The offence was a breach of s34(1)(a) of the Environmental Protection Act 1990 (duty of care as respects waste).

- Mixed commercial waste (glass, metal etc) was disposed of at two locations in Colchester in March 2017 (being locations where no Environmental Permit or relevant Exemption was held which would allow for lawful disposal of the waste).
- The waste was traced back to The Nurseries, Great Horkesley, Essex, CO64AJ.
- S Walsh & Sons accepted responsibility for clearing the site (The Nurseries) but subcontracted the job to Calahan's Cleaning Services.
- The EA prosecuted S Walsh & Sons (as well as Calahan's) for failure to exercise the statutory duty of care over the waste (breach of s34(1)(a) of the Environmental Protection Act 1990) resulting in the waste being illegally deposited.

History:

Walsh as a gesture of goodwill to the landowner agreed to remove two loads of waste from the demolition of greenhouses on a cost + basis. Walsh asked Calahans to conduct the work (Walsh had a long standing relationship of using Calahans) Unknown to Walsh and without instruction, Calahans sub-contracted the work and failed to secure duty of care paperwork for the transfer. The two loads were unloaded into a farmer's field. Walsh deployed resources and removed the waste to permitted facilities the same day.

Actions to prevent recurrence:

Walsh no longer use Calahan's as a subcontractor.

325a – duty of care was added to the management system as part of the company response to the incident occurring.

Role specific training has been rolled out to all staff with a responsibility for waste operations and contracting. This includes but is not limited to site managers, weighbridge operators, drivers, loading operatives and contract managers.

Walsh contracts include a duty of care section ensuring all parties understand the requirements before any waste is removed from any Walsh job.

WAMITAB

WASTE MANAGEMENT INDUSTRY TRAINING AND ADVISORY BOARD

CERTIFICATE No: 0663

CERTIFICATE OF TECHNICAL COMPETENCE

This Certificate confirms that

Thomas Gareth Pugh

has demonstrated the standard of technical competence required for the management of a facility of the type set out below

Facility Type:

Managing Treatment Operations :

Clinical or Special Waste (Level 4) - TMS4

WAMITAB INCORPORATED 1989

Authorising Signatures:

Director General _____

Director _____

Date of issue: 14 December 1998

WAMITAB

WASTE MANAGEMENT INDUSTRY TRAINING AND ADVISORY BOARD

CERTIFICATE No: 4171

CERTIFICATE OF TECHNICAL COMPETENCE

This Certificate confirms that

Thomas Gareth Pugh

has demonstrated the standard of technical competence required for the management of a facility of the type set out below

Facility Type:

Managing Landfill Operations :

Special Waste (Level 4) - LS4

Authorising Signatures:

Director General

Director

Date of issue: 10 January 2002

Continuing Competence Certificate

This certificate confirms that

Thomas Pugh

Has met the relevant requirements of the Continuing Competence scheme for the following award(s) which will remain current for two years from 20/07/2020

LH	Landfill - Hazardous Waste
TMH	Treatment - Hazardous Waste

Expiry Date: 20/07/2022

Verification date: 29/06/2020

Authorised:

WAMITAB Chief Executive Officer

Learner ID: 9198

Certificate No.: 5167015

Date of Issue: 20/07/2020

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

00149842

Management System Summary:

We are currently updating our management systems to be ISO compliant. The mobile treatment permit will be operated to the new ISO compliant management system. Each deployment will draw from the relevant policies with a site specific document created alongside the deployment form based on the activity required on that site to ensure all pollution risks are identified and eliminated or where that is not possible minimised. A copy of the site specific system will be available on site and all staff trained in the sections relevant to their roles.

A summary of the key policies controlling waste operations (numbers subject to change) –

101 - Audits

109 - Environmental Impacts and Risks

110 – Anomalies

312 – Environmental Incident reporting process

320 – Plant and equipment

325 – waste management

325a – duty of care

414 – weighbridge operations

505 – sites with environmental permits

TBD – Mobile treatment

Policy 505 – sites with environmental permits is shown below to demonstrate the management system

Sites with an Environmental Permit

Purpose

To ensure that any site with an Environmental Permit issued by the Environment Agency is operated by S Walsh & Sons in accordance with legal requirements and best practice

Scope

Applies to any site where S Walsh & Sons undertake operations under an Environmental Permit issued by the Environment Agency in England and Wales

References

The Environmental Permitting (England and Wales) Regulations 2016

The Environmental Protection Act 1990-Waste Management a Duty of Care

The Hazardous Waste Regulations 2005

Definitions

Environmental Permit – a Permit issued by the Environment Agency in England or Wales to allow for the reception and management of waste

Waste - Any substance or object the holder discards, intends to discard or is required to discard" is WASTE under the Waste Framework Directive (European Directive (WFD) 2006/12/EC), as amended by the new WFD (Directive 2008/98/EC, that came into force in December 2010).

Non Hazardous Waste - Non-hazardous waste is waste that is not specifically designated as hazardous by, or having hazardous properties described in, the Hazardous Waste Directive 91/689/EEC.

Clinical Waste- as defined in the Controlled Waste Regulations 1992 and taken by S Walsh & Sons to include, swabs or dressings.

Hazardous Waste - Hazardous Waste is defined by reference to the European Waste Catalogue (EWC) and includes fluorescent tubes and old computers.

SSSI – Site of Special Scientific Interest

AQMA- Air Quality Monitoring Area as designated by the Environment Agency document PM10 with monitoring taking place in accordance with Environment Technical Guidance Document M17

Procedure

S Walsh & Sons activities are not carried out within:

- 500 metres of a European Site or a SSSI;
- A specified AQMA

.

- 50m of any well spring or borehole used for the supply of water for human consumption. This must include private water supplies

- 250 metres of the presence of Great Crested Newts where it is linked to the breeding ponds of the newts by good habitat

Each site where S Walsh & Sons manage the waste management operations under an Environmental permit shall follow the site-specific terms and conditions specified in the Environmental permit for the site.

Prior to any supplier being allowed to deposit any waste materials on any S Walsh & Sons controlled site, a Waste Information Form must be completed by a representative of the source of the waste. The completed Waste Information form (WIF) is to be forwarded to a S Walsh & Sons WIF Assessor for evaluation before the waste is taken to any Environmental Permitted Site managed by S Walsh & Sons.

Providing that the S Walsh & Sons WIF assessor is satisfied that the waste can be accepted at a S Walsh & Sons Managed facility, a copy of the WIF is to be sent to the appropriate site.

The waste producer is also required to complete a Controlled Waste Transfer Note (A client may use their own CWTN form) for the materials that they intend to send to any S Walsh & Sons site that has an Environmental Permit.

In addition, only waste specified on the individual Environmental Permit shall be accepted onto any site. The S Walsh & Sons process for the acceptance of Waste shall be followed on every site.

If a load is rejected before being accepted onto a site, i.e. it has not been booked onto the site, the S Walsh & Sons process for the rejection of waste shall be followed.

Following acceptance of the waste on site it shall be moved, sorted and stored or dealt with in accordance with S Walsh & Sons process Movement, Sorting and Management of Waste prior to recovery operations.

All materials that are subject to recovery operations shall be stockpiled on site in areas as defined on individual site drawings and plans.

If a waste load has been accepted on site and it transpires that the load may not comply with the Site's Environmental Permit conditions, the S Walsh & Sons process `Dealing with suspect loads that have been accepted on site', shall be applied.

Where any delivered waste materials are found to be unacceptable and require removal from site this shall be carried out in accordance with S Walsh & Sons process Removal of Unacceptable Waste from Site.

The principles set out in the S Walsh & Sons process Site Production Design and Material Selection shall be applied to all materials that are subject to a recovery operation.

Any incidental wastes identified at any stage of the production process shall be dealt with in accordance with the S Walsh & Sons Process Dealing with Incidental Waste and Residues.

All materials that are subject to processing shall be tested prior to and after processing to ensure that the outputs meets specific specifications. The testing shall follow the requirements of process Testing of Materials Subject to Recovery Operations.

The removal of processed materials from site shall be undertaken in accordance with process 414N Materials Collection and Supply from a Site with an Environmental Permit.

Weighbridge Operations

All sites where waste is accepted have a dedicated weighbridge that is operated by a competent

Weighbridge Clerk. Details relating to the operation of the Weighbridge are contained in document reference 414 Weighbridge Operations.

Environmental Risk

Environmental Risk assessments have been carried out for each site where waste is accepted and treated and or land filled. Full details and the details are contained in document reference 033G Waste management risk assessments

Environmental Emergencies

In the event of any Environmental Emergency of any site with an Environmental Permit, the process 414S Environmental Emergencies at Waste Transfer & Treatment or Landfill Facilities shall and must be followed.

Plant and Equipment

All plant and equipment shall be properly constructed of sound materials, be of adequate strength and in good mechanical condition. Equipment will be maintained, tested, (where necessary) thoroughly examined and safe to use in compliance with the Provision and Use of Work Equipment Regulations 1998.

All Plant and equipment involved in the processing of waste materials shall be subject to planned preventative inspections in accordance with the requirements of the Provision of Work Equipment Regulations 1998.

A record of all plant and equipment including test/inspections certificates shall be maintained on individual waste facilities by the S Walsh & Sons Site Manager.

All plant and equipment shall only be operated by trained and competent persons or they will be under the direct supervision of a competent person. Further details of the competence requirements for personnel are contained in the S Walsh & Sons Awareness, Training & Competencies matrix.

Lifting Equipment

All lifting equipment & associated accessories shall be maintained and inspected in accordance with the requirements of the Lifting Operations and Lifting Equipment Regulations 1998. Further information on this matter can be found in S Walsh & Sons Document Reference Lifting Equipment.

When equipment is used on site, certificates certifying that lifting equipment & associated accessories has received Test and thorough inspection by a competent body and is fit for use will be available in the Site Health, Safety & Environmental File that will be maintained by the S Walsh & Sons Site Manager.
All equipment/accessories will be marked with its safe working load and a unique identity number and under no circumstances will imposed loads exceed this limit.

Accidents, Incidents and Abnormal Events

All accidents, incidents, near misses or abnormal events including environmental incidents shall be dealt with in accordance with S Walsh & Sons Process Accident, Incident Reporting and Investigation

Non-Conformances

All Anomalies Non Conforming Materials, Workmanship & Preventative Actions & Complaints shall be dealt with and recorded in accordance with the S Walsh & Sons process on this matter

Control of Dust

Each S Walsh & Sons Manager is responsible for ensuring that their site has adequate dust suppression in place. Any dust complaint shall be treated as a non conformance and shall be fully investigated by the S Walsh & Sons Site Manager.

Health, Safety and Environmental Inspections and Audits

On a weekly basis the Site Manager shall complete a Health, Safety and Environmental Site Inspection Form covering all areas of the site.

On a Quarterly basis each Director is required to carry out a Safety Tour that covers a minimum of 3 topics. The topics are to be selected from the items Planned General Inspection Process. On completion of the form a copy is to be returned to the Head Office

On a Quarterly basis the HSE Specialist is to undertake an in depth inspection of a minimum of one work site using the Planned General Inspection Process. On completion of the form a copy is to be returned to the Head Office.

As and when required or deemed necessary by any of the Senior Management Team, or at the request of any Client, Safety Sampling or Safety Surveys will be undertaken. The Safety Sampling or Safety Survey Report Form shall be used to record the outcomes of these process's. On completion of the form a copy is to be returned to the Head Office.

The outcomes from all proactive monitoring activities shall be discussed at respective Monthly and Quarterly Health, Safety and Environmental Management Meetings. Trends will also be reviewed and analysed as part of the Management Review process.

Site Diary

A site Diary shall be completed on a daily basis by the S Walsh & Sons Site Manager. The Site Diary will be made available to any interested party including Environment Agency. As a guide the following information should normally be recorded:

- Weather
- Personnel on Site including the COTC/ WAMITAB Holder
- Operations being undertaken
- Site Development Works
- Areas where activities are being undertaken
- Plant Breakdown or Maintenance
- Any Environmental Monitoring or Sampling
- Any internal or external inspections or Audits (Including Environment Agency Inspections
- Emergencies / Non-Planned Events
- Daily tonnage or Number of Loads
- Rejected Loads
- Instructions Received
- Dispatch of Records

- Other Information

Site Documentation

As a minimum, the following documentation shall be displayed in the waste reception area for each site operated under an Environmental Permit:

- The Site Waste Management Licence/Environmental Permit and or details of any Exemptions
- Planning Permission and Site Working Plans
- Site Acceptable Waste List
- Details of the Management Structure
- Emergency Contact List
- Company Insurance Certificates –(Public Liability and Employers Liability)
- COTC and or WAMITAB Certificates
- Discharge and Trade Effluent Consents (relating to any waste activity on site)
- The S Walsh & Sons Health & Safety Statement of Intent
- The S Walsh & Sons Environmental Statement of Intent
- The S Walsh & Sons Quality Management Statement
- The Health and Safety Law Poster

Related Documents

Description	*Doc Ref*
Controlled Waste Transfer Note	**325B**
S Walsh & Sons Awareness, Training & Competencies matrix	**326E**
Record of all plant and equipment	**320**
Weighbridge Operations	**502**
Waste Information Form	**414A**
Process for the acceptance of Waste	**414B**
Process for the rejection of waste	**414C**
Movement, Sorting and Management of Waste prior to recovery operations	**414D**
Dealing with suspect loads that have been accepted on site'	**414E**
Removal of Unacceptable Waste from Site	**414F**
Site Production Design and Material Selection	**414G**
Dealing with Incidental Waste and Residues	**414H**
Testing of Materials Subject to Recovery Operations.	**414J**
Control and Suppression of Dusts	**414K**
Materials Accepted on a S Walsh & Sons site	**414L**
Storage of Documents	**414M**
Materials Collection and Supply from a Site	**414N**
Flow Chart Receipt of Waste and Categorisation	**414P**
Flow chart for treatment of Concrete	**414Q**
Flow chart for treatment of other wastes	**414R**
Dealing with an Environmental Emergency at any Site with an Environmental Permit Lifting Equipment	**414S**
Fire Procedures for Use on a Site with an Environmental Permit	**414T**
Loading & Unloading Skips and Roll on /off Bins	**414U**
Certificate of Through Examination (Lifting Equipment and Accessories)	**323**
Anomalies Non-Conforming Materials, Workmanship & Preventative Actions & Complaints	**110**
Health, Safety and Environmental Site Inspection Form	**106A**
Planned General Inspection Process	**106D**
Safety Sampling or Safety Survey Report Form	**106E**
Management Review	**102**

Nature and Heritage Conservation

Screening Report: Bespoke waste

Reference	**EPR/JB3903CC/A001**
NGR	**TQ 63027 75207**
Buffer (m)	**180**
Date report produced	**19/11/2020**
Number of maps enclosed	**2**

The nature and heritage conservation sites and/or protected species and habitats identified in the table below must be considered in your application.

Nature and heritage conservation sites	Screening distance (m)	Further Information

Protected Species	Screening distance (m)	Further Information
Smelt Osmerus eperlanus migratory route	up to 500m	Environment Agency. Dial 03708 506 506 for your local Fisheries and Biodiversity team
European eel Anguilla anguilla migratory route		
Atlantic salmon Salmo salar migratory route		
Twaite shad Alosa fallax migratory route		
Allis shad Alosa alosa migratory route		
River lamprey Lampetra fluviatilis migratory route		
Sea lamprey Petromyzon		

marinus migratory route

Protected Habitats	Screening distance (m)	Further Information
Mudflats	up to 500m	Natural England

Where protected species are present, a licence may be required from Natural England to handle the species or undertake the proposed works.

Please note we have screened this application for protected and priority sites, habitats and species for which we have information. It is however your responsibility to comply with all environmental and planning legislation, this information does not imply that no other checks or permissions will be required.

Please note, the enclosed pre-application map(s) is valid for a period of **6 months**. If you plan to submit your application more than 6 months after the map(s) was generated, you must request that the screen is re-run. This will ensure that you have used the most current information on heritage and nature conservation interests in your application.

Protected Habitats - Mudflats

Environment Agency

Legend

Protected Habitats screened for Env Permits

1: 5,000

0 125

Metres

N W E S

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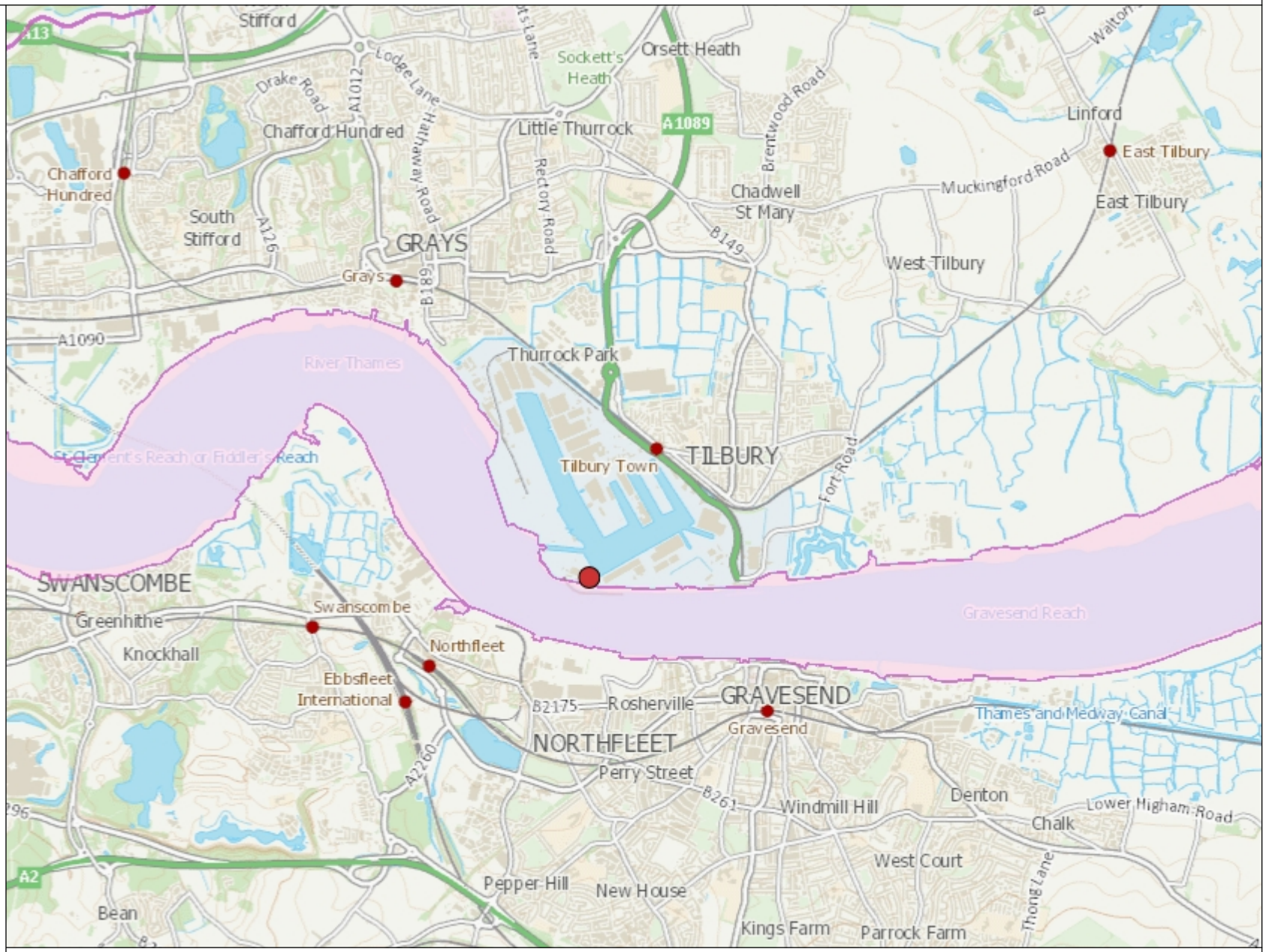
Protected Species

Environment Agency

Legend

Protected species screened for Env Permits - complete set

- Protected species, non fish
- Protected fish
- Protected fish migratory route



1: 50,000

0 1,250

Metres

N W E S

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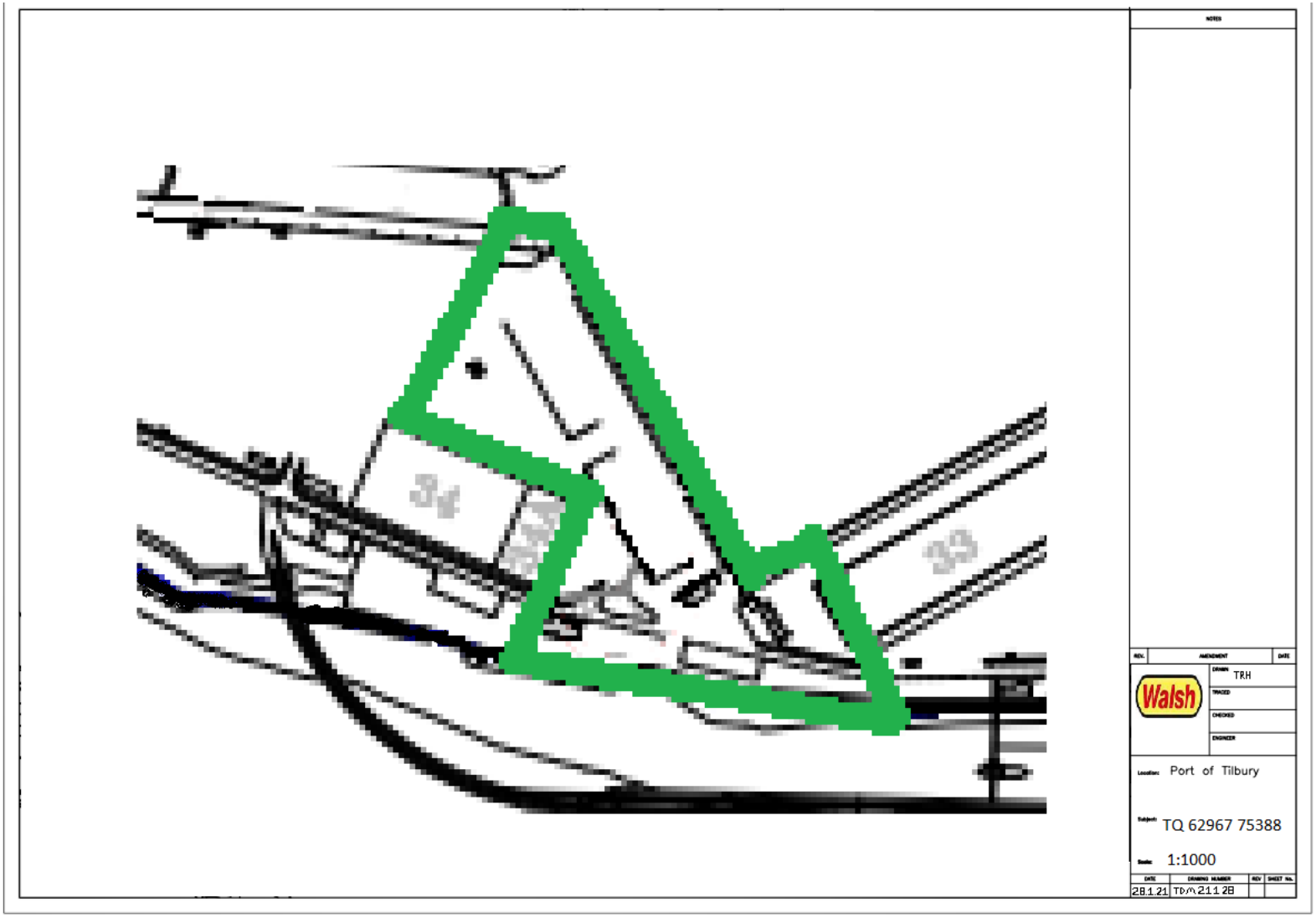
Site Plans


NOTES
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AMENDMENT
DATE
Walsh
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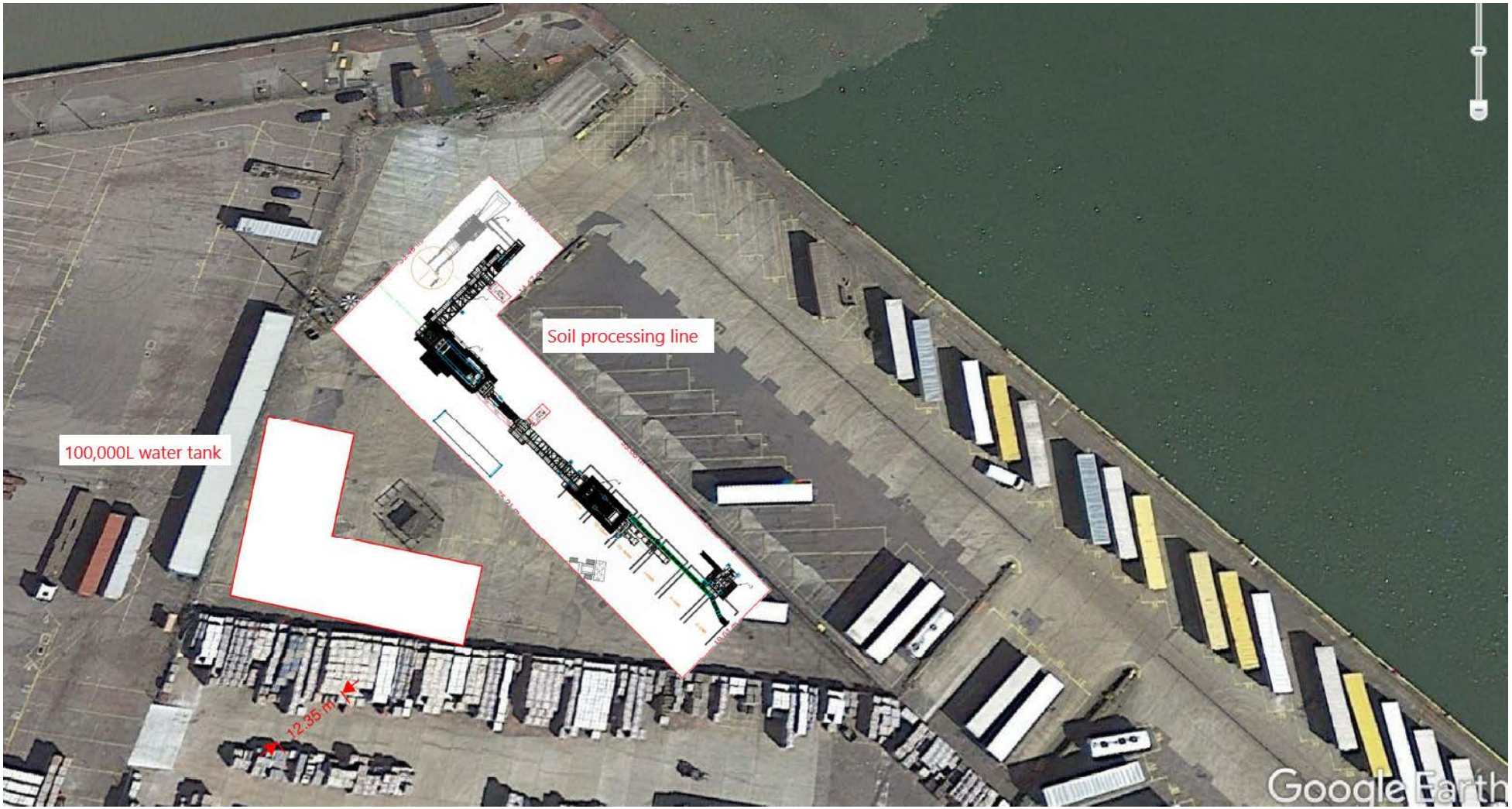
TRH
TRACED
CHECKED
ENGINEER
Location:
Port of Tilbury
Subject:
TQ 62967 75388
Scale:
1:1000
DATE
DRAWING NUMBER
REV
SHEET No.
28.1.21
TD/M/211/2B

Berth 34 – Proposed Operations plan



Berth 34 – proposed operations drainage plan

Site Plans

Berth 34 Receptors

Application condition report – pre operation commencing

Completed 25.02.21 by Tom Harris – Soil & Waste Controller

1.0 SITE DETAILS	
Name of the applicant	S Walsh and Son Ltd
Activity address	Berth 34, Port of Tilbury London, Tilbury Freeport, RM18 7EH
National grid reference	TQ 62967 75388

Document reference and dates for Site Condition Report at permit application and surrender	N/A

Document references for site plans (including location and boundaries)	B2.5a – Site Plans

Note:
In Part A of the application form you must give us details of the site's location and provide us with a site plan. We need a detailed site plan (or plans) showing:

- Site location, the area covered by the site condition report, and the location and nature of the activities and/or waste facilities on the site.
- Locations of receptors, sources of emissions/releases, and monitoring points.
- Site drainage.
- Site surfacing.

If this information is not shown on the site plan required by Part A of the application form then you should submit the additional plan or plans with this site condition report.

2.0 Condition of the land at permit issue	
Environmental setting including: • geology • hydrogeology • surface waters	Berth 34 consists of a large concreted area with sealed drainage systems. The entire dock has underlying geology of loamy, clayey soils of coastal flat with naturally high groundwater in keeping with the normal geology of Essex. The site is in an area of medium to low groundwater risk. Berth 34 is surrounded on 3 sides by the River Thames.
Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination	There are no recorded pollution incidents within the proposed area. Historically the land has been used for storage and distribution of containerised materials There was no visual or olfactory evidence of contamination noticed during site walk overs

• evidence of damage to pollution prevention measures	and the concrete surface is in good condition throughout
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	None available
Baseline soil and groundwater reference data	Loamy clayey soils of untested quality under impermeable paving with sealed drainage. The site is surrounded on 3 sides by the River Thames so it is presumed ground water is continuous with the river setting. There are no aquifers at depth
Supporting information	• Source information identifying environmental setting and pollution incidents • Historical Ordnance Survey plans • Site reconnaissance • Historical investigation / assessment / remediation / verification reports • Baseline soil and groundwater reference data

3.0 Permitted activities	
Permitted activities	Treatment of up to 250,000 tonnes of waste soils per year by sorting, separation, screening, crushing, blending and washing.
Non-permitted activities undertaken	Washing and grading of primary aggregates
Document references for: • plan showing activity layout; and • environmental risk assessment.	Please see B2.5a site plans & B2.5a site plans part 2 B2.6 Environmental Risk Assessment

Berth 34 Tilbury docks treatment of waste, including by washing, to produce soil, soil substitutes and aggregate

This application is for a new waste operation to import non-hazardous waste soils and aggregate for recovery to create quality protocol secondary aggregates and restoration grade soils at Berth 34 Tilbury docks.

The new waste operation permit will be operated to a bespoke environment management system written in line with the latest guidance. All procedures will comply with best available techniques and the Sector Guidance note s5.06 – recovery and disposal of hazardous and non-hazardous waste.

Robust site management is key as the operation is to be run alongside a primary aggregate washing process with sustainability core to both operations. The proposed operation at Berth 34 will treat up to 250,000 tonnes of waste soils per year by sorting, separation, screening, crushing, blending and washing. The wash plant is a closed loop system for water with a filter press ensuring all water is recirculated. The site benefits from impermeable paving and the soil washing and filter press will take place in a sealed system with any water escaping the closed loop to be captured and recirculated. Water for the wash plant, wheel wash and dust suppression measures will be collected from on site drainage and rainwater harvesting from the roof of 2 large warehouses adjacent to Berth 34.

This location has been selected to allow material from riverside developments in London to be removed by barge and reduce the impact of groundwork haulage by road. The Port of Tilbury site does not benefit from any designations with historically heavy industrial use. The nearest sensitive receptors are the river Thames immediately by the site. The nearest ground water is on the opposite side of the river 800m away or nearly 2km to the north. The site has a very low risk of flooding from sea or river. Port of Tilbury was also selected because all power required for the operation will be provided by wind turbines at the port.

Berth 34 was home to a large distribution warehouse from 1940-1960s by 1990 the building had been removed and the berth was used as open storage for containerised goods at the same time a new warehouse was built set back from the dockside. It has been used for that purpose from 1990 until present

All loading and unloading of ships at all Berths is carried out by trained Port of Tilbury staff.

All operations will be subject to weather based controls, with a weather station installed at the site office located on Berth 34.

Site Specific risk assessment for treatment of waste to produce soil, soilsubstitues and aggregates at Tilbury Berth 34

Type of Operation:	Waste Operation: Treatment of waste to produce soil, soil substitutes and aggregate
Location:	Berth 34 & Tilbury Freeport, RM18 7EH
Location of environmentally sensitive sites (km / m):	Greater than 500m (see below)
Risk assessment carried out by:	Tom Harris - Soil & Waste Controller
Date:	12-Nov-20

The scope of the permit and associated rules is defined by the following risk criteria:

Parameter 1	Permitted activities - The storage of waste (R13) and treatment to produce soil, soil substitutes roadstone and aggregate(R3,R5).
Parameter 2	Permitted waste types - Non Hazardous as listed below other than waste consisting solely or mainly of dusts, powders or loose fibres or waste in liquid form
Parameter 3	Quantity of waste accepted at the facility: <250,000 tonnes per annum.
Parameter 4	The site selected is not within an AQMA
Parameter 5	All operations take place on an impermeable surface with sealed drainage system
Parameter 6	There are no point source discharges to controlled waters or groundwater. All rain water is harvested for use on site
Parameter 7	The site selected is not within 500m of any designated site or area. The closest designation is a groundwater protection area 800m south the other side of the River Thames.
Parameter 8	The site selected is adjacent to the River Thames. No waste treatment activities will be carried out within 10m of the water course. Wastes will only be stored closer to the watercourse immediately prior to loading or immediately after unloading. All stockpiles on site will be more than 10m from the river. There are no boreholes for extraction within 50m
Parameter 9	The nearest residential dwelling is over 1.2km away

Data and information				Judgement				Control Measures	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**

Data and information				Judgement				Control Measures	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**
Local human population	Releases of particulate matter (dusts) and micro-organisms (bioaerosols).	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	Medium	Medium	**Medium**	Permitted waste types are inert and non hazardous and do not include dusts, powders or loose fibres and have a low potential to produce bioaerosols, but the treatment activities will produce particulate matter so a high magnitude risk is estimated. The permitted level of throughput and potential size of the facility means there is potential for exposure if anyone is living or working close to the site (apart from the operator and employees). There is potential for increased dust generation from permitted activities during prolonged dry periods e.g. summer months. Berth 34 is located too far for residential dwellings to be a receptor but employees of other business are considered sensitive as well. The process is a wet process which signifcantly reduces dust impact from conveyance. Loading and unloading will be subject to weather appropriate targetted suppresion Dust is viewed as a low residual risk in part due to the extreme distance to the nearest receptors	Emissions of substances not controlled by emission limits (excluding odour and noise) shall not cause pollution. The operator shall not be taken to have breached this rule 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. Condition based on SR. Particulate management forms part of the EMS with a sustainable water collection strategy in place for suppression. A dust management plan forms part of the application	Very Low
Local human population	As above	Nuisance - dust on cars, clothing etc.	Air transport then deposition	High	Low	**Medium**	As above. Local residents often sensitive to dust, however the site is located too far for residential dwellings to be a receptor. Employees of other business are considered sensitive receptors	As above	Low
Local human population, livestock and wildlife.	Litter	Nuisance, loss of amenity and harm to animal health	Air transport then deposition	Very low	Low	Low	Local residents often sensitive to litter, however permitted waste types have low litter potential and the distance to residents makes the pathway unlikely	Waste types and modes of transit offer a lower risk of litter. EMS includes daily checks for litter with a trigger to clear any litter found inside or outside the site.	Very low

Data and information				Judgement				Control Measures	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**
Local human population	Waste, litter and mud on local roads	Nuisance, loss of amenity, road traffic accidents.	Vehicles entering and leaving site.	Low	Low	Low	Road safety, local residents often sensitive to mud on roads, however most material will enter site by barge and leave site by barge or train.	Waste types and modes of transit offer a lower risk of litter. EMS includes daily checks for litter with a trigger to clear any litter found inside or outside the site. There is a road sweeper	Low
Local human population	Odour	Nuisance, loss of amenity	Air transport then inhalation.	Low	Low	**Low**	Local residents often sensitive to odour, however permitted waste types have low odour potential.	Wastes are of a low odour risk and the nearest resident is over 1km away. The permit will have the standard emissions shall be free from odour condition with an OMP created if requested by the regulator	Very low
Local human population	Noise and vibration	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	Low	Medium	**Medium**	Local residents often sensitive to noise and vibration however the nearest residential dwelling is over a km away and the intervening site is 24 hour heavy industrial use. All plant on site is new and to the latest standards. It is not anticipated noise from our operations will increase the existing background levels from other operations at the nearest residents	The permit will have the standard emissions shall be free from noise and vibration condition with a noise and vibration management plan created if requested by the regulator	Low

Data and information				Judgement				Control Measures	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**
Local human population	Scavenging animals and scavenging birds	Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity.	Air transport and over land	Low	Medium	**Low**	Permitted wastes unlikely to attract scavenging animals and birds but may become nesting / breeding sites. Material is not going to be stockpiled at site for long periods and the nearest residential dwelling is over 1km away.	The permit will have the standard Emissions of substances not controlled by emission limits (excluding odour and noise) shall not cause pollution. The operator shall not be taken to have breached this rule 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. An EMP covering scavengers will be created if requested by the regulator	Very low
Local human population	Pests (e.g. flies)	Harm to human health, nuisance, loss of amenity	Air transport and over land	Low	Medium	**Low**	Permitted waste types unlikely to attract pests and the nearest residential dwelling is over 1km away	As above	Very low
Local human population and local environment	Flooding of site	If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream.	Flood waters	Low	Low	**Low**	Permitted waste types are inert and non hazardous so any waste washed off site will add to the volume of the local post-flood clean up workload, rather than the hazard.	Environment Management system for site covers Flood risk. The site is not in a flood risk zone and is part of an active dock site	Very low
Local human population and / or livestock after gaining unauthorised access to the waste operation	All on-site hazards: wastes; machinery and vehicles.	Bodily injury	Direct physical contact	Medium	Low	**Low**	Permitted waste types are inert therefore only a low magnitude risk is estimated. Site is part of a secured active dock site	Environment Management system covers site security	Low

Data and information				Judgement				Control Measures	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**
Local human population and local environment.	Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters or arsonists/vandals. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches.	Medium	Low	**Low**	Permitted waste types do not include any flammable materials so a low magnitude risk is estimated. The docks have fire fighting equipment immediately to hand	Environment Management system includes operations, maintenance, accidents, incidents, non-conformances, fires and spillages	Low
Local human population and local environment	Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff or fire fighters. Pollution of water or land.	As above.	Medium	Low	**Low**	As above.	As above (excluding comments on access to waste). Permitted activities do not include the burning of waste.	Low
All surface waters close to and downstream of site.	Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids. Spillage of material during loading and unloading of barges	Acute effects: oxygen depletion, fish kill and algal blooms	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Low	Low	**Low**	Permitted waste types do not include sludges or liquids so only a medium magnitude risk is estimated. No point source emissions to water are planned. The site is covered by impermeable paving with sealed drainage leading to 100,000 litre capacity storage tanks. All loading and unloading carried out by trained Port of Tilbury staff with specifically designed mobile dock cranes	All liquids shall be provided with secondary containment. No point source emissions. Run-off controlled by on site harvesting. All wastes are subject to analysis prior to acceptance. Storage has distance limitations from watercourses.	Very low

Data and information				Judgement				Control Measures	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**
Migratory specis route along surface water	Smoothering by deposited materials	interference with breeding of protected species	spillage from transit	Low	High	Medium	Protected species are outside the dock area. There is an 8m stand off from the site boundary by the water course and mud flats. There is very low risk to this receptor from airborne emissions	All liquids shall be provided with secondary containment. No point source emissions. Run-off controlled by on site harvesting. All wastes are subject to analysis prior to acceptance. Storage has distance limitations from watercourses.	Low
All surface waters close to and downstream of site.	As above	Chronic effects: deterioration of water quality	As above. Indirect run-off via the soil layer	Low	Low	**Low**	Waste types are non-hazardous and inert so harm is likely to be temporary and reversible. Site is impermeable paving with sealed drainage and rainwater harvesting	All liquids shall be provided with secondary containment. No point source emissions. Run-off controlled by on site	Very low
Abstraction from watercourse downstream of facility (for agricultural or potable use).	As above	Acute effects, closure of abstraction intakes.	Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction.	Low	Low	**Low**	The River Thames is a large watercourse with high flow for abstraction to be permitted, which will dilute contaminated run-off. Site has impermeable paving with sealed drainage and rainwater harvesting	As above. Also operations are more than 50 metres from any spring or well, or from any borehole not used to supply water for domestic or food production purposes or 50m from any spring or well or any borehole used for the supply of water for human	Very low

Data and information				Judgement				Control Measures	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**
Groundwater	As above	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/groundwater then extraction at borehole.	Low	Low	**Low**	Permitted wastes unlikely to contaminate groundwater. Site has imperable pavement with sealed drainage and rainwater harvesting	As above	Very low
Local human population	Contaminated waters used for recreational purposes	Harm to human health - skin damage or gastro-intestinal illness.	Direct contact or ingestion	Low	Medium	**Low**	Unlikely to occur. Site has impermeable pavement with sealed drainage and rainwater harvesting. Berth 34 slopes away from the dock.	SR - Emissions of substances not controlled by emission limits (excluding odour and noise) shall not cause pollution. The operator shall not be taken to have breached this rule 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. SR (if required) - emissions management plan.	Very low

Data and information				Judgement				Control Measures	
Receptor	**Source**	**Harm**	**Pathway**	**Probability of exposure**	**Consequence**	**Magnitude of risk**	**Justification for magnitude**	**Risk management**	**Residual risk**
What is at risk? What do I wish to protect?	**What is the agent or process with potential to cause harm?**	**What are the harmful consequences if things go wrong?**	**How might the receptor come into contact with the source?**	**How likely is this contact?**	**How severe will the consequences be if this occurs?**	**What is the overall magnitude of the risk?**	**On what did I base my judgement?**	**How can I best manage the risk to reduce the magnitude?**	**What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).**
Protected sites - European sites and SSSIs	Any	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Any	Low	Medium	**Medium**	Waste operations may cause harm to and deterioration of nature conservation sites however site is located such a significant distance from the nearest it is not viewed there is a pathway	Site location complies with controls on standard rules permits and will have the standard - Emissions of substances not controlled by emission limits (excluding odour and noise) shall not cause pollution condition. There are no senstive species or habitats within 500 metres. The nearest point of protection is over 800m the over side of the Thames or 1.8km to Tilbury Fort.	Low

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Thames river basin district: climate change risk assessment worksheet

Name (as on your part A application form): S. Walsh & Son Ltd

Our permit reference number (if you have one): EPR/JB3903CC

Your document reference number: B2.6b – Climate change assessment

Risk assessment worksheet for the 2050s

Thames river basin district

You must carry out a climate change risk assessment for any new bespoke waste and installations permit applications if you expect to operate for more than 5 years. Use the user guide to complete the table. You can add in extra pages if necessary.

Consider how your operations will be affected by the changes in weather and climate described in the table. Consider any changes to average climate conditions that may impact on your operations, for example extreme rainfall.

Also consider:

- critical thresholds - where a 'tipping point' is reached, for example a specific temperature where site processes cannot operate safely
- changes to averages - for example an entire summer of higher than expected rainfall causing waterlogging
- where hazards may combine to cause more impacts

You can add in other climate variables if you wish.

If you have stated on your application form that you do not expect to be operational in 2050, you must still consider climate change risks for the time you do intend to operate. Whilst the variables are for the 2050s, this is an estimated date and you may experience these conditions before then.

This worksheet will sit in your management system. It must appear on the management system summary you submit with your application, even if you do not need to submit the whole risk assessment with your application.

If your pre-mitigation risk score (column D) is 5 or higher, you must complete columns E to H.

Potential changing climate variable	**A** **Impact**	**B** **Likelihood**	**C** **Severity**	**D** **Risk** (B x C)	**E** **Mitigation** (what will you do to mitigate this risk)	**F** **Likelihood** (after mitigation)	**G** **Severity** (after mitigation)	**H** **Residual risk** (F x G)
1. Summer daily maximum temperature may be around 7°C higher compared to average summer temperatures now.	Increased evaporation from wash systems. Material drying faster increasing dust generation	2	2	4	Rainwater harvesting tank capacity was designed with climate resilience in mind. Existing dust management measures will continue to be effective			
2. Winter daily maximum temperature could be 4°C more than the current average, with the potential for more extreme temperatures, both warmer and colder than present.	Wash plant can freeze in prolonged low temperatures if water left in plant when inactive	2	3	6	Wash plant will not freeze if water in motion. Drain down when inactive during cold temperatures	1	3	3

Potential changing climate variable	**A** **Impact**	**B** **Likelihood**	**C** **Severity**	**D** **Risk** (B x C)	**E** **Mitigation** (what will you do to mitigate this risk)	**F** **Likelihood** (after mitigation)	**G** **Severity** (after mitigation)	**H** **Residual risk** (F x G)
3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity)*.	Intense rainfall can result in soils being slow to screen. It also reduces dust entrainment and is good for rainwater harvesting systems	2	2	4	Site management system includes stockpile management measures. If processing has to slow then material will be diverted as required			
4. Average winter rainfall may increase by 36% on today's averages.	Very wet soils can be slow to screen. Wet soils generate less dust and more rain is good for the rainwater harvesting system	2	2	2	As above			
5. Sea level could be as much as 0.6m higher compared to today's level *.	The site is more than 0.6m above sea level despite being within tidal river areas	1	1	1	None foreseen			
6. Drier summers, potentially up to 42% less rain than now.	The operations primary water supply is designed to be from rainwater harvesting. Drier summer result in more dust entrainment	3	3	9	Rainwater harvesting system includes a 100,000L tank which has been in place and filling pre summer.			
7. At its peak, the flow in watercourses could be 35% more than now, and at its lowest it could be 75% less than now.	None foreseen	1	1	1	N/A			

*Indicates data has come from climate change allowances as part of the spatial planning process. Evidence from your planning submission is acceptable evidence for this worksheet.

The proposed operation is based on a combination of the inert and excavation waste transfer station and the manufacture of soil, soil substitute and aggregate standard rules permits. The operation will not include manufacture of top soil so all codes relating to improving soil growing quality have been removed.

2 specific codes were added to support critical infrastructure tunnel projects in central London:

19 02 03	treated soils only
19 12 12	treated soils only

19 02 03 if for a site where tunnelled predominantly chalk soil is too wet for transit and will be pressed to reduce moisture under mobile plant permit. Material under this code has to be treated with chemical additives to facilitate the process

19 12 12 is for material being generated by a tunnel process where tunnelled soils are being mechanically treated under mobile plant permit to reduce moisture without additives

01 WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS	
01 01	wastes from mineral excavation
01 01 01	wastes from mineral metalliferous excavation
01 01 02	wastes from mineral non-metalliferous excavation
01 04	wastes from physical and chemical processing of non-metalliferous minerals
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	Waste sand and clays
10 WASTES FROM THERMAL PROCESSES	
10 11	wastes from manufacture of glass and glass products
10 11 12	clean glass other than those mentioned in 10 11 11
10 12	wastes from manufacture of ceramic goods, bricks, tiles and construction products
10 12 08	waste ceramics, bricks, tiles and construction products(after thermal processing)
10 13	wastes from manufacture of cement, lime and plaster products and articles and products made from them
10 13 14	waste concrete only
15 WASTE PACKAGING	
15 01	packaging
15 01 07	clean glass only
17 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	
17 01	concrete, bricks, tiles and ceramics
17 01 01	Concrete
17 01 02	Bricks
17 01 03	tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	wood, glass and plastic
17 02 02	glass
17 03	bituminous mixtures, coal tar and tarred products

17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 05	soil (including excavated soil from contaminated sites) stones and dredging spoil
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 08	track ballast other than those mentioned in 17 05 07
17 09	other construction and demolition wastes
17 09 04	soil with inclusions only
19 WASTES FROM WASTE MANAGEMENT FACILITIES, OFF SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION / INDUSTRIAL WASTE	
19 02	wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)
19 02 03	treated soils only
19 08	wastes from waste water treatment plants not otherwise specified
19 08 02	waste from desanding
19 12	wastes from the mechanical treatment of wastes
19 12 05	clean glass only
19 12 09	minerals (for example sand, stones)
19 12 12	treated soils or Incinerator Bottom Ash Aggregate Only
19 13	wastes from soil and groundwater remediation
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01
20 MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS	
20 01	separately collected fractions
20 01 02	clean glass only
20 02	garden and park wastes (including cemetery waste)
20 02 02	soil and stones

Berth 34 Tilbury docks treatment of waste, including by washing, to produce soil, soil substitutes and aggregate

Wash plant process description:

- Feed material is loaded into the hopper of the Terex Spaleck scalping screen
- The dry screen is equipped with a top deck circa 50mm & a lower FLIPFLOW screen at 6mm
- The >50mm is deposited to ground & a percentage of the <6mm is also deposited to ground
- All material between 6mm and 50mm is fed into the washing process
- The material is conveyed by the main feed conveyor into a water boiling box where water is introduced to effectively slurry the material prior to conveyance to the primary washing screen
- The primary washing screen is fitted with 4mm polyurethane modules. The screen is equipped with high pressure spay bars
- The majority of the <4mm particles get washed through the mesh & into the sand & water collection sump
- A pump fitted to the sump transports the sand & finer particles with water in sealed pipes to the EvoWash sand recovery system
- All material between 4 and 50mm is fed from the screen into the AggMax Logwasher
- The Logwasher scrubs the material to breakdown silt /clay into the liquid phase using two heavy duty rotating shafts with attrition paddles scrub the material
- From the back of the Logwasher a contraflow of water carries any floating debris from the back of the Logwasher onto a dewatering screen (Trash Screen) this dewaters any floating organics, which are collected within a skip for disposal from site
- The underflow of water & a small percentage of fine sand/silt are transported by water within sealed pipework back to the EvoWash sand recovery system
- The material >4mm gets deposited on a final rinsing screen where any fines generated gets washed through and returns with the underflow from the trash screen effluent back to the EvoWash sand recovery unit
- The dewatered washed & scrubbed aggregate is transported by a second main conveyor onto a large dry screen which grades the material 40-20mm, 20-10mm & 10mm-4mm
- The material is then deposited into segregated concrete storage bays under the system

- All the <4mm effluent containing the sand & silt fraction is pumped through cyclones on the EvoWash sand recovery system
- The underflow from the cyclones is fed onto a large dewatering screen that will reduce the moisture to circa 15% on the recovered sand
- The sand is transported by conveyors to a segregated concrete storage bays

Water Treatment:

- All liquid in the system is pumped via sealed system to the water treatment plant
- Liquid is treated in the Thickener tank with a polyelectrolyte to aid settlement of solids
- The overflow is ~ 90% of flow will be clarified & recycled back into the system for reuse straight away
- The underflow of a thickened slurry will flow into an agitating conditioning buffer tank
- From the buffer tank the slurry is pumped into a very large decanting centrifuge
- The centrifuge separates and dewaters the sludge
- A firm thickened sludge cake is deposited to a ground bay for disposal from site
- The centrate is recirculated into the enclosed water system
- Water is required to initially charge the system & top up any losses from evaporation during conveyance and as moisture in the washed material.
- A sealed system has been designed to capture surface water from the slab with additional rain water harvesting from the roof of large warehouses adjacent to Berth 34

DRAFT Dust Management Plan v1

Tilbury Docks – soil treatment facility

Document Control:

Version	Date	Author	Change Description
V1	Jan 2021	Tom Harris	Original Dust Management plan

Contents:

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   Implementing the DMP
   Review of the DMP
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4. MITIGATION AND MONITORING
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   Monitoring
   Dust Action Plan
   Out of hours

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   Table 1: Receptors
   Table 2: Other Dust emitting operators
   Table 3: Summary of mitigation measures

   APPENDICES
   Appendix 1 Site Layout Plan
   Appendix 2 Operational control guide

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1. Introduction

1.1 This is the Dust Management Plan (DMP) for the Tilbury Docks Soil treatment facility at Tilbury docks, Essex. The site will process carefully selected construction and demolition waste streams to produce a range of quality protocol secondary aggregates. The waste acceptance and treatment operations are covered by environmental permit EPR/JB3903CC. This DMP forms part of the sites environment management system. The DMP is a living document subject to regular review with update as appropriate

1.2 The Site is part of the Port of London, Tilbury Dock site is situated off Saint Andrews Lane in Tilbury, Essex and is approximately 0.6 km to the south west of Tilbury town centre. Tilbury docks is a large site with various deep Berths. The River Thames is located immediately to the south of the Site. At the north end of the site the nearest residential receptors are over 250m north east of the Site.

1.3 The Site is accessed via Saint Andrew Lane which leads via A1089 to the A13 to the north east of the Site. The Site and permit boundaries are shown on Drawing TDB21128.

1.4 Environmental permit number EPR/JB3903CC will be for the operation of a soil treatment facility. The permit will authorise acceptance, storage and treatment up to 250,000 tonnes per annum of construction and demolition waste to produce soil, soil substitutes and aggregate. Treatment consists of crushing, washing and screening.

1.5 The Site is not located any Air Quality Management Area (AQMA) Thurock Council declared an AQMA north of the site for (NO2) in November 2014. The source of the pollution is reported to be road transport unspecified.

Implementing the DMP

1.6 The Site foreman, reporting to the TCM, has the responsibility of ensuring that the procedures in this DMP are adhered to and will ensure that all members of staff are aware of the site dust management procedures and a copy of this DMP will be kept on Site. The Site foreman will have the authority to modify or stop operations to reduce emissions as required

Review of the DMP

This DMP will be reviewed in line with the permit requirements:

- When changes are made to our Site, operations or equipment that affect the activities covered by our permit;
- Whenever an application is made to change (‘vary’) the permit;
- After any accident, complaint or breach of our permit; and
- If a new environmental problem or issue is encountered, and we have implemented new measures to control it.

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2. Source Receptor pathway

Nature of Operations

2.1 The permit will authorise acceptance, storage and treatment up to 250,000 tonnes per annum of construction and demolition waste to produce soil, soil substitutes and aggregate. Treatment consists of crushing, washing and screening.

2.2 Plant used on site comprises:

- A 360 tracked excavator;
- A soil wash plant with crusher and screener
- A loading shovel

2.3 The loading shovel is only used for collecting material from the crusher belt and loading outbound lorries. The loading shovel operates 10 hours per day.

2.4 The crusher can process some 100 – 200 tonnes of material per hour and in line with Dock operation could be operated 24 hours a day. Routine operation is planned to be between the hours of 07.00 to 17.00 Monday to Friday and 8:00 – 12:00 Saturday.

2.5 The site is undergoing commissioning a full site plan with appropriate measures will be added to appendix 1.

2.6 The majority of wastes are treated in accordance with the WRAP Quality Protocol: 'End of waste criteria for the production of aggregates from inert waste'. Small volumes of residual waste (e.g. metal) are removed from Site for recovery or disposal at suitably permitted facilities.

2.7 The entire site benefits from impermeable paving with a sealed drainage system

2.8 Wastes are imported to the Site by road in sheeted heavy goods vehicles (HGV) and boat. All wastes are visually inspected on receipt of the Site.

2.9 Identified sources for dust emissions from the Site are:

- Fugitive emissions from vehicle movements on Site and on the public highway;
- Loading and unloading of waste material;
- Movement of waste materials around the Site;
- Treatment of waste by crushing and screening,
- Waste stockpiles;
- All site surfaces (including roads); and
- Exhaust emissions.

2.10 Mitigation measures are proposed in Section 4.

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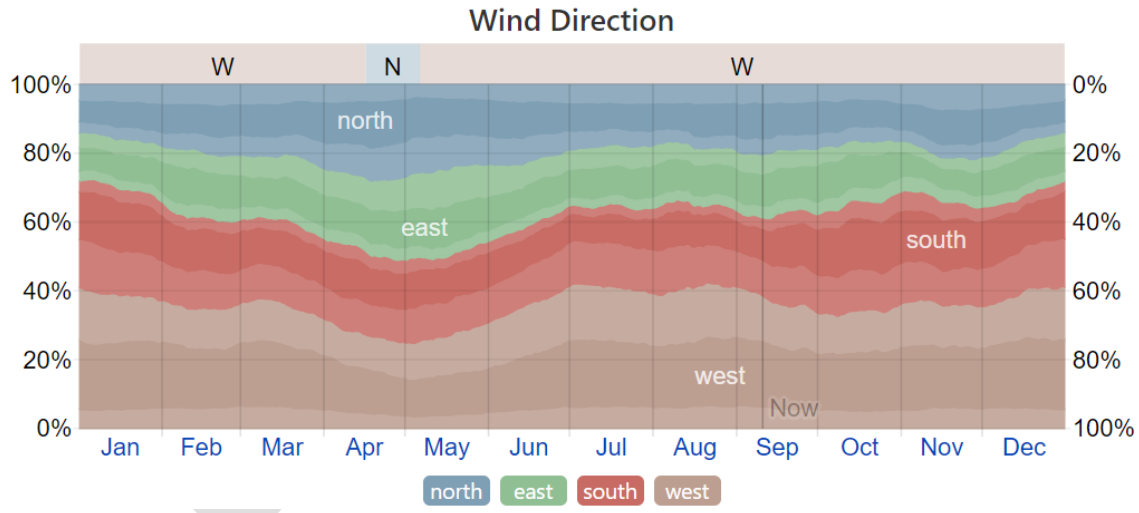
Pathway

2.11 The generation of fugitive dust is particularly dependent upon weather conditions, with wind speed and direction being key to the entrainment and carriage of dust. Rain can help suppress dust generation. The site will have a weather station over the weighbridge.



2.12 Wind speed and direction data has been obtained from the NASA's MERRA-2 Modern-Era Retrospective Analysis . This reanalysis combines a variety of wide-area measurements in a state-of-the-art global meteorological model to reconstruct the hourly history of weather throughout the world on a 50-kilometer grid. The data will be cross checked with weather data from site once statistically sufficient data is available.

2.16 The predominant wind directions are from the south western quarter. It is calculated that the wind originating from the southwest accounts for approximately 30% of all wind. The next most predominant wind direction is from the west, at a frequency of 15%. Wind directions from the east and northwest sectors occur relatively infrequently.

2.17 Winds exceeding 13 mph are taken to be capable of lifting dust from stockpiles. Wind exceeding speeds of 13 mph occur occasionally throughout the year.

3. RECEPTORS

3.1 Sensitive locations are those where the public and habitats may be exposed to airborne emissions from the Site.

3.2 The distance from the source to the receptor plays an important role in the potential impact experienced from airborne dust. Detection concentrations fall off rapidly with increasing distance from the source. Local sources and impacts of wind such as downward exhausts, blowers and wind tunnelling / channelling are also considered.

3.3 The very largest dust particles usually only travel 10-20 m before being deposited, and the vast majority of dust is deposited within 100 m of the source.

3.4 As a large proportion of the surrounding area is used for commercial and industrial purposes, the majority of the areas around the site are not considered sensitive in the context of air quality.

3.5 Table 1 summarises the closest receptors. None are viewed as being at high risk of dust due to distance

3.5 Table 2 summarises other dust emitting operators in the immediate area. All of these are closer to sensitive receptor than the proposed operation except for the River Thames.

Table 1: Receptors

Receptor	Receptor type	Distance (m)	Direction	Wind Direction	% time wind (>13 mph)
River Thames	Water body	10	South West	NNE, ENE, E, ESE	2
Mudflats	Habitat	10	South West	NNE, ENE, E, ESE	2
Tarmac Cement and Lime	Industrial	700	South West	NNE, ENE, E, ESE	2
Factory Road	Residential	1100	South West	NNE, ENE, E, ESE	2
Cemex	Industrial	500	North East	SSW, WSW, W,WNW	15
Dock Road	Residential	1100	North East	SSW, WSW, W, WNW	15
Cemex	Industrial	500	North East	SSW, WSW, W, WNW	15

Table 2: Other dust emitting operators

Company	Address	Type of Business	Source of emissions	Distance from site	Direction
Tarmac Cement and Lime	Factory Road	Building materials	Fugitive emissions from vehicle movements, point source	1100	South West
Cemex	Tilbury Docks	Building materials		500	North East
EMR	Tilbury Docks	Waste Management		750	North East

Grain Terminal	Tilbury Docks	Food stuffs loading and unloading	emissions from exhausts, loading, unloading and processing materials	1000	East

3.6 There are no SSSI's within range of consideration.

3.7 The mudflats south of site is a protected habitat.

3.8 Dust is not viewed as capable of interfering with the protected species in the Thames

Potential Impact of Dust Emissions on Receptors

3.9 The closest residential receptors are greater than 1 km away and have not been considered in this assessment.

3.10 Members of the general public will not be near the site as the nearest footpath is over 100m away

3.11 No Receptors within 200 m are conservatively considered to be sensitive to dust and PM10.

3.12 The River Thames and mudflats to the south of site are only at risk from dust from smothering. This would require excessive dust production over a sustained period. On site management will prevent excessive dust generation at any time and the wind speed and direction combination indicates this is only a risk 2% of the time.

3.13 Receptors to the south west of the site will be in part shielded by the large warehouses adjacent the operation in this direction. It is not viewed there is a pathway for smothering levels of dust to the river or mudflat.

3.14 Industrial properties to the north of the Site are subject to winds capable of entraining dust (>13 mph) ~15 % of the time. These receptors are both are considered at very low risk of adverse effects from the Site due to the distance and nature of the operations. Immediately East and West of the site are large areas used for container storage and are not viewed as sensitive.

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4. MITIGATION AND MONITORING

Mitigation Measures

4.1 This section sets out the measures that are employed to mitigate the potential adverse effect on air quality at nearby receptors predicted as a result of the operations. The effects on air quality are expected to relate mainly to the generation of dust from HGV traffic and the processing and storage of dry materials.

4.2 The mitigation measures set out in Table 3 below seek to break the source-pathway-receptor linkage, and are considered to be best practice within the industry

Table 3: Summary of mitigation measures

Abatement Measure	Description / Effect	Use on site
Hardstanding	Hardstanding generate less dust than unmade ground from vehicle movements	The entire site is surfaced in hardstanding or concrete to allow easy cleaning and prevent wind whipping. The site access road is concreted between the wheel cleaning and public highway
Wheel cleaning facility	Rumble track system shakes loose dust and mud from vehicles	The rumble strip is located on site on the egress road from the loading area. All vehicles have to pass over it as they traverse site.
Control of operations (throughput, vehicle size and operation)	The more activity on site with associated traffic movements the more emissions and resuspension of particulates	The operation has been sized appropriately, with particular regard to dust, noise and vehicle movements. Less than half the permitted area is currently used for waste activities. Annual throughput is limited by the permit to 250,000 tonnes per annum.
Minimising drop heights for waste	Minimising the height at which waste is handled will reduce the distance over which debris and particulates could be blown and dispersed by the wind	Drop heights from the crusher, screener and vehicles are minimised. Maximum drop height is from the screener, when operating, which is ~2.55m
Sheeting of Vehicles	Prevents the escape of debris, dust and particulates from vehicles as they travel	All vehicles delivering and exporting potentially dusty material to and from site are sheeted.
Minimising waste storage heights and volumes on site	Minimising the height at which waste is handled will reduce the distance over which debris and particulate could be blown and dispersed by winds.	Stockpiles on site are maintained to a maximum height no more than 1m below the height of dust netting

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	Reducing storage volumes reduces the surface area of which particulates can be mobilised	Lines are marked across the hard storage surfaces at the maximum permitted height.
Control of operation during high winds, exceptionally dry conditions and/or prevailing wind direction	Mobilisation of dust and particulates is likely to greater during periods of strong winds or exceptionally dry conditions.	Weather conditions are monitored by an on site weather station. Wind speed and direction trigger levels are set to control activities. (appendix 2) If visible dust emissions can be seen to cross the site boundary despite the employed mitigation measures operations will be ceased. During all crusher / screener operations dust suppression will be used.
Site speed limit, no 'idling' policy and minimisation of vehicles movements on site	Reducing Vehicle movements on and idling on site will reduce emissions from vehicles. Enforcement of the speed limit will reduce re-suspension of particulates by vehicle wheels	The site speed limit of 5mph is enforced for all vehicles.
Remedial Measures		
Surface Dampening of stockpiles and ground surfaces	Minimise fugitive emissions on internal haul and access roads Prevents resuspension of dust from unpaved areas Minimise fugitive emission from stockpiles	Surfaces and stockpiles will be dampened as required and without saturating so as to prevent off site dust emissions. A mobile dust suppression unit is used on site and repositioned based on site activities and prevailing wind conditions.
Application of CMA / Chemical suppressant	Dilutes Calcium magnesium acetate (CMA) or other chemical dust suppressant is regularly applied to reduce dust and particulate resuspension	Chemical additive is used in the dust suppression system as appropriate.
Road Sweepers	Road sweeping vehicles to damp down surfaces while coleecting dust and particulates from the road surfaces particularly kerb sides	Employed on site as appropriate to prevailing weather conditions
Good site management	Record all dust and air quality reports, identify root cause(s), take appropriate measures to reduce dust emissions in a timely manner	All staff
Staff Training	Provide training to all site staff relevant to their job role.	All staff.

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	Training covers emergency preparedness to ensure staff understand how to react to situations out of the normal.	Role appropriate reminders issued to staff.

Monitoring

4.3 Visual inspections of the following will be undertaken by the Site Manager or his nominee during each working day as set out in Table 4.

Location	Triggers	Actions
Site Boundary	Fugitive dust emissions	See Dust action plan
Site access Roads	Wind whipping, dust generation	Send bowser to damp down
Stockpile and processing area	Dusty wastes or surfaces	Send bowser, check PIRU is suitably located
Road between wheel cleansing and public highway	Mud and debris	Road sweeper
Public Highway	Mud and debris	Road Sweeper

4.4 A record of the inspections and their findings, together with the prevailing weather conditions, will be maintained in the site diary.

4.5 The site has a weather station which gives a live feed for temperature, wind speed, wind direction, air pressure and rain. The readouts are displayed in the weigh bridge. Winds speed reaching 13mph will trigger a check of wind direction and an inspection of site activities for dust generation. An automatic alarm triggers at 22mph which would result in cessation of activities on site if the wind is towards sensitive receptors.

Dust Action Plan

4.6 Visible dust crossing the site boundary, noticeable dust generation on site or a report of dust will trigger the DAP

- Identify sources of off site dust emissions. Review and increase mitigation measures. If this is not possible cease activity
- Complete an accident and emergency form (Form C of the management system) ensure root cause has been identified and action put in place to prevent recurrence
- All reports must be fully investigated to locate source
- Notify the regulator is pollution has occurred
- Only once the source has been identified and mitigated can operations resume
- The report, investigation and remedial action must recorded and passed to compliance which will trigger a review site specific mitigation measures

Out of Hours

In the event there are dust emissions from the site out of hours emergency contact details are provided on the site identification board by the main gate

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Appendix 1: Site Plan

Appendix 2: Operational control guide

Dust generation is particularly dependent upon wind speed and direction. The table below provides a minimum action to be taken in dry conditions. Rain suppresses dust generation and the impact will have to be judged by visual inspection

Dust control actions

Wind Direction	Wind Speed (mph)	Sprays	Cannon	Treatment
North Quarter	Less than 13	Visible dust	Visible dust	Proceed
	13 – 22	Visible dust	Cover screening	Proceed
	22+	Dampen piles	Off	Stopped
East Quarter	Less than 13	Visible dust	Visible dust	Proceed
	13 – 22	Visible dust	Cover screening	Proceed
	22+	Dampen piles	Off	Stopped
South Quarter	Less than 13	Visible dust	Visible dust	Proceed
	13 – 22	On	Cover screening	Review dust
	22+	Dampen piles	Off	Stopped
West Quarter	Less than 13	Visible dust	Visible dust	Proceed
	13 – 22	On	Cover screening	Review dust
	22+	Dampen piles	Off	Stopped

Recording:

All records should be kept in the site diary in the weighbridge.

Record prevailing wind direction and speed at least AM and PM. All dust control activities should be recorded and any changes in weather or site conditions which resulted in any action.

Dust Action Plan

Any visible dust generated on site must be investigated. Any dust seen leaving site must be investigated and reported to compliance immediately. (Tom Harris 07770 851765 & Tom Pugh 07985 836174)

- Identify sources of dust emissions. Review and increase dust control actions. If this is not possible stop the activity causing dust
- All external reports must be immediately investigated to locate the source
- Only once the source has been identified and dust stopped can operations resume
- The report, investigation and remedial action must recorded and passed to compliance

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