


S. Norton & Co Ltd. Procedure					
	<u>Title</u>	<u>Procedure No:</u>	<u>Process Owner:</u>	<u>Revision:</u>	<u>Date</u>
	Aerial Emissions Risk Assessment and Management Plan Barking Site	EP-4.4.6-02	Environment Manager	2	23/05/23

1.0 Purpose

The term '**aerial emissions**' hereinafter, will be used when referring to dust/ debris, of various fractions from both point/ fugitive sources that cause/has the potential to cause a nuisance to site staff or sensitive receptors in the surrounding area.

This procedure outlines the various abatement/ control techniques used by S. Norton & Co Ltd at its Barking site to mitigate aerial emissions from site operations, ensuring as far as practicably possible that suitable abatement techniques are implemented in line with industry best practices with reference to regulatory guidance where applicable. The procedure also defines how aerial emissions are monitored, as well as the corrective action process followed if an issue is identified through internal/ external inspections.

The details of this procedure furthermore demonstrate how S. Norton & Co Ltd. sets out the control measures used to manage its environmental aspects as defined within the **Aspects & Impacts Register**. Environmental Risk Assessments (ERA) are used to appraise the risk of individual activities, in relation to aerial emissions.

1.1 Process Users

- All operational sites regulated by an Environmental Permit

1.2 Element of Standard

- ISO 14001:2004 – 4.4.6 – Operational Control

1.3 Procedure - General Rules and Responsibilities

1.3.1 Environment Manager is responsible for ensuring that:

- company procedures relating to the management of aerial emissions are defined and have been issued to site managers/ person in charge (PIC) for implementation, as necessary
- appropriate advice and guidance is given to site managers/ PIC in support of this procedure
- training and resources are made available to operational sites, in line with procedural requirements
- monitoring of aerial emissions is conducted as necessary companywide
- periodic inspections take place to ensure that aerial emissions procedures are being correctly implemented on site; verifying compliance through observation and gathering of evidence

1.3.2 Site Manager/ Person In Charge (PIC) is responsible for ensuring that:

- company procedures relating to the management and control of aerial emissions are implemented & effective, including any site specific agreements
- the correct abatement equipment is deployed and maintained on-site to ensure, where necessary, that aerial emissions are suitably controlled, in conjunction with advice given by the company's Environmental Manager, if requested
- the day to day management of aerial emissions is carried out, including the enforcement of good site practices, to prevent/minimise nuisance to surrounding sensitive receptors
- the appropriate corrective action is taken, if issues with aerial emissions are identified, in conjunction with advice given by the company's Environment Manager, if requested
- the relevant site staff attend site specific monthly review meetings – to discuss when necessary, aerial emissions management on site

1.3.3 Health & Safety and Environment Representative is responsible for:

- assisting/ supporting the site manager with the day to day management of aerial emissions,
- completing the relevant inspection checksheets for the site and communicating feedback to the site manager/ PIC
- assisting with aerial emissions monitoring exercises at their nominated site, as requested by the Environment Manager

2.0 Aerial Emissions Risk Assessment

2.1 No point source aerial emissions are expected at the Barking site. The majority of aerial emissions that may arise from typical site arrangements are expected to be attributed to fugitive sources.

2.2 Table 2 gives an outline of the potential hazards posed, the receptors and pathways involved and the management and assessment of the identified risks. More detail is included in the Dust Management Plan with regards to the monitoring and mitigation of the associated risks.

2.3 The probability of exposure is the likelihood of the receptors being exposed to the hazard and is defined as being low, medium or high which are summarized in Table 1 below:

Table 1 Risk Levels

Risk Level	Quantification
Low	Exposure unlikely – barriers in place to mitigate against exposure
Medium	Exposure fairly likely – barriers to exposure less controllable
High	Exposure likely – few barriers to direct exposure

Table 2 Aerial Emissions Risk Assessment

What do you do that can harm and what could be harmed?			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
What has the potential to cause harm?	What is at risk? What do I want to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk?	How likely is the contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Dust from vehicle movements on site Unloading of material and transfer to the stockpile.	Neighbouring properties within 2 km including: George Carey Church of England School, Cannon Retail Park, Creekmouth Industrial Area, Galleons Drive Housing Estate, Gemini Business Park. Statutory and non-statutory local Wildlife sites within 2km of the site	Air	<ul style="list-style-type: none"> • Water suppression systems • Site Surface Sweeping • Good site practices e.g Speed limits on site, maintenance of dust abatement equipment, training, regular checks and monitoring, positioning of stockpiles 	Low	Low	Low - Mitigation measures in place lowers the risk of airborne emissions generated to an absolute minimum.
Dust from stockpiling of material	Neighbouring properties within 2 km including: George Carey Church of England School, Cannon Retail Park, Creekmouth Industrial Area, Galleons Drive Housing Estate, Gemini Business Park. Statutory and non-statutory local Wildlife sites within 2km of the site	Air	<ul style="list-style-type: none"> • Water suppression systems • Site Surface Sweeping • Good site practices e.g maintenance of dust abatement equipment, training, regular checks and monitoring, positioning of stockpiles 	Low	Low	Low
Dust from loading vessels	Neighbouring properties within 2 km including: George Carey Church of England School, Cannon Retail Park, Creekmouth Industrial Area, Galleons Drive Housing Estate, Gemini Business Park. Statutory and non-statutory local Wildlife sites within 2km of the site	Air	<ul style="list-style-type: none"> • Water suppression systems • Soft loading of vessels using specialist mobile plant • Preparation of dockside prior to vessel arrival to ensure minimal dust released through efficient location of stockpiles • Good site practices e.g maintenance of dust abatement equipment, training, regular checks and monitoring, positioning of stockpiles 	Low	Low	Low

3.0 Aerial Emissions Management Plan

The below details the measures put in place to mitigate against the risk posed by fugitive aerial emissions at the Barking Site. The risk of aerial emissions causing an adverse environmental impact and/ or being harmful to human health is considered low.

3.1 Sources of Fugitive Aerial Emissions

The potential sources of aerial emissions arising from operations on site include:

- Delivery of material
- On-site vehicle movements
- Unloading of material from vehicles
- Transferring material to stockpiles
- Loading of vessels

The site operations and associated forms and work procedures listed at the end of this document are designed to minimize any aerial emissions emanating from the site. This is done to ensure that site operations do not constitute a nuisance to local sensitive receptors.

3.2 Abatement of Fugitive Aerial Emissions - Control Measures

Control measures to limit potential fugitive aerial emissions at the Barking site will be implemented in line with industry best practices with reference to regulatory guidance where applicable. Typical control measures used on the site will include but may not be limited to:

3.2.1 Physical Containment

3.2.1.1 Steel plating

The application of steel plating is sought where aerial emissions can be attributed to a specific area within a process. Typical applications include bays which receive dusty material fractions or waste types.

Use of physical containment is often the most simple and effective technique for controlling aerial emissions, it is the company's preference where practicable.

3.2.2 Water suppression systems

3.2.2.1 Rain Guns

Mobile rain guns are fed off the sites fresh water feed. The rain guns are used to manage fugitive emissions which may occur over large areas, such as sites surfaces or stockpiles. The water spray is atomised by a splitter which cloaks the area where the dust/ debris is becoming airborne, with suspended water droplets. The water droplets contact the airborne dust/ debris; resulting in particle agglomeration, causing the combined particles to gather sufficient mass and fall back to the material stockpile or site surface.

The rain guns are effective at suppressing dust/ debris which has become airborne. The rain guns are used by trained site operatives, and are subject to a routine maintenance inspection.



Figure 1 A rain gun located on top of the shear

3.2.3 Site Surface Sweeping

Every site is equipped with a site surface sweeping unit, typically this can be attached to a Fork Lift Truck (FLT) or if a larger unit is needed, a Wheel Loader is used. The sweeper unit physically removes dust from the site surface and is equipped with a water injection system to minimise dust generated during sweeping activities. The unit is highly effective and allows for good flexibility as its use and application can be controlled by site staff.

Figure 3 Typical surface sweeping unit attached to FLT

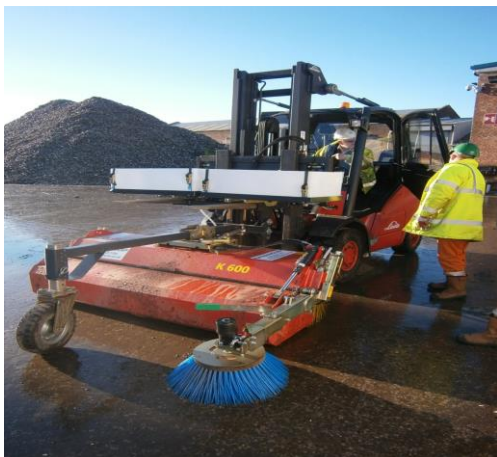


Figure 4 Site surface post sweep

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3.3 Abatement of Fugitive Aerial Emissions – Operational Techniques

Potential aerial emissions will be managed so that they stay within the site boundary. If any aerial emissions are detected through visual observations or otherwise as leaving the site boundary, immediate action will be taken to stop the operation giving rise to such emissions.

3.3.1 Good site practices

- Speed limits are in place and are enforced to minimise aerial emissions arising from the suspension of surface dusts as a result of vehicular movements across site surfaces. Signage is commonly used to communicate site speed limits
- The placement of material (when possible) to minimise aerial emissions by reducing the agitation of potentially dusty material types, such as unprocessed material; which has not yet been subject to in-process extraction, and other dusty waste fractions (typically shredder residues)

- Good housekeeping, such as the correct segregation of materials, regular and effective sweeping/ cleaning regimes for site surfaces and regular maintenance of mobile/ static plant including dust abatement equipment
- Keeping stockpiles flush with material transfer points; where practicable, reducing the exposure of the material to the elements, minimising the likelihood of dust/ debris becoming airborne through agitation

Good site practices are included, where necessary, within written procedures and work instructions and may be specific to a site, a process, a work area and may also be detailed within employee roles and responsibilities. Company bulletins may be used to notify operators of new site practices or serve as a reminder. Where applicable, signed acknowledgement records are kept for each operator as proof of understanding and communication. If good site practices are not adhered to, appropriate disciplinary action may be taken.

3.3.2 Specialist Mobile Plant

High rise cranes are used on our dockside facilities to enable the soft loading of vessels. Soft loading is beneficial in many ways:

- it reduces damage to vessels
- minimises noise and aerial emissions by eliminating the need for dropping material from height into the ships hold
- the cranes are sufficient to allow for the placement of material on high level stockpiles, eliminating the need to throw material which can cause issues with noise and aerial emissions

3.3.3 Ship loading

During ship loading a number of control measures are implemented to mitigate aerial emissions:

- High Rise cranes are used to soft load vessels – eliminating the need to drop material into the ships hold thus reducing the agitation of material and creation of airborne dusts
- Rain guns and/or fogging cannons can be used to capture any airborne particulates that arise from the movement of material
- Monitoring of aerial emissions (subjective assessment only), making adjustments to activities if nuisance issues are anticipated
- Completion of **pre-ship checksheet** by the responsible person, to ensure that rain guns/fogging cannons are in place prior to loading
- Preparation of the dockside and stockpiles, prior to the vessel reaching the berth, minimises material handling, thus reducing aerial emissions likely to cause nuisance in the local area

3.3.4 Inspections

Inspections are carried out, at a minimum, to meet the requirements of each site's Environmental Permit and any other arrangements formally agreed with the Environment Agency. Inspections are conducted on two levels, Internal/ External and can take many forms.

3.3.4.1 Internal Inspections

These take the form of regular checks and inspections and periodic internal audits which take place on an annual basis.

- **Checks and inspections**

- **Environmental Compliance Inspection Report**
- **Weekly Dust Abatement Checksheet** - Any inspection carried out by the Health & Safety and Environment Representative would be based on a subjective assessment at the time/date recorded. Training is provided to each representative to enable them to make appropriate judgments and recommend/ seek suitable corrective action as required.
- **Daily Dust Inspection Checksheet**
- **Mobile/Static Plant Daily Checksheet**
- **Maintenance Inspection Schedules**

- **Internal Audits**

When applicable, internal audits are conducted as part of our compliance to ISO 14001. Internal audits are a systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which our environmental management system and applicable legislative criteria are being fulfilled. The internal audit process would record evidence which is both qualitative and quantitative and would document instances/ areas of non-compliance, relating to aerial emissions, which would require action and timely closure. More detail about the internal audit process can be found within the **Internal Audit Procedure**.

3.3.4.2 External Inspections

External inspections of aerial emissions may be conducted by the Environment Agency during specific events, or may occur during general site inspections. A Compliance Assessment Report (CAR) will be produced after each inspection (site visit) by the Environment Agency, any recommendations or permit breaches will be detailed on the CAR and subsequent remedial actions will be taken by S. Norton as appropriate.

The third party certification body, which certifies our Environmental Management System to ISO 14001, conducts inspections on all aspects of our Environmental Management System inclusive of aerial emission management procedures. The external audit process collates evidence which is both qualitative and quantitative and identifies instances/ areas of non-compliance, which would require action and timely closure. Verification of closure is sought by the third party certification body, during surveillance visits and re-certification audits, which occur annually over a three year period.

3.3.5 Corrective Action

Corrective action is taken if areas of non-compliance are identified during internal and external inspections. Additionally, aerial emission monitoring exercises may also require corrective action dependent on the data gathered. Corrective action is taken in accordance with the **Corrective & Preventive Action Procedure**.

3.3.6 Complaints

All complaints are recorded on a complaints tracker. Environmental complaints, inclusive of those pertaining to aerial emissions, will be directed to the Environment Manager for action, follow-up and closure. The complaints handling process is defined within the **Customer Concerns & Satisfaction Procedure**. Records of all environmental complaints are retained for each site and are available for inspection by the Environment Agency at any given time.

3.3.7 Quantitative Monitoring

Quantitative dust monitoring may be undertaken using specialist equipment owned and maintained by S. Norton or its stakeholders. S. Norton will send samples for analysis, for impartiality, to an independent company/ laboratory.

Sampling suites are decided and agreed on the merit of each event, however a typical sample analysis will conclude gravimetric values (depositional), directional data, soiling rates (% coverage) and microscopy for characterisation of particulates. Dust monitors may also be deployed at potential receptors in the locality of a site, this will be done subject to the correct authority being granted by the receptor. Reports are typically written in-house once analysis results have been confirmed; all reports use the relevant Environment Agency guidance, for reference to prescribed limits.

Where applicable, dust monitoring analysis results will be sent to the Environment Agency at a time scale defined within each sites Environmental Permit, or as requested.

3.3.8 Management Controls

Management controls are implemented by the:

- setting of key objectives and targets
- use of defined management procedures, supported by the training and education of site staff, in the correct use and maintenance of abatement equipment and agreed good site practices.

The suitability and effectiveness of management procedures relating to aerial emissions are closely monitored via internal/ external inspections.

Performance against objectives and targets is monitored as part of the company's management review process, as defined within the **Management Review Procedure**.

3.3.9 Document & Record Control

A defined **Document Control Procedure** ensures accuracy and relevance of all documentation utilised by S. Norton, due to the application of document control markings i.e. revision numbers, identification numbers etc. and a defined document change management system. S. Norton also uses a defined **Control of Records Procedure**, to ensure; internal & legal requirements for the storage and maintenance of records are fulfilled, inclusive of those which may be specifically required for aerial emissions management.

3.3.10 Aspect & Impacts Review

The companies **Aspects & Impacts Register** is maintained by the Environment Manager. This Register is broken down into process areas/ activities, each area/ activity has an Environmental Risk Assessment (ERA), this risk assessment is used to determine a score for each activity/ process. The aspect categories are defined on the aspects & impacts register and are inclusive of aerial emissions, therefore the impact of aerial emissions, for each process area/activity, are considered and scored.

The scoring methodology for the ERAs is contained within the **Aspects & Impacts Procedure**; those scores which are identified as significant are considered during improvement projects, performance deliverables and policy reviews.

3.3.11 Training

A training matrix is maintained within the companies Integrated Management System (IMS). Training requirements are reviewed as specified within the **Training Procedure**; this ensures that staff involved in the management & control of aerial emissions are/ remain appropriately trained.

4.0 References

- Aspects & Impacts Procedure EP – 4.3-01
- Weekly Dust Abatement Equipment Checksheet 4.4.6-01-25
- Weekly Yard Environmental Inspection Checksheet 4.4.6-01-27
- Control Of Records Procedure QP – 4.2-02
- Corrective & Preventive Action Procedure QP – 8.5-02.
- Customer Concerns & Satisfaction QP – 8.2-02,
- Daily Mobile/Static Plant Daily Checksheet - QWF-035-01
- Document Control Procedure QP – 4.2-01
- Environmental Compliance Inspection Report EF-4.5-01
- Identification of Legal & Other Requirements & Compliance Evaluation EP-4.3.2-01
- Internal Audit Procedure QP – 8.2-01
- Maintenance Inspection Schedules
- Training Procedure QP 6.2-01

5.0 List of Records

The following records are maintained in accordance with the **Control of Records Procedure QP-4.2-02**.

- Completed environmental compliance inspection reports
- Completed environmental inspection checksheets
- Completed maintenance checksheets/schedules
- Relevant training records
- Results/ reports from quantitative dust monitoring events