paint overspray, in dryer oven condensates, and in waste water from electrophoretic dip coating.

Wet scrubbers are usually run as closed loop systems. Solvent containing paint sludge will be removed from time to time. If the volume of waste water is low, this may also be removed from site in drums or by tanker. In which case both streams should be considered as waste (O6).

If solvent containing waste water is treated in a waste water treatment plant which is operated on the same site, the abated quantity is counted as O5.2, and only the remaining quantity which leaves the installation is O2. Any solvent evaporation from the waste water treatment plant will contribute to O4.

Sampling of waste water would ordinarily be done using a flow proportional sampler, this way the concentration in the sample multiplied by the flow will give the mass emission rate. However, if the solvent is volatile, grab sampling might be more appropriate due to evaporation losses between sampling and analysis.

Emissions from a biological treatment plant will normally be measured as Total Volatile Organic Carbon (TVOC) and expressed as mgC/l. All measurements of TVOC should be carried out according to the standard BS EN 1484.

To convert this measurement to a mass emission of solvent will require the ratio of the molecular weight of the solvent and that of the carbon content of the solvent.
This assumes that the all TVOC is still present as the original solvent. Whilst this is almost certainly not the case, this assumption represents a worst case scenario from

the point of constructing a mass balance.

Measurement from an adsorption bed or similar can be done in the same way. Here the solvent is not changed by the abatement. The solvent is not destroyed by abatement simply removed from the water and transferred into a solid medium. In these cases, it may be more appropriate to measure the solvent directly rather than convert from a measurement of TVOC.

Emissions to water may also need to comply with a concentration based ELV. Compliance with concentration based ELVs is not considered in this guidance.

Calculation of O3

(The quantity of organic solvents which remains as contamination or residue in products output from the process/activity.)

The VOC remaining as contamination or residue in the product is considered part of the fugitive emission because it will be slowly released to the environment during the lifetime of the product.

For coating processes, it will be necessary to take an emission factor approach to calculating this figure. For example, by calculating the amount of coating material applied to each production unit (after drying / finishing) and the residual VOC content.

Heatset web offset printing is a special case in that the solvent residue in the finished product is not to be considered as part of the fugitive emissions. This is because the solvent used in the ink is not a VOC under ambient conditions. (It is a VOC only under the conditions used in the production process.) Thus O3 = 0.

Nevertheless, the amount of residual solvent still needs to be calculated and removed from the overall fugitive emission figure.

Calculation of O4

(Uncaptured emissions of organic solvents to air.)

This includes the general ventilation of rooms, where air is released to the outside environment via windows, doors, vents and similar openings.

This figure is very difficult to measure directly. In almost all cases, it will only be possible to calculate this by difference by measuring the other parameters in the mass balance equations. O4 is only one component in the fugitives figure (F), however it could be the dominant one.

For areas with controlled ventilation systems, it may be possible to use occupational health monitoring techniques to determine the amount of solvent present in the workplace air and multiply this by the number of air changes and their volume.
Workplace air will need to comply with any relevant occupational health standard under Health and Safety Law.

Calculation of O5

(Organic solvents and/or organic compounds lost due to chemical or physical reactions.)

O5 has been sub-divided into O5.1 for solvents destroyed in air abatement systems and O5.2 for solvents destroyed in water abatement systems. The total is given by the simple equation: O5 = O5.1 + O5.2 Calculation of O5.1 (Emissions to air)

This calculation can only be made, when the emission is treated in an abatement device that destroys the solvent, i.e. a thermal or catalytic oxidiser or a bio-filter, or in a boiler plant.

Solvents, which are captured and leave the installation as solvent containing wastes, waste water or by-products cannot be counted as O5.1.

This parameter is the quantity of solvent destroyed by the abatement device. Therefore it is necessary to measure the destruction efficiency of the abatement device. To do this, a monitoring exercise under a range of typical operating conditions will need to be carried out.

The destruction efficiency will be the:

100 x (Solvent inlet conc – Solvent outlet conc) / Solvent inlet conc

To calculate the solvent outlet concentration, it will be necessary to convert the measurement of TVOC using the ratio of the molecular weight of the solvent and the carbon content of the solvent as described in the calculation O1.1.

Once the destruction efficiency has been determined. O5.1 can be calculated as follows:

O5.1 = O1.1 x 100 / (100 – destruction efficiency)

Installations using more than one solvent may find that the destruction efficiency is different depending on the mix of solvent in use. This may need to be factored into the monitoring exercise. This may be the case where central abatement units collect waste gases from several application booths and/or dryer ovens. Continuous measurement may be a cost-effective alternative in such cases.

Calculation of O5.2 (Emissions to water)

This calculation can only be made, when the emission is treated in an abatement device that destroys the solvent, e.g. a biological treatment plant.

This parameter is the quantity of solvent destroyed by the abatement device. Therefore it is necessary to measure the destruction efficiency of the abatement device. To do this, a monitoring exercise under a range of typical operating conditions should be carried out.

The destruction efficiency will be the:
100 x (Solvent inlet conc – Solvent outlet conc) / Solvent inlet conc

To calculate the solvent outlet concentration, it will be necessary to convert the measurement of TVOC using the ratio of the molecular weight of the solvent and the carbon content of the solvent as described in the calculation O2.

Once the destruction efficiency has been determined. O5.2 can be calculated as follows:

O5.2 = O2 x 100 / (100 – destruction efficiency)

Installations using more than one solvent may find that the destruction efficiency is different depending on the mix of solvent in use. This may need to be factored into the monitoring exercise.

Calculation of O6

(Organic solvents contained in collected waste)

Careful and accurate recording of waste disposal is an important part of the solvent mass balance calculation. This also applies to streams O7 and O8.

Solvent containing wastes could include:

(i) Waste paint, ink, adhesive or coating material
(ii) Waste solvents
(iii) Sludges
(iv) Other solvent containing materials, examples are: packaging material, filters, spent waxes, wiping clothes.

It is important that both the quantity and solvent content of each waste stream is accurately recorded, so this parameter can be calculated. Waste can be highly variable in both quantity and solvent content. It can also be notoriously difficult to get representative samples of some solid waste streams for analysis. This has the potential to be a source of uncertainty in the overall mass balance calculation.

If unused paint or other materials are returned to the supplier for reuse, then this does not count as waste and should be excluded altogether from the mass balance.

Those waste streams which are sent to a treatment facility for the recovery and reuse of the solvent. E.g. where an adsorbent has been used for abatement, e.g. in a carbon filter. If that material is sent to an offsite facility which desorbs the solvent and collects this for reuse, then this should be counted under O8 rather than O6.

Solvent streams collected from condensation systems. Some of this might be reused directly in which case it will be part of stream I2. Otherwise it will also be counted under O8.

Waste water streams, e.g. those arising from water scrubbers used for abatement, if these are discharged to water or sewer, this should be counted under O2. Although the sludge from scrubbers will probably be a waste. Waste water taken away in containers or by road tanker should be counted under O6.

Calculation of O7

(Organic solvents, or organic solvents contained in mixtures, which are sold or are intended to be sold as a commercially valuable product)

Those waste streams which are sent to a treatment facility for the recovery and recycling of the solvent, but not for its reuse, should be counted under O7 rather than O6 or O8.

Examples could include the use of limestone as an adsorbent material. The spent limestone is sent to a cement plant with the adsorbed solvent used as part of the fuel.

Disposal of spent carbon adsorbent at a hazardous waste incineration plant would not count as O7 but as O6.

Solvent might be recovered on site from condensers, adsorbent materials or spent scrubbing liquors used in air abatement systems. These may be sent offsite for further treatment and recovery. If this was then reused, it would count as O8, otherwise it should be counted here as O7. However if some of this stream is used internally, that portion would count as I2, and not be included in this figure.

Calculation of O8

(Organic solvents contained in mixtures 'recovered for reuse but not as input into the process/activity, as long as not counted under O7)

Those waste streams which are sent to a treatment facility for the recovery and reuse of the solvent. E.g. where an adsorbent has been used for abatement, e.g. in a carbon filter. If that material is sent to an offsite facility which desorbs the solvent and collects this for reuse, then this should be counted under O8 rather than O6 or O7.

This will also include those solvent streams collected from condensation systems. Some of this might be reused directly in which case it will be part of stream I2.
Otherwise it will also be counted under O7 or O8.

Calculation of O9

(Organic solvents released in other ways)

Category O9 should be limited to the release of organic solvents in ways that are otherwise difficult to categorise. For example, it can be used to record solvents released through spillages, accidents or abnormal events arising from other than normal operating conditions. Care is needed to avoid omissions or double counting of such streams.

It may not be possible to totally disaggregate such emissions from other parameters, whilst a solvent spillage will produce more waste (O6) from clean up, there will also be an increase in fugitive emissions to air (O4) and some release to water (O2).

However attempting to identify and separately classify these events should assist operators and Regulators in understanding the level of emissions that can ordinarily
be expected from a well performing plant.

8. How to Produce a Good Quality Mass Balance

The first step is for the operator to set out in detail, the methodology that will be followed in making the solvent mass balance. This methodology should be set out in writing and agreed with the Regulator.

The results of the solvent mass balance should be presented in a report, which should include all the results and contextual information needed for the Regulator to follow the calculation steps and verify the results and assumptions or estimates made.

It is recommended the following elements are either included in the solvent mass balance report or referenced in the calculation methodology for discussions between the operator and the Regulator.

- Simplified lay out of the installation including:
    - relevant process steps and secondary installations (e.g. mix room, waste water treatment plant, waste handling areas, etc.)
    - Off-gas treatment equipment (process type, technical data)
    - Stacks (release points of VOC into the air: position, dimensions, upstream processes)
    - Release points of waste water (with VOC), destination of waste water after it leaves the work area
- Contextual information to each applied calculation parameter, like off-gas treatment efficiencies, emission factors, conversion factors:
    - Description of the calculation process (equations used)
    - Description of data sources
    - Definition
    - Date of last determination
    - Reference to the respective measurement report (the operator must make available to the Regulator on request)
    - Statement, why the used parameter is applicable (e.g. “paint shop design, material and application method not changed since last determination”)
    - Consideration of the uncertainty of the result.
- As annexes:
    - used raw data
    - measurement reports, if direct measurements were used for the establishment of the solvent balance.

9. How to Deal with Uncertainty

Every solvent mass balance report must include a systematic assessment of the uncertainty in making the mass balance. Because the mass balance contains a mixture of data from numerous sources, uncertainties will accumulate.

Contributions to uncertainty include:

- Tracking the movements of all solvent containing raw materials, especially when there is a large inventory of different substances, e.g. different colour paints, inks and cleaning solvents
- Sampling errors, particularly those streams with a high level of variability such as may be found in some solid waste streams
- Use of data sheets, where solvent concentrations are given as a range
- Breakdowns and other than normal operating conditions
- Analytical errors
- Measurement errors
- Calculation errors

Some of these contributors to uncertainty will be more important than others. For example, a small error in the calculation of the solvent input could be very significant in comparison with the fugitive emission limit value, whereas a larger error in a smaller component may be less important.

Where there is a breach of an ELV, Regulators will take account of the uncertainty relative to the scale of the exceedance in deciding on whether to take enforcement action.

Ideally uncertainty should not exceed 20% of the Emission Limit Value. The operator must take action to reduce uncertainty where it exceeds 40% of the Emission Limit Value.

Operators should in any event periodically review uncertainty in the solvent mass balance methodology, using a stepwise process for reducing uncertainty as follows:

- Make an estimation of overall uncertainty
- Determine the most significant individual contributors to overall uncertainty
- Target improvements on those measurements
- Repeat

From time to time, it will be necessary to use short intensive measurement campaigns to update or verify emission factors which are used in the calculation methodology.

Schedule 7 – 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**
All substances specified in Table 4.3	To be notified within 24 hours of the observation being made or a monitoring report being received by the Operator.

(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 8: Interpretation

i. References to the "**EP Regs**" or "**Environmental Permitting Regulations**" in this document relate to the Environmental Permitting (England and Wales) Regulations 2016 and subsequent amendment Regulations. Words and expressions defined in the EP Regs shall have the same meaning when used in this Permit.

ii. References to the "**IED**" or "Industrial Emissions Directive" in this document relate to retained EU Law, Directive 2010/75/EU of the European Parliament and of the Council of 24th November 2010 on Industrial Emissions (Integrated Pollution Prevention and Control) and read in accordance with Schedule 1A to the EP Regs.

iii. "**Regulator**" means the authority in whom functions are conferred by regulation 32, or by direction under regulation 33 of the Environmental Permitting (England and Wales) Regulations 2016 (as amended). For the purpose of this environmental permit this shall be taken to mean High Peak Borough Council. The 'discharge of functions' under the above Regulations shall be undertaken by an 'Authorised Officer'. The Officer shall be authorised by High Peak Borough Council 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) or 109 of that Act.

iv. The Regulator are statutorily obliged to include conditions in any Environmental Permit they issue which are designed to ensure that the process is operated using the best available techniques (BAT) to prevent and minimise emissions of prescribed substances and to render harmless any substance that may be emitted.

v. For Part A2 installations **'Best available techniques'** has the meaning as specified in Schedule 7 of the EP Regs.

vi. "**Facility**", "**Installation**", "**activity**" and "**directly associated activity**" have the same meaning as defined in the EP Regs.

vii. "Regulated facility boundary" means the geographic extent of the facility regulated by this permit.

viii. "**Operator**" has the same meaning as defined in the EP Regs.

ix. "**Staff**" includes employees, directors or other officers of the Operator, and any other person under the Operator's direct or indirect control, including contractors.

x. "**Log book**" refers to a record whether kept as hard copy or held electronically. Electronic records should be accessible at the regulated installation, or in the case of mobile plant at the company registered address or main operating address specified in the permit. Should an authorised Officer wish to inspect a log book which is held electronically, then such facilities and personnel as are necessary must be made available. Such facilities and personnel may be needed without advance notice being given.

xi. "**Emissions**" shall have the same meaning as given in the EP Regs.

xii. "**Fugitive emission**" for the purpose of this permit means an emission of pollutants from any point other than from a stack or abatement equipment into the air (and for Part A2 facilities, into the ground or water (surface or ground)) and from a Solvent Emission facility as defined in the EP Regs.

xiii. "**High standard of housekeeping**" shall refer to the approved written housekeeping programme within the Environmental Management System.

xiv. "**Monitoring**" Includes the taking and analysis of samples, instrumental measurements (periodic and continual), calibrations, examinations, tests and surveys.

xv. "**Year**" means calendar year ending 31st December.

xvi. "**Annually**" means once a year

xvii. "**six monthly periodic monitoring"** means periodic monitoring in each six month period (January to June and July to December) with at least four months between sampling dates.

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

xix. "**quarterly**" for reporting/sampling means after/during each 3 month period, January to March; April to June; July to September and October to December and, when sampling, with at least 2 months between each sampling date.

xx. Reference to the Environment Agency Technical guidance collection: **Monitoring stack emissions**: environmental permits, refers to the collection of four guidance documents published 19 December 2019, and last updated 07/03/2024 which is found here: https://www.gov.uk/government/collections/monitoring-stack-emissions-environmental-permits

c. Guidance for selecting a monitoring approach, last updated 13/12/2023
d. Techniques and standards for periodic monitoring, last updated 12/11/2022
e. Maximum uncertainty values for periodic monitoring, last updated 24/09/2021
f. Standards for continuous monitoring and sampling, last updated 07/03/2024

xxi. "**MCERTS**" means the Environment Agency's Monitoring Certification Scheme.

xxii. "**ISO**" means International Standards Organisation.

xxiii. "**Standard Conditions**" shall mean a temperature of 273.15 K and a pressure of 101.3 kPa.

xxiv. "**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.

xxv. References to "**Ringelmann**" refer to the relevant British Standards to compare the darkness of smoke with standard shades of grey:

g. BS 2742C Ringelmann chart
h. BS 2742M Minature smoke chart
i. BS 2742:2009 Use of the Ringelmann and miniature smoke charts

xxvi. **Other Statutory Requirements -** Compliance with this permit does not necessarily infer compliance with any other legislation, such as Health & Safety at Work or other Statutory requirements.

xxvii. **"Volatile organic compound"** or **"VOC"**, "**Organic compound**", "**Organic solvent**" and **"Halogenated organic solvent"** have the same meaning as defined in the EP Regs.

xxviii. "**Hazard statements**" shall have the same meaning as in the European Regulations (EC) No. 1272/2008 and read in accordance with UK amending Regulations. Hazard statements that apply to Solvent Activities under the EP Regs are H340, H350, H350i, H360D, H360F, H341, H351.

xxix. "**LAeq**" means the A-weighted equivalent continuous energy level with the definition, measurement etc, in accordance with BS4142:2014 and any associated revisions.

xxx. "$L_{Ar,Tr}$" Rating level. The specific noise level plus any adjustment for characteristic features of the noise. "$_{Tr}$" Reference time interval. The Specified interval over which an equivalent continuous 'A'-weighted sound pressure level is determined as determined in accordance with BS4142:2014 and any associated updates.

xxxi. "**Rating Level**" Shall have the same meaning and calculation in accordance with BS4142: 2014 and any associated revisions.

xxxii. "**Waste Framework Directive**" or "**WFD**" means Directive 2008/98/EC of the European Parliament and of the Council on waste, as last amended by Directive (EU) 2018/851 and read in accordance with UK amending legislation.

xxxiii. "**Waste hierarchy**", **"list of waste"** and **"R"** shall have the same meaning as referred to in the 'Waste Framework Directive'.

xxxiv. **"waste "**, "**disposal**" and "**recovery**" shall have the same meaning as defined in the EP Regs.

xxxv. "**hazardous waste**" and "**hazardous substance"** have the same meaning as defined in the EP Regs.

xxxvi. "**hazardous property**" has the meaning in Annex III of the Waste Framework Directive.

xxxvii. "**waste code**" means the six digit code referable to a type of waste in accordance with the 'List of Waste' and in relation to hazardous waste, includes the asterisk.

xxxviii. "**impermeable surface**" means a surface or pavement constructed and maintained to a standard sufficient to prevent the transmission of liquids beyond the pavement surface, and should be read in conjunction with the term "sealed drainage system".

xxxix. **"hardstanding"** is a compacted solid surface capable of withstanding the operation and the loading/ unloading of waste.

xl. **"secure storage"** means storage where waste cannot escape and members of the public do not have access to it.

xli. "**sealed drainage system**" in relation to an impermeable surface, means a drainage system with impermeable components which does not leak and which will ensure that:

a. no liquid will run off the surface otherwise than via the system;
b. except where they may lawfully be discharged to foul sewer, all liquids entering the system are collected in a sealed sump.

xlii. "**sorting**" means sorting that may be undertaken by hand or machinery. Sorting enables materials to be processed/recycled appropriately. It may involve separation of different waste types.

xliii. "**separation**" means separating wastes into different material types, components and grades.

xliv. "**grading**" means the sorting of materials to industry-agreed specifications ready for use, without the need for further treatment, by the end consumer to produce new products.

xlv. "**uncontaminated**" means material that does not contain or is contaminated with potentially polluting material.

xlvi. *"***accident***"* means an accident that may result in pollution.

xlvii. "**pollution**" has the same meaning as in the EP Regs.

xlviii. "emissions to land" includes emissions to groundwater.

xlix. "**groundwater**" has the same meaning as defined in the EP Regs.

l. "**STS BAT Conclusions**" BAT Conclusions for surface treatment using organic solvents including preservation of wood and wood products with chemicals published on 9th December 2020

Schedule 9: BAT Review

BAT Summary - Saica Flex (BUXTON)

BAT No.	Topic	Ref.	Technique	Site Compliance	Site Action(s)	Timeframe
1	Environmental Management System	-	-	Site has completed its EMS to DRAFT level.	Full implementation now in progress.	
2	Overall environmental performance		Identify process areas of VOC emission and energy consumption	Process areas / steps have been assessed and identified and detailed in the sites Aspects / Impacts register within site EMS.	Identified actions have been provisionally agreed for formal approval at Management Review in Jan 2025 where they will be finalised with timeframe and ownership.	
			Identify and implement action to minimise VOC emission and energy consumption			
			Regularly review / update on progress	To be reviewed annually as defined in EMS		
3	Selection of raw materials	a	Use of RM's with low environmental impact	Assessed as part of sites Aspects & Impacts to be included in the EMS. These include using thinner gauge materials, using materials with recycled content and manufacturing structures specifically designed for recycling.		
		b	Optimisation of use of solvents in the process	Ink batching / ink returns for recycling / solvent reclaim system in-house		
4	Reduction in solvent consumption / VOC emission	b	Use of water based coatings	Site uses three types of water based coldseal coatings on its CL750 coating machine and can also be run on the CL850 as alternative machine.		

	/ overall environmental impact of RM's used	d	Use of solvent free two component adhesives	Solventless two component system in use on the CL850 laminator and can also be used on the CL750 as an alternative machine.	NA	
		h	Use of substances which are not VOC or are VOC's of lower volatility	Drum cleaner cloths used on both print presses (MIRA 1 & MIRA 2) to remove low level ink residues at changeover / clean down.	NA	
5	Storage & handling of raw materials	a	Prevention and control of leaks plan	A plan for the prevention and control of leaks and spillages has been implemented as part of the site EMS. Site Plan detailing all identified bunded / bulk storage areas and spill kits has been developed along with defined Spill Procedure.		
		b	Sealing & covering containers and bund areas	Site has installed appropriate sealed / bunded storage areas to meet the needs of the site. These are located in the sites Aganto area for storage of large sealed containers, bunded trolleys for transporting of covered ink pails within the site from ink room to press. They are also included on a site plan along with spill kit locations and these are routinely checked in line with EMS.		
		c	Minimise storage of hazardous materials in production areas	Site works to systems of minimal hazardous materials in production areas. This has been briefed out to the relevant departments where the hazardous materials are used and routinely audited to assure ongoing compliance.		

		d	Techniques to prevent leaks during pumping	Pumping systems on presses and laminators are fitted with diaphragm pump system, proven to be more robust and reliable for handling our sites solvents and liquid types, they are pnuematically operated for safety i.e. atex rated. Eliminates the risks of leakage (in or out) versus peristaltic or centrifugal pumps.		
		e	Techniques to prevent overflowing	Site systems include use of deadman handles for solvent dispensing at both print presses, high level alarms / sensors on adhesive trolley on our lamination machines and overspill / drain back system on our coldseal trolleys for coating machines.		
		f	Capture of VOC during solvent deliveries	Solvent tank is pressure valve vented back into the delivery tanker.		
		g	Containment for spills when handling solvents	Transported in trolleys / absorbent spill kits available. Drums on dolleys (not bunded) but no surface waste drains in areas where dolleys are used.		
6	Distribution of raw materials	a	Centralised supply of VOC-containing materials	Solvent pumped direct to presses. Bulk pumping system for white inks / varnishes has been newly installed.		
		b	Advanced mixing system	Rexon Ink dispenser accurately blends and dispenses inks and allows for advance bulk preparation of inks for use. Unit is also used to reblend press return inks into new blends thus reducing ink waste.		

		d	Automation of colour change	Presses have line purging with solvent capture into holding tank on the press (fitted with high level sensor system) and then decanted into drums which are then passed through to the site distiller. New inks then dispensed through cleaned units.		
		e	Colour grouping	Production planning campaign where possible same colour jobs		
7	Coating Application	a	Roller coating	Lamination use roller application for adhesive		
		b	Doctor blade over roller	Print presses use doctor blade / roller application		
8	Drying and curing	f	Convection drying/curing combined with heat recovery	Print presses currently recirculate air during drying process	Site is investing in heat reclaim system CAPEX 2025/2026	2026
9	Cleaning	b	Solids removal prior to complete cleaning	Presses purge residue inks back into the ink dispense units (for reuse) prior to solvent purge within the presses.In lamination, plastic sheeting is applied to surfaces to prevent soiling and reducing cleaning requirements.		
		c	Manual cleaning with pre-impregnated wipes	Site uses cloths applied with pump dispenser solvent for manually cleaning.		
		f	Enclosed washing machines	Soak tank currently in use, waste solvent contents controlled and disposed of through approved hazardous waste contractor.	Fully enclosed Flexo Parts Washer in CAPEX for 2025.	2025
		g	Purging with solvent recovery	Presses fitted with solvent flushing system which goes to site reclaim distiller for recovery / reuse.		
		i	Ultrasonic cleaning	Annilox cleaner		
10	Monitoring - Solvent Mass	a	Full ID and quantification of the solvent inputs /	Site currently implements an SMP provided via the head office	Site is currently undertaking a review and streamlining	End 2024

	Balance (SMB)		outputs including uncertainty		process of the SMP using outside contractors (MCAL)	
		b	Implementation of a solvent tracking system	Site is in use of a solvent tracking system (Enablon) which is updated monthly		
		c	Monitoring of changes that may influence the uncertainty of the SMB	Monitoring of changes that may influence the SMB is included within the updated SMP	The updated SMP will include BAT 10 c in the methodology and will be included within the EMS	End 2024
11	Emissions in waste gases	-	Dust	N/A		
		-	TVOC (Total Volatile Organic Carbon)	Annual emissions testing includes TVOC (in addition to a continuous monitoring system)	Next testing planned Dec 2024	End 2024
		-	DMF (N,N-Dimethylformamide)	N/A		
		-	Nox (Sum of NO and NO2)	Annual emissions testing includes Nox	Next testing planned Dec 2024	End 2024
		-	CO (Carbon Monoxide)	Annual emissions testing includes CO	Next testing planned Dec 2024	End 2024
12	Emissions to water	-		No emissions to water at site		
13	Emissions during OTNOC	a	Identification of critical equipment	RTO, LEL monitors on presses, laminator, coldseal machines. Full list included within EMS		

	(other than normal operating conditions)	b	Inspection, maintenance and monitoring	All monitors are serviced / calibrated 6 monthly. RTO is annually serviced by external contractor and records are kept. Monthly visual inspections are carried out on the RTO by sites maintenance team. Only authorised and trained staff are permitted to operate the RTO. The RTO is continuously digitally monitored for operation. Any periods of non-operation or alarm activation of the RTO are logged. The print presses are subject to weekly planned maintenance with supporting records kept.		
14	VOC emissions in waste gases	a	System selection, design and optimisation	Site has installed an RTO		
		c	Air extraction close to the point of preparing inks	Air extraction fitted within the ink dispensing room		
		d	Extraction of air from drying/curing processes	Press ovens extract to RTO		
		e	Minimisation of fugitive emissions and heat losses from the ovens/dryers	Print presses have sealed pressurised air flow system so minimises fugitive emissions.		
15	VOC emission reduction in waste gases	f	Regenerative Thermal Oxidation (RTO)	Site has installed an RTO		
16	Reduction of energy consumption of the VOC abatement system	a	Maintaining the VOC concentration sent to the off-gas treatment system by using variable-frequency drive fans	RTO is fitted with a variable frequency drive fan to modulate the airflow to match the exhaust from the presses as they are in operation (or idle).		
		b	Internal concentration of solvents in the off-gases	Off gases are cycled to increase concentration		

17	Reduction of Nox & CO emissions	a	Optimisation of thermal treatment conditions (design and operation)	RTO of appropriate design (outlined in B2.3) and serviced and maintained to optimise emissions		
		b	Use of low Nox burners	RTO set up to achieve optimal emissions		
		Table 1	NOx (BAT- AEL) **20 - 130 mg/Nm3**	RTO set up to achieve optimal emissions and will aim to achieve compliance with BAT-AEL		
		Table 1	CO (BAT - AEL) **20 - 150 mg/Nm3**	RTO set up to achieve optimal emissions and will aim to achieve compliance with BAT-AEL		
18	Dust emission	-		Not applicable to our site based on Table 2		
19	Energy Efficiency	a	Energy efficiency plan	Energy efficiency plan drafted from site assessment and added into EMS.		
		b	Energy balance record	The site has an energy balance system ENABLON which reports and monitors monthly energy usage		
		c	Thermal insulation of tanks and vats containing cooled or heated liquids, and of combustion and steam systems	Domestic hot water tanks are thermally insulated, Chiller unit is pre-insulated and all water pipes feeding chilled water to lamination machines are insulated. Thermal oil boiler is insulated as are the feed pipes to the coldseal machine and print presses.		
		e	Heat recovery from hot gases	New hot air air bypass system now fitted to RTO	Heat reclaim system to be requested for CAPEX 2026	2026
		f	Flow adjustment of process air and off-gases	Hot air feed in print presses adjusts when press stops i.e. heater stops / extraction continues. Also applies to coldseal machine drying ovens.		

20	Water Use & Water Generation			Site does not have any aqueous processes		
21	Emissions to water			No emissions to water from the site. Waste water generated at site is from domestic use only i.e. toilets, kitchens, handwash sinks etc		
22	Waste management	a	Waste management plan	Site has identified all its relevant waste streams at site and identified and implemented systems to optimise waste recovery through licensed waste disposal contractors with opportunities for future improvements in line with waste hierarchy protocols. These have been added to site Waste Management Action Plan in site EMS.		
		b	Monitoring of waste quantities	All waste streams are measured / monitored and recorded		
		c	Recovery / recycling of solvents	On site solvent distiller system in operation.		
		d	Waste stream specific techniques	Containers are either recycled or reused this includes ink pails, IBC's		
23	Odour emissions	-	Review odour management	Site has a system for monitoring external areas for odour emissions that may impact / affect local areas. Assessments are logged as part of site Odour Management Plan incorporated within site EMS.		
28	Flexographic printing	table 28	Total VOC emissions as calculated by the solvent mass balance < **0.1- 0.3** kg VOCs per kg of solid mass input	Site is not planning to take this route of compliance		

		table 29	Fugitive VOC emissions as calculated by the solvent mass balance < **1 - 12 %** of the solvent input	Site aims to achieve compliance via implementing a solvent management plan and managing emissions via the RTO		
		table 30	Emission level for VOC emissions in waste gases TVOC **1 - 20 mg C/Nm3**	Site aims to achieve compliance via adequate solvent destruction within the RTO		

END OF PERMIT CONDITIONS

D. Footnotes

This section does not form part of the permit, but contains guidance relevant to it.

Statutory Guidance – Local Authority Pollution Control (DEFRA)
https://www.gov.uk/government/publications/local-authority-pollution-control-general-guidance-manual

National security and commercial confidentiality - All data and information submitted to the Regulator in relation to this Environmental Permit will be placed on the relevant public register in accordance with regulation 46(1) of the EP Regs, unless that information has been subject to a successful application for exclusion from the public register of information affecting national security or confidential information in accordance with regulations 47 and 48 of the EP Regs.

Submission of information or monitoring data – The Operator shall be aware of any conditions in this Environmental Permit requiring the periodic submission of information to the Regulator.

"Change in operation" means a change in the nature or functioning or an extension of the installation or mobile plant which may have consequences for the environment.
The change or extension shall be deemed to be a **"substantial change"** if the change in operation of an installation which in the Regulator's opinion may have significant negative effects on human beings or the environment and includes—
(a) in relation to a Part A installation, a change in operation which in itself meets the thresholds, if any, set out in Part 2 of Schedule 1 of the EP Regs, and
(b) in relation to a waste incineration plant or waste co-incineration plant for non-hazardous waste, a change in operation which would involve the incineration or co-incineration of hazardous waste.

"Variations" - The Operator must familiarise themselves with procedures or conditions relating to variations and changes in operation. The Operator may be liable to prosecution if they operate otherwise than in accordance with the conditions and plant described in this permit.

Reviews – The Regulator will periodically review this Environmental Permit. For Part A installations this shall be in accordance with Schedule 7 and in relation to Part B installation in accordance with Schedule 8 of the EP Regs.

Inspections will be made by Authorised Officers of the Regulator (with or without prior notice), in order to check and ensure full compliance with this permit. Inspection will be carried out in accordance with a risk assessment, and/or following from any complaints or applications.

An **annual subsistence fee** is payable in order to operate your installation/ mobile plant. An invoice will be issued annually by the Regulator which will include details of how to pay. You are reminded that failure to pay the subsistence fee may result in additional fees for late payment and/or the permit being suspended or even revoked. It is an offence to operate a regulated facility without a permit.

Risk Rating - Procedures and records shall be examined during inspections and will be referred to during the Department of Food and Rural Affairs (DEFRA) risk rating, carried out to determine the risk rating: LOW, MEDIUM or HIGH, which will determine the annual subsistence fee and the inspection frequency of the Regulator. Details of the risk rating can be found on the DEFRA website:
https://www.gov.uk/government/collections/environmental-permitting-resources-for-local-authorities

Transfer and Surrender – There is provision in the EP Regs to transfer or surrender an Environmental Permit either in full or in part. There are specified timescales, fees and other requirements that must be met and the Operator is advised to familiarise themselves with the procedures.

Enforcement - The Operator could be liable to **enforcement** action where:

- The Operator fails to comply with or contravenes any permit condition;
- A change is made to the installation/ mobile plant operation without prior notification of the change to the Regulator;
- Intentional false entries are made in any record required to be kept under the conditions of the permit;
- False or misleading statement is made.

A person guilty of an offence under the EP Regs could be liable to (i) a fine or imprisonment for a term not exceeding 12 months, or both; or (ii) to an unlimited fine or imprisonment for a term not exceeding 5 years, or both depending on whether the matter is dealt with in the Magistrates or Crown Court. Any enforcement action is taken with regards to the Regulator's Code: https://www.gov.uk/government/publications/regulators-code

Appeals:- Under regulation 31 and Schedule 6 of the EP Regs, Operators have the right to appeal against a decision to impose an environmental permit condition following either that person's application, a Regulator initiated variation or to take account of a partial transfer, revocation or surrender of an environmental permit. There are specified time periods in which to lodge an appeal. Appeals must be submitted to the Planning Inspectorate with the legally required information. Most appeals are decided by an Inspector from The Planning Inspectorate, delegated by the Secretary of State under Section 114 of the Environment Act 1995. However, if a case is particularly important or controversial, the Secretary of State may 'recover' it to make the decision. Operators are advised to familiarise themselves with the requirements of regulation 31 and Schedule 6 of the EP Regs. Procedures, guidance and appeal form are available on the Planning Inspectorate website and further guidance can be found in Section 30 of the General Guidance Manual:
https://www.gov.uk/government/organisations/planning-inspectorate/services-information
https://www.gov.uk/government/publications/local-authority-pollution-control-general-guidance-manual

An appeal will not stop conditions of this Environmental Permit coming into effect and you must comply with their requirements. On determination of an appeal, an Inspector can affirm or quash decisions, conditions and notices and can direct the Regulator to grant and vary conditions of a permit.