AtkinsRéalis

Dust Management Plan

DDE (SW) Ltd.

April 2025

5149237.CFIL08

CHALLONSLEIGH FARM INERT LANDFILL

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This document has 22 pages including the cover.

Document history

Document title: Dust Management Plan

Document reference: 5149237.CFIL08

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Permit application	TSM	ATF	ATF	ATF	14/12/2021
2.0	Permit application	TSM	ATF	PG	ATF	08/04/2025

Client signoff

Client	DDE (SW) Ltd.
Project	CHALLONSLEIGH FARM INERT LANDFILL
Job number	100098315
Client signature/date	

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1. Introduction

1.1. This Dust Management Plan (DMP) is to control and minimise dust emissions during construction of the planned development works for the planned inert landfill to be located at Challonsleigh Farm, Smithaleigh (near Lee Mill, Ivybridge) Devon, the focus of this DMP being avoidance of an off site impact.

1.2. That follows the grant of planning permission on 1st April 2020 by Devon County Council, ref. DCC/4038/2018, for a waste transfer building and associated infrastructure, and land raise operations for the importation inert waste material over a 10 year period requiring a change of use from agriculture and incorporating landscaping.

Project Background and Site Details

1.3. The proposed inert landfill site is located south of the A38 Devon Expressway and is sited immediately to the east and southeast of two existing waste management facilities operated by DDE (SW) Ltd. (which were previously operated by SITA UK Ltd and Wood Yew Waste Ltd.), referred to by DDE (SW) Ltd. as Sites A and B.

1.4. The planned inert landfill site lies between the A38 and the waste management facility approximately 400m to the south, with that site referred to by DDE (SW) Ltd. as Site C, and the planned inert landfill as Site D. The National Grid Reference for the approximate centre of the planned inert landfill is SX 5959,5535 (Easting 259590, Northing 055350), with the nearest post code being PL7 5AX.

1.5. The land is predominantly farmland used for grazing, but with trees and dense shrub vegetation on the historic inert landfill area which exists around and under the existing site C waste management facility. An access track runs along the western boundary of the planned inert landfill to the site C waste management facility, with the River Yealm close to the eastern boundary of the planned inert landfill. A small unnamed intermittent watercourse with hedgerow and trees either side, runs from west to east through the middle of the proposed inert landfill area..

1.6. The landfill as a land raise with inert waste is planned to be implemented broadly as per the details submitted for the Devon County Council planning permission, ref. DCC/4038/2018 and the discharged planning conditions therein, which confirmed a different phasing sequence.

1.7. It is envisaged the inert waste placement will be carried out in distinct phases from south to north, with each phase practically completed before the next is started. Topsoil will be stripped and stored in designated storage areas in accordance with the approved Soil Management Plan submitted as part of the discharge of conditions. There are also 33kV overhead cables south of the west to east flowing ordinary watercourse, and in time those cables will be relocated. Along the northern boundary of the inert landfill there are 11kV overhead cables which currently cross west to east, and in time those will be relocated underground with an easement from the northern extent of the landfill to the alignment of the cables underground.

1.8. The inert landfill will be accessed from the existing access road running along the west side of landfill to the existing waste management facility, vehicles having first visited a central weighbridge of the combined access road. Vehicles will use an existing drive through ‘sump’ style wheel wash which is present midway along the access road, prior to exiting onto the public highway.

1.9. The planned land raise inert landfill is intended in the long term to provide an improved restoration profile and ecological land use over part of the historical landfill area. The historic landfill covered by an extant permit to the south will be restored at a latter date.

Planned Construction Activities and Dust Emissions

1.10. The following foreseeable activities have a potential to affect the local air quality either via vehicle emissions or fugitive emissions (dust):

1. Enabling works e.g. vegetation clearance.
2. Excavation and earthmoving of topsoil and subsoil.
3. Formation of material stockpiles and wind erosion from stockpiles or storage areas.
4. Surfacing works.
5. Vehicular traffic within the construction site areas.
6. Wind erosion from exposed soils.
7. Tipping, dozing and blading of waste

1.11. The main potential source of dust generated by the proposed scheme will be the landfill operation, including from the external movement and un/loading of delivery vehicles, and dust generated by the placement, spreading and compaction of waste by tipping, dozing and blading. Wind erosion may occur until the final surface of each landfill phase is restored with vegetation.

Dust Management Guidance

1.12. In relation to dust management the development construction will comply with statutory, health and safety, and planning requirements, and seek to adhere to best practice guidance, particular guidance relevant to the dust management and the formation of this Dust Management Plan are:

- Technical Guidance to the National Planning Policy Framework, July 2021 and planning practice guidance on Air Quality – How can an impact on air quality be mitigated? Paragraph:008 Reference ID: 32-008-20191101.
- Institute of Air Quality Management (IAQM) publication Guidance on the assessment of dust from demolition and construction, version 1.1, 2014.
- HSE information sheet – Construction Dust.
- HSE online guidance for Construction dust: specific tasks https://www.hse.gov.uk/construction/healthrisks/hazardous-substances/construction-dust-specific-tasks.htm
- BRE publication BR456 Control of dust from construction and demolition activities, 2003.

Potential Off Site Dust Sensitive Receptors

1.13. The air quality in the local area will generally be good, with the possible exception of close to the A38, or close to processing activities within the recycling site to the south and the waste transfer station to the west.

1.14. Dust can be dispersed by the wind and smaller dust particles remain airborne for longer, dispersing widely and depositing more slowly over a wider area. Research reported in Annex 1 of Mineral Planning Guidance Note 11: Controlling and Mitigating The Environmental Effects of Minerals Extraction in England – Consultation Paper May 2000, has shown that large dust particles (>30µm) will, largely, be deposited within 100m of sources, while intermediate sized particles (10- 30 µm) are likely to travel up to 200–500m. Fine dusts (<10 µm), which make up a small proportion of dust emitted from most workings, can travel up to 1 km from the sources but have a very low deposition rate and so are unlikely to create an adverse amenity effect. Modelling studies show that deposition rates decrease significantly in an almost logarithmic manner with increasing distance from the source.

1.15. For reference in implementing this Dust Management Plan the following table lists the nearest residential properties to the construction site areas, the sensitive receptors being those assessed in the Proposed Extension to Linhay Hill Quarry Environmental Statement (Part 3), June 2016, Chapter 14 Dust and Air Quality. The assessment approach within that environmental statement chapter followed the IAQM Guidance on the assessment of dust from demolition and construction, 2014, which indicates that assessment is normally required where there is a human receptor within 350m of the boundary of a site or within 50m of the route used by construction vehicles on a public highway up to 500m from the site entrance. Consequently, with reference to the assessed distances in the following table, sensitive receptor locations further afield than 500m from a dust source are unlikely to be affected and are considered a low priority for dust control and mitigation, a possible exception being if a strong consistent wind occurs blowing from an elevated dust source towards a sensitive receptor with no or few obstructions between the source and receptor.

Table 1-1 – Nearest Land Uses / Potential Sensitive Receptors and Relative Distances from the site

Land Use	Potential Receptor Y/N	Distance and Direction from Site Boundary		Elevation m AOD	Receptor Area Sensitivity
Devon Expressway A38 public highway	Y	<20 m	N	57-71	Low
Agricultural land.	Y	>55 to >80 m	N	67-84	Low
Commercial and residential area between Plymouth Road north bound off slip from the A38, and Moorland Road / New Park Road	Y	90 to 340 m	N to NE	62-69	Medium (commercial properties) & High (residential areas)
Agricultural land (grazing).	Y	<10 m	ENE	44-50	Low
River Yealm	N	<5 to 250 m	E	39-42	Low
Strasleigh Hams waste management facility including inert landfill, with agricultural land further east.	Y	≈100 to 250 m	E	49-62	Low
Overhead 400kV power lines.	Y	≈40 m	S	42-52 (pylon bases)	N/A
Mackarell Parks, Southwood Woods & Strasheligh Ham CWS (largely a woodland site with a derelict quarry and quarry lake).	Y	75 m	SE	42	Medium where public access, otherwise Low

Land Use	Potential Receptor Y/N	Distance and Direction from Site Boundary		Elevation m AOD	Receptor Area Sensitivity
Woodland cover over historic landfill which includes in the south west the New England Fields CWS (marshy grassland).	Y	<5 m to 350 m 550 m	S S SSW	44-52	Medium where public access, otherwise Low
Unnamed ordinary watercourse which flows west to east to the River Yealm.	Y	≈150 m	S	39-48	Low
Waste management facility operated by DDE(SW) Ltd.	Y	0 m	S and W	56-60	Low
Private access road to the waste management facility operated by DDE(SW) Ltd.	Y	0 m	W	52-72	Low
Agricultural land (grazing).	Y	>20 m	W	52->68	Low
Waste management facilities operated by DDE(SW) Ltd.	Y	70-200 m	W	55-62	Low
Commercial and residential properties north and south of off slip from A38 south bound.	Y	200-375 m	W	73-75	Medium (commercial properties) & High (residential areas)
Smithaleigh Caravan and Camping Park	Y	400-600 m	W	63-68	Medium
Residential property ‘Homeleigh’	Y	100 m	NW	80-85	High
Residential property ‘Higher Challonsleigh’ and to the north Langage Farm.	Y	400 m	NNW	93-94	High

Notes:

From IAQM Guidance on the assessment of dust from demolition and construction, Version 2.2 2024, Box 6 Sensitivities of People to Dust Soil Effects:

High sensitivity receptor – surrounding land where: users can reasonably expect enjoyment of a high level of amenity; or the appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. Indicative examples include dwellings, museums and other culturally important collections, medium and long term car parks and car showrooms.

Medium sensitivity receptor – users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or the appearance, aesthetics or value of their property could be diminished by soiling; or the people or property wouldn’t reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. Indicative examples include parks and places of work.

Low sensitivity receptor – the enjoyment of amenity would not reasonably be expected; or property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or there is transient exposure, where the people or property would reasonably be expected to be present only for limited periods

Land Use	Potential Receptor Y/N	Distance and Direction from Site Boundary	Elevation m AOD	Receptor Area Sensitivity
of time as part of the normal pattern of use of the land. Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads. From IAQM Guidance on the assessment of dust from demolition and construction, 2024, Box 8 Sensitivities of Receptors to Ecological Effects: High sensitivity receptor – locations with an international or national designation and the designated features may be affected by dust soiling; or locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain. Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings. Medium sensitivity receptor – locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or locations with a national designation where the features may be affected by dust deposition. Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features. Low sensitivity receptor – locations with a local designation where the features may be affected by dust deposition. Indicative example is a local Nature Reserve with dust sensitive features.				

1.16. There are no statutory designated sites within a kilometre of the site and fourteen non statutory designated sites within two kilometres of the site, and only two are within 500 m. Those are the New England Fields County Wildlife Site, and Mackarell Parks, Southwood Woods and Strashleigh Hams County Wildlife Site.

Air Quality Criteria

1.17. A number of air-quality criteria have been set for particulate pollutants in different situations, such as for air quality management, annoyance, worker protection or overall environmental protection. The main aspects to air quality criteria for assessing particulate matter or dust are the annoyance effects and health effects. For the annoyance effects all sizes of particulate are considered, but for health effects the main focus is on particles less than 10 micro-metres in diameter. Those particles are known as PM10 and are small enough to be captured by inhalation and slow to deposit.

1.18. Potentially applicable air quality criteria for dust management are summarised in Appendix A, however annoyance often occurs due short-term high deposition rates which are invariably associated with particular weather conditions or transient activities. Hence an average deposition rate is only an indicator of the likelihood of annoyance and complaints may occur at deposition rates less than guideline values. The rate of deposition may vary widely with emissions, variations in wind speed and direction, and variations in the background dust concentration. Background levels will also influence the reaction of receptors to additional dust from specific sources, together with the following factors:

- The frequency of dust deposition incidents – a community may be prepared to tolerate an incident once a month, but not repeated incidents at frequencies of once or twice a week.
- The area affected by deposition – the larger the emissions, the larger the area affected and thus the greater probability of a complaint.

Weather

1.19. The most important meteorological parameters governing the atmospheric dispersion of fugitive dust are:

- wind direction, the prevailing wind over the UK being south westerly.
- wind speed i.e. high enough to cause dust to become airborne; and
- atmospheric stability, i.e. the amount of turbulence, particularly of the vertical motions.

1.20. Additionally, rainfall is an important factor influencing whether dust is likely to become airborne and the local topography, structures and vegetation (e.g. trees and hedges) will affect wind characteristics near or at a construction site, hence planned dust control and mitigation also have to respond reactively to local transient conditions including rainfall and drying conditions.

1.21. That is because, for example, wind erosion dust emissions are known to be strongly correlated with wind speed and the inverse square of the moisture content. Thus a small increase in moisture content of the material which may give rise to dust can yield a large increase in control efficiency, with 55% control efficiency potentially achievable by a 50% increase in moisture content and a high end control efficiency of 75% corresponding to a doubling of moisture content. Beyond that point, control efficiency increases more slowly with moisture content.

2. Dust Control and Mitigation Measures

Objective

2.1. Dust emissions will be minimised through good industry practices adopted for dust control, by employing dust control measures, and regular dust monitoring.

Contractual Controls

2.2. Visitors and sub-contractors will be required to abide by the site safety, health and environmental rules, and employing good practise to minimise dust emissions such as keeping drop heights to a minimum and the surface of deposited materials compacted and obeying the site traffic routes and speed limits.

Dust Control and Mitigation

2.3. Good dust control measures are a fundamental to construction entailing excavations and materials movement and those to be applied are detailed in the following table.

Table 2-1 – Dust Control and Mitigation Measures

Potential Dust Source	Planned Control Measures	Contingency Measures (see note 1)
General Engineering Construction Activities	1) Programme of work to take account of five day and daily weather forecasts with daily activities and materials to be sited so that whenever possible dust blows across site not off site or towards receptors and that dust emissions are minimised. 2) Wind speed (qualitative assessment using Beaufort scale) and direction to be assessed at the start of work. Where potential for dust generation i.e. strong Force 3 and above, wind speeds to be checked more frequently. 3) Consideration to be given to erecting solid screens or barriers around dusty activities when wind strength and direction will result in dust lifting and its dispersion and when those activities cannot be postponed till more suitable weather conditions. 4) Dust producing activities to be temporally ceased or modified when unfavourable conditions exist such as high wind speed (greater than 5 m/s i.e. strong Force 3 and above) or dry weather and whenever dust is seen to be arising with a potential to migrate off site.	Initial: 1) Activity to be temporarily ceased or moved to a location that reduces possible impact to a receptor. 2) If complaints received though no visual dust deposits observed, simple dust monitoring to be considered in line with Beaman & Kingsbury “Assessment of Nuisance from Deposited Particulates Using Simple and Inexpensive Measuring System” Subsequent: 3) Apply water spray to reduce dust generation.

Potential Dust Source	Planned Control Measures	Contingency Measures (see note 1)
	5) Cutting, grinding or sawing equipment only to be used if fitted with suitable dust suppression or extraction or no likelihood of off site dust emissions. 6) Visual checks of airborne and deposited dust to be conducted downwind of the works at the site boundary if evidence of wind causing dust to lift. 7) Dropping height of materials to be kept to a minimum. 8) All placed material to be compacted as soon as practically possible. 9) Vehicle movements to be limited as necessary to prevent the production of dust from potential SHW Series 600 Class U1B or Class U2 material if encountered (and trafficking on those materials is to be avoided). 10) Paved roads to be swept or water spray apply when required to minimise dust emissions,	
Material Sorting or Processing (if required)	1) Material sorting (if required) to be sited in location as far from site perimeter / receptors as practically possible within the available working area. 2) Plant / drop area to be screened e.g. with temporary wind boards or non-active stockpile. Drop heights to be practical minimum.	Initial: 1) Activity to be temporarily ceased until cause of emissions established. 2) Water sprays used to prevent dust generation. Subsequent: 3) Stockpiles of screened material containing increased proportion of fines to be covered or enclosed in temporary bays to prevent wind erosion. 4) Activity to be moved to a location that reduces possible impact to a receptor.
Construction Plant and Transport	1) On road vehicles to comply with statutory emission requirements. 2) Vehicle engines to be switched off when stationary, no idling. 3) Where possible temporary haul roads to be constructed and maintained with low fines material. 4) Construction vehicles not to be overloaded to reduce fall of soil/rock material onto haul roads. 5) Speed within construction site area to be limited to average of 15 km/hr.	Initial: 1) Increased water spray application intensity or frequency on haul roads. 2) Vehicle loads or speed to be reduced. Subsequent: 3) Activity to be temporarily ceased or moved to a location that reduces possible impact to a receptor. 4) Water spray or sheeting of material in haulage vehicles. 5) Cover of haul road with reduced fines material.

Potential Dust Source	Planned Control Measures	Contingency Measures (see note 1)
	6) Temporary haul roads if required to be preferentially sited away from site perimeter or screened by stockpiles or preferentially used such that wind blown emissions are in an across the site direction as opposed to off site. 7) Haul roads where required to be wide enough so that vehicles can pass without one or both vehicles needing to drive on natural ground along side the road. 8) Water spray application at minimum rate of 0.2 L/m^2 two times per day in dry conditions on the haul routes. Control efficiency to be monitored.	
Stockpiling	1) Drop heights to be practical minimum. 2) All material to be compacted as soon as practically possible. 3) Stockpiles to be located away from sensitive receptors. 4) Stockpiles to be formed downwind of existing stockpiles where possible.	Initial: 1) Minimise size of stockpile. 2) Application of water spray. 3) Windbreak material / dust netting to line fencing around stockpiles to minimise dust movements. If necessary, a temporary lined fence to be situated downwind of stockpile. Subsequent: 4) Activity to be temporarily ceased or moved to a location that reduces possible impact to a receptor. 5) Stockpiles to be sheeted should soil become dry and airborne. 6) Stockpiles to be sheeted in moderate/ heavy rain to minimise increase in moisture content, hence increased total weight, and to reduce run-off having suspended solids.
Wind Erosion	1) Where practically possible stockpiles to be orientated along the prevailing / predominant wind direction to present minimum cross sectional area to the wind. 2) Exposed area of soils in non active areas to be seeded with grass and shrubs as soon as is reasonably practicable.	Initial: 1) Landscaping and wind shelter-belts to reduce effects of wind blow. 2) Consider application of approved soil stabilisation chemicals as last resort.
Site Deliveries	1) To use paved road where possible. 2) Road to be wide enough so that vehicles can pass without one or both vehicles needing to drive on natural ground along side the road. 3) Sheeting of material in haulage vehicles.	Initial: 1) Vehicle loads or speed to be reduced. 2) Use or grate / rumble strip to remove loose material. 3) Consider vacuum sweeping with a 340m3/min vacuum system at a

Potential Dust Source	Planned Control Measures	Contingency Measures (see note 1)
	4) Speed restriction to achieve mean of 15 km/hr. 5) Haulage vehicles only to traverse a clean swept area.	frequency of once every 2 days on paved roads. Control efficiency to be monitored. Subsequent: 4) Activity to be temporarily ceased or moved to a location that reduces possible impact to a receptor. 5) Increase frequency or capacity of vacuum sweeping. 6) Use temporary wheel wash with self-contained water system; super-saturated water to be disposed off-site. 7) Establish vegetation cover on any bare areas of ground adjacent the road. 8) Establish wind break adjacent the road e.g. ditch, bund or fencing. 9) Regular water spray application, possibly as continuous system along side of road that operates transiently as vehicle passes.

Notes:

1: “Initial” Contingency Measures to be considered / implemented if “excess” emissions suspected, observed or detected based on the Dust Monitoring. “Secondary” measures to be considered and applied if source of “excess” emissions is not transient and selected dependent on measure most likely to achieve mitigation.

3. Monitoring

3.1. In order to ensure that effective dust control is being implemented so that airborne particulate and the rate of dust deposition do not increase at sensitive locations around the site, the following routine dust monitoring and weather observations are to be carried out.

Visual Monitoring

3.2. There will be a daily visual assessment of dust generation when wind speeds are greater than 5m/s (strong Force 3 and above) or when there has been no rainfall in the previous two days. A log of inspections will be maintained by the site manager or his/her representative recording the date and time of the inspection, the wind speed, last rainfall, any visual dust and the actions taken to suppress the emissions. An example Dust Visual Monitoring Record is provided in Appendix B.

3.3. Specific triggers for inspections are:

- When a production or activity threshold is reached.
- Continual dry conditions exist or strong winds are forecast especially from the prevailing south west direction, e.g. when there has been no rainfall for an extended period and wind speeds greater than 5 m/s (a Force 3 and above).
- After a large storm or extraordinary event.

Quantitative Monitoring

3.4. The background dust level will be very low and the nearest sensitive receptors are specific properties.

3.5. The aim is for on site activities to be undertaken during suitable weather conditions with application of appropriate dust management controls, though it possible that may necessitate a low intensity of construction, which adversely could lead to an extended construction duration.

3.6. It is considered there is not a need for quantitative dust monitoring for active management, though that will be reviewed during the construction works and operation, as it will partly be dependent on the weather pertaining, how dry and friable the excavated materials are, and the required material movement or other specific construction/ operational tasks.

3.7. If required monitoring will be undertaken using DustScan DS100-D combined directional and settlement dust monitoring gauges, located between the construction activities and sensitive receptors.

Wind Speed and Direction

3.8. On site weather conditions will be appraised based on visual observations and will be recorded daily when construction works are ongoing. Weather forecasts if required are to be obtained from the Met Office.

Review

3.9. The effectiveness of the dust control and mitigation measures and thereby this Dust Management Plan is to be reviewed regularly, e.g. at site management meetings.

4. Complaints Procedure

4.1. A complaint relating to possible dust arising from activities at the site is to be recorded and actioned on its receipt by the Site Manager (or conveyed to the Site Manager from site staff or visitors) or via notice to a DDE(SW) Ltd. and must be made as soon as the possible dust arising or concern is noticed.

4.2. That is so the possible dust arising or associated can be investigated and acted upon contemporaneously and expeditiously with a high priority. A complaint received some time after cessation of the dust arising or occurrence of a possible dust concern may be investigated with lower priority because the concern will not be contemporaneously verifiable.

4.3. Contact details for the Site Manager are shown at the entrance to the site.

4.4. Investigation and recording of incidents will be carried out as detailed in the site operating procedures. Using the DDE(SW) Ltd. incident reporting system the aim will be for the following to be recorded on receipt of a complaint relating to a possible dust concern:

- Complainant and complaint details recorded, i.e.
  - Name, address and preferred method of contact (post, phone, email).
  - Date and time complaint received and what prompted the complaint.
  - Type of dust concern e.g. cloud or plume, or deposited.
  - Duration and frequency of possible dust concern, or is it the first time the problem has been noticed.
  - Weather pertaining at time of possible dust concern.
  - Suspected activity causing the dust.
- Site manager notified.
- Existing and recent weather conditions at the site i.e.
- temperature, rainfall, wind direction and speed.
- Inspection of suspected dust source and visual observations recorded.

4.5. Action implemented will be in accordance with Dust Control and Mitigation Measures detailed in the Dust Management Plan. Lessons learnt will be fed back to site staff through safety and environmental briefings by DDE(SW) Ltd. management

APPENDICES

Appendix A. Summary of Air Quality Criteria

Table A.1 – Summary of Air Quality Criteria

Application	Determinand	Limit Value	Reference
Annoyance	Deposited dust	200 mg/m^2 per day	"Custom and practice (England and Wales)" quoted in Environment Agency Technical Guidance Document (Monitoring) M17 Monitoring of particulate matter in ambient air around waste facilities.
		Open country: 100 mg/m^2/day complaints possible, 140 mg/m^2/day complaints likely. Residential areas and outskirts of town: 150 mg/m^2/day complaints possible, 200mg/m^2/day complaints likely.	Vallack, H. W. & Shillito, D. E. (1998), "Suggested guidelines for deposited ambient dust", Atmospheric Environment, Vol.32, pp.2737-2744.
	Soiling (by dust slide)	25 soiling units (SU) per week	"Custom and practice" quoted in Environment Agency M17.
	Soiling (by sticky pad)	0.5% effective area coverage (EAC) per day in rural summer time; public response: possible complaints. 0.2% EAC/day – noticeable, 0.7% EAC/day – objectionable, 2% EAC/day – probable complaints, 5% EAC/day – serious complaints.	Beaman, A.L. & Kingsbury, R.W.S.M. (1981), "Assessment of nuisance from deposited dust particulates using a simple and inexpensive measuring system", Clean Air, Vol.11, No.2, pp.77-81.
	Soiling (by DustScan method)	Source significance: Very High if >25 %EAC/week or 100 for 45° %AAC/week Very Low if <2.5 %EAC/week or <80 %AAC/week, where AAC = absolute area coverage.	Datson, H., Birch, W.J. (2006), "The development of a novel method for directional dust monitoring", Environmental Monitoring and Assessment, Vol.124(1-3), pp.301-308.
Air quality management and environmental protection	Suspended particulates	24 hour average PM10 concentration not to exceed 50 µg/m^3 more than 35 times per year, annual average PM10 concentration not to exceed 40 µg/m^3.	EU limit and National Air Quality Strategy objective

Application	Determinand	Limit Value	Reference
Worker protection	Hazardous substances	Occupational Exposure Limits (OELs) for the UK, the following being potentially relevant: Silica, long-term exposure limits (8-hr TWA reference period): - respirable crystalline 0.1 mg/m^3 - amorphous inhalable dust 6 mg/m^3 - respirable dust 2.4 mg/m^3	HSE Guidance Note EH40

Appendix B. Example Dust Visual Monitoring Record

Dust Visual Monitoring Record - Sheet of Completed by

Activity Observed / Dust Source	Date & Time:	Point of Observation	Visible Dust (Y or N, ✓ or X),			Comments and details of action or change if required, e.g. nil; modify, move reduce or suspend operation; apply or increase water spray dust suppression
			None	Within site only	Crossing site boundary	

Weather and ground conditions (circle as appropriate)

Wind speed as Beaufort Scale:

0	1	2	3	4	5	6	7	8-12
< 0.3m/s	0.3-1.5m/s	1.5-3.3m/s	3.3-5.5m/s	5.5-8.0m/s	8.0-10.8m/s	10.8-13.9m/s	13.9-17.2m/s	≥17.2m/s
<1km/h	1-5km/h	6-11km/h	12-19km/h	20-28km/h	29-38km/h	39-49km/h	50-61km/h	≥62km/h
Calm	Very light	Light breeze	Gentle breeze	Moderate breeze	Fresh breeze	Strong breeze	Near gale	Gale to hurricane
Smoke rises vertically.	Smoke drifts.	Wind felt on face, rustles leaves.	Leaves and flags move.	Paper blown about, small branches move.	Large branches sway.	Large trees sway, difficult to walk.	Small trees blown down.	Structural to widespread damage.

Wind from:	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
Rain:	None	Intermittent showers	Prolonged >1 hour	Very light Does not wet surface.				Light <2.5mm/hr Puddles form slowly.				Moderate 2.5-7.5mm/hr Puddles form rapidly.				Heavy >7.5mm/hr Falls in sheets.
Ground surface:		Dry not dusty	Dry dusty	Drying				Damp				Wet (small puddles)		Very wet (large puddles)		

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