Crown Transfer Station 2

Dust and Emissions Management Plan

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1 Introduction

1.1 Report Objectives

This Dust and Emissions Management Plan (DEMP) supports a bespoke permit application by Crown Waste Management Limited (the Operator) at Crown Waste Transfer 2, Pool Road Industrial Estate, Pool Road, Nuneaton, CV10 9AE (the Site).

This DEMP is part of the Environment Risk Assessment (ERA) report (referenced: K4554-BLP-R-ENV-00008) for the Site and as such should be read in conjunction with the ERA. The purpose of this DEMP is to identify which aspects of the Site's operations are likely to cause a potential harmful emission of uncontrolled dust and how these emissions will be minimised and mitigated. Reference has been made to Environment Agency (Agency) web-based guidance[1].

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.

[1] https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

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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 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.

Crown Waste Management Limited operates an Environmental Management System (EMS) for this site and the associated Pool Road Transfer Station 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

The Site is located 1.5km west of Nuneaton and is centred on an approximate National Grid Reference of SP 34686 92298 and is located within Pool Road Industrial Estate which comprises predominantly industrial businesses.

The Site occupies 0.3 hectares of land, with the main concreted yard area where waste materials are stored and processed covering around 0.2 hectares. The site operates as a satellite of the currently permitted Waste Transfer Station (WTS1) operated within Pool Road Industrial Estate by the Operator under existent permit reference EPR/EP3192FU.

The proposed Waste Transfer Station (WTS2) currently operates under waste exemptions. The Site will store baled plastic, cardboard, wood, soils & stones, general mixed waste, green waste and metal. The Site also provides skip and vehicle storage. The proposed treatment activities will be limited to treatment of construction and demolition wastes to produce a saleable aggregate.

The site is accessed via an existing gated access off Pool Road. Existing fencing will be repaired (where necessary), utilised and maintained. The northwest corner of the Site is bounded with Lego Concrete Blocks with corrugated fencing. A mixture of 3m high solid profiled sheeting screen fences and palisade fences are installed around the remaining site. A notice board will be provided at the site gate with the permit details and the Agency's contact details.

No new buildings will be constructed onsite and waste will be weighed in and sorted at the currently permitted WTS1 prior to storage at the Site.

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Surface water runs from north to south and is directed to a drain towards an interceptor and silt trap before existing via foul sewer. Kerbing, a minimum height of 0.1 m, will be installed around the permitted of the Site to create a sealed system.

The Site Layout is shown on drawing reference 4554/4/003.

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3 Fugitive Dust Emissions Sources

3.1 On-Site Dust Emission Sources

Dust emissions result from small particles suspended in the air leaving the Site. Particles can become airborne as a result of activities undertaken at the Site. Air currents disperse the particles with finer dust particles able to be deposited over a wider area. The storage and treatment activities at the Site may result in fugitive dust emissions. Fugitive dust emissions can potentially arise from the following Site activities:

- Transport of waste to Site;
- Deposit of waste in designated storage bays;
- Transit of waste between treatment plant and designated storage bays;
- Storage of waste in bays;
- Deposit of waste into the hopper, screener, picking station;
- Transport of waste on conveyors;
- Screening of waste and ejection of fines / material;
- Wind-blown dust accumulated on Site surfaces;
- Vehicle movements on dusty roads;
- Loading of material for removal from Site; and
- Transport of waste from Site.
- Potentially dusty wastes accepted onsite include soils and aggregate.

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. This DEMP includes measures to manage potential fugitive emissions.

3.1.1 Off-Site Dust Emission Sources

The site is neighboured by two other open yards and a number of commercial / industrial properties. These activities have potential to generate their own dust emissions.

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4 Control Measures for On-Site Dust Emissions

This section provides the control measures for the WTS2 and the operations associated with the WTS2 such as waste delivery, handling and vehicle controls.

4.1.1 Waste Delivery

Control of incoming wastes will be managed according to the Operator's waste acceptance procedures. The waste acceptance protocols aim to identify non-permitted waste which will be rejected and redirected to the customer, to an appropriate permitted disposal facility or temporarily stored in a closed and lockable 14-yard quarantine skip.

All vehicles delivering waste to the Site will be under the control of Site staff, all of whom have been trained in the procedures for the receipt and rejection of waste. All loaded lorries entering and leaving the site shall be sheeted or netted as appropriate. Instruction will be given to the driver to ensure vehicles will not be unsheeted before they enter the Site to prevent waste becoming a dust nuisance.

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.

Wastes will be inspected by the driver of the collecting vehicle as far as is possible before collection and again by Site operatives prior to the load being deposited. This is to ensure that the waste delivered conforms with the description on the Waste Transfer Note and can be accepted on Site. Until this is done the waste is not deposited. Site operatives supervising deposit of the material will be in constant communication with the Site Manager to advise them if dusty loads incorrectly described by the supplier have been accepted.

Waste is received on-site on a load-by load basis. Waste will only be brought to the Site after it has been weighed in, registered and checked at the permitted WTS1. Vehicles will enter the Site via the entrance gateway, tip the waste in the designated area and leave by the exit gateway as shown on the Site Layout Plan.

Construction and demolition waste will be processed by a hopper, screener and picking station into aggregate.

Records of received wastes will be made and retained in accordance with the Duty of Care. The following records will be retained for each load of waste delivered:

- Date and time of delivery;
- Vehicle details (registration);
- Description (including any associated strong odours);
- Origin (if known); and,
- Quantity.

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

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vehicle engine idling when stationary for prolonged periods to reduce exhaust emissions and appropriate locations to deposit waste.

4.1.2 Waste Rejection

Wastes delivered to the Site that is not within its permit or that is identified as dusty will be rejected and redirected to the customer, to an appropriate permitted disposal facility or temporarily stored in a closed and lockable 14-yard quarantine skip. Providing the skip is fully enclosed excessively dusty wastes may be stored for one week prior to removal. A record will be made of wastes found not to be permitted. This may include:

- Waste types;
- Deliverer;
- Date of receipt; and
- The producer.

All non-permitted waste and / or excessively dusty waste will not be accepted. The majority of the waste accepted at Site is of low / medium dust potential. The high risk dust potential waste types are limited to wastes that are processed at the Site. In the unlikely event that dusty waste will be deposited onsite the below controls will be implemented.

4.1.3 Site Controls

The Site is bunded to the north western corner with Lego Concrete Blocks with corrugated fencing. A mixture of 3m high solid profiled sheeting screen fences and palisade fences are installed around the remaining site. Both minimise dust and litter emissions.

Stockpiles of materials stored at Site shall not exceed 3 metres in height.

Daily visual inspection by appropriate site staff at suitable locations taking account of the prevailing wind direction will be undertaken.

A complaints procedure is in place on Site and any complaints received will be documented, investigated and remedial measures put in place.

4.1.4 Vehicle Controls

All loaded lorries entering and leaving the site shall be sheeted or netted as appropriate. All vehicles and exterior surfaces will be maintained and cleaned as necessary to minimise the accumulation of mud or dusty materials. In the event that the Site becomes muddy and/or debris is tracked off Site by vehicles entering/leaving Site the road sweeper will be deployed to clean the Site and any contaminated roads off Site.

Plant, vehicles, and equipment at the Site will be regularly serviced and cleaned to ensure that any potential risk posed by failure are minimised.

The operator will also reduce the risk of dust generation by minimising the drop height.

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4.1.5 Dust Suppression System

The Site has a Quattro 4-in-1 Effective Defence to minimise dust. It includes a rainmaker which extends to a heigh of 3m where 3 powerful jet nozzles throw mist up to 20m. It also contains a handheld jet wash for direct application to problem areas. It can also be towed around site and use the rear spray bar measuring for damping down roads and other surfaces. Material will be dampened down prior to treatment via hopper, screener and picking station where required or when dry and then stored. The dust suppression system can be on during operation and if high dust levels are evident during non-operational hours. Manual sprays may also be used on stockpiles if deemed necessary. The datasheet is attached as Appendix B.

4.1.6 Screener

Soil, brick and concrete will be processed through a screener to produce a saleable aggregate. The screener as it vibrates causes the particles to be moved across the screen sorting out the particles by size. Dust could be released when the conveyors discharge the separated material. The conveyors move at sufficient velocity to prevent material from being exposed to cross winds for sustained periods of time, but not so fast that material is ejected from the conveyor. The finer nature of this material means it is likely to have higher particulate or light fraction content. Particular care is therefore taken not to drop from excessive height when loading it from the stockpile into the container. The mechanical screener will be operated in accordance with manufacturers recommendations. The mobile screener will only be operated periodically during operational hours dependent on available material. The maximum daily treatment capacity of soil, brick and concrete wastes is 80 to 100 tonnes. The daily tonnage varies depending on accepted contracts. In dry weather conditions, when the mechanical screener is in operation the dust suppression system is activated.

4.1.7 Picking Station

The screened material is then fed into the picking station where Site operatives pick any contaminants from the waste which are deposited in skips. For noise, dust and safety reasons the picking station is located in a portacabin away from areas where vehicles operate.

Treated material is deposited into an adjacent concrete bay with concrete push walls to a height of 3 m. When sufficient material has been accumulated it is loaded into a container for export from Site for onward processing.

4.1.8 Separator

Soil, brick and concrete will also be processed through a separator. The HAAS wind sifter AIRWOLF proposed to be used onsite will complete the recycling process downstream of the mobile screener. The material is fed by a sturdy vibrating conveyor, so that the material is distributed over the entire working width of the wind sifter. The materials are separated by a process consisting of three components: the acceleration belt, the air nozzle and the separation drum. Light and heavy materials are precisely separated. Both fractions, light and heavy, are discharged over 2 integrated and hydraulically foldable outfeed belts into the adjacent concrete bays.

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Product advantages that minimise dust emissions include:

- Very low dust emission due to a sophisticated airflow system
- Comfortable dropping heights of light and heavy outfeed belts
- Low infeed height of 2.76 m – flexible use in combination with other mobile machines
- Removable dust covers over vibratory feeder

The data sheet for the HAAS Airwolf is attached as Appendix C.

4.1.9 Adverse Weather Conditions

During adverse weather conditions i.e. strong winds material will be covered with a suitable terrain type sheet, treatment activities will cease and the dust suppression system may be required to be on during non-operational hours.

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5 Potential Pathways

5.1 Airborne Pathways

The potential pathways for dust to reach sensitive receptors are via the air or over land. 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 WTS2; and
- Direct deposition of dust, mud and debris from vehicles exiting the WTS2 Site.

Transit of emission which could travel overland will primarily be limited by physical barriers such as containment engineering, walls, fences and vegetation. There is no direct pathway between Site surfaces and potential off-site receptors other than via the Site access gates.

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.

The Operator has considered the potential cumulative airborne issue from both the sites (WTS1 and WTS2) in terms of emissions. This could potentially occur when the wind is blowing from the northeast or the southwest (i.e. when the two sites are aligned).

WTS1 is already permitted under environmental permit reference EPR/EP3192FU and operates in accordance with the following approved plans: Odour Management Plan (4554/R/003), Fire Management Plan (4554/R/004), and Dust Management Plan (4554/R/006).

For WTS2, the Operator will implement the appropriate mitigation measures detailed in this report and the Fire Prevention Plan (K4554-BLP-R-ENV-00010), Dust and Emissions Management Plan (K4554-BLP-R-ENV-00013), and Odour Management Plan (K4554-BLP-R-ENV-00012).

The risk of an increase cumulative impact is considered low as appropriate mitigation measures are and will be in place.

Meteorological data from Nuneaton[2] is expected to provide representative meteorological data for the area. The windrose reproduced as Figure 1 indicates a wind direction from the prevailing south-south-east.

[2] https://wind.willyweather.co.uk/wm/warwickshire/nuneaton.html

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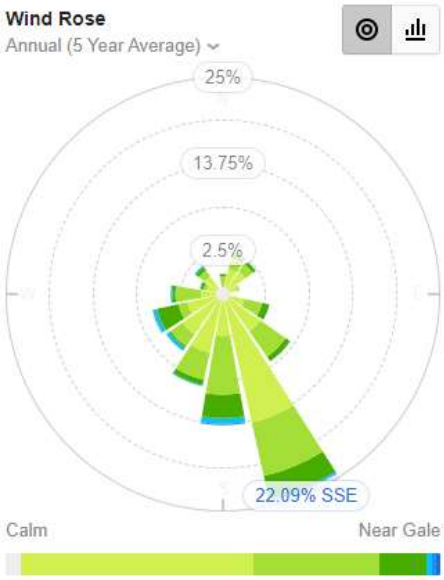

Figure 1. Windrose Nuneaton

The primary barrier to dust emission will be the Site's surrounding fencing. The Site is bounded to the northwestern corner with bounded with Lego Concrete Blocks with corrugated fencing. The remaining Site is bounded by security fencing. These are located where the risk of dust and light fraction fine emissions is likely to be highest i.e. separator and screener. The fencing will be effective at trapping the light fraction fines, however strong winds may still lift dust over the wall.

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6 Potential Sensitive Receptors

6.1 Receptor Locations

When choosing the receptors, the closest or the most sensitive (if different from the closest) have been considered in each direction from the hazard. The most sensitive receptors are within 500 m radius of the Site making the assessment conservative for other potential receptors located further away. Account has been taken of the mechanism of transport to the sensitive receptor e.g. wind direction or a physical connection to the Site. Receptors are considered sensitive where people and habitats have the potential to be adversely affected by the dust emissions.

The probability of exposure is determined by the distance of the receptor to the Site and the likelihood of the hazard reaching the receptor (e.g. frequency of prevailing wind in that direction). This stage of the assessment assumes that exposure has resulted from an uncontrolled emission i.e. without mitigation.

Sensitive receptors were identified in the Environmental Risk Assessment (K4554-BLP-R-ENV-00008), detailed in Table 1 and shown on drawing reference 4554/4/001B (Appendix A). The distance of these receptors to the Site boundary, their direction relative to the Site and the frequency the wind blows in the direction of the receptor is detailed in Table 1. The sensitivity to dust of the individual receptor types identified in the third column of Table 1 is further detailed in Table 2. The Agency guidance template[3] for dust management requires consideration to be given to the impact of dust emissions on receptors within a 1km of the WTS2.

Number	Receptor	Description	Distance from Site	Direction from Site	Freq. of Prevailing Wind
1	Bar Pool Brook	Watercourse	<10	N	13.6
2	Ennell Road / Arrow Road	Road	96	N	13.6
3	Properties off Willow Road	Residential	140	N	13.6
4	Holly Stitches Dell	Local Wildlife Site	151	N	13.6
5	Coastal and Floodplain Grazing Marsh	Protected Habitats	<10	NNW to NE	22.1 to 7.2
6	Arleigh Internation / Midland Chandlers Head Office	Commercial	51	NNE	9.8
7	Unnamed Pond	Waterbody	132	NNE	9.8
8	Tuttle Hill	Road	362	NNE	9.8

[3] Environment Agency Example Dust and Emissions Management Plan (template supplied by the EA, Februaryl 2023), guidance at https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

Number	Receptor	Description	Distance from Site	Direction from Site	Freq. of Prevailing Wind
9	Residential Properties off Corrib Road	Residential	128	E	5.5
10	Coventry Canal	Watercourse	195	ESE	2.5
11	Pool Road Industrial Estate	Commercial / Industrial	<10	E to W	5.5 to 0.7
12	Railway Line	Railway	187	SE	3.6
13	Playing Fields	Recreational	248	SE	3.6
14	MacIntyre's Discovery Academy	School	355	SE	3.6
15	Allotment Gardens	Recreational	168	S	2.1
16	Properties off Vernons Lane / Black - A - Tree Road	Residential	227	S	2.1
17	Pool Road	Road	<10	S	2.1
18	Hilary Road	Road	155	WSW	1.8
19	Properties off Hilary Road / Mapel Road	Residential	166	WSW	1.8
20	Whittleford Park and Barpool Valley	Local Wildlife Site	110	NW	8.6
21	Judkins Quarry Complex – HWRC & Bio-Waste Facility	Industrial	485	NE	7.2
22	Camp Hill Primary School and Early Years Centre	School	550	NW	8.6
23	St Anne's Catholic Acadamy	School	950	NW	8.6
24	Stockingford Community Centre	Recreational	915	SE	3.6
25	Stockingford Medical Centre	Medical Centre	710	SSW	4.4
26	Croft Junior School	School	890	SSW	4.4
27	Queen's Church of England Academy	School	700	SE	3.6
28	The Benedictine priory and precinct of St Mary	Scheduled Monument	605	E	5.5
29	Manor Court Site	Hospital	685	E	5.5
30	Abbey Church of England Infant School	School	890	E	5.5

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Number	Receptor	Description	Distance from Site	Direction from Site	Freq. of Prevailing Wind
31	Good Quality - semi improved grassland	Protected Habitats	880	WSW	0.7

Table 1. Sensitive Receptors within 1km

Receptor Type	Sensitivity to Dust
Habitat/Local Wildlife Site	High
Watercourse/ body	High
Residential/School/Hospital/Medical Centre	High
Highway/ Railway/ Footpaths/Road	Medium
Recreational	High
Industrial	High
Commercial	High
Scheduled Monument	Low

Table 2. Types of Receptors Sensitive to Dust

6.2 Receptor Type

6.2.1 Habitat & Watercourse

The Nature and Heritage Conservation Screen (EPR/KB3703LA/A001) identified two Local Wildlife Sites (LWS), Holly Stiches Dell and Whittleford Park and Barpool Valley. It also identified the protected habitat coastal and floodplain grazing marsh. No European Site, Ramsar Site or Site of Special Scientific Interest (SSSI) were identified. The Screen is attached to the DMP.

A review of Magic Maps[4] showed other priority habitats within 500m including Deciduous Woodland and Woodland. These habitats are features of the two LWS and will be considered as part of the LWS in this report.

Two waterbodies comprising a pond and a canal were identified within 500m of the site.

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, School, Hospital, Recreational Land, Industrial & Commercial

The potential emissions from the WTS2 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 waste activities may generate similar emissions.

[4] https://magic.defra.gov.uk/MagicMap.aspx

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Fine dust particulates can travel further than larger particles that may settle on surfaces nearby.

The WTS2 activity has the potential to generate dust due to the nature of the waste types to be utilised and associated treatment activities. However, the site will operate with the use of the following: technology (separator) which will minimise fugitive emissions; the use of a building for the picking station to contain any potential emissions; strict waste acceptance procedures to ensure excessively dusty wastes are not accepted at the site; lego concrete blocks located to the northwest corner; and a dust suppression system.

The closest residential receptors are located within 128m of the site off Corrib Road. There is one school located within 500m of the site (MacIntyre's Discovery Academy). For conservatism, this management plan assumes the residences and schools are occupied during the operational hours of the WTS2 by members of the public most sensitive to emissions. The combination of controls, physical barriers (lego concrete blocks, building for the picking station, and dust suppression system) distance to the receptors and the prevailing wind direction will prevent dust from reaching receptors. Neighbouring waste activities and industrial units may generate similar emissions and are deemed to be transient receptors.

6.2.3 Highways, Railway, Footpaths & Roads

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.

Pool Road which serves the wider Pool Road industrial estate is located less than 10m from the site. However, as stated previously, the combination of controls, physical barriers (lego concrete blocks, building for the picking station, and dust suppression system) distance to the receptors and the prevailing wind direction will prevent dust from reaching receptors.

6.2.4 Air Quality Management Area (AQMA)

The proposed WTS2 is not located within and Air Quality Management Area according to DEFRA[5]

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

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7 Dust Risk Assessment

7.1 Risk Assessments

The risk potential to each receptor as identified in Section 7 and shown on drawing referenced 4554/4/001B from dust generated at the Site is presented in Table 3 below. The pathway fordust is determined by the location of the receptor relative to the WTS2, distance from theWTS2 and the frequency (likelihood) the prevailing wind will blow in the direction of thereceptor (%), as determined by weather data from the closest weather station. This table evaluates the unmitigated risk to sensitive receptors from uncontrolled dust emissions and the control measures to be implemented at the Site in order to minimise this risk, producing a revised risk to receptors.

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.

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Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Mitigated Risk
	No.	Dist.	Direc.	Freq.					
Dust & Litter: from wastes received and Site operations	1	<10	N	13.6	High – close to Site, frequently downwind	High – potential to accumulate in watercourses	High	Strict waste acceptance procedures are in place to ensure excessively dusty wastes are not accepted onto Site. Stockpiles do not exceed 3 metres in height. All loads delivered to or removed from Site will be sheeted or netted. All vehicles and exterior surfaces will be maintained and cleaned as necessary to minimise the accumulation of mud or dusty materials. If required a mechanical sweeper will be deployed to clean the Site and/or any contaminated roads off Site. The Site is bounded along the north western corner were the separator / screener are located with Lego Concrete Blocks with sheet cladding. Any dusty waste materials may be dampened down via the Dust Suppression System. Litter picking is undertaken regularly. Routine monitoring is undertaken. All events or complaints received associated with noise will be documented in accordance with the Sites Complaint Procedure.	Low
	2	96	N	13.6	High – close to Site, frequently downwind	Medium – road transient nuisance	Medium		
	3	140	N	13.6	High – close to Site, frequently downwind	High – nuisance to residents	High		
	4	151	N	13.6	Medium – proximity to Site, frequently downwind	High – potential to smother vegetation	Medium		
	5	<10	NNW to NE	22.1 to 7.2	High – close to Site, frequently downwind	High – potential to smother vegetation	High		
	6	51	NNE	9.8	Medium – close to Site, infrequently downwind	High – nuisance to workers	Medium		
	7	132	NNE	9.8	Medium – close to Site, infrequently downwind	High – potential to accumulate in waterbody	Medium		
	8	362	NNE	9.8	Low – distant to Site, infrequently downwind	Medium – road transient nuisance	Medium		
	9	128	E	5.5	Medium – close to Site, occasionally downwind	High – nuisance to residents	Medium		
	10	195	ESE	2.5	Medium – proximity to Site, occasionally downwind	High – potential to accumulate in watercourses	Medium		
	11	<10	E to W	5.5 to 0.7	Medium – close to Site, occasionally downwind	High – nuisance to workers	Medium		
	12	187	SE	3.6	Medium – proximity to Site, occasionally downwind	Medium – railway transient nuisance	Medium		
	13	248	SE	3.6	Medium – proximity to Site, occasionally downwind	Medium – open space nuisance to users	Medium		
	14	355	SE	3.6	Low – distant to Site, occasionally downwind	High – nuisance to students	Medium		
	15	168	S	2.1	Medium – proximity to Site, occasionally downwind	Medium – open space nuisance to users	Medium		
	16	227	S	2.1	Medium – proximity to Site, occasionally downwind	High – nuisance to residents	Medium		
	17	<10	S	2.1	Medium – close to Site, occasionally downwind	Medium – road transient nuisance	Medium		

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Hazard / Pathway	Receptor				Probability of Exposure	Unmitigated Consequence	Initial Risk	Risk Management	Mitigated Risk
	No.	Dist.	Direc.	Freq.					
	18	155	WSW	1.8	Medium – proximity to Site, occasionally downwind	Medium – road transient nuisance	Medium		
	19	166	WSW	1.8	Medium – proximity to Site, occasionally downwind	High – nuisance to residents	Medium		
	20	110	NW	8.6	Medium – proximity to Site, infrequently downwind	High – potential to smother vegetation	Medium		
	21	485	NE	7.2	Low- distant from site, infrequently downwind	High – nuisance to workers	Medium		
	22	550	NW	8.6	Low – distant from site, infrequently downwind	High – nuisance to students	Medium		
	23	950	NW	8.6	Low – distant from site, infrequently downwind	High – nuisance to students	Medium		
	24	915	SE	3.6	Low – distant from site, occasionally downwind	Medium – open space nuisance to users	Low		
	25	710	SSW	4.4	Low – distant from site, occasionally downwind	High – nuisance to workers and users	Medium		
	26	890	SSW	4.4	Low – distant from site, occasionally downwind	High – nuisance to students	Medium		
	27	700	SE	3.6	Low – distant from site, occasionally downwind	High – nuisance to students	Medium		
	28	605	E	5.5	Low – distant from site, occasionally downwind	Low - receptor not sensitive to dust	Low		
	29	685	E	5.5	Low - distant from site, occasionally downwind	High – nuisance to workers and users	Medium		
	30	890	E	5.5	Low - distant from site, occasionally downwind	High – nuisance to students	Medium		
	31	880	WSW	0.7	Low - distant from site, occasionally downwind	High – potential to smother vegetation	Medium		

Table 3. Fugitive Emissions Risk Assessment and Action Plan

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7.2 Dust Monitoring and Action Plan

7.2.1 Dust Monitoring

Consideration has been given to carrying out total deposited dust and / or PM10 monitoring at the Site. It is understood there has been no historical issue with dust from the Site (based on the available CAR reports and confirmation from the Operator). The Site's orientation and position of fixed plant means it would not be practicably possible to locate appropriate monitoring equipment at the down-prevailing wind location (i.e. on northwest boundary immediately adjacent to the separator / screener). It would not be possible to obtain a representative sample due to the proximity of the plant to likely monitoring infrastructure and adjacent industrial activities. If it were located in the centre of Site, the readings may not be representative of off-Site emissions due to its proximity to Site operations and passing vehicles.

Any monitoring equipment located outside the Site boundary would need to be on public land and would be vulnerable to vandalism. Providing a reliable power supply would also be very problematic. There would also be uncertainty as to the source of any dust due to the immediate proximity of other industrial activities surrounding the Site. It is considered that reliance on regular, routine visual monitoring of Site emissions it the most reliable and immediate indicator of potential emissions. Ongoing visual assessment of Site activities is considered to offer the operator the ability to make a more immediate response to potential dust emissions than PM10 or deposited dust equipment.

The Operator will enforce a no idling policy for Site vehicles, ensuring that wagon or mobile plant engines are switched off when not in use.

7.2.2 Visual Monitoring

The Site is monitored twice daily for dust by the Site Manager and continuously by the operatives in the course of their duties to establish whether any dust has left the Site. This will include dust arising from vehicles arriving at Site and from the Site itself.

The Site Diary will be completed for each inspection and all Site Personnel will 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 locations will be targeted for dust monitoring by the nominated Site staff:
- Incoming / exiting vehicles;
- Point of waste deposition;
- Screener;
- Separator; and,
- Subject to prevailing wind direction (i.e. up and down wind), appropriate areas of the Site perimeter.

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The following information will be recorded during each round of monitoring in the Site Diary:

- Name of assessor and position at the Site;
- 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, event if it is not from the Site;
- Details on the corrective action taken, realistic timeframes for remedial works and any subsequent changes to monitoring and operational procedures; and
- The Site Manager will be informed immediately of any findings of dust and particulates attributed to the Site and will authorise remedial measures to be taken.

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

7.2.3 Action Plan

In the unlikely event that unacceptable dust emissions (i.e. visible dust emissions or resulting in a complaint) arise from the WTS2 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 will be undertaken to ensure it is operating as designed. If required, an external contractor will undertake a audit of the system.
- Additional dust controls may be considered to be utilised at the WTS2
- A thorough clean and clearing of the WTS2 including the picking station 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.
- Waste handling procedures may be altered, and waste acceptance procedures reviewed, such covering dusty wastes on deposit, or stop accepting problematic wastes; and
- 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.

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- A record of all complaints.
- Details on the corrective action taken and any subsequent changes to operational procedures

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8 Community Engagement, Reporting & 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 dust and particulate management system will ultimately be judged by the impact of the Site 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 for each source term are detailed in previous sections of this report. The management of those controls will be based on the on-going monitoring regime on Site. 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 Procedures

Any complaints received at the Site or via the Regulatory Bodies including the Agency and Local Authority, will be recorded in the Site Diary. This will instigate further visual dust monitoring at the location of the complaint and on-Site to determine the extent and location of the dust generating materials and/or process will be identified. 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 the Site. This information will assist in the investigation and determining the source of the dust e.g. differentiating between potential dust from the Site or other off-Site activities.

All complaints and queries will be logged in accordance within the Operator's Environmental Management System (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 from the Site, 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 Site origin.

Complaints regarding dust from the Site 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;

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- On-Site activities and operational condition 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 the Operator of the complaint and the Operator will confirm to the best of its knowledge the information described above

The Operator will ensure that the complainant has all the relevant contact details of the Site (i.e. the Site Manager) and the officer responsible at the Agency. The operator 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

The Site 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 the Operator.

8.4 Complaint Screening

As part of each dust 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 to ascertain if the dust is coming from the Site;

- 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;

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- 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 Site 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 and summarised in Table 3 .

8.7 Abnormal Events

The Dust and Emissions Management Plan assumes that the Site will be running under expected operational conditions. There are however circumstances that could result in a dust emission from the Site if not appropriately considered in advance.

8.7.1 Strong Winds

Daily visual inspection of the Site infrastructure will be undertaken and recorded. 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 Hot/Dry Conditions

The warmer the weather the greater the potential for wastes to become dry and dusty, particularly when stored outside and when agitated. Daily inspections will be undertaken of the waste to ensure waste delivered to the Site is not dusty and stockpiles of waste are kept to an operational minimum and wetted down if required to reduce dust emissions. During prolonged periods of hot weather inspection frequency will be increased, the surface area of stored waste will be kept to a minimum on the basis that waste will be kept on the Site for less than one day. Additionally, the dust suppression system may be employed if deemed necessary. Contingency actions are identified in Table 4.

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Issue	Period	Mitigation Plan
Site not available as the delivery location e.g. plant failure / storage capacity full. Action for waste deliveries	1 day	Direct delivery to alternative facility Address mechanical failure issue
	Up to 72 hours	As above
	1 week	As above
	1 month	As above
	3 months or longer	Identify alternative long term delivery point – potentially temporary transfer station
Site available as delivery Site but not for transferring waste e.g. failure of onsite plant	1 day	Direct delivery to alternative facility Address mechanical failure issue
	Up to 72 hours	As above
	1 week	Implement medium term solution i.e. transfer to 3rd party
	1 month	As above
	3 months or longer	Prioritise replacement of mechanical equipment to mitigate scale of impact
Off-tanker not available for bulked waste	1 day	Store material at Site
	Up to 72 hours	Identify alternative delivery point
	1 week	As above
	1 month	Implement medium term solution i.e. transfer to 3rd party for treatment, storage
	3 months or longer	Implement long term solution i.e. establish new off-tanker

Table 4. Contingency Action Plan

8.7.3 Implementation of the 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 at the Site. 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.

8.7.4 Operator's Experience with Contingency / Emergency Situations

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

8.7.5 Review and Update Contingency and 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.

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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 installation 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 Dust and Emissions Management Plan will be reviewed on an annual basis with the scheduled review of the 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.

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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.

Activities associated with the WTS2 are to be undertaken with a dust suppression system to be appropriately designed and installed by a specialist contractor.

Residential properties and schools to the east and southeast 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.

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Appendix A – Drawings

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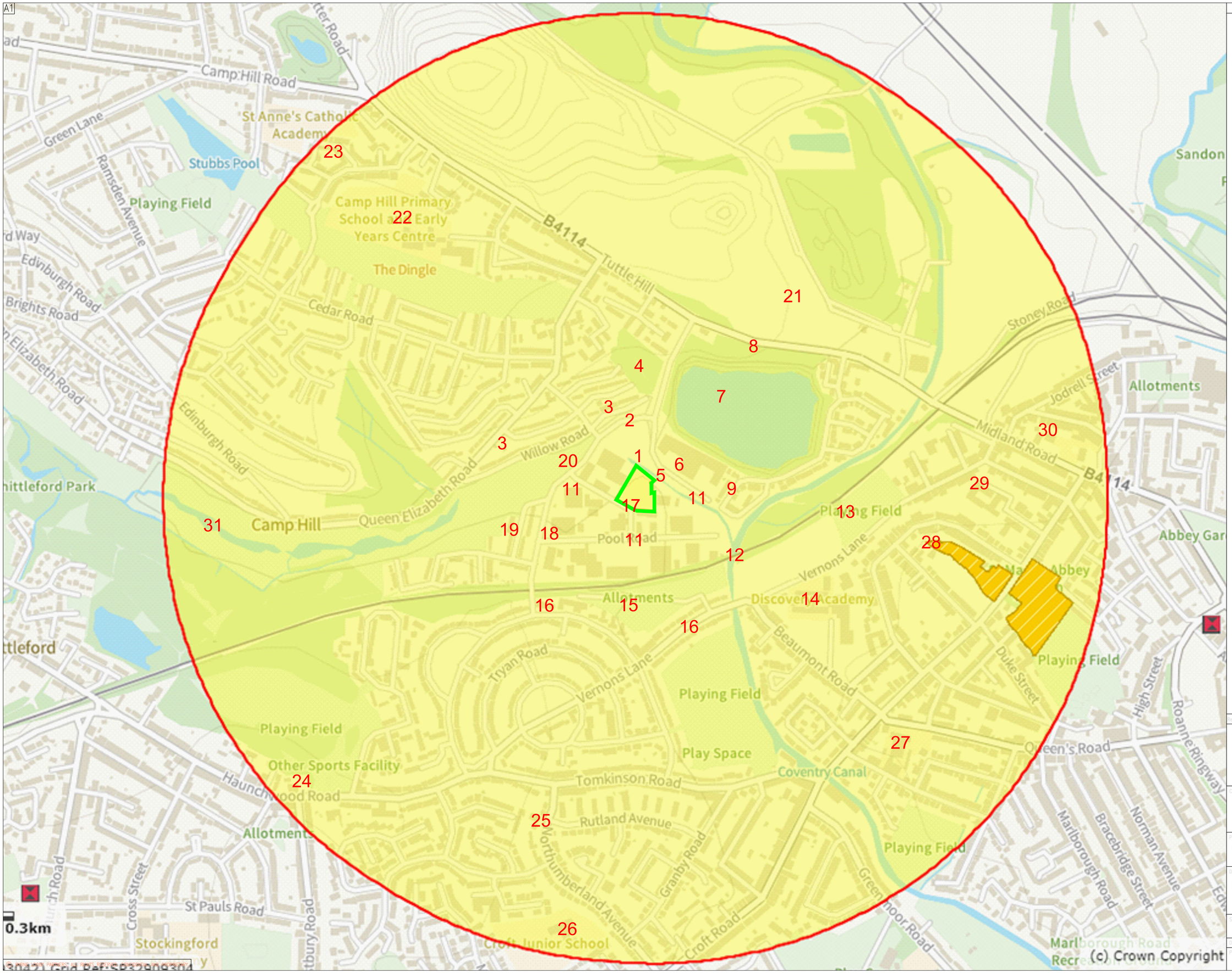
A1



GENERAL NOTES

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM.

2. DO NOT SCALE FROM THIS DRAWING.

3. ANY ANOMALIES IDENTIFIED WITH THE DETAILS SHOWN ON THIS DRAWING ARE TO BE BROUGHT TO THE ATTENTION OF BYRNE LOOBY PRIOR TO CONSTRUCTION WORKS COMMENCING.

LEGEND:

- Permit Boundary
- 1000m Buffer Zone
- (1) Receptor Marker

Rev	Date	Description	By	Chk	App

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IRELAND | UK | UAE | BAHRAIN | KSA

CLIENT

PROJECT
Crown Transfer Station 2

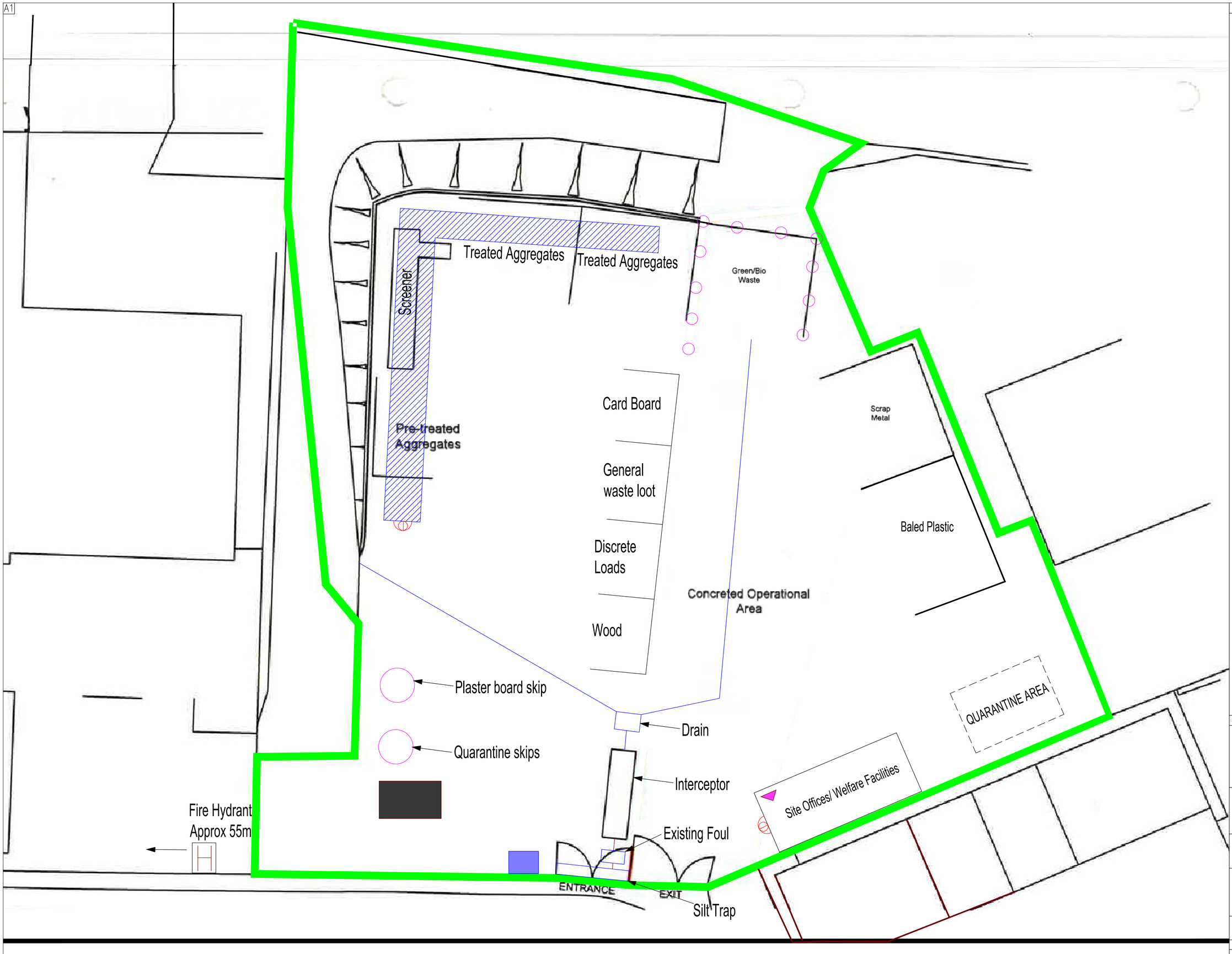
DRAWING TITLE
Receptor Plan

STATUS
FOR CONSTRUCTION

Date: 21/04/22	Scale: N/A	Drawn: JM	Chk: MR	App: JB

Project No:	Drg. No:	Rev:
4554	4554.4.001B	00

A1



GENERAL NOTES

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM.

2. DO NOT SCALE FROM THIS DRAWING.

3. ANY ANOMALIES IDENTIFIED WITH THE DETAILS SHOWN ON THIS DRAWING ARE TO BE BROUGHT TO THE ATTENTION OF BYRNE LOOBY PRIOR TO CONSTRUCTION WORKS COMMENCING.

LEGEND:

- Permit Boundary
- Picking Station
- Drainage Pipe
- Spray Bar Motorised Odour Neutraliser
- Fire Extinguisher
- Approximate Location Of Fire Hydrant
- Mains Water Supply
- Fuel Tank
- Quarantine Area
- Spill Kit

Rev	Date	Description	By	Chk	App

BYRNELOOBY
WWW.BYRNELOOBY.COM
IRELAND | UK | UAE | BAHRAIN | KSA

CLIENT

PROJECT
Crown Transfer Station 2

DRAWING TITLE
Site Layout Plan

STATUS
FOR CONSTRUCTION

Date: 21/04/22	Scale: N/A	Drawn: JM	Chk: MR	App: JB

Project No:	Drg. No:	Rev:
4554	4554.4.003	00

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Appendix B - Quattro 4-in-1 Effective Defence Datasheet

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quattro

4-in-1 effective defence

ASE 'quattro' combines 4 effective spray methods to make an all-round effective defence against dust and odour. The quattro unit consists of:

Rainmaker
Extends to a height of 3m, 3 powerful jet nozzles throw mist up to 20m.
Applications: Stationary dust suppression.

Handheld Jet Wash
Lance for controlled spraying area.
Applications: Direct application to problem areas (ideal for applying chemical additives direct to source.)

Rear Spray Bar
Measuring 1.6m in diameter with 10 powerful jet nozzles.
Applications: Damping down roads and tracks.

Nozzle-line attachment
Detatchable 10m manifold and T-Section to run 2 X 50m of 2m spaced flexible nozzle-line.
Applications: Boundary suppression system.

Suitable for: Odour, Dust, Disinfection

APPLICATIONS

- Demolition
- Ground Remediation
- Bulk Materials Handling
- Waste Transfer and Landfill
- Crushing and Screening
- Construction
- Mining and Quarrying
- Aggregates
- Disinfection Services
- Manufacturing

TECHNICAL SPECIFICATION

Droplet size (µm) - 50-100 microns
Nozzles (pcs) - Rainmaker (3), Rear Spray Bar (10)
Rainmaker - Extendable 3m mast with 3 high-pressure nozzles
Jetwash - 7m stowed hose with lance
Bowser - Road towable trailer with 1125l tank
Nozzleline - 2 x 50m flexible nozzleline, 2m spaced, 10m manifold fitted with quick release fitting for ease of use
Coupling - Available in 40mm eye or 50mm ball hitch
Spray Bar - Custom spray bar with 10 high pressure nozzles on rear chasis
Power supply - Yanmar L100 engine

All equipment selectable via a simple diverter valve

AVAILABLE TO PURCHASE OR HIRE

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01905 362100

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www.airspectrum.com

Appendix C - HAAS Airwolf Data Sheet

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QUALITY
MADE IN GERMANY

HAAS AIRWOLF

Mobile Air Blower Separator

The mobile HAAS wind sifter
for the separation of heavy- and light-fraction of:

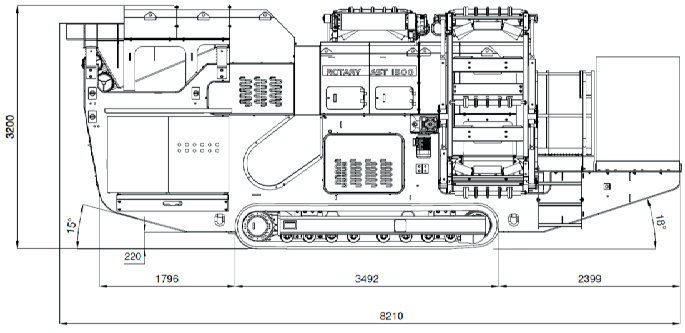
WASTE · RDF · BIOMASS · COMPOST

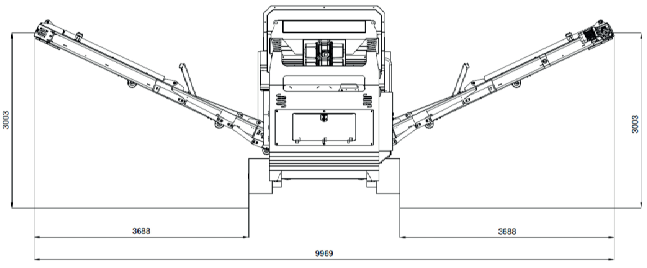


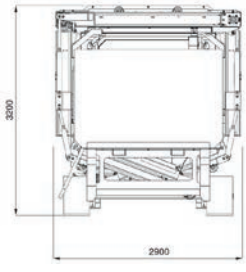


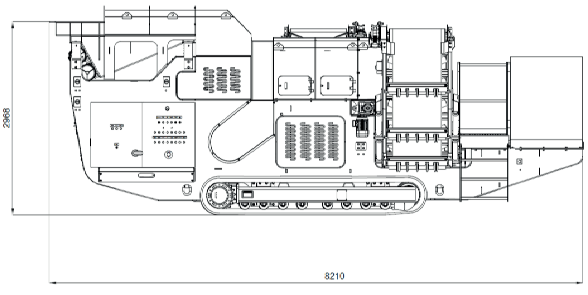
HAAS® Recycling-Systems

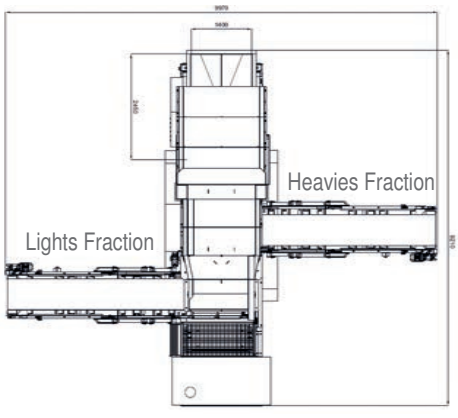
TECHNICAL DATA











Vibrating Feeder

- 2.46 m long x 1.4 wide tray
- 2 no Vibtech vibration motors
- Coil spring isolation
- Variable speed control

Drum

- 1480 mm wide
- 710 mm diameter
- 3 kW WEG electric motor
- Bonfiglioli gearbox

Feeder Conveyor

- 1500 mm wide plain belt
- Variable speed control on belt
- 3 kW WEG electric motor
- Bonfiglioli gearbox

Heavies Fraction conveyor

- 800 mm wide chevron belt
- Variable angle troughed rollers
- Hydraulic folding with push button controls
- 3kW WEG electric motor
- Bonfiglioli gearbox

Lights Fraction conveyor

- 800mm wide chevron belt
- Variable angle troughed rollers
- Hydraulic folding with push button controls
- 3 kW WEG electric motor
- Bonfiglioli gearbox

Track Chassis

- 400 mm wide pad crawler tracks
- 3.5 m long track

Power

- 65 kVA Perkins diesel generator
- 22 kW electric/hydraulic power pack for tracking and folding/unfolding conveyors
- Push button controls
- Generator/mains interlocked change over switch

Transport Dimensions

- Height 3.2 m
- Width 2.9 m
- Length 8.2 m
- Weight 13,500 kg (estimated)

HAAS Recycling-Systems

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