

Economic Regeneration, Growth and Environment
Public Protection
New Town House, Buttermarket Street
Warrington WA1 2NH

POLLUTION PREVENTION AND CONTROL ACT 1999

ENVIRONMENTAL PERMITTING (ENGLAND AND WALES) REGULATIONS 2010

SOLVENT EMISSIONS (ENGLAND AND WALES) REGULATIONS 2004

PERMIT EP15/1(A2)

PLASTIC OMNIUM AUTOMOTIVE LIMITED, WESTMINISTER INDUSTRIAL ESTATE, HUNTINGTON WAY, MEASHAM, SWADLINCOTE, DERBYSHIRE DE12 7DS (company registration number 03275572) is hereby permitted to carry out a prescribed

(company registration number 03275572) is hereby permitted to carry out a prescribed activity under Section 6.4 (Part A2)(A) of Schedule 1 to the Environmental Permitting (England and Wales) Regulations 2010, in accordance with the conditions specified in this Permit at the specified installation.

Installation address: Plastic Omnium Automotive Limited

Omega South

Unit C

Skyline Drive Warrington WA5 3TP

(Signature).....

(Date)...18 January 2016......

Peter Astley Assistant Director

Regulation and Protection

Status Log

Detail	Date	Comments
Application received	29/05/15	Duly Made 02/06/15
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Permit issued	18/01/16	

Council contact details

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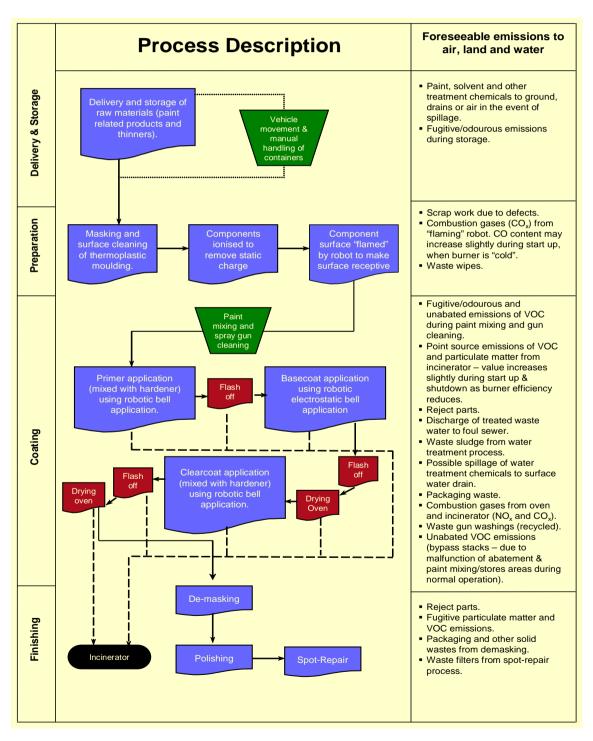
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DESCRIPTION OF ACTIVITY

Plastic Omnium Automotive are permitted to operate a surface coating activity as listed in Schedule 1, Section 6.4 Part A2 of the Regulations at the installation address subject to the conditions of this permit. The installation carries out injection moulding and then the painting and coating of plastic components for the automotive industry. The paints used in the coating process are specified by the customer and are required to match exactly the specification for the product. The coated parts are then delivered offsite to the specific customer's vehicle manufacturing line for assembly.

Figure1: Activity flow diagram



Injection moulding

Plastic granules are delivered to site and vacuum pumped into four storage silos or stored within the building 1000kg bags. These are then screw fed to the injection moulding line. The plastic is then heated and moulded to form the component parts. Extraction is provided with air recirculated back into the process. Waste plastic is re-grinded and fed back into the process.

Surface preparation

The moulded products are stored in metal trolleys prior to the painting process. If required, specific areas of the product are protected with masking tape. The product is taken to the surface preparation area and placed onto a jig fixture, which is installed on a conveyor system. Exposed areas of the product are manually cleaned, using solvent wipes.

The product is then blown with ionised air to remove any static charge in the product to prevent airborne dust attracting to the product surface.

The product undergoes a final inspection and clean using a ultra-violet lamp and solvent wipes. All used solvent wipes are stored in sealed containers prior to disposal.

The product is installed in a conveyor system and cleaned cryogenically by a 5-axis robot using liquid CO_2 . The CO_2 is exhausted directly to the atmosphere through an exhaust ventilation system. No access to the area is allowed if the CO_2 concentration is above 0.5% which is controlled by a concentration sensor.

The component is then 'flamed' by bringing a gas-powered flame close to the surface to be painted. The surface molecular structure of the plastic is changed to allow better adhesion of the paint during the spraying process. Extraction is via the air housing recirculation system.

Paint mixing

All paint is mixed within the designated enclosed paint mixing room with the paint being diluted on site to the required specification.

Some of the paint is supplied in 200ltr drums and is connected directly to pumps to be sent to the application robots where fully contained mixing occurs with their relevant hardeners. Some of the low use Basecoat colours are supplied in 25ltr drums and are mixed automatically in 25 litre containers. The mixed paint is then pumped to the application robots where fully contained mixing occurs with their relevant hardeners if required.

Air is extracted from the mixing room through filters and conducted to a Recycled Air Housing Unit where it is redirected to be used in the spray booth area. There is no direct emission point to atmosphere from the mixing room.

Robot bell cups are cleaned automatically within the spray application booths, waste solvent cleaner is collected and stored in a sealed container awaiting collection by an authorised waste collector for recycling off site.

Robot spray gun heads (4 of) are manually cleaned in an enclosed gunwash machine located within the paint maintenance room. Waste gunwash solvent is stored in sealed drums before transfer to a tank ready for collection by an authorised waste collector for recycling off site.

Coating application

The plastic products are conveyed throughout the paint plant on a conveyor system mounted on jig fixtures. Robots using pneumatic gun and electrostatic bell application apply paint mechanically.

There are 3 spray booths in total, with a flash off zone after each of the three paint applications. All incoming air is passed through fabric panel air filters that are fitted into the booth ceilings; all extracted air passes through the water curtain of the wet floor booths. This ensures that no dust enters the spray booths, and that no particulates exit the spray booths. All water from the wet floor booths is subject to a coagulant and flocculent treatment, collected paint sludge is removed by an authorised waste collector for disposal off site. Cleaned water is then returned back into the system.

Air flows over the product being sprayed on the conveyor line at a minimum speed of 0.35 m/s. Flash off and stabilisation zones have air flows at 0.4 m/s to ensure that there is no leakage of solvent mist from the spray booths. In all spray booths, the air is extracted and recirculated through grills in the wet booth floor and then recirculated back to the relevant booth with a small portion, approximately 4%, exhausted to the Regenerative Thermal Oxidiser (RTO) before being emitted to atmosphere.

The coating application is carried out in three stages with an oven cycle after every spray booth exit:

Stage 1: Primer Booth

Spray booth 1. Prior to spraying, the primer is automatically mixed and pumped to the robot spray gun head. It is then mixed automatically with hardener at the point of application using a robotic pneumatic gun application. Primer aids the adhesion of the basecoat and levels the surface. After spraying, the primer is allowed to flash off and then dried in an oven for a period of 25 minutes at a temperature of 82°C +/- 2°C.

Stage 2: Base Coat Booth

Spray booth 2. Base coats are prepared and applied in a similar manner to primers. There are three separate coats applied using robotic electrostatic bell application, after a flash off period the parts are dried in an oven for a period of 16 minutes at a temperature of 65°C +/- 2°C.

Stage 3: Clear Coat Booth

Spray booth 3. The clear coat is automatically mixed with hardener in a totally enclosed mixing unit immediately prior to being fed to the robot. There are two separate coats applied using robotic electrostatic bell application, after a short flash off, the parts continue to the clearcoat oven where it is dried for a period of 40 minutes at a temperature of 82 °C +/- 2°C. This promotes the evaporation of solvents from the paint, and hardens the surface thus ensuring a high quality finish. The product is then allowed to cool. Air is recirculated back into the process.

Finishing Process

After cooling, the product is unloaded from the inspection area, any masking tape protecting the product removed and surfaces manually polished where appropriate. Any defects are first identified and sanded with a very fine grade of sandpaper. There is no dust extraction system due to the low level of dust produced.

A small quantity of polish is then applied to the product before buffing with an air driven, hand held polishing tool.

Thermal abatement

The majority of the air from the spraybooths and the paint mixing room is re-circulated back into the system. Approximately 4% of the air containing VOCs is ducted to the Durr 3015 (110288) Regenerative Thermal Oxidiser (RTO) thermal abatement plant from the spray booths, the flash off zones, ovens and the paint mixing room.

The RTO is 3- tower type ceramic base with an entrapment chamber. Each tower houses ceramic media which act as a heat store to recover and then regenerate the heat energy in the airstream. The main fan pushes the process air into the 1st tower where the air is preheated by the ceramic media. The combustion chamber temperature is controlled by a gas burner to around 820°C. This hot air exits through the 2nd tower where the heat is absorbed by the ceramic media. In the 3rd tower the air is recirculated through the 1st tower.

In this way 1st chamber is getting colder and the 2nd and 3rd chamber getting hotter. In the next cycle the airflow-stream direction will change, and the process air will be preheated in the 2nd ceramic bed, while the others ceramics beds are being also heated by the air leaving the combustion chamber. The system operates on a 3 phase system switching to the next tower. An entrapment chamber is installed to capture the VOC spikes when the valve switches and the air flow is reversed to oxidise them prior to discharge to meet the emission limits.

Emissions are release via a 16m high stack. In case of an emergency a visual light is automatically activated. Visual control units, displays and fire alarms, are located along the plant to warn in case of failure.

The RTO is fitted with continuous monitors for temperature and VOC. The VOC is measured using a RAEGuard2 PID detector linked to a SIMATIC HMI data logger.

If there is failure of the system, an emergency bypass valve is used and all coating processes stopped.

Table1: RTO details

Manufacturer;	DURR	
Model:	3015	
Reference number:	110288	
Brief description:	3 Tower Regenerative Thermal Oxidizer	
Flow rate:	14,300 Nm³/hr	
Entry air temperature:	30°C (min 0°C – max 60°C)	
Exit air temperature:	90°C (min 40°C – max 120°C)	
Exit velocity:	Min 16 m/s	
Combustion temperature:	820°C (min 750°C – max 850°C	
Exchange efficiency:	99%	
Maximum emissions:	20 mg / Nm ³ of total carbon	
	100 mg / Nm³ of carbon monoxide	
	100 mg / Nm³ of nitrogen oxides	
Continuous monitors	Temperature and VOC (RAEGuard2 PID)	

Water Treatment

Water from the wet floor spray booths is automatically pumped to the flocculation water treatment plant to remove suspended solids and dissolved materials. Tanks are in a 5 meter deep pit manufactured of water proof concrete with no external route to drain.

The wet back system is fully enclosed, fugitive losses via evaporation and approximately 10 l/hr from the management of the flocculent.

There is no deliberate discharge of List I or List II substances from the installation. By-products of the water purification system are precipitated as hydrated metal oxides, and the resultant sludge is collected by a licensed waste contractor and buried off-site in a licensed landfill.

An Osmosis process is used for air humidification and dilution of water based paints. The osmosis plant is a large scale de-ionisation system with approximately 75% efficiency. For every 4 parts mains water we discharge 1 part effluent to sewer, as a salt concentration from the incoming water supply.

The trade effluent discharged to sewer is under consent from United Utilities. There are no deliberate discharges to groundwater due to the checks on system integrity. All water emissions are sampled for the requested substances as part of the consent.

Raw material storage

Granular plastics are delivered within tankers and vacuum delivered into 6 storage silos.

Bulk solvents for use in the paint mixing room are delivered in IBCs and offloaded into designated bunded storage areas.

All paints, adhesives and process chemicals are delivered in sealed containers and stored within an internal bunded area.

Table 2: Raw materials

Raw Material	Activity	Area
Primer coat conductive primer	Paint Spraying	Paint mixing/store
		room
Primer / clearcoat hardener	Paint Spraying	Paint mixing/store
		room
Basecoat material water borne	Paint Spraying	Paint mixing/store
		room
Clearcoat Resin material	Paint Spraying	Paint mixing/store
		room
Solvent thinners	Paint Spraying	Paint mixing/store
		room
Flushing solvent	Paint Spraying	Paint mixing/store
		room
Granular plastic	4 Plastic storage silos	External to building
	and/or bags	Raw material area
		(internal)
CO2	6 x Tanks (50 te)	External to building
Flocculation / biocide chemicals	Sealed containers	Internal
Water	Flocculation tank	Internal
Substrate	Sealed containers	Internal

Waste material storage

Sealed drums and skips are stored in the waste storage area prior to disposal off site.

Bonding and assembly

Painted parts are then assembled to complete exterior parts for supply to automotive manufactures. This can involve a range of operations depending upon the customers' requirements, but may involve assembly of internal electronic parts and connectors, structural strengthening, lighting fixtures adhesive bonding or ultrasonic welding to complete the parts for delivery and is carried out typically by hand tools.

Bonding uses a 2 component adhesive and is assembled in a robotic cell.

The glue contains VOC as a solvent, this is released during the curing process. The glue is delivered in 205 litre drums and mixed with 20Kg of hardener just prior to robotic application. Approximately 25g is applied to each part.

Fugitive emissions are controlled via an extraction system, passed through an activated carbon bed, then fed back in to the area to ensure no net pressure gain or loss. The bonding cell itself is enclosed and maintained at a slight over pressure to eliminate dust and dirt from the process. There is no direct extraction to atmosphere.

Glossary

Act Pollution Prevention and Control Act 1999

Activity One or more stationary technical units falling within the defined sections

of the Schedule 1 of the Environmental Permitting Regulations 2010 (as

amended)

BAT Best Available Techniques

Electrostatic Bell Application method where paint particles are moving parallel to each

other. An electrostatic charge aids particle adhesion.

EP Regs Environmental Permitting (England and Wales) Regulations 2010

Halogenated Shall mean an organic solvent which contains at least

Organic solvent one atom of bromine, chlorine, fluorine or iodine. per molecule.

Installation One or more activities within a defined area comprising the process.

Operator Plastic Omnium Automotive Ltd

Organic solvent Means any VOC which is used alone or in combination with other agents,

and without undergoing a chemical change, to dissolve raw materials, products or waste materials, or is used as a cleaning agent to dissolve contaminants, or as a dissolver, or as a dispersion medium, or as a viscosity adjuster, or as a surface tension adjuster, or a plasticiser, or as

a preservative.

Organic compound Means any compound containing the element carbon in combination

hydrogen, halogens, oxygen, sulphur, phosphorus, silicon or nitrogen, with the exception of carbon oxides and inorganic carbonates and

bicarbonates.

PPC Pollution Prevention and Control

Regulator Warrington Borough Council.

RTO Regenerative Thermal Oxidiser abatement plant

SED Solvent Emissions Directive 1999/13/EC

EP15/1(A2) PERMIT CONDITIONS

1 Emission Limits, monitoring and controls to air

Odour

- 1.1 There shall be no offensive odour emitted from the installation, detectable beyond the site boundary, as perceived by an officer of the regulator.
- 1.1.1 A daily olfactory assessment shall be made by the operator for odour emissions from the installation while the process is operating. The assessment shall be made at a point on the process boundary where such an emission is most likely to be detected, taking into account the wind direction, source of odour and nearest neighbour. The assessment must be made by a responsible person who has been instructed to carry out these duties.
- 1.1.2 If odour emissions are detected, immediate action shall be taken to determine the cause of the emission and to resolve the malfunction responsible for the emission. Contingency arrangements shall be instigated to prevent or reduce to a minimum any further odour emissions caused by the malfunction. The regulator shall be notified of any such occurrence as soon as practicable.
- 1.1.3 A record of olfactory assessments shall be entered into a logbook. The records shall include a subjective assessment of the nature and severity of any odour detected.

Visible emissions

- 1.2 There shall be no visible emissions, other than steam or water vapour, from the installation.
- 1.2.1 Emissions from the installation, other than steam or condensed water vapour, shall be free from persistent fume.
- 1.2.2 Visual observations, from a position providing an unimpeded view, shall be carried out at least once per day of all emission points to atmosphere.
- 1.2.3 In the event of visible emissions being observed, immediate action shall be taken to determine the cause of the emission, and action shall be taken to abate the emission and to resolve the malfunction responsible for the emission. Contingency arrangements shall be instigated to prevent or reduce to a minimum any further visible emissions caused by the malfunction. The regulator shall be notified of any such occurrence as soon as practicable.
- 1.2.4 The results of the visual observations shall be recorded in a logbook, along with details of remedial action taken.

Regenerative Thermal Oxidiser (RTO)

1.3 No emission from the RTO shall exceed the limits for the pollutants as specified in table 3. The monitoring frequency in table 3 shall be carried out for each pollutant.

Table 3: Emission limits and monitoring frequency from the RTO

Total Particulate Matter (TPM)	Emission Limit	Monitoring frequency for the RTO stack
	10 mg/m	Once per year extractive monitoring
	No visible emission during normal operation	Once per day
	Visible emissions during start up and shut down shall not exceed Ringlemann Shade 1	On start-up and shut down
Oxides of Nitrogen (NOx)	Emission Limit	Monitoring frequency
	100 mg/m ⁻³	Once per year extractive monitoring
Carbon Monoxide (CO)	Emission Limit	Monitoring frequency
	100 mg/m ⁻³	Once per year extractive monitoring;
Oxides of Sulphur (SOx)	Emission Limit	Monitoring frequency
	1% wt/wt sulphur in fuel	Certificate from Gas Supplier
Isocyanates (NCO)	Emission Limit	Monitoring frequency
	0.1 mg/Nm (averaged over a 2 hour period as total NCO group)	Once per year extractive monitoring
Volatile Organic Compounds (VOC)	Emission Limit	Monitoring frequency
	20 mg/m (expressed as total carbon excluding particulate matter)	Once per year extractive monitoring; Continuously recorded indicative monitoring
Where VOCs assigned a hazard statement R40 and/or R68 are used	20 mg/m expressed as the sum of the mass concentrations of the individual VOC concerned	Once per year extractive monitoring

- 1.3.1 The concentrations of the substances listed in table 3 shall be expressed at reference conditions, 273K, 101.3kPa, without correction for water vapour content and the results of the monitoring shall be expressed in mg/m³.
- 1.3.2 The RTO shall be continuously monitored for temperature. The RTO shall be fitted with an audible and visual alarm to trigger if the temperature drops below 750 °C.
- 1.3.3 The RTO shall be continuously monitored for VOC, recorded with an averaging period of 15 minutes. The monitoring equipment shall be connected to an audible and visual alarm, set to trigger at 75% of the emission limit in table 3.
- 1.3.4 Any triggering of alarms shall investigated and be recorded in a log book.
- 1.3.5 All continuous monitors shall be calibrated at least every 12 months and in accordance with the manufacturers' instructions.

1.3.6 For releases of VOCs, calibration and compliance monitoring must meet the following requirements as appropriate:

In the case of continuous measurements the emission limit values shall be considered to be complied with if:

- a) none of the averages over 24 hours of normal operation exceeds the emission limit values, and
- b) none of the hourly averages exceeds the emission limit values by more than a factor of 1.5

In the case of periodic measurements the emission limit values shall be considered to be complied with if, in one monitoring exercise:

- a) the average of all the readings does not exceed the emission limit values; and
- b) none of the hourly averages exceeds the emission limit value by more than a factor of 1.5
- 1.3.7 A summary of the continuous monitoring results shall be supplied to the regulator every 6 months from issue date of this permit. The summary shall be in electronic format as agreed with the regulator and shall clearly highlight any results that breach the emission limits stipulated in table 3 or any other part of this permit.
- 1.3.8 All extractive sampling shall be carried out in accordance with recognised standards as agreed with the regulator prior to monitoring taking place. In all cases this shall be to the MCERTS, or equivalent, standards for both procedures and personnel.
- 1.3.9 The proposed test methods for measuring compliance with emission concentration limits shall be forwarded to the regulator at least 21 days prior to commencement of sampling, and testing shall not be commenced until the regulator approves the proposed test method in writing.
- 1.3.10 The regulator must be advised at least 7 days in advance of any periodic monitoring exercise giving the date, time and place of sampling and the pollutants to be tested.
- 1.3.11 Results shall be expressed in accordance with the requirements of condition 1.3 and 1.3.1. The results of monitoring shall be supplied to the regulator within 56 days of completion of the monitoring. Monitoring reports shall be submitted in electronic format.
- 1.3.12 Any use of the bypass of the abatement plant shall be deemed an emergency and steps shall be taken to contain the unabated emissions. The process line shall be stopped when it is immediately safe to do so. The regulator shall be notified immediately of any use of the bypass system.
- 1.3.13 The final efflux velocity of all emissions from the final point of discharge to atmosphere of the RTO stack shall not be less than 15 ms⁻¹.
- 1.3.14 All emission points from which it is necessary to achieve dispersion of the residual pollutants shall discharge vertically upwards and shall not be fitted with any restrictive plates, caps or cowls at the final opening.

- 1.3.15 The final point of discharge to atmosphere of the stack serving the RTO shall be maintained at the minimum height of 16m from ground level. Where guidance, plant or equipment, or the nature of emissions changes; a new stack height calculation shall be repeated and the heights modified accordingly.
- 1.3.16 Adequate insulation shall be provided to minimise the cooling of waste gases and to prevent liquid condensation by keeping the temperature of the exhaust gases above the dew point.
- 1.3.17 Stack flues and duct work shall be cleaned to prevent accumulation of materials as part of the routine maintenance programme required in section 8 of this permit.
- 1.3.18 The introduction of dilution air to emission stacks shall not be permitted. In the event that emissions from a stack can be demonstrated to be compliant with the emission limits in condition 1.3, air may be added to render harmless a visible or odorous emission. The introduction of dilution air shall only be permitted where stated within this permit.
- 1.3.19 All emissions from the spraybooths, oven, flash off zones and paint mixing room shall be vented through the RTO before being emitted via the stack.
- 1.3.20 All paint spraying shall only be carried out in the designated spray booths with the extraction on.
- 1.3.21 Application of primer shall be by robotic pneumatic spray gun, and base coat and clear coats shall be by electrostatic bell application only within the stated booths.
- 1.3.22 The spray booths, the RTO and the flocculant water treatment system shall be operated, service and maintained in accordance with the manufacturers' recommendations.

2 Emission Limits, monitoring and controls to Water and land

Flocculant Effluent Treatment Plant

- 2.1 All waste water from the wet back spray booths shall be collected and treated in the flocculant effluent treatment plant before recycling within the process. No effluent from the flocculation tank shall be discharged to sewer.
- 2.1.1 A Trade Effluent Discharge Consent shall be in place to control emissions to sewer from the Osmosis plant. All discharge shall meet the Trade Effluent Discharge Consent conditions for emission limits, monitoring and reporting. A copy of the consent shall be provided to the Regulator within 28 days of issue of this permit.
- 2.1.2 The flocculant storage tank shall be fitted with high-level alarms or volume indicators to warn of over-filling. The filling systems shall be interlocked to the alarm system to prevent overfilling.
- 2.1.3 The flocculant storage tank shall be located within the 5 meter deep pit manufactured of water proof concrete with no external route to drainage, capable of containing the volume within the flocculant tank.
- 2.1.4 The integrity of the flocculent pit area shall be inspected, recorded and documented. Such inspections shall take place at least every 12 months.
- 2.2 There shall be no discharge of List I or List II substances from the installation.
- 2.3 Run-off from raw material and waste storage areas shall be channelled and transported to an interceptor to prevent or minimize discharge of pollutants to surface waters and sewers.
- 2.4 All tanks and storage areas containing liquids shall be contained. Bunded areas and interceptors for the site shall be:
 - impermeable and resistant to the liquid contained;
 - visually inspected monthly and;
 - have an annual maintenance inspection. Prior to this inspection all contents shall be removed.
- 2.5 The effluent transport system (including any subsurface plant, equipment, tanks, drains, sewers, sumps, or storage vessels) shall be inspected and surveyed at least once every five years for the following:
 - Establish a record of all subsurface drains, sewers, plant, equipment, sumps or storage vessels to include the routing of all pipework.
 - Produce an inspection and maintenance record for all subsurface drains, sewers, plant, equipment, sumps of storage vessels, which involves as necessary, pressure or leak tests, materials thickness checks or camera surveys.
- 2.5.1 Where an inspection determines that subsurface infrastructure is leaking, arrangements shall be made to repair, isolate or otherwise contain the leak in accordance with a defined action plan, and the regulator shall be notified immediately.

- 2.6 There shall be no defects in the concrete hard standing within the storage areas of the installation as designated on the plan in Appendix 2. As far as is practicable, joints between concrete pads shall be effectively sealed so as to provide an impervious surface.
- 2.6.1 Where a defect is noted action shall be taken to rectify the defect within 6 weeks of identification. For the purpose of this condition, a 'defect' is any break in the concrete hard standing that will allow liquid spillages to drain away into the subsoil. For the purpose of this condition 'rectified' shall mean repair of the defect such that liquid spillages can no longer enter the sub-soil.
- 2.7 An inspection and maintenance programme in accordance with section 9 shall be established for all sub-surface structures to prevent pollution to surface water, sewer and ground water by minimising leaks from pipework, sumps and storage vessels. Yard drainage systems must be inspected at least once every 5 years and for process effluent areas at least once every 3 years.
- 2.8 Operational areas shall be equipped with impervious surfaces, spill containment kerbs, sealed construction joints, and connection to a sealed drainage system.
- 2.9 All liquid storage tanks shall be fitted with high level alarms or volume indicators to warn of over filling. Tanks shall have delivery connections located within the bunded area, fixed and locked when not in use and have their integrity inspected as part of the maintenance programme in condition 9.

3 Noise emission Limits, monitoring and controls

- 3.1 The operator shall annually review the noise survey of the installation, as provided as part of the application, such that any changes to the plant or equipment are identified and the survey updated appropriately.
- 3.2 The operator shall construct a noise management plan within 6 months of issue of this permit, reviewed in line with the noise survey, which shall include the following:
 - 1) A statement of policy with regard to dealing with noise
 - 2) A documented complaint procedure for the investigation, analysis, determination, and solution to noise problems
 - 3) Details of routine maintenance undertaken in particular to deal with noise issues
- 3.3 The operator shall keep a register of complaints regarding noise emissions from the installation.
- 3.4 All plant or equipment within the installation shall:
 - have a rating level of -10dB (when compared to the background level), or is otherwise inaudible at the installation boundary, as perceived by the Regulator, if monitored under the requirements of BS 4142:2014; or
 - Where plant or equipment cannot be demonstrated to meet the standard above, a full noise survey shall be carried out and the results modelled to show the specific impact of the new plant or equipment on the environment. The modelling exercise shall take account of any relevant noise abatement measures. The results of the modelling shall be submitted to the regulator and shall demonstrate BAT. The modelled plant or equipment shall be permitted within the installation only where written consent of the regulator has been obtained.
- 3.5 In the event of the Regulator receiving a complaint of noise associated with any element or activity within the installation boundary, the operator shall:
 - (i) Be required to investigate the source of the complaint within 48 hours of notification of the complaint.
 - (ii) Carry out such monitoring, surveys or modelling of the source of the complaint to demonstrate, to the satisfaction of the Regulator, either:
 - (a) that the complaint is unfounded, or
 - (b) the complaint has substance

Where (ii)(b) above is found to be the case, the operator shall arrange to carry out such works or change procedures or processes in such a way, that a reassessment carried out in (ii) above comes to the conclusion in (ii)(a).

3.5.1 All time scales in relation to any aspect of condition 3.5 are to be set by the regulator in the event of a complaint being received.

4 Delivery, storage and handling of raw and waste materials

- 4.1 All raw and waste materials from the installation shall be handled with care to prevent or reduce to an absolute minimum any emissions to air, land or water.
- 4.2 Spillages of liquids and dusty materials shall be cleaned up immediately. Liquid spillages shall be contained and cleaned up by the use of a suitable absorbent material. Spillages of dusty or powdery materials shall be removed by means of vacuum cleaning using an industrial grade vacuum cleaner or by wet cleaning methods. Dry sweeping methods shall not be permitted. Sweeping and vehicular movement of powdery materials using uncovered containers is prohibited unless the material is thoroughly damped to prevent wind entrainment.
- 4.3 All raw materials delivered to the installation, and waste materials generated by the installation, shall only be placed in areas of site designated for storage as shown on the plan in appendix 2. All designated areas shall be capable of containing the raw material or waste contained therein, and prevent overflow into surrounding areas. Accumulation of waste or raw materials outside the designated areas shall be considered a spillage and shall be dealt with in accordance with the requirements of section 5.
- 4.3.1 The operator shall inspect the designated storage areas on a monthly basis to ensure that materials or wastes are adequately contained. The results of the inspections along with any repair work, where necessary, shall be recorded in a log book. Any damage shall be repaired as soon as is practicable and in any case no longer than 6 weeks from the date of detection.
- 4.4 Drums and containers containing liquid VOC materials, whether full, partly full or empty, shall be stored in a bunded, secure, well-ventilated storage area away from other products. All drums and containers whether full, partly full or empty, shall be kept tightly closed to prevent any fugitive emissions to air.
- 4.5 Application of cleaning solvents shall be by solvent wipes. All wipes shall be held within closed containers prior to use.
- 4.5.1 Used solvent wipes and other items contaminated with solvent shall be placed in a suitably labelled metal bin fitted with a self-closing lid. Bins shall be emptied at least daily into a sealed drum ready for disposal.
- 4.6 Solvent Storage Containers, including paint, whether empty or full shall only be stored in a designated bunded area in the paint mixing room or adjacent paint store. The bunding shall be impervious to the materials in use and be capable of storing 110% of the capacity of the largest container within the bund. All containers should be lidded when not in use.
- 4.7 The coupling of solvent storage containers, including paint, to transfer pipework or mixing systems shall only be undertaken by nominated persons trained to do so, and shall only be carried out in a bunded area.

- 4.8 The pipework associated with transfer of solvent, paint or other volatile materials shall be checked for integrity and shall be fitted with an isolation valve on both sides of the coupling to minimise losses from either the storage container or the pipework. The connections shall be kept securely locked at all times when a connection is not being made and shall be under the direct control of the named personnel only.
- 4.9 The waste storage area shall be bunded and impervious to the liquid material being stored in the area. The bunded area shall be capable of storing 110% of the capacity of the largest tank/container within the bund.
- 4.10 The integrity of storage tanks and bunds shall be inspected and documented in a log book on a monthly basis, particularly where corrosive substances are involved.

5 Raw material and Waste Minimisation

- 5.1 The operator shall:
 - Maintain an inventory covering the principal types of raw materials used. The inventory shall be submitted to the regulator annually.
 - Review alternatives annually for the principal types of raw materials used with regard to their environmental impact. Notably this shall include, solvents, paints, cleaning products and water use.
 - Maintain records to demonstrate that quality and/or environmental control procedures are used to minimise any potential adverse environmental impact of the use or storage of raw materials.
 - Undertake to complete any long-term studies needed into the less polluting options and make any material substitutions identified within the review period. Such studies will be identified as and when required by the regulator and requested in writing.
- 5.2 The operator shall carry out a waste minimisation audit within 18 months of issue of this permit and thereafter at the written request of the regulator. The methodology used and an action plan for optimising the use of raw materials shall be submitted to the regulator within 2 months of completion of the audit. Specific improvements resulting from the recommendations of audits shall be carried out within a timescale approved by the regulator.
- 5.3 The operator shall, within 4 weeks of submitting the information required by condition 5.2, also calculate the following indicators of waste minimisation performance expressed as a ratio:
 - (i) tonnes of VOC consumed v tonnes of good product
 - (ii) tonnes of paint consumed v tonnes of good product
 - (iii) tonnes of wastes produced v tonnes of good product
 - (iv) volume of 'clean' water consumed v tonnes good product

Where any of the above parameters are not specifically monitored, arrangements shall be made to undertake monitoring of the use of the material within 8 weeks of issue of this permit.

- 5.4 Substances or mixture that contain VOCs assigned, or which need to carry, the hazard statement H340, H341, H350, H350i, H351, H360D or H360F, where the mass flow of the sum of the compounds causing the labelling is greater than or equal to 10g/h are not permitted to be used in the activity.
- 5.5 The operator shall carry out an annual water efficiency audit, to be supplied to the regulator within 24 months of issue of this permit. The audit shall be reviewed at least every 4 years from submission.
- 5.5.1 The operator shall measure the monthly volume of mains water used in the activity. All measurements should be recorded and the records held on site.

- 5.6 The operator shall:
 - record the quantity, nature, origin and where relevant, the destination, frequency of collection, mode of transport and treatment method of any waste which is disposed of or recovered off-site.
 - ensure that waste storage areas are clearly marked and signed, and that containers are clearly labelled.
 - ensure that appropriate storage facilities are provided for substances that are flammable, sensitive to heat or light etc, and that incompatible waste types are kept separate.
 - ensure that containers are stored with lids, caps and valves secured and in place (this also applies to emptied containers).
 - ensure that procedures are in place to deal with damaged or leaking containers.
 - segregate waste wherever practicable.
 - identify the disposal route for all waste, which shall be as close to the point of production as possible.
 - store dusty wastes in closed containers and handle in a manner that avoids emissions.
 - store all waste wipes or solvent contaminated material in lidded containers prior to collection for disposal.
- 5.7 Waste gunwash shall be collected for recycling off site.
- 5.8 The operator shall conduct an annual review to demonstrate that the best environmental options are being used for dealing with all waste streams.
- 5.9 At least once every 2 years, the operator shall investigate potential markets for the recovery/re-use of wastes that are currently disposed of in landfill.

6 Energy Efficiency

- 6.1 The operator shall produce an annual report on the energy consumption of the installation.
- 6.1.1 The report shall monitor energy usage for the installation and identify target areas for reduction and shall be updated annually. ("Sankey" diagrams and energy balances would be useful as aids).
- 6.1.2 The report shall consider heat recovery systems as part of the RTO operation.
- 6.2 The operator shall ensure that all plant is operated and maintained to optimise the use and minimise the loss of energy.
- 6.3 In respect of energy efficiency, the operator shall meet the requirements of either:
 - (i) Climate Change Agreement (CCA), or
 - (ii) Direct Participation Agreement (DPA)

7 Prevention of Environmental Accidents

- 7.1 The operator shall produce an accident management plan by 1 July 2017. The plan shall identify the hazards, assess the risks and identify the measures required to reduce the risk of potential events or failures that might lead to an environmental impact.
- 7.1.1 The plan shall identify:
 - the actions to be taken to minimise these potential occurrences; and
 - the actions to deal with such occurrences so as to limit their consequences
- 7.2 In the case of abnormal emissions arising from an accident, such as a spillage for example, the operator shall:
 - investigate immediately and undertake remedial action as soon as practicable
 - promptly record the events and actions taken
 - ensure the regulator is made aware, as soon as practicable
- 7.3 In the event of an accident occurring, the operator shall follow the prescribed instructions within the accident management plan. In an emergency situation it shall be sufficient to demonstrate that any divergence from the plan was necessary either:
 - in the interests of health and safety
 - as a result of instructions from a suitably qualified member of the emergency services (fire, ambulance, police)
 - as a result of instructions from a duly authorised officer of the Health and Safety Executive
 - as a result of instructions from the regulator
- 7.4 The accident management plan shall be reviewed annually and be submitted to the regulator upon written request.

8 SED compliance

- 8.1 The operator shall comply with the Total Emission Limit Value compliance route to meet the SED requirements.
- 8.2 To comply with the Total Emission Limit Value the operator shall demonstrate that the Total Emission from the activity (expressed in solvent emissions per unit of product) is less than or equal to the Total Emission Limit Value.
- 8.3 A Solvent Management Plan, to assess the solvents inputs and outputs of the activity, shall be produced and updated annually by the operator in accordance with the definitions in Appendix 5. The plan will include an inventory of solvent use within the installation.
- 8.4 The total emissions of VOCs, which are not destroyed by the use of the RTO abatement equipment, shall not exceed 20% of the solvent inputs, as determined from the Solvent Management Plan and calculated in accordance with Appendix 5. Fugitive emissions of solvent include those discharged to sewer as well as emissions to air.

9 General Conditions

- 9.1 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.
- 9.2 Effective operational and maintenance systems shall be employed on all aspects of the installation where failure could impact on the environment. As a minimum there shall be:
 - documented operational control procedures
 - a documented preventative maintenance schedule, covering all plant where failure could lead to impact on the environment, including major 'non-productive' items such as tanks, pipe-work, retaining walls, bunds, ducts and filters. This shall be reviewed and updated annually
 - a documented cleaning schedule covering all aspects of good housekeeping
 - documented procedures for monitoring of emissions to include duration, frequency, type and appropriate reference standard where applicable

Operation and maintenance procedures shall be updated as necessary to account for changes in working practice or plant and machinery, chemical or procedures used. If the procedures change, a copy of the new procedures shall be kept available for inspection and submitted to the regulating authority upon request.

In terms of emergency maintenance, spares and consumables, in particular, those subject to continual wear shall be held on site or shall be available at short notice so that plant breakdowns can be rectified rapidly.

- 9.3 Relevant staff at all levels shall receive the necessary formal training and instruction in their duties relating to control of the process and emissions to the environment. Such training shall include as a minimum, the following:
 - awareness of the regulatory implications of the permit
 - awareness of all potential environmental impacts under normal and abnormal circumstances
 - awareness of the procedures for dealing with a breach of the permit conditions
 - prevention of accidental emissions and action to be taken when accidental emissions occur
 - awareness of all operating procedures

Records shall be kept which detail all relevant training provided to staff. The records shall be made available for inspection by an authorised officer from the regulating authority. Records of training shall be retained for two years.

- 9.4 The operator shall appoint a suitably competent person to liaise with the regulator and members of the public in the event of a complaint. The designated person shall be notified to the regulator within 14 days of issue of the permit and, where that person changes, within 14 days of any change. The requirement to have a competent person liaising with the regulator does not reduce the requirement to adequately train staff in terms of environmental awareness.
- 9.5 If there is any intention to change any aspect of the installation from the description of the process at the beginning of this permit or the information as provided within the application, or any other aspect which may affect the substances or concentration of substances being emitted to the environment, the regulator shall be notified of the proposed changes at least 4 weeks before the changes take place.
- 9.6 Any malfunction which results in emissions to the environment which are likely to cause an adverse effect on the local community or neighbouring premises shall be reported to the regulator immediately, and a record shall be made of the incident within the logbook.
- 9.7 A logbook shall be established and maintained which records all information required to be kept by conditions of this permit, this includes details of procedures, results of sampling, record of all visual and olfactory observations, maintenance records.
- 9.7.1 The information shall be recorded in a form to be agreed with the regulator but can include both electronic and hard copies, and shall be retained for at least two years. This information shall be made available for inspection by the Regulator on request. Where information is updated or modified, copies of the modified information shall replace those held within the logbook.

10 Decommissioning the Installation

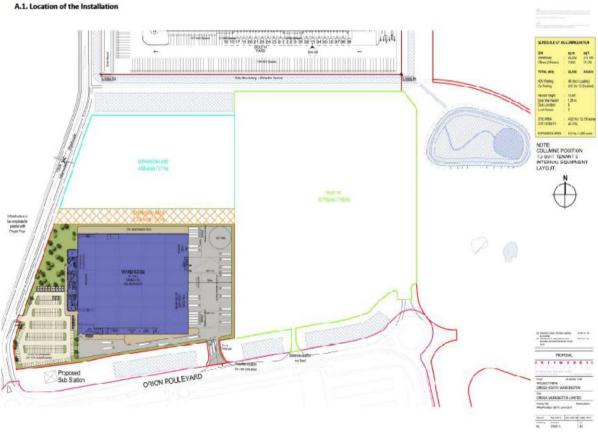
10.1 A site decommissioning plan shall be submitted to the regulator within 12 months of issue of this permit. The plan shall be prepared and updated as may be necessary due to changes in plant, equipment or materials used within the installation. In any event the plan shall be reviewed and resubmitted every 3 years from the date of the first submission.

The plan shall include:

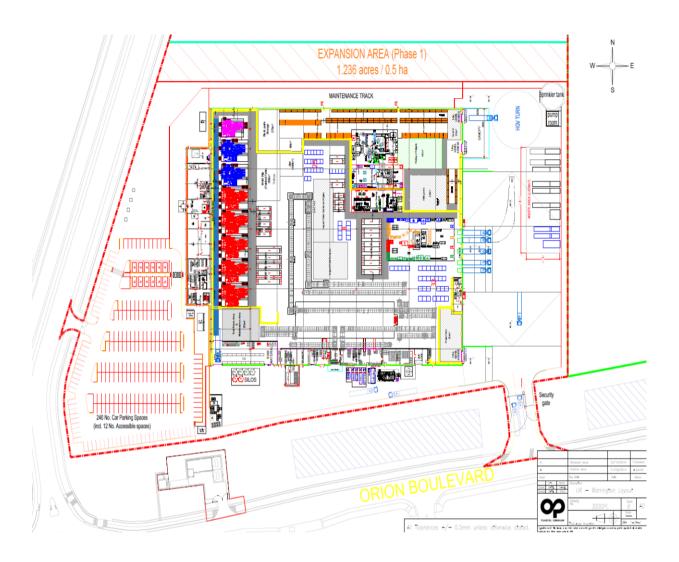
- A complete methodology to be adopted in the decommissioning of the installation, to include:
 - 1) Removal of key plant or machinery likely to be contaminated
 - 2) Removal of contamination associated with the plant and machinery
 - 3) Minimising any contamination from the installation buildings during demolition
 - 4) Removal of contaminated subsurface infrastructure as may be necessary
- An assessment of the impact of decommissioning on the nearest sensitive receptors.
- The preparation of a ground contamination report to include the testing of soil within the decommissioned installation to demonstrate contamination levels are no greater than those submitted in the operators' application site reports ref Document 16.

APPENDIX 1: Site location

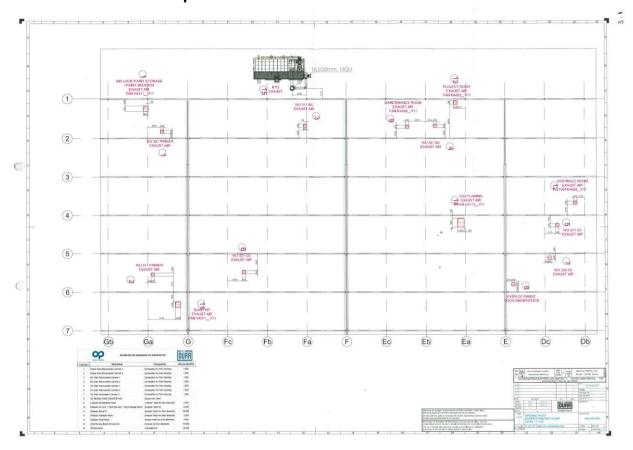


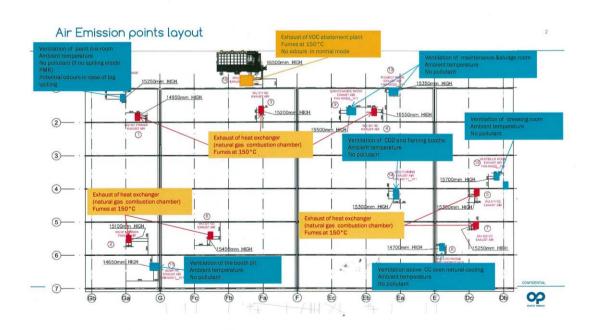


APPENDIX 2: Installation layout



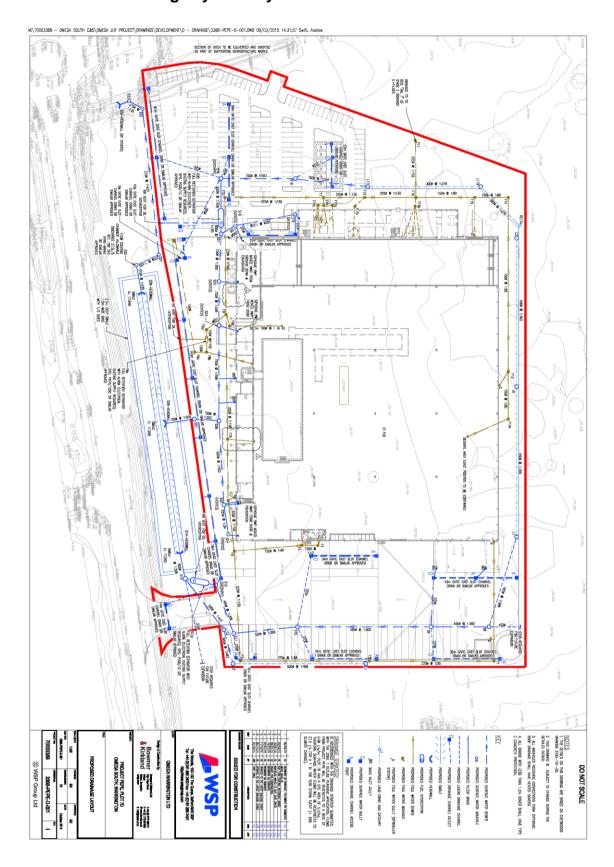
APPENDIX 3: Emission points to air



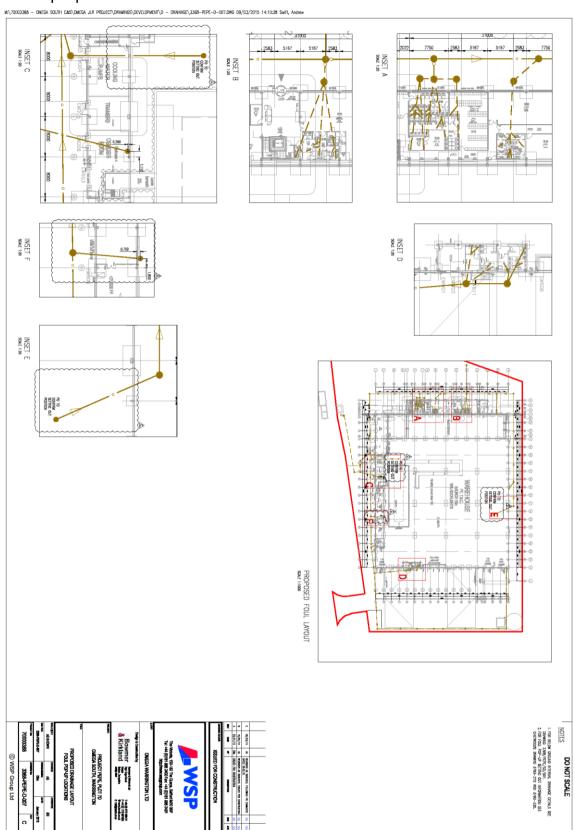


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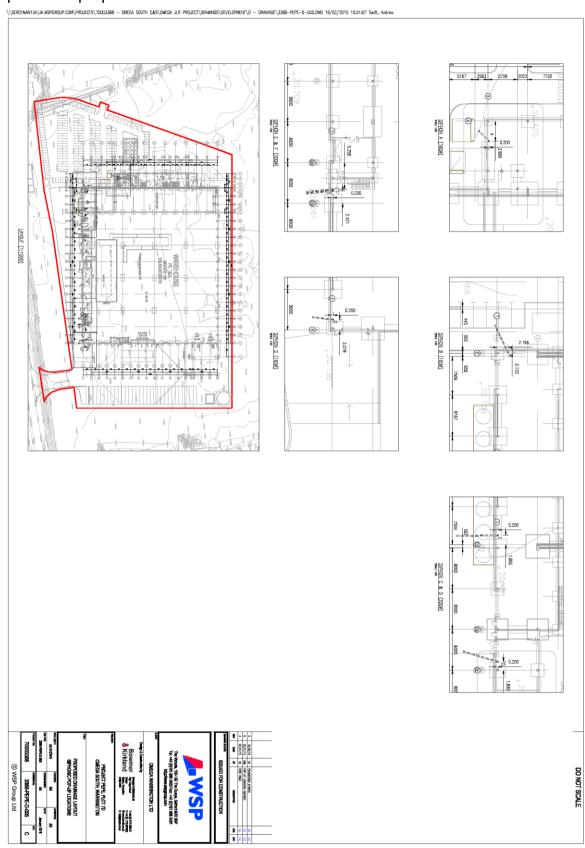
APPENDIX 4: Drainage system layout



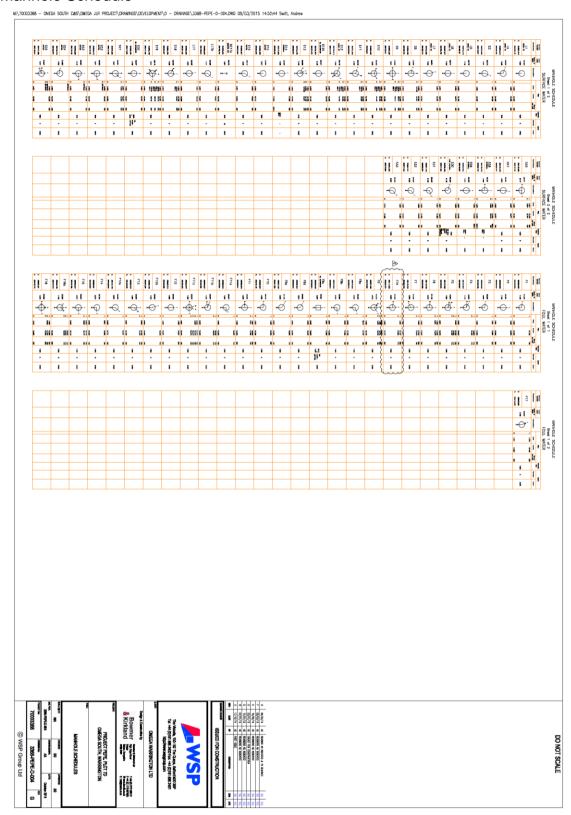
Foul Pop Up Locations



Siphonic Pop-up locations



Manhole Schedule



APPENDIX 5: Solvent inventory calculation

Solvent Management Plan

Definitions:

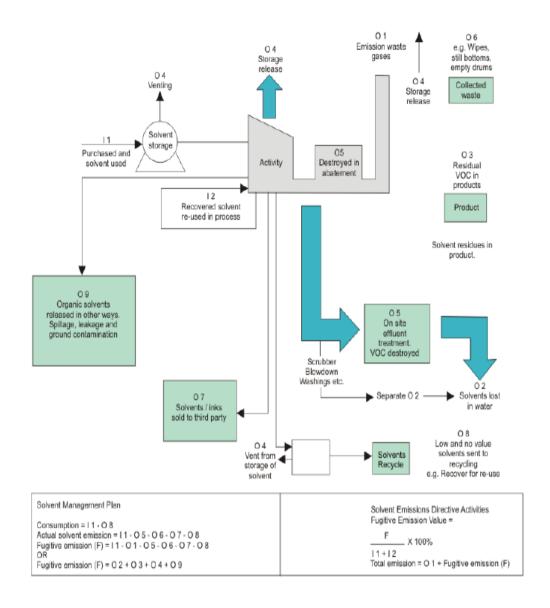
The following definitions provide a framework for the mass balance calculations used in determining compliance with the requirements of the Solvent Management Plan.

Inputs of Organic Solvent in the time frame over which the mass balance is being calculated (I)

- The quantity of organic solvents, or their quantity in mixtures purchased which are used as input into the process/activity (including cleaning solvents).
- 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.)

Outputs of Organic Solvents in the time frame over which the mass balance is being calculated (O)

- O1 Emissions in waste gases
- O2 Organic solvents lost in water, if appropriate taking into account waste water treatment when calculating O5
- 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.
- Organic solvents and/or organic compounds lost due to chemical or physical reactions. (including for example those which are destroyed, e.g. by thermal oxidation or other waste gas or waste water treatments, or captured, e.g. by adsorption, as long as they are not counted under O6, O7 or O8).
- Of Organic solvents contained in collected waste.
- Organic solvents, or organic solvents contained in mixtures, which are sold or are intended to be sold as a commercially valuable product.
- 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.



Determination of Consumption

Consumption (C): means the total input of organic solvents into an installation in the last calendar year, or previous 12-month period (I1), less any VOC that are recovered for reuse (O8).

The total mass of Solvent Inputs and Outputs must be determined and submitted to the regulator annually, preferably to coincide with the operators stocktaking requirements, in the form of a mass balance in order to determine the annual actual consumption of solvent

Where: C= I1- O8

11 Total quantity of organic solvents, or their quantity in mixtures purchased which are used as input into the process/activity

- A calculation of the purchased Solvent Input (**I1**) to the process/activity, is carried out by recording:
- mass of solvent contained in inks, coatings, diluents and cleaners in the initial stock (IS) at the start of the accounting period; plus
- mass of solvent contained in inks, coatings, diluents and cleaners in the purchased stock (PS) during the accounting period; minus
- mass of solvent contained in inks, coatings, diluents and cleaners in the final stock (FS) at the end of the accounting period.

Total Solvent Input (I1) = IS + PS - FS

Determination fugitive VOC emissions

To demonstrate compliance with fugitive emission values the operator must determine the fugitive emissions (F) from the installation using the following:

- F = I1 -O1 -O5 -O6 -O7 -O8 or
- F=O2+O3+O4+O9

This quantity can be determined by direct measurement of the quantities. Alternatively, an equivalent calculation can be made by other means, for instance by using the capture efficiency of the process.

The Fugitive Emission value as a percentage of the Solvent Input (I) is determined by Fugitive Emission Value = 100 x F/I

Where the Solvent Input (I)= I1+ I2 (determined as part of the Solvent Management Plan)

Fugitive emission values must be determined for each installation, once completed, it need not be repeated until the equipment is modified.

Determination of compliance with the Total Emission Limit Value (20%)

Compliance is achieved if the Total Emission from the activity expressed in solvent emissions per unit of product, or otherwise as stated is equal to or less than the Total Emission Limit Value,

Where Total Emission is equal to the mass of solvent released in waste gases plus the fugitive emissions determined above

Total Emission = O1 + Fugitive (See above)

EXPLANATORY NOTES

This permit is issued under the Environmental Permitting (England and Wales) Regulations 2010 (as amended) to apply an integrated environmental approach to the regulation of certain prescribed activities. The permit sets out a series of conditions that must be complied with as a minimum for the protection of the environment as a whole. This includes emissions to air, water and land as well as minimising waste and optimising the use of raw materials and energy.

Variations to the Permit

The Permit may be varied in the future. If at any time the activity, or any aspect of the activity, regulated by the Permit conditions changes such that the conditions no longer reflect the activity and require alteration, Warrington Borough Council should be contacted.

Surrender of the Permit

Where an Operator intends to cease the operation of an installation (in whole or in part) Warrington Borough Council should be informed in writing. Such information must include the information specified within the EP Regulations.

Transfer in whole or in part of the Permit

Before the Permit can be wholly or partially transferred to another person, a joint application to transfer the Permit must be made by both the existing and proposed holders.

Confidentiality

The Permit requires the Operator to provide information to Warrington Borough Council. The information will be placed on a public register in accordance with the requirements of the EP Regulations. If the Operator considers that any information provided is commercially confidential, it may apply, with clear and precise reasons, to have such information withheld from the register.

Responsibility under workplace health and safety legislation

This Permit is given in relation to the requirements of the EP Regulations. It must not be taken to replace any responsibility you may have under workplace health and safety legislation.

Best Available Techniques

You should note that Regulation 106(1) of the EP Regulations provides that also in relation to any aspect of the activity not regulated by the Permit conditions, the best available techniques (BAT) shall be used.

"Best Available Techniques" (BAT) is described as being the most effective and advanced stage in the development of activities and their methods of operation, including management and training, which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole; and for the purpose of this definition —

- (a) "available techniques" means those techniques which have been developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the cost and advantages, whether or not the techniques are used or produced inside the United Kingdom, as long as they are reasonably accessible to the operator;
- (b) "best" means, in relation to techniques, the most effective in achieving a high general level of protection of the environment as a whole;
- (c) "techniques" includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

Appeals

Anyone who is aggrieved by the conditions attached to a Permit can appeal to the Secretary of State for the Environment. Appeals must be received no later than:

- a) 6 months from the date of the decision (normally the date on the bottom of the Permit) for refusal to grant a Permit; refusal of an application for a variation notice; if the operator disagrees with the conditions imposed in the Permit; refusal of an application to transfer a Permit; or refusal of an application to surrender a Permit.
- b) Before the date on which a revocation notice takes effect.
- c) 2 months from the date of a variation notice; enforcement notice; or suspension notice.

Appeals relating to processes in England and Wales should be sent to the Planning Inspectorate at the following address:-

The Planning Inspectorate
Environmental Pollution Administration
Room 4/19 Eagle Wing
2 The Square
Temple Quay
Bristol
BS1 6PN

Please Note

- an appeal will <u>not</u> suspend the effect of the conditions appealed against; the conditions must still be complied with.
- In determining an appeal against one or more conditions, the Act allows the Secretary of State in addition to quash any of the other conditions not subject to the appeal and to direct the Local Authority either to vary any of these conditions or to add new conditions.