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Trigon Hill Landfill Site

Dust and Emissions Management Plan

Valencia Waste Management Limited

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Contents

1 Introduction

1.1 Report Objectives

This 'Dust and Emissions Management Plan' (DEMP) has been prepared to support a variation application by Valencia Waste Management Limited (Valencia) for the existing permit (EPR/BX4054ID) at Trigon Hill Landfill site (the Site). The proposed permit variation application is for a new Material Recovery Facility (MRF).

The purpose of this DEMP is to identify which aspects of the MRF operations are likely to cause a potential harmful particulate emission if uncontrolled and how these emissions will be minimised and mitigated. The DEMP also considers the potential emissions from mud and debris and provides appropriate control measures.

A copy of this DEMP will be included in the Site's Environmental Management System (EMS) held at the Site Office and all members of staff will have access to this document.

2 Dust and Particulate Management

2.1 Responsibility for Implementation

The site manager would be responsible for implementing the DEMP. Additional support will be provided by the Technical Competent Managers (TCMs). Provision of appropriate TCMs is necessary to demonstrate to the Environment Agency that the applicant is a fit and proper person, a test all prospective environmental permit holders must pass to be granted a permit. The site manager and/or TCM would be responsible for the training of site staff.

Valencia operates an Environmental Management System (EMS) at their other active sites and head office and the DEMP would form part of the EMS.

All staff to be employed on site would be given training and instruction on implementing the dust management plan. Training will be part of the initial induction process and reviewed annually.

All site staff would be responsible for visual monitoring of dust and would be instructed on appropriate reporting and actions.

All third-party contractors would be required to be inducted; the induction process would include their responsibility concerning compliance with the DEMP.

2.2 Site Operations

Trigon Hill Landfill Site is located approximately 2.2 km to the northwest of Northport and 2.4km northwest of Wareham town centre in Dorset. The approximate National Grid Reference for the MRF is SY8960089400. The proposed MRF location is bounded: to the west by the landfill (adjacent to Cell 2 Phase 3); to the north by woodland; to the east by a solar farm and woodland; and to the south by the landfill and woodland.

The site is located on a former opencast ball clay pit with planning consent for restoration by landfilled wastes.

An Environmental Permit (EP) referenced BX4054ID was issued on 21st June 2006 to Viridor Waste Management Limited for landfilling at the Site. The landfill is comprised of 6 phases and 25 cells and has accepted non-hazardous household, commercial and industrial wastes. The permit has been varied numerous times with the current extant permit issued on 13th March 2023 for a minor technical variation recording Valencia Waste Management Limited, update of the associated company name, address and financial provision.

The proposed permit variation is to extend the existing boundary to the east to incorporate additional land for the proposed MRF. The proposed MRF will have an annual throughput of up to 250,000 tonnes of predominantly commercial and industrial wastes. The MRF proposes to treat the waste into separate fractions including ferrous and non-ferrous metal recovery. A portion of

recovered material comprising soil and rubble may be utilised in the adjacent landfill for daily cover and construction of in cell tracks.

The proposed materials recycling activity are to be undertaken within a purpose built building which will be steel portal frame with internal push walls. The building will measure circa 85 m by 39 m with an eaves height of approximately 9m and a ridge height of circa 12.5 m.

The building will have two 8 m wide vehicular fast acting roller shutter doors on the northern and southern aspect to allow delivery of waste and the export of materials only.

Vehicles entering the Trigon Hill Landfill Site with waste to be accepted at the MRF will be required to enter off Bere Road, the designated site entrance. This is located to the north of the landfill and the proposed MRF. The internal haul road follows a southerly direction along the east of the landfill and the west of the proposed MRF. All vehicles entering and exiting the wider Trigon Hill Landfill Site to include the landfill and the proposed MRF will utilise the internal haul road. All wastes are expected to go via the weighbridge for inspection prior to acceptance and review of duty of care documentation. The wheel wash is located to the north on the internal haul road prior to exit onto Bere Road.

3 Potential Dust Emission Sources

3.1.1 Non-Hazardous Landfill Site

The site currently operates an active non-hazardous landfill site in accordance with the permit (referenced EPR/BX4054ID). This updated DEMP does not include for any controls relating to the landfill as these are subject to separate control procedures however internal transport routes will be subject to similar controls related to vehicle movements, waste acceptance, handling and transportation.

3.1.2 Proposed Materials Recovery Facility

Dust emissions result from small particles suspended in the air leaving the building and associated internal transport routes. Particles can become airborne as a result of activities undertaken associated with the MRF including the use of internal transport routes. Air currents disperse the particles, with finer dust particles able to be deposited over a wider area. The storage and treatment activities from the MRF may result in fugitive dust emissions.

Fugitive dust emission can potentially arise from the following activities:

- transport of waste to the MRF.
- deposit of waste in the MRF.
- transit of waste between Recycling Plant and deposit in designated stockpiles, bays or containers.
- storage of waste in bays in the MRF.
- transport of waste on conveyors.
- treatment activities in the MRF.
- wind-blown dust accumulated on internal transport routes to MRF.
- vehicle movements on dusty roads on internal transport routes to MRF
- loading of material for removal; and
- transport of material on internal transport routes from MRF to either the landfill or off-site.

Fugitive dust may present a dust nuisance to surrounding human receptors or cause an adverse impact if excessive deposits settle on sensitive habitats and smother sensitive plant life or surface water receptors as accumulated sediment.

All treatment and storage is proposed to be within a purpose built building with two 8m wide vehicular fast acting roller shutter doors on the northern and southern aspect only to be utilised to allow delivery of waste and the export of materials.

Nevertheless, this DEMP includes measures to manage potential fugitive emissions.

3.1.3 Off-Site Dust Emissions

Trigon Hill Landfill Site and proposed MRF is located in a primarily rural location with neighbouring quarry excavations, tree plantations, agricultural land, solar farms and residential areas. Neighbouring agricultural land and quarrying activities have the potential to generate dust.

4 Control Measures for Materials Recovery Facility

This section provides the control measures for the MRF and the operations associated with the MRF such as waste delivery, handling and vehicle controls. The site currently operates an active non-hazardous landfill site in accordance with the permit (referenced EPR/BX4054ID). This updated DEMP does not include for any controls relating to the landfill as these are subject to separate control procedures however vehicle controls and certain waste delivery and handling controls are applicable site wide.

4.1.1 Waste Delivery

Control of incoming wastes will be managed according to the Valencia's Waste Acceptance Procedures (WAP) in the EMS.

Wastes to be accepted will be transported to Site in sheeted vehicles and transferred on acceptance directly into the building for processing. It is not considered that these loads would present a risk of dust upon entry or deposit and the risk is considered negligible.

The transport of waste is regulated by Duty of Care code of practice issued under section 34(7) of the Environmental Protection Act 1990, this code requires that waste is stored securely to prevent escape during transport. Consequently, the vast majority of vehicles will arrive at site with sheeted covers which will be removed to allow inspection of wastes at the site booking-in office.

The HGVs will (unless the waste is rejected) transport the waste along internal roads to the MRF Building where a second inspection will be undertaken by site staff prior to deposit.

All hauliers would be informed of the site rules at the point of entry to the site, these would include measures to minimise dust and emissions including limiting vehicle speeds, no vehicle engine idling when stationary for prolonged periods to reduce exhaust emissions and appropriate locations to deposit wastes.

4.1.2 Waste handling

- Vehicles will be supervised during loading within the MRF to ensure they are not overfilled.
- The waste streams will be generally non dust generating, however, water would be used to dampen down if required particularly dusty waste streams if encountered.
- All waste when transferred from the unloading area into the Recycling Plant is within the MRF Building.

4.1.3 MRF Controls

The following controls will be in place for the MRF activities:

- All MRF activities are to be undertaken within a purpose built enclosed building.

- The building will have two 8m wide vehicular fast acting roller shutter doors on the northern and southern aspect to allow delivery of waste and the export of waste materials only. The vehicular access doors will be closed when not in use.
- A dust suppression system will be in place within the building, the design and installation to be confirmed prior to construction of the building and appropriate liaison with a specialist contractor. The system will be subject to a service contract. Some of the routine maintenance tasks e.g. cleaning of ducts and the system will be carried out in house in accordance with manufacturers training and instructions.
- Good housekeeping practices will be in place to ensure that any loose dust or waste is cleared from the recycling plant and building. This will include daily inspections of waste treatment and storage areas and removal of any loose dust or waste.
- Jet wash facilities will be available if necessary for cleaning of waste storage / treatment areas.

4.1.4 Recycling Plant

All plant for use in the MRF will be chosen according to its suitability for the task, maintained according to the manufacturer's recommendations and appropriately operated to minimise dust.

The Recycling plant is to be located within an enclosed building.

A comprehensive dust suppression system will be in place within the building, the design and installation to be confirmed on design of the building and appropriate liaison with a specialist contractor.

A regular maintenance and inspection programme for all site areas including machinery is undertaken. A Daily Record Sheet will be used to records if any dust is detected at the Site (Appendix A).

4.1.5 Vehicle Controls

Vehicle controls, as stated previously, are consistent with the control measures employed for the landfill activities. The internal haul road from the access off Bere Road is located to the north of the landfill and MRF building travelling south along the eastern edge of the landfill and to the west of the proposed MRF building.

- Speed limits will be enforced onsite.
- Surfaces will be routinely inspected for defects and damage and repairs will be implemented as soon as possible to maintain a smooth surface clear of large cracks and potholes.
- All loads will be sheeted or netted as appropriate.

- Instruction will be passed to waste suppliers to ensure vehicles are sheeted .
- To ensure that any potential risk posed by failure of plant, vehicles or equipment are regularly serviced and cleaned.
- All roads will be maintained and cleaned as necessary to minimise the accumulation of mud or dust.
- The tractor and bowser will be available if required to spray all haul routes to prevent the liberation of dust from moving vehicles and plant. A daily visual inspection will be made of the public highway and any mud on the road recorded.
- A permanent wheel wash facility is fully operational at the Site. The wheel wash is maintained and cleaned regularly. All vehicles leaving the MRF building or landfill area must drive through the wheel wash.
- Site staff will check departing vehicles and the condition of the public highway during periods of waste placement. Vehicles will be re-directed through the wheel-wash if particularly cohesive materials, such as clay, are still present prior to exiting the site.
- Valencia will enforce a no idling policy for vehicles, ensuring that wagon or mobile plant engines are switched off when not in use.

5 Pathway Characterisation

5.1 Potential Hazards Pathways

The potential pathways for dust and particulates to reach sensitive receptors are via the air or over land, namely via the wind. Transit of airborne emissions will be determined by the prevailing wind direction and physical obstructions.

Fugitive particulates emissions arising from the proposed activities can be transported via a number of pathways to adjacent sensitive receptors. The following transport mechanisms are possible:

- Windblown dust from operations associated with the MRF; and
- Direct deposition of dust, mud and debris from vehicles exiting the MRF building and the wider Trigon Hill Landfill Site.

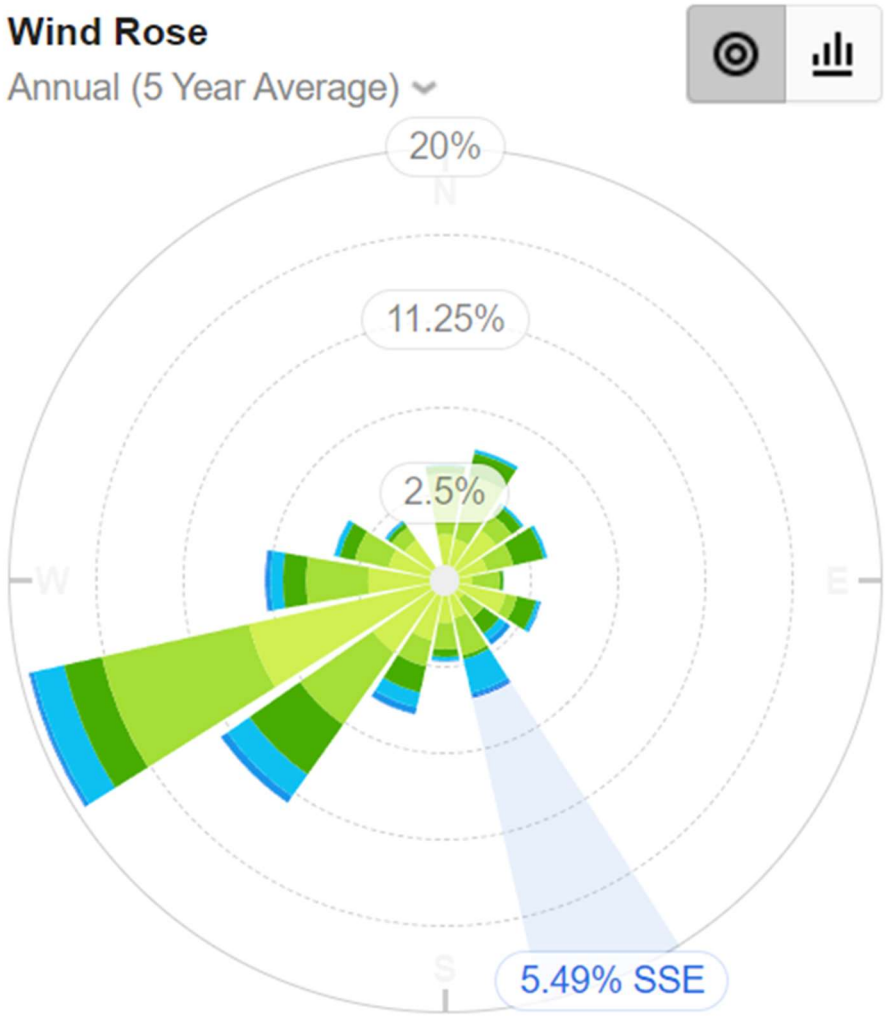
The receptors closest to the operations will be at the highest risk from fugitive dust, mud and debris emissions carried by one or more of the above pathways. However, engineered mitigation measures or natural obstructions to these pathways will determine the degree of risk presented to the receptors by the hazard source term.

Weather and wind statistics are taken from the Hurn[1] Weather Station located 22.9 km northeast of the proposed Site boundary, including the landfill and MRF, and provides wind statistical data for the past 5 years. Due to the locality and the available wind data set of this weather station, it is considered suitable to reflect the weather patterns experienced at Site. The wind rose direction distribution for Hurn weather station is shown in Figure 1 below.

The primary barrier to dust emissions will be the MRF building and associated dust suppression system. The proposed MRF is bounded to the north, east and south by woodland and to the west by Trigon Hill Landfill. The prevailing wind direction is from the west-southwest towards the east-northeast.

[1] https://wind.willyweather.co.uk/sw/dorset/coldharbour.html

Figure 1. Wind Rose



6 Receptor Characterisation

6.1 Potential Hazard Receptors

When identifying the receptors, the closest and the most sensitive (if different from the closest) have been considered in each direction from the hazard. Account has been taken of the mechanism of transport to the sensitive receptor e.g. proximity to highway access / egress points for mud and wind direction for airborne dust. Recent wind direction from Hurn has been used to establish hazard pathways to adjacent receptors.

Probability of exposure is determined by the distance of the receptor to the MRF and the likelihood of the hazard reaching the receptor i.e. frequency of prevailing wind in that direction. The probability of exposure is irrespective of the type of hazard presented.

Sensitive receptors were identified in the Environmental Risk Assessment (K0485-BLP-R-ENV-00004) and detailed in the Table 1. The distance of these receptors to the proposed Site boundary to include the landfill and MRF, their direction relative to the MRF and the frequency the wind blows in the direction of the receptor are detailed in Table 1 below. The sensitivity to dust of the individual receptor types identified in the third column of Table 1 is further detailed in Table 2. The Environment Agency (Agency) guidance template[2] for dust management requires consideration to be given to the impact of dust emissions on receptors within a 1km of the MRF.

Table 1. Potential Sensitive Receptors

No	Description of Receptor	Type	Direction	Distance metres	Frequency Downwind (%)
1	Landfill site, associated surface water bodies and site roads	Commercial/Industrial/ Surface Water/Road	S to NNW	<10	2.64 to 6.12
2	Local Wildlife Sites (Trigon Heaths, Stokeford Heath, Old Ram Plantation,Budden's Farm, South Heath Binnegar, Bloxworth and Morden Heaths, Hyde House, Wareham Lodge, Worgret Heath)	Protected habitat	SW to NE	<10	2.64 to 12.4
3	Priority habitat (deciduous woodland)	Protected habitat	E to SSE	50	0 to 8.14
4	Priority habitat (lowland heathland, deciduous woodland and no main habitat), Trigon Hill Plantation and road	Protected habitat, commercial/industrial and road	NW to SE	80	3.35 to 19.27
5	Public right of way (PROW)	Bridleway/Footpath	N to S	95	0 to 19.27
6	Drainage ditches	Surface Water	ENE to SW	98	0 to 19.27
7	Solar power farm	Infrastructure	E to SE	132	3.35 to 8.14
8	Pond at the Covert	Surface Water	NE	217	12.4
9	Little Trigon Hill Plantation, Clean Hallow Plantation & Brick Kiln Plantation	Commercial/Industrial	S to W	248	2.64 to 6.12

[2] Environment Agency Example Dust and Emissions Management Plan (template supplied by the EA, April 2022), guidance at https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

No	Description of Receptor	Type	Direction	Distance metres	Frequency Downwind (%)
10	Properties off Bere Road in Cold Harbour	Residential	ENE to E	480	8.14 to 19.27
11	Protected habitats (Dorset Heaths (SAC), Morden Bog and Hyde Heath (SSSI)	Protected habitat	ESE	999	5.17
12	Protected habitats (Dorset Heathlands (Ramsar) (SPA), Dorset Heaths (SAC), Morden Bog and Hyde Heath (SSSI)	Protected habitat	SW to NE and SSE to SW	1031	0 to 12.4
13	Protected habitats (Dorset Heathlands (Ramsar) (SPA), Dorset Heaths (Purbeck and Wareham) & Studland Dunes (SAC), Morden Bog and Hyde Heath (SSSI)	Protected habitat	NE to SE	1488	3.35 to 19.27
14	Morden Bog	National Nature Reserve	NE to E	1686	8.14 to 19.27
15	Protected habitats (Dorset Heathlands (Ramsar) (SPA), Dorset Heaths (SAC), Stokeford Heaths (SSSI)	Protected habitat	SW to NW	2000	2.64 to 4.72
16	Protected habitat Poole Harbour (Ramsar) (SPA)	Protected habitat	E to SE	2726	3.35 to 8.14
17	Protected habitat Solent and Dorset Coast (SPA) & Studland to Portland (SAC)	Protected habitat	S to SW	9809	4.33 to 6.12

Table 2. Types of Receptors Sensitive to Dust

Receptor Type	Sensitivity to Dust
Habitat	Medium
Watercourse/ body	Medium
Residential	High
Highway/ Railway/ Footpaths	Medium
Recreational	High
Industrial	Medium
Commercial	Medium

6.2 Receptor Type

6.2.1 Habitats and Waterbodies

A review of online maps shows 6 Priority Habitats within 500 m of the MRF. 4 areas of priority habitat deciduous woodland 1 area of priority habitat of lowland heathland and 1 area of priority no main habitat.

Three special areas of conservation (SAC) were identified within 10km of the MRF: Dorset Heaths; Dorset Heaths (Purbeck and Wareham) & Studland Dunes; and Studland to Portland. The

following special protection areas (SPA) were identified within 10km: Dorset Heathlands; Poole Harbour; Solent and Dorset Coast.

Two RAMSAR wetlands were identified within 10km and comprised Dorset Heathlands and Poole Harbour.

The Agency habitat screening tool identified four sites of special scientific interest (SSSI) were identified within 2km and comprise the following: Morden Bog and Hyde Heath; Stokeford Heaths; Wareham Common; and Worgret Heath. However, based on the screening tool on magic map both Wareham Common and Worgret Heath were over 2km from the proposed site and have therefore not been considered further.

One national nature reserve (NNR) was noted within 2km of the site (Morden Bog). Additionally, the following nine local wildlife sites (LWS) were recorded within 2km of the site: Trigon Heaths; Stokeford Heath; Old Ram Plantation; Budden's Farm; South Heath Binnegar; Bloxworth and Morden Heaths; Hyde House; Wareham Lodge; and Worgret Heath.

According to the Agency, a protected species (sand lizard) has been identified within 500m of the MRF.

A number of waterbodies were identified in proximity to the proposed MRF including those associated with the landfill, drainage ditches to the east-northeast to southwest, and a pond.

Uncontrolled fugitive dust is unlikely to affect adjacent habitats. In the unlikely event dust emissions were to occur, only the accumulation of very significant quantities dust in the vegetation could inhibit normal plant growth or animal behaviour.

6.2.2 Residential, Recreational, Industrial and Commercial Premises

The potential emissions from the MRF may have an impact on persons occupying residential, recreational, industrial, or commercial premises. Exposure of emissions to persons at industrial or commercial premises may be lower however as they are more likely to be inside during the working day or they may be transient visitors to the premises. Certain industrial premises may generate similar emissions to the Site and the employees may be desensitised as a result. For example, the neighbouring agricultural land & quarrying activity may generate similar emissions.

Fine dust particulates can travel further than larger particles that may settle on surfaces nearby. Finer particulates may elicit an unpleasant or harmful respiratory effect from sensitive individuals, whilst settlement of dust may be unsightly. Dust is less likely to affect internal spaces; however, a sustained source of fine suspended particulates may eventually permeate inside buildings.

The MRF activity has the potential to generate dust due to the nature of the waste types to be utilised and associated treatment activities however all storage and treatment is to be undertaken within a building with a dust suppression system.

The closest residential areas to the Site are located off Bere Road in Coal Harbour. There are no schools identified within 500m. For conservatism, this management plan assumes the residences

are occupied during the operational hours of the MRF by members of the public most sensitive to emissions. The combination of controls, physical barriers (building, doors and vegetation), distance to the receptors and the prevailing wind direction will prevent dust from reaching receptors.

6.2.3 Highways and Public Rights of Way

The transitory nature of highways means receptors using those locations will be exposed to potential emissions for shorter (albeit variable) periods of time than residences or businesses. Pedestrians will have longer and more direct exposure to emissions compared to vehicle users.

The internal roads near cold harbour are the closest roads with a public right of way (PROW) located within 100m. However, as stated previously that the combination of controls, physical barriers (building, abatement system, doors and vegetation) are unlikely to result in dust emissions reaching these receptors.

6.2.4 Air Quality Management Area

The MRF is not located within and Air Quality Management Area according to DEFRA[3].

[3] https://uk-air.defra.gov.uk/aqma/maps/

7 Risk Assessment and Management Plan

7.1 Risk Assessment

Specific risk assessments have been completed for fugitive dust, and mud & debris, and are contained in Tables 3 and 4. The pathway for dust is determined by the location of the receptor relative to the MRF, distance from the MRF and the frequency (likelihood) the prevailing wind will blow in the direction of the receptor (%), as determined by weather data from the closest weather station. The pathway for mud and debris is determined by the location of the receptor relative to the MRF, the frequency of use of the local road network to and from the wider Trigon Hill Landfill to include the landfill and MRF by vehicles and meteorological conditions which affect the mobility of mud and debris onto public highways.

The risk assessment tables represent the risk of exposure to the hazard before mitigating controls are put in place. The probability of exposure is therefore not necessarily a reflection of the severity of the impact on the receptor, which may not be sensitive to the hazard. The severity of the unmitigated consequence presumes the receptor has been exposed to the hazard. However, if the receptor is unlikely to be exposed, then the overall unmitigated risk is low and vice versa. The mitigated risk is the residual risk presented by the hazard after control measures have been instigated. This is the most realistic representation of the risk as it is extremely likely that controls will be maintained.

Table 3. Dust Risk Assessment

Hazard/Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	ID No.	Distance from Site (m)	Direction from Site	Freq. Downwind (%)					
Dust **Through air from:** Vehicle movements, waste treatment and handling of wastes	1	<10	S to NNW	2.64 to 6.12	High - close proximity to the site, moderately downwind	Medium - staff/users sensitive to dust and potential for accumulation on surface water	Medium	Site staff will trained and enforce strict waste be appropriately acceptance protocols to manage the deposit of potentially dusty wastes. All wastes will be accepted, treated and stored within a purpose built enclosed building enclosed with fast acting roller shutter doors shut when not in use and with an appropriate dust suppression system to be installed. Excessively dusty waste will not be accepted. All vehicles transporting materials to and from the MRF will be sheeted. All plant will be regularly maintained in accordance	Low
	2	<10	SW to NNE	2.64 to 6.26	High - close proximity to the site, moderately downwind	Medium – potential deposition on sensitive vegetation	Medium		
	3	50	E to SSE	0 to 8.14	High - close proximity to the site, moderately downwind	Medium – potential deposition on sensitive vegetation	Medium		
	4	80	NW to SE	3.35 to 19.27	High - close proximity to the site, frequently downwind	Medium – potential deposition on sensitive vegetation, dust nuisance to staff or users of road	Medium		
	5	95	N to S	0 to 19.27	High - close proximity to the site, frequently downwind	Medium - dust nuisance to users	Medium		
	6	98	ENE to SW	0 to 19.27	High - close proximity to the site, frequently downwind	Medium - potential for dust accumulation in watercourse	Medium		

Hazard/Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	ID No.	Distance from Site (m)	Direction from Site	Freq. Downwind (%)					
	7	132	E to SE	3.35 to 8.14	High - close proximity to the site, moderately downwind	Medium - receptor potentially sensitive to dust (may impact functioning of equipment)	Medium	with the manufacturer's instructions. All vehicles will use wheel cleaning facilities to prevent mud / dust being trailed onto adjacent roads and creating a hazard / nuisance. On site vehicle speed limit enforced to ensure that vehicle movements do not generate excessive dust. Internal roads are to be regularly maintained. During dry periods controls will be put in place including dampening of site roads/surfaces as necessary using a mobile bowser or restricting activities	
	8	217	NE	12.4	High - moderate proximity to the site, frequently downwind	Medium - potential for dust accumulation in watercourse	Medium		
	9	248	S to W	2.64 to 6.12	Medium - moderate proximity to the site, moderately downwind	Medium - dust nuisance to staff	Medium		
	10	480	ENE to E	8.14 to 19.27	Medium - distant from the site, frequently downwind	High - dust nuisance to residents	Medium		
	11	999	ESE	5.17	Medium - distant from the site, moderately downwind	Medium – potential deposition on sensitive vegetation	Medium		
	12	1031	SW to NE and SSE to SW	0 to 12.4	Medium - distant from the site, frequently downwind	Medium – potential deposition on sensitive vegetation	Medium		
	13	1488	NE to SE	3.35 to 19.27	Medium - distant from the site, frequently downwind	Medium – potential deposition on sensitive vegetation	Medium		

Hazard/Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	ID No.	Distance from Site (m)	Direction from Site	Freq. Downwind (%)					
	14	1686	NE to E	8.14 to 19.27	Medium - distant from the site, frequently downwind	Medium – potential deposition on sensitive vegetation	Medium		
	15	2000	SW to NW	2.64 to 4.72	Low - distant from the site, infrequently downwind	Medium – potential deposition on sensitive vegetation	Low		
	16	2726	E to SE	3.35 to 8.14	Medium - distant from the site, moderately downwind	Medium – potential deposition on sensitive vegetation	Medium		
	17	9809	S to SW	4.33 to 6.12	Medium - distant from the site, moderately downwind	Medium – potential deposition on sensitive vegetation	Medium		

Table 4. Mud Risk Assessment

Hazard/Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	ID No.	Distance from Site (m)	Direction from Site	Freq. Downwind (%)					
Mud tracked from site onto public highway by: Vehicles leaving	1	<10	S to NNW	2.64 to 6.12	High - close proximity to the site, staff may pass site entrance on a regular basis	High - potential road hazardous conditions for staff/users of road. Surface water not sensitive.	High	Tarmac surfaces and hard surfaced haul roads will significantly reduce disturbance of ground and production of fugitive mud. All departing vehicles will be required to use the wheel washing equipment at least once to remove accumulated mud or debris. Site staff at the weighbridge will check departing vehicles. Vehicles may be required to repeat their use of the wheel cleaning equipment, if mud is likely to be a problem. The wheel washing equipment will be subject to regular maintenance to ensure their effectiveness. The integrity of the haul roads will be regularly assessed to ensure the surface is not accumulating mud that could be tracked off site. Repairs will be made to surfaced roads or where potholes / low	Low
	2	<10	SW to NNE	2.64 to 6.26	Low - not applicable	Low - no impact	Low		
	3	50	E to SSE	0 to 8.14	Low - not applicable	Low - no impact	Low		
	4	80	NW to SE	3.35 to 19.27	Low - not applicable	High - potential road hazardous conditions for staff/users of road. No impact on protected habitat	Medium		
	5	95	N to S	0 to 19.27	Low - no physical connection	Low - no impact	Low		
	6	98	ENE to SW	0 to 19.27	Low - not applicable	Low - no impact	Low		
	7	132	E to SE	3.35 to 8.14	High - close proximity to the site, staff may pass site entrance on a regular basis	Low - no impact	Medium		
	8	217	NE	12.4	Low - not applicable	Low - no impact	Low		

Hazard/Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Residual Risk
	ID No.	Distance from Site (m)	Direction from Site	Freq. Downwind (%)					
	9	248	S to W	2.64 to 6.12	Medium - moderate proximity to the site, staff may pass site entrance	High - potential road hazardous conditions	Medium	points are causing water or mud to accumulate. Internal roads will be maintained and cleaned as necessary using a road sweeper. Where mud on the public roads has been positively identified as being associated with the site, then road sweepers will be employed without delay to remove the mud / debris. A daily visual inspection will be made of the public highway and recorded. Where mud is positively identified as being associated with the site, then road sweepers will be employed without delay to remove the mud / debris	
	10	480	ENE to E	8.14 to 19.27	Medium - distant from the site, residents may pass site entrance	High - potential road hazardous conditions	Medium		
	11	999	ESE	5.17	Low - not applicable	Low - no impact	Low		
	12	1031	SW to NE and SSE to SW	0 to 12.4	Low - not applicable	Low - no impact	Low		
	13	1488	NE to SE	3.35 to 19.27	Low - not applicable	Low - no impact	Low		
	14	1686	NE to E	8.14 to 19.27	Low - not applicable	Low - no impact	Low		
	15	2000	SW to NW	2.64 to 4.72	Low - not applicable	Low - no impact	Low		
	16	2726	E to SE	3.35 to 8.14	Low - not applicable	Low - no impact	Low		
	17	9809	S to SW	4.33 to 6.12	Low - not applicable	Low - no impact	Low		

7.2 Dust Monitoring and Action Plan

7.2.1 Dust Monitoring

Dust monitoring will be undertaken daily during operational periods at the MRF. The Site Manager will be responsible for assessing predicted meteorological conditions each day.

All personnel employed on Site will undertake visual monitoring for dust within the MRF building and external to the MRF building. Any problems observed will immediately be reported to the Site Manager who will be responsible for investigating the cause and implementing any necessary remedial plan.

Visual monitoring internally continually during recycling plant operation. Visual monitoring externally to the MRF will be undertaken at two upwind and two downwind (based on the prevailing wind direction) daily. The locations will be subject to change based on prevailing wind direction on the day.

Records will be completed for each inspection and all site staff would be responsible for reporting dust and particulate problems as soon as practicable to the site manager or the next level of management if the site manager is not available.

The following information will be recorded during each round of monitoring:

- Name of assessor and position at facility e.g. weighbridge clerk etc.;
- Nature of any problem identified including location, source, date, time, duration, prevailing weather conditions and likely cause;
- On-site activities and operational condition at the time of the monitoring visit (this should include any of the abnormal events detailed in Section 8.7 below);
- Records of the likely source of any dust, even if it is not from the facility; and
- Details on the corrective action taken, realistic timeframes for remedial works and any subsequent changes to monitoring and operational procedures.

The Site Manager will be informed immediately of any findings of dust attributed to the site and will authorise remedial measures to be taken.

The operations associated with the MRF will be contained within a building and therefore it is considered that quantitative dust monitoring is not suitable.

7.2.2 Action Plan

In the unlikely event that unacceptable dust emissions arise from the MRF one or more of the following remedial actions will be undertaken:

- Operations identified as generating unacceptable emissions of dust will be reduced or suspended until effective remedial actions have been taken or weather conditions resulting in the fugitive emissions have moderated.
- A review of the dust suppression system within the MRF building will be undertaken to ensure it is operating as designed. If required, an external contractor will undertake an audit of the system.
- Additional dust controls may be considered to be utilised within the MRF building for example dust control curtains using a fine spray to create a physical barrier across access doors.
- A thorough clean and clearing of the MRF building will be actioned if it is considered to be the source of fugitive emissions of dust.
- Vehicle movement routes may be reconsidered with regard to location (i.e., relocating further from the receptor at risk), speed limits may be reduced, or surfaces and gradients altered.
- Additional inspection of vehicles may be undertaken to ensure adequate covering of loads arriving and cleanliness of wheels when leaving.
- All vehicles will pass through the wheel wash facility and additional wheel cleaning may be employed if required, such as a mobile pressure washer;
- Waste handling procedures may be altered, and waste acceptance procedures reviewed, such covering dusty wastes on deposit, or stop accepting problematic wastes; and
- Quantitative dust monitoring may be implemented, if persistent complaints are received and the corrective actions above have not resolved the problem.
- A record relating to the management and monitoring of dust will be maintained in the Site log.

This record will include the following details:

- A record of all dust events including date, time and the cause of the problem.
- A record of all complaints.
- Details on the corrective action taken and any subsequent changes to operational procedures.

7.3 Mud and Debris Monitoring and Action Plan

7.3.1 Monitoring

- Visual Monitoring for fugitive mud and debris emissions will be undertaken daily during operational periods.
- The Site Manager will be responsible for assessing predicted meteorological conditions each day, which will determine if mud and debris control methods will be required on all operational areas.
- All personnel employed on Site will undertake visual monitoring for mud and debris. Any problems will immediately be reported to the Lead Operative who will be responsible for investigating the cause and implementing any necessary remedial plan.

7.3.2 Action Plan

In the unlikely event that unacceptable mud and debris emissions are identified, one or more of the following remedial actions will be undertaken:

- Operations identified as generating unacceptable emissions of mud and debris will be reduced or suspended until effective remedial actions have been taken or weather conditions resulting in the fugitive emissions have moderated.
- On Site vehicle movement routes may be reconsidered with regard to location (i.e., relocating further from the receptor at risk or avoiding excessively muddy roads).
- Internal unpaved roads will be regularly inspected and maintained to reduce the potential for the roadway to become a source of mud and debris on the wheels of Site traffic.
- Any mud and debris carried onto the public highway will be removed using a road sweeper as soon as practical.
- Additional inspection of vehicles may be undertaken to ensure adequate cleanliness of wheels when leaving.
- All vehicles will pass through the wheel wash facility and additional wheel cleaning may be employed if required, such as a mobile pressure washer.
- Waste handling procedures may be altered, and waste acceptance procedures reviewed, such as stopping the acceptance of problematic wastes.

A record relating to the management and monitoring of mud and debris will be maintained in the Site log. This record will include the following details:

- A record of all mud and debris events including date, time and the cause of the problem.
- A record of all complaints; and

- Details on the corrective action taken and any subsequent changes to operational procedures.

8 Community Engagement, Reporting and Contingencies

8.1 Overview

Prevention will be viewed as the most effective means of controlling dust before an adverse impact occurs from uncontrolled emissions. The Source → Pathway → Receptor model determined above allows for the identification of the critical control points where dust can arise, how it can travel to a receptor and the likely impact.

The performance of a DEMP will ultimately be judged by the impact of the MRF on the receptors. Should complaints be received, a procedure will be in place to effectively deal with the issue in a sensitive, efficient and auditable manner. The controls are detailed in previous sections of this report. The management of those controls will be based on the on-going monitoring regime. The monitoring regime can work as an early warning system against potential problems (e.g. meteorological monitoring) or a diagnostic tool to establish the cause of a dust event (e.g. perimeter monitoring).

8.2 Complaints Procedure

In the event of a dust complaint the complaint form provided in Appendix B will be completed. This will record the date, time and the cause of the dust emission and include details on the corrective action taken and any subsequent change in operational procedures. Where possible, as much information and detail about the complaint will be recorded, whether this is from the relevant authority or a complaint direct to Valencia. This information will assist in the investigation and determining the source of the dust e.g. differentiating between potential dust from the MRF activities and landfill activities or other off-Site activities.

All complaints and queries will be logged in accordance within the EMS as soon as is practicably possible. All complaints logged will be subject to investigation, and complainants responded to within 48 hours of receipt, where possible. All responses will be through trained and experienced staff.

In the event that a substantiated dust complaint is received arising, additional monitoring will be undertaken at the nearest sensitive receptors. The person conducting the survey shall make note of any dust at each monitoring point including those not of obvious waste origin.

Complaints regarding dust will be investigated in accordance with the protocol, and appropriate records maintained which may include:

- Complaints received including name and contact details of complainant (if known), and complainants description of the dust.
- Nature of problem including date, time, duration, prevailing weather conditions and cause of the problem.

- On-Site activities and operational conditions at the time of the complaint.
- Records of the likely source of the dust, even if it is clearly not from the Site.
- Details on the corrective action taken and any subsequent changes to monitoring and operational procedures; and,
- The Agency will be proactively informed by Valencia of the complaint and Valencia will confirm to the best of its knowledge the information described above.

Valencia will ensure that the complainant has all the relevant contact details (i.e. the Site Manager) and the officer responsible at the Agency. Valencia will be in regular contact with the complainant and the Agency whilst the cause of the dust is being investigated and remediated.

An evaluation of the effectiveness of the techniques used will be carried out on completion of any remedial measures, or if the complaints persist. Records of the above will be retained by Site for future reference.

8.3 Means of Contact

Valencia will be readily contactable to outside organisations and to members of the public. The Site signage board (placed in a readily visible location) will contain the necessary contact details for both the Site operations and Agency. The company website also contains the necessary contact details.

Any complaints received directly to Site will be notified to the Agency. Should an off-site issue arise, therefore, the complainant has a readily available means of getting in touch with Valencia.

8.4 Complaint Screening

As part of each complaint received, these will be objectively assessed against the wider environment to ensure that the source of the emission is traced back to the correct source. It is essential that the source is correctly identified in order that mitigating measures can be applied effectively and correctly. The complaint will also be assessed against previous records to place the nature of the complaint into context.

If patterns in complaints emerge, community groups or individuals (subject to their agreement) will be called upon to act as an additional dust monitoring resource.

8.5 Complaint Investigation

In the event that dust is found to be causing a problem from the Site, as determined and confirmed by investigation into off-site complaints, or during routine monitoring; measures will be taken to determine the source of this dust and the following courses of action as detailed below shall be taken:

- Additional dust monitoring as detailed above to identify the extent of the dust emission and potential cause for the dust i.e. waste material and/or activity.
- Examination of the operational activities at the time of the dust complaint.
- Examination of the meteorological conditions at the time of the complaint.
- Carry out a review of the operational procedure and controls and instigate any control measures immediately following identification of the problem; and,
- Further monitoring will be carried out to ensure the issue has been addressed and to monitor the effectiveness of any control measures undertaken.

It is recognised that whilst complainants are encouraged to report valid complaints to the regulatory bodies, complaints that are received/submitted directly to the Site are able to be investigated more rapidly. As a result, complaints reported directly can be substantiated, reviewed and actioned quicker. With the complainant still able to report the complaint to the regulatory bodies after, should it be necessary. Nevertheless, all complaints will be investigated.

8.6 Contingency and Emergency Plans

In the event that dust is proven to be from the any Site activities, landfill or MRF, and found to be causing a problem, as determined by the investigation of off-Site complaints or during routine on-Site monitoring, action will be taken to determine the source and the following courses of action. Control and mitigation measures for each stage of the waste management process are as described in Section 4.

8.7 Abnormal Events

The DEMP assumes that the MRF will be running under expected operational conditions. There are however circumstances that could result in a dust emission from the MRF if not appropriately considered in advance.

8.7.1 Strong Winds

Daily visual inspection of the infrastructure will be undertaken and recorded by the Site Manager. Additional inspection for damage resulting from high wind events will also be undertaken and contingency actions identified below considered should high wind conditions result in escape of significant dust emissions.

8.7.2 Implementation of Contingency Plan and/or Emergency Plan

Unscheduled unavailability should only take place due to unscheduled maintenance, emergency situations and for Health and Safety reasons such as a fire. In such cases the plant staff will initially inform the plant manager who will in turn inform service managers, the Authority and the Agency.

Site staff will implement measures to store or divert wastes as required with consideration to divert wastes to the landfill.

8.7.3 Operator's Experience with Contingency/Emergency Situations

Valencia has a policy of continuous review of emergency and contingency procedures which helps improve procedures across the Valencia's operations.

8.7.4 Review and Update of Contingency/Emergency Plans

The Contingency Plan and Emergency Plan will be reviewed following any incident where they have had to be followed. They will be updated as necessary with any lessons learned.

8.8 Records and Reviews

A daily record relating to the management and monitoring of dust will be maintained. It will include the following details:

- The results of inspections and visual monitoring carried out by site personnel;
- Weather conditions including atmospheric pressure, wind speed and wind direction;
- Problems including date, time, duration, prevailing weather conditions and cause of the problem;
- Complaints received including address of complainant; and
- Details of the corrective action taken, and any subsequent changes to operational procedures.

The DEMP will be reviewed on an annual basis with the scheduled review of the Site's EMS or with every major decrease, or alteration to the dust generated at Site (i.e. a change to dust source term, pathways or receptors).

8.9 Communication Tools

Stakeholders will typically include the Local Authority, the Agency, Parish Councils and members of the local community. Other stakeholders may include local businesses should the Site be deemed to impact upon them.

In addition, and as covered within the complaints section, contact details will be made available so that any complaints can be directed to Site and an investigation undertaken immediately.

9 Conclusion

The risk assessments detailed in this document indicate that due to management activities, uncontrolled dust, mud and debris emissions, collectively 'particulates emissions', are unlikely to cause any disturbance to the surrounding area.

All proposed activities associated with the MRF are to be undertaken within an enclosed building with a dust suppression system to be appropriately designed and installed by a specialist contractor.

Residential properties to the east-northeast/east and protected habitats are considered most sensitive to the current operations. However, given the predominant wind direction and the mitigation measures employed, these areas are highly unlikely to be affected by the operations.

It has been concluded that with the use of appropriate mitigation controls detailed in this management plan, the operations undertaken will not present a risk to surrounding receptors.

Drawings

A1

GENERAL NOTES

LEGEND

1. DO NOT SCALE
2. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM
3. ANY ANOMALIES ON THIS DRAWING ARE TO BE BROUGHT TO THE ATTENTION OF BYRNE LOOBY LTD

KEY

- PERMIT BOUNDARY
- PROPOSED BOUNDARY
- 2K BUFFER ZONE
- PROPOSED MRF LOCATION
- (4) RECEPTOR MARKER

Rev	Date	Description	By	Chk	App

BYRNELOOBY

WWW.BYRNELOOBY.COM

IRELAND | UK | UAE | BAHRAIN | KSA

CLIENT: Valencia Waste Management Limited

PROJECT: TRIGON

DRAWING TITLE: 2K SENSITIVE RECEPTOR PLAN

STATUS: FINAL

Date: 02.11.23	Scale: 1:7500	Drawn: JM	Chk: GH	App: JB

Project No:	Drg. No:	Rev:
K0485	K0485.1.002	00

A1

GENERAL NOTES

LEGEND

1. DO NOT SCALE
2. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM
3. ANY ANOMALIES ON THIS DRAWING ARE TO BE BROUGHT TO THE ATTENTION OF BYRNE LOOBY LTD

KEY

- PERMIT BOUNDARY
- PROPOSED BOUNDARY
- 10K BUFFER ZONE
- PROPOSED MRF LOCATION
- 4 RECEPTOR MARKER

Rev	Date	Description	By	Chk	Appr

BYRNELOOBY

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IRELAND | UK | UAE | BAHRAIN | KSA

CLIENT:
Valencia Waste Management Limited

PROJECT:
TRIGON

DRAWING TITLE:
10K SENSITIVE RECEPTOR PLAN

STATUS:
FINAL

Date: 02.11.23	Scale: 1:35000	Drawn: JM	Chk: GH	Appr: JB

Project No:	Drg. No:	Rev:
K0485	K0485.1.003	00

Appendix A – Daily Record Sheet

BYRNELOOBY
AN ayesa COMPANY

Daily Site Inspection Report

SITE: **WEEK COMMENCING:**

ITEM NO.	ITEM DESCRIPTION.	SUN	MON	TUE	WED	THUR	FRI	SAT
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

COMMENTS BELOW **(Please insert number)**

NO.	DATE	COMMENT

INSPECTED BY: ..... **DATE:** .....

CHECKED BY: **DATE:**

Appendix B – Complaint Form

BYRNELOOBY
AN ayesa COMPANY

Details	
Name	
Address Postcode	
Contact Details	
Tel	
Email	
Date	
Complaint Ref Number	
Complaint Details	

Investigation Details	
Investigation carried out by	
Position	
Date & Time investigation carried out	
Weather conditions	
Wind direction and speed	
Investigation findings	
Feedback given to Environment Agency and / or local authority	
Date feedback given	
Feedback given to public	
Date feedback given	

Review and Improve	
Improvements needed to prevent a reoccurrence	
Proposed date for completion of the improvements	
Actual date for completion	
If different insert reason for delay	
Does the dust and emissions management plan need to be updated	
Date that the dust and emissions management plan was updated	

Closure	
Site Manager review date	
Site Manager signature to confirm no further action required	

Technology | Engineering | Consulting

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www.byrnelooby.com
www.ayesa.com/en/

Email: info@byrnelooby.com