DRM AGGREGATE SOLUTIONS LTD

WHITCHURCH DRIVE

KETLEY

SHROPSHIRE

TF1 5BY

DUST & EMISSION MANAGEMENT PLAN

(DEMP)

VERSION NUMBER: 1

DATE: 19 AUG 2019

Issue and Revision Record

Revision	Date	Originator	Checker	Company Approver	Description of Changes

Contents Page

1. Introduction

DRM Aggregate Solutions Ltd operates a waste transfer/ recycling facility located on Whitchurch Drive, Ketley, TF1 5BY. The site is intended to allow DRM Aggregate Solutions Ltd to run a waste recycling business and increase the amount of waste recycled/ recovered. Primarily through crushing and screening to produce soil, soil substitutes and aggregate. DRM Aggregate Solutions Ltd, amongst other business activities, carries out small civil engineering projects and surfacing. It is intended that the site will accept waste from commercial, industrial and domestic customers.

This Dust & Emissions Management Plan (DEMP) is designed to support a bespoke environmental permit application.

The waste management activities undertaken at the site include storage of waste prior to treatment though crushing and/ or screening to produce soil/ soil substitutes and aggregates.

This is located within the district of Telford & Wrekin Council.

The site does not fall within a statutory Air Quality Management Area (AQMA)

Due to the physical processing (crushing and/or screening) of suitable waste materials and associated vehicle operations on the site, if there were no environmental control/ abatement systems then there would be the potential for the site to produce atmospheric emissions. The potential emissions and sources of emissions are;

- Dust from physical processing, open air storage and movement of vehicles and plant around on the site. This is the main emission that will be considered in more depth.
- PM_{10} and $PM_{2.5}$ emissions associated with physical processing, open air storage and movement of vehicles and plant around on the site.
- NO_2 from exhaust emissions of mobile plant and vehicles.

The site is currently in its infancy, Planning permission (TWC/2018/0060) was granted on 11th January 2019 for Change of Use from Scrap Yard (Sui Generis) to waste recycling site for concrete, road planings and soil, including erection of an office and storage building and bunded waste recycling bays (Sui Generis). At present the waste bays and building have not been constructed. This DEMP looks at the current situation and will be reviewed once the bays and building have been constructed or if there are any other operational changes on site.

There are no specific conditions relating to dust or other emissions from the site. Conditions are in place to restrict the operating hours of the crusher to operate on weekdays (Monday to Friday) only and in-between the hours of 08:15 and 17:30 only.

This document is designed to provide the operator with a set of procedures and understanding of how dust emissions from the site could impact on the surrounding environment and the control measures required.

This document should be read in context with the general Environmental Management System (EMS) for the site – DRM Aggregate Solutions Ltd EMS, July 2019. This document provides additional information and procedures to ensure environmental compliance.

A copy of the DEMP and EMS will be held within the office on site and shall be readily available to those operatives on site.

1.1 Sensitive Receptors

The main local receptors identified for the site are highlighted in the *Table 1* below and their location shown on *Map 1* below;

Table 1 – List of Receptors

Map No.	*Receptor*	*Distance (m)*	*Direction*	*Type*	*At Risk?*
1	T & W	0	SE	Industrial	Workers, Public, Contractors
2	Deciduous Woodland - Protected	23	E	Open Space	Workers, Public, Contractors
3	A5223	38	W	Road	Workers, Public, Contractors
4	Ketley Brook	51	E	Open Water	Workers, Public, Contractors
5	Railway Line	71	N	Industrial	Workers, Public, Contractors
6	Telford College of Arts & Technology	78	W	Public Sector	Workers, Public, Contractors
7	Residential Properties - Haybridge	110	N	Residential	Workers, Public, Contractors
8	Residential Properties - Ketley Brook	147	E	Residential	Workers, Public, Contractors
9	Car Wash, Filling Station	220	NW	Commercial	Workers, Public, Contractors
10	Residential Properties - Ketley Sands	233	SW	Residential	Workers, Public, Contractors
11	Residential Properties - Arleston	274	SSW	Residential	Workers, Public, Contractors
12	Fire Station	314	W	Public Sector	Workers, Public, Contractors
13	Haybridge Industrial Estate	336	NW	Commercial	Workers, Public, Contractors
14	B5061	385	SE	Road	Workers, Public, Contractors
15	The Bridge School (primary & secondary)	385	NE	Public Sector	Workers, Public, Contractors
16	New Buck's Head Football Ground	500	W	Commercial	Workers, Public, Contractors
17	Pond (Works)	509	SE	Open Water	Workers, Public, Contractors
18	Works	530	SE	Industrial	Workers, Public, Contractors
19	Bridge Builder Public House	545	S	Commercial	Workers, Public, Contractors
20	Residential Properties - Wellington	601	W	Residential	Workers, Public, Contractors
21	Filling Station	607	S	Commercial	Workers, Public, Contractors
22	Wrekin Retail Park	665	S	Commercial	Workers, Public, Contractors
23	Field Drain	715	N	Open Water	Workers, Public, Contractors
24	Field Drain	730	NW	Open Water	Workers, Public, Contractors
25	Residential Properties - Ketley	777	E	Residential	Workers, Public, Contractors
26	Millbrook Primary School	785	NNW	Public Sector	Workers, Public, Contractors
27	Post Office	883	NE	Commercial	Workers, Public, Contractors
28	The Old Hall School	904	WNW	Public Sector	Workers, Public, Contractors
29	Residential Properties - Hadley	945	ENE	Residential	Workers, Public, Contractors
30	Sports Leisure Centre	982	NE	Commercial	Workers, Public, Contractors

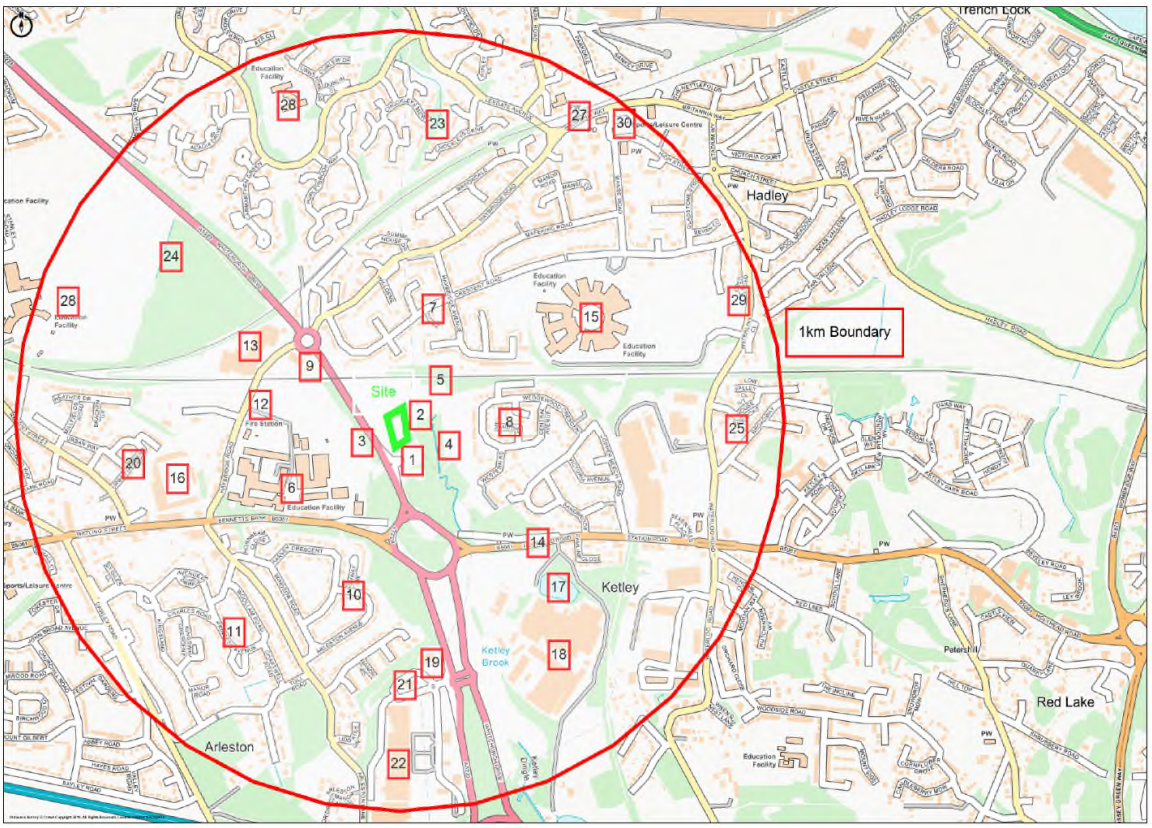
These receptors identified are located within 1km of the site and may be impacted by dust and other emissions such as Nitrogen Dioxide from combustion sources such as mobile plant and road vehicles.

Of the receptors highlighted in *Table 1* the potential receptors that are more susceptible to the adverse effects of exposure to high levels of dust and particulates would be;

- Protected Deciduous Woodland
- Telford College of Arts & Technology
- The Bridge School (Primary & Secondary)

Map 1

Location of Receptors - DRM Aggregate Solutions Ltd



EMS - July 2019

Deposited dust is normally described as an amenity issue whether through environmental permitting or planning control. This is normally through a sense of perception. There is no specific legal definition or exposure limits.

Dust can be a nuisance through prevalence and persistence and through soiling of property, cars, laundry etc.

Additionally, sensitive receptors are those sites where amenity issues could be problem i.e. those industries who require a degree of cleanliness such as electronic manufacturers, powder coaters, paint shops, offices, busy roads, car parks, food manufacturers, food outlets, solar panels, air conditioning systems and agricultural land.

After a review of the local land use within 1 km of the site there appear to be no clean industry manufacturing processes, no powder coaters, no paint shops, no food manufacturing and no actively farmed agricultural land.

There are however offices associated with the works and various other local small businesses, busy roads associated with the A5223 running north to south and the B5061 running east to west of the site. There are food outlets associated with Furrows Haybridge Service station to the northwest and Wrekin Retail Park (Costa Coffee and Subway) to the south. There is likely to be solar panels within the 1km zone highlighted and these could be associated with a combination of industrial units and residential properties. There are 2 units on the Wrekin Retail Park claiming to be zero carbon eco units and so the assumption is that these will have solar panels. Air conditioning systems are likely to be fitted to the industrial units and offices highlighted above and car park areas are also associated with the works, Wrekin Retail Park and Haybridge Industrial Estate.

These will be considered as a sensitive receptor as they have the potential to be affected by dust emissions, however the actual likelihood is extremely low.

Figure 1.1: Nearby Sensitive Receptors

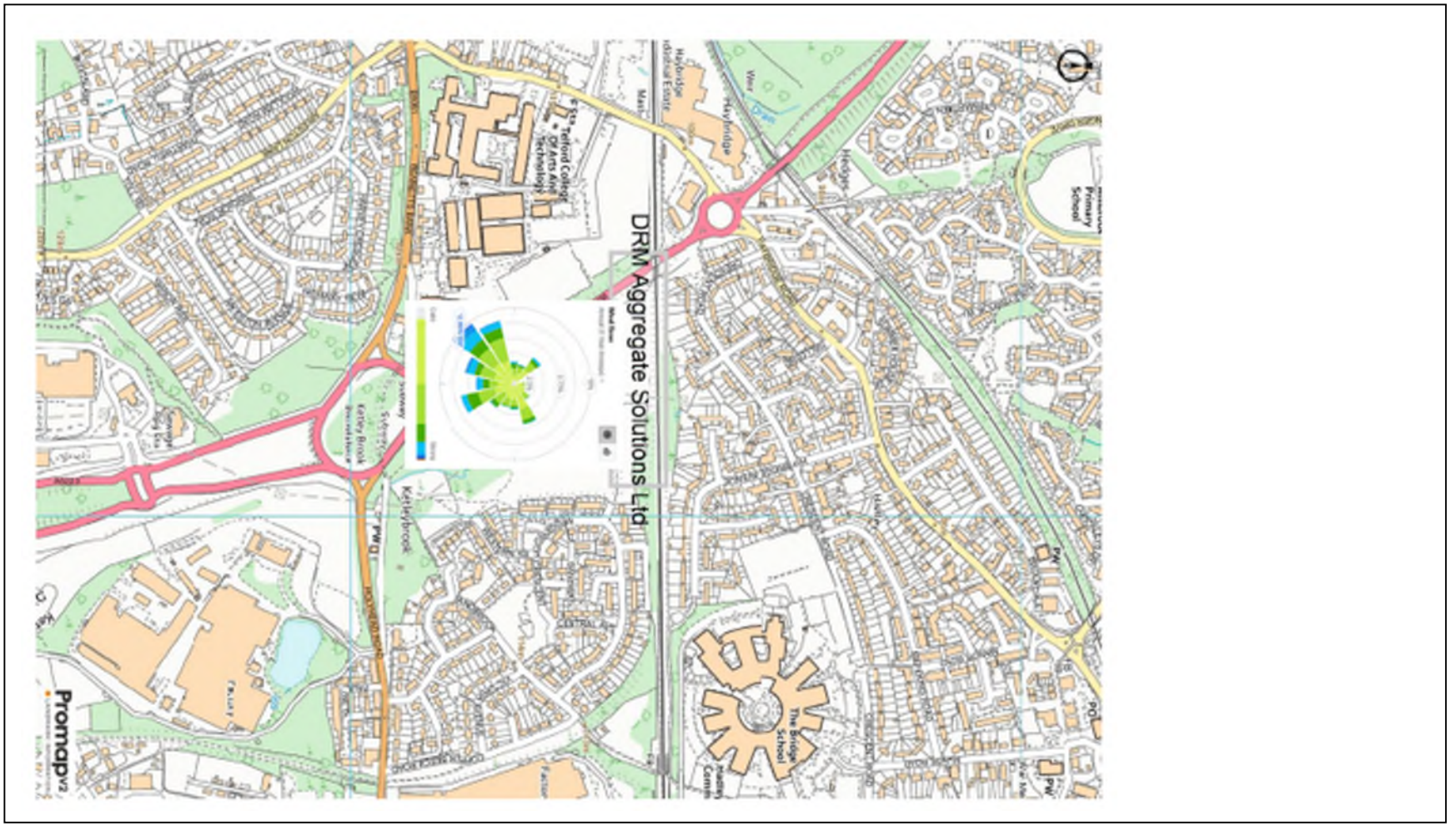


Figure 1.1: Wind rose showing the AVERAGE WIND DIRECTION AND STRENGTH at DRM Aggregate Solutions Ltd

Table 1.1 Sources of Dust and/or other Emissions

Company	Address	Type of Business	Distance from DRM Aggregate Solutions Ltd site boundary (m)
	A5223	Major road	38
Network Rail	North of Wedgewood Crescent	Railway Line	71
Saint-Gobain PAM UK (closed)	PO Box 3/Holyhead Rd, TF1 5AD	Foundary	250
	B5061	Major road	385
	Holyhead Road	Works	530
	Dawley Road	Agricultural land	1000
Pink Skips (Dissolved)	Recycling House Ketley, Telford TF1 5HW	Skip hire and transfer station	1100
	Summerfield Road	Open soil / restoration area	1420
Various house builders (5-year building program)	Lawley Housing Village	Residential	1500

2. Operations at DRM Aggregate Solutions Ltd

2.1 Waste Deliveries to DRM Aggregate Solutions Ltd

Waste is delivered to the site as per Section 3.1 and 3.2 of the EMS
Waste delivered to the site will be contained predominately within skip vehicles, tippers and 8-wheel tippers.
Vehicles fitted with auto sheet mechanisms will be required to have the sheets on prior to arrival on site. Once on site, vehicles will be required to remove sheets by the waste inspection area to allow preliminary waste inspections to take place.
Records associated with the waste operation can be found in Section 5 of the EMS.
Dusty loads will be damped down where relevant and practical prior to coming onto site.

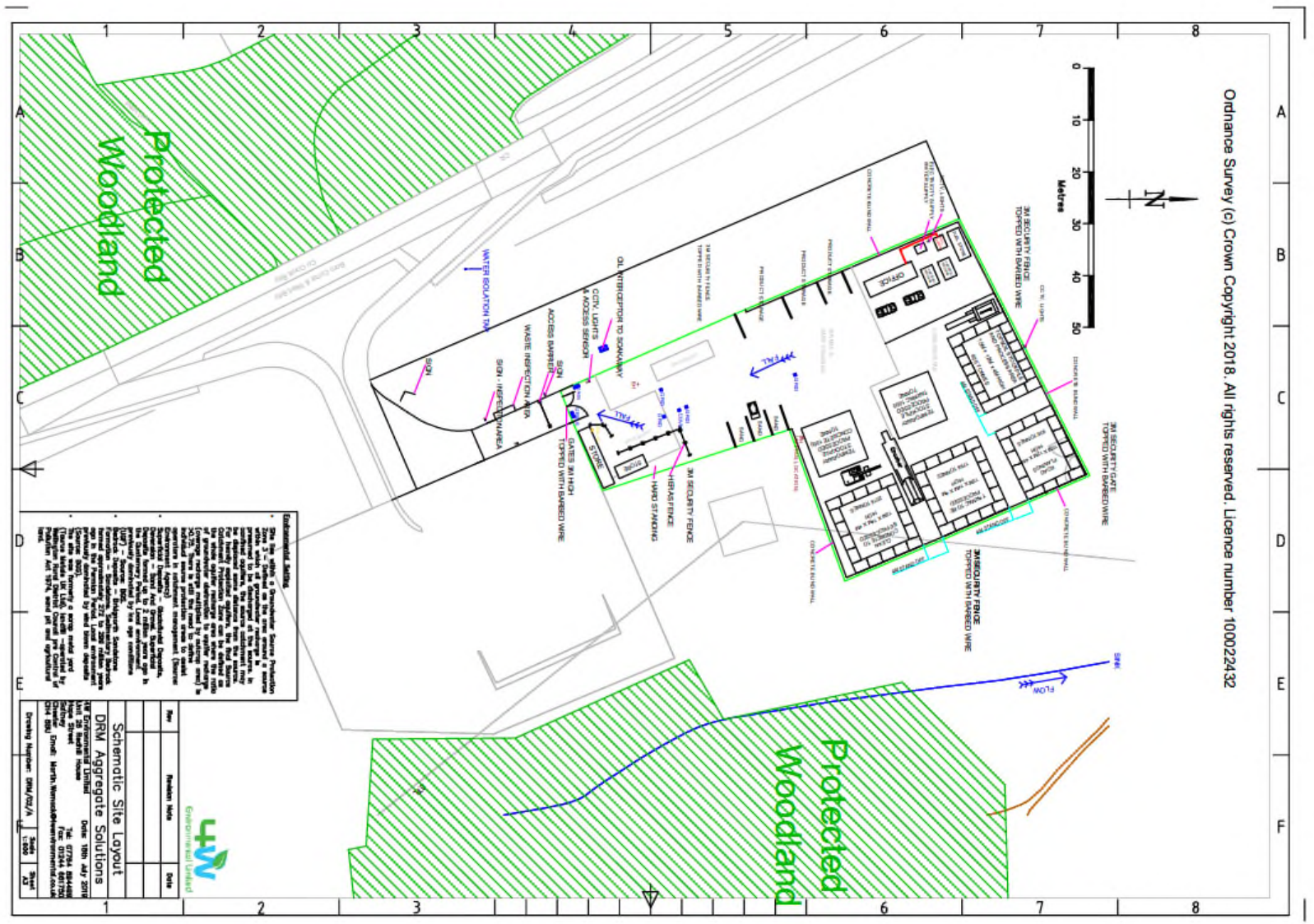
2.2 Overview of Waste Processing, Dust, and Other Emission Controls

An overview of the site layout can be found on Drawing No. DRM/02/A which shows;

- the site infrastructure
- location of buildings
- loading and unloading areas
- storage stockpiles
- location of mobile plant
- location of water supply for use in suppression system
- different types of site surface.

Table 2.1 Typical waste types brought to DRM Aggregate Solutions Ltd

European Waste Code(EWC)	Product Description	Max Tonnes/week	Destination within facility					Process
			Stockpile Area	Treatment Area	Main Building	Storage Area	Storage Bays	
17 01 01	Concrete	6000	Yes	Yes	N/a	Yes	N/a	Crushing
17 01 02	Bricks	6000	Yes	Yes	N/a	Yes	N/a	Crushing
17 01 02	Bricks	6000	Yes	Yes	N/a	Yes	N/a	Crushing
17 01 03	Tiles & Ceramics	6000	Yes	Yes	N/a	Yes	N/a	Crushing
17 01 07	Mixtures of concrete, bricks, tiles and ceramics	6000	Yes	Yes	N/a	Yes	N/a	Crushing
17 03 02	Planings (non-coal tar)	6000	Yes	Yes	N/a	Yes	N/a	Screening
17 05 04	Soil and Stones	6000	Yes	Yes	N/a	Yes	N/a	Screening
20 02 02	Soil and stones	6000	Yes	Yes	N/a	Yes	N/a	Screening
	Screened material from any of the above		Yes	Yes	N/a	Yes	N/a	Crushing
	Crushed material from any of the above		Yes	Yes	N/a	Yes	N/a	Screening
Total		6000						


Protected Woodland
Protected Woodland
Schematic Site Layout
DRM Aggregate Solutions
Ordnance Survey (c) Crown Copyright 2018. All rights reserved. Licence number 100022432
Metres
0
10
20
30
40
50
N
OFFICE
STORE
WEIGH
3M SECURITY FENCE TOPPED WITH BARBED WIRE
3M SECURITY GATE TOPPED WITH BARBED WIRE
HARD STANDING
WASTE INSPECTION AREA
ACCESS BARRIER
CCTV, LIGHTS & ACCESS SENSOR
OIL INTERCEPTOR TO SOAKAWAY
WATER ISOLATION TAP
SIGN
GATES 3M HIGH TOPPED WITH BARBED WIRE
FLOW
SPW

For an explanation of site activities please see DRM Aggregate Solutions EMS.

The design of the site as shown in Drawing No. DRM/02/A is to minimise handling and transporting of material around the site. The stockpiles of unprocessed material are located near to the crusher and the temporary stockpile of processed product/ material is located near the crusher. Product and material will be loaded directly from the stockpiles according to demand.

The design of the site my change overtime (erection of building and bays) and this DEMP will be updated accordingly.

The site is currently designed to prevent dust emissions through physical barriers and operating techniques. There is an earth bund which is located to the West of the site which will offer some protection from the prevailing westerly winds. Planning permission is in place to construct a 4m high bund. Similarly, to the eastern boundary is an established deciduous woodland, the top of the canopy exceeds the maximum storage height of 4 metres.

Operational measures include;

- the use of a water bowser or garden hose spray system to damp down stockpiles.
- Brush attachment on skid steer to clean road surfaces back to concrete/ hard standing.
- Crusher is fitted with dust suppression spray bar on the exit conveyor.
- Drop heights kept to a minimum.
- Crusher chutes to be covered where possible (this item of equipment will be hired in).
- Crusher to operate on average one day per week for reduced opening times. Therefore, weather conditions can be considered when deciding when to crush.

2.3 Mobile Plant and Equipment.

Nitrogen Dioxide gas is a by-product of internal combustion engines and the site uses several items of plant with internal combustion engines. The following table lists the type, mobile and emission ratings for the mobile plant and equipment used on site:

Description	Make	Model	Emission Rating
Excavator	Volvo	EC180B LC	Unknown (fitted with DRG valve[1])
Generator for trommel	Powerscreen		Unknown
Skid Steer	Gehl	4640	Unknown (fitted with DRG valve[1])
DRM HGV's	Various	Various	Tier 6

[1] DRG valve – burns off excess pollutant gases.

The equipment listed in the above table is owned by DRM Aggregate Solutions Ltd/ R D Marsh Surfacing Contractors Ltd. The crusher will be hired in to crush on a campaign basis. It is estimated that crushing will average one day per week.

Routine maintenance (oils and filter) is carried out by site staff and out contractors are brought into carry out major repairs/ service. The machines are serviced every 200 hours.

When items of equipment will need replacing then the emissions will be taken into consideration at the time of purchase.

The yard is supervised, and any unnecessary idling of machines is not tolerated, and staff are made aware about idling machinery.

3. Dust and Particulate (PM_{10}) Management

3.1 Responsibility for Implementation of the DEMP

Richard Marsh is responsible for the DEMP and making sure it works.
Dawn Marsh is this person's deputy.
This document will be reviewed in response to any complaints from residents, businesses, enforcing officials, environmental near misses and change in operation (layout, waste tonnage on site, stockpile locations, crushing and screening).
Staff will be competent to implement the DEMP through induction training and training records (See Section 1.6 of EMS). In the event of a review if staff feel that they are not competent to review then a third-party consultant can be brought in to carry out a review on their behalf.
Training for the site is handled through Section 1.6 of the EMS.
Refresher training can be given at any time if judged by the Technically Competent Manager that training is required.

3.2 Sources and Control of Fugitive Dust/Particulate Emissions

Sources
The operations with the potential to produce dust and particulates on site are shown below;

- Vehicles entering and/or leaving the site with mud on wheels and tracking dust on to or off the site.
- Debris falling off lorries which arrive uncovered.
- Vehicles and plant moving around the site kicking up dust
- Road vehicles tipping waste
- Excavators/360s sorting waste
- Plant sorting waste – trommel screener
- Plant treating waste – crushers
- Waste dropping from conveyors into stockpiles
- Waste stored in stockpiles – potential for wind-whipping on the surface of the waste.
- Site surfaces – loose material on the floor with the potential to be wind whipped or tracked off site.
- Loading waste materials back on to vehicles.
- Particulate emissions from the exhaust of vehicles/plant/machinery on site.
- Generators, plant and other non-road going mobile machinery.

Table 3.1: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted
Mud	tracking dust on wheels and vehicles, then mud dropping off wheels/vehicles when dry	Choose from table 1 above	Visual soiling, also consequent resuspension as airborne particulates	Site surface is mainly concrete/ hard standing. Vehicles do not track through waste/ product stockpiles. Any mud will be washed off vehicles using the hose before vehicles leave site. Haul road ensures any residual mud drops off before vehicle reaches public highway. Brush attachment for skid steer used to clean road surfaces. If required a road sweeper can be brought onto site.
Debris	falling off lorries	Choose from table 1 above	Visual soiling, also consequent resuspension as airborne particulates	Vehicles fitted with Auto sheeters to ensure loads are covered. Nets to be used on other vehicles removing dusty loads. Water hose to damp down dusty loads if required.
Tipping, storage and sorting of wastes in the open	Atmospheric dispersion	Choose from table 1 above	Visual soiling and airborne particulates	Minimise source strength by means of low drop heights, profiling and shielding of piles from wind whipping (height of stockpiles below the screening bund to the West and tree line to the East, use of water suppression to damp down stockpiles if required.
Vehicle exhaust emissions	Atmospheric dispersion	Choose from table 1 above	Airborne particulates	Vehicles serviced and maintained, avoidance of unnecessary idling of machines. DRM HGV's are Tier 6.
Non road going machinery exhaust emissions	Atmospheric dispersion	Choose from table 1 above	Airborne particulates	Vehicles serviced and maintained, avoidance of unnecessary idling of machines. Excavator and Skip Steer have DRG valves to burn off excess emissions.

Table 3.2: Measures that will be used on site to control dust/particulates (PM_{10}) and other emissions

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
Preventative Measures			
Site speed limit, 'no idling' policy and minimisation of vehicle movements on site	Reducing vehicle movements and idling should reduce emissions from vehicles. Enforcement of a speed limit may reduce re-suspension of particulates by vehicle wheels.	Easy to implement as part of good practice. Identified in the site management system (2.1.2 and 2.9.4) and implemented.	Observation of staff activity, complaints, near miss reports.
Minimising drop heights for waste. Use of enclosed chutes for waste drops/end of conveyor transfers and covered skips / storage vessels.	Minimising the height at which waste is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds. This can be achieved by keeping bucket low before opening out on excavator when loading vehicles and managing stockpiles. Adjusting angle of conveyors on screen and crusher to reduce fall height. Potential for enclosing drop chute will further reduce dispersion.	Steps identified in DEMP and EMS (4.4.2)	Will be used and implemented where equipment allows, staff training
Good house-keeping	Having a consistent, regular housekeeping regime that is supported by management, will ensure site is regularly checked and issues remedied to prevent and remove dust and particulate build up. Observation, site diary inspections	Easy to implement and requires minimal equipment. Encourages a sense of pride and satisfaction amongst the staff which promotes vigilance and a positive culture. (EMS Appendix 7)	Will be implemented on site regardless.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
		Staff should target the areas not caught by the road sweeper and other cleaning apparatus. Daily inspections by TCM or nominated deputy	
Sheeting of vehicles	Prevents the escape of debris, dust and particulates from vehicles as they travel.	Identified in the site management system (4.4.3) and implemented as appropriate measures.	This will not apply to non-waste activities. The site also acts as a storage yard for R D Marsh Surfacing Contractors Ltd?
Hosing of vehicles on exit	May remove some dirt, dust and particulates from the lower parts of vehicles although likely to be less effective than a more powerful wheel wash.	EMS (4.3.3)	This procedure will be implemented when observations of dust generation on site are reported to management or following on from the twice daily visual inspections around the site boundary. Following complaints that are investigated and results show additional requirements for mitigation.
Ceasing operation during high winds and/or prevailing wind direction	Mobilisation of dust and particulates is likely to be greater during periods of strong winds and hence ceasing operation at these times may reduce peak pollution events.	Likely to reduce dust and particulate emissions, however, not a long-term solution. Decision on when to cease operations will be those responsible for implementing this DEMP. This decision will be based upon observations of site activities and weather. A record will be kept in the site diary of the decision and reason i.e. crushing suspended as winds blowing from the SW towards the Bridge School. Dust clouds seen to move off site.	Risk based informed decision to be made and recorded. Suspension of activities could also take place following on from complaints.
Easy to clean concrete	Creating an easy to clean impermeable surface, using materials	Implemented through EMS (4.3.1 and Appendix 7).	This be used all the time the site is operational

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
impermeable surfaces	such as concrete as opposed to unmade (rocky or muddy) ground within the site and on site haul roads. This should reduce the amount of dust and particulate generated at ground level by vehicles and site activities.		
Minimisation of waste storage heights and volumes on site	Minimising the height at which waste is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds. Reducing storage volumes should reduce the surface area over which particulates can be mobilised.	The amount of waste stored on site and stockpile dimensions are given in Drawing No. DRM/02/A.	This be used all the time the site is operational
Reduction in operations (waste throughput, vehicle size, operational hours)	Reducing the amount of activity on site, including no tipping, crushing or screening of high-risk loads with the potential to generate particulate matter during windy weather, as well as associated traffic movements should result in reduced emissions and re-suspension of dust and particulates from a site.	Effective in terms of dust and particulate reduction	This will be used all the time the site is operational. Also, will be implemented following on from a complaint. Until it is investigated.
Remedial Measures			
On-site sweeping	Sweeping could be effective in managing larger debris, dust and particulates but may also cause the mobilisation of smaller particles. Road sweeping vehicles damp down dust and particulates whilst brushing	Implemented through EMS (2.9.2, 2.9.3, Appendix 2, Appendix 7).	This will be used when the site is operational and will form part of the good housekeeping. The decision on when to use will be made by TCM or site staff.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
	and collecting dust and particulates from the road surface, particularly at the kerbside. This may generate dust and particulate movement that may become a Health and Safety issue if the filters and spray bars on the sweepers are not maintained.		
Water suppression with hose	Damping down of site areas using hoses can reduce dust and particulate re-suspension and may assist in the cleaning of the site if combined with sweeping.	EMS 4.4.2 and 4.4.5	This procedure will be implemented when observations of dust generation on site are reported to management or following on from the twice daily visual inspections around the site boundary. Following complaints that are investigated and results show additional requirements for mitigation.

This is not an exhaustive list of all abatement options, and there may be other technology and abatement options that exist to achieve the same or a greater outcome in reducing the risk of pollution.

The table above is an exercise to make the connection between the pathway and receptor and source. It is to encourage the operator into thinking about how the abatement works, what options could be alternatively more suitable (and possibly cheaper and less intensive to operate regularly) and to go into specific detail about how the abatement works. This will encourage the operator and staff that use this document to not make any assumptions and to ensure that there are no gaps in abating the sources of dust emissions on site.

3.3 Other considerations

Water usage/ availability:
The water supply for the site is currently fed directly from the 600mm water main running along the A5223. This water main has the pressure to allow water to be sprayed over large distances on site and means that all storage areas for waste to be covered. In terms of capacity this water main will be sufficient as long as there is not a hosepipe ban in place for commercial/ industrial processes from Severn Trent Water.

The maximum water requirements for 8 hours of crushing is approx. 1000 litres or an IBC full of water. To dampen down the site for a day will require approx.
In the future it is proposed to collect roof water and surface water and use this for dust suppression.

The water requirement (volume) for all of the systems that rely on water for effect, for the worst possible scenario (dry and windy conditions for an entire operational day) is as follows;

Crusher running for 8 hours	1000 litres
Hosing down site (10 minutes every hour for 8 hours)	1360 litres
Total water requirement	2360 litres

In the event of a drought:
If drought conditions and hose pipe bans are in place for commercial/ industrial processes, then operations will have to cease unless water can be brought to site via other means. In the long-term grey water from surface run off and roof water is intended to be used.

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3.4 Enclosure of Waste Processing & Storage Areas

The activity will take place in the open. The stockpiles and site are located below the height of the surrounding screening bund to the West and below the tree line to the East of the site. These will act as barriers to reduce the effects of wind whipping. It is also proposed to create a bund to the North of the site. This has recently gained planning approval (planting scheme to be agreed). The site is not located in an Air Quality Management Area. The current site layout is shown in Drawing No. DRM/02/A.

As the scale and intensity of the site is relatively low scale (crushing on average one day per week for reduced operational hours) and with the site layout features mentioned above then the justification for enclosure to gain an additional benefit is not warranted.

3.5 Visual Dust Monitoring

Visual dust monitoring will be undertaken in the morning and afternoon, the results of which will be recorded in the site Diary. The inspection will be taken walking around the perimeter from outside the southern, western and northern boundary. A visual inspection will be taken of the eastern boundary although attention is drawn to the proximity of the deciduous woodland which may affect the visual assessment.

In reality when the site is supervised and manned there will be staff who will be continually making observations of the site. They will receive training on the importance of ensuring that particulate matter/ dust does not escape from the site and so they will also act as a potential control system. Out of hours the Director has access to the CCTV system which will allow an assessment to be made of any wind whipping of material from the site.

Small particles like PM10 and PM2.5 affect human health but they are not visible by the naked eye so if you see dust this will include an element of PM2.5 and PM10. It also means that if you don’t see dust, there still might be high levels of PM10.

It is understood that the most likely cause of dust emissions will be from the crushing or screening activity. Observation of dust emissions will take place when these operations are been undertaken to determine if dust is been generated and if the dust generated is likely to cause an offsite nuisance.

Records of monitoring will be held within the site diary or in the office (electronically).

If dust is detected additional visual dust monitoring will take place to ascertain the cause of the dust. If the dust is deemed to be originating from the site then the cause will be investigated and the activity producing the dust will be stopped (if applicable) whilst remedial measures are implemented (wetting of stockpiles, road sweeping, crushing, screening etc). After remedial measures have been implemented then the activity may start again. If the cause was down to weather conditions, then the activity will be stopped until the weather conditions change.

If there are several complaints of dust then an investigation into the cause will be carried out by linking site activity from CCTV records, weather conditions and site Diary records of visual monitoring to see if justified. At this point if there are no direct attributable causes then additional monitoring (quantitative) may be considered.

4. Particulate Matter Monitoring

The monitoring program has been produced taking into account the following factors;

- The type of particulate this DEMP is aimed at is general particulate matter (deposited dust).
- As the potential issue is one of nuisance impacts, then measurement of deposition rates using a horizontally mounted collection gauge such as a Frisbee gauge will be relevant.
- As the waste types (mainly inert) accepted are suitable for making soil, soil substitutes and aggregate and considering the waste acceptance procedures in place it is not deemed necessary to monitor the chemical affects on soils and vegetation or to monitor for organic species, inorganic species, fibres and bioaerosols.
- Research by DETR concluded that 'The issue of dust on ecological receptors is largely confined to the associated chemical affect of dust, and particularly the effect of acidic or alkaline dust influencing vegetation through soil'.

Therefore, it is proposed that twice daily visual inspections are supported by quarterly dust deposition monitoring.

4.1 Monitoring Location

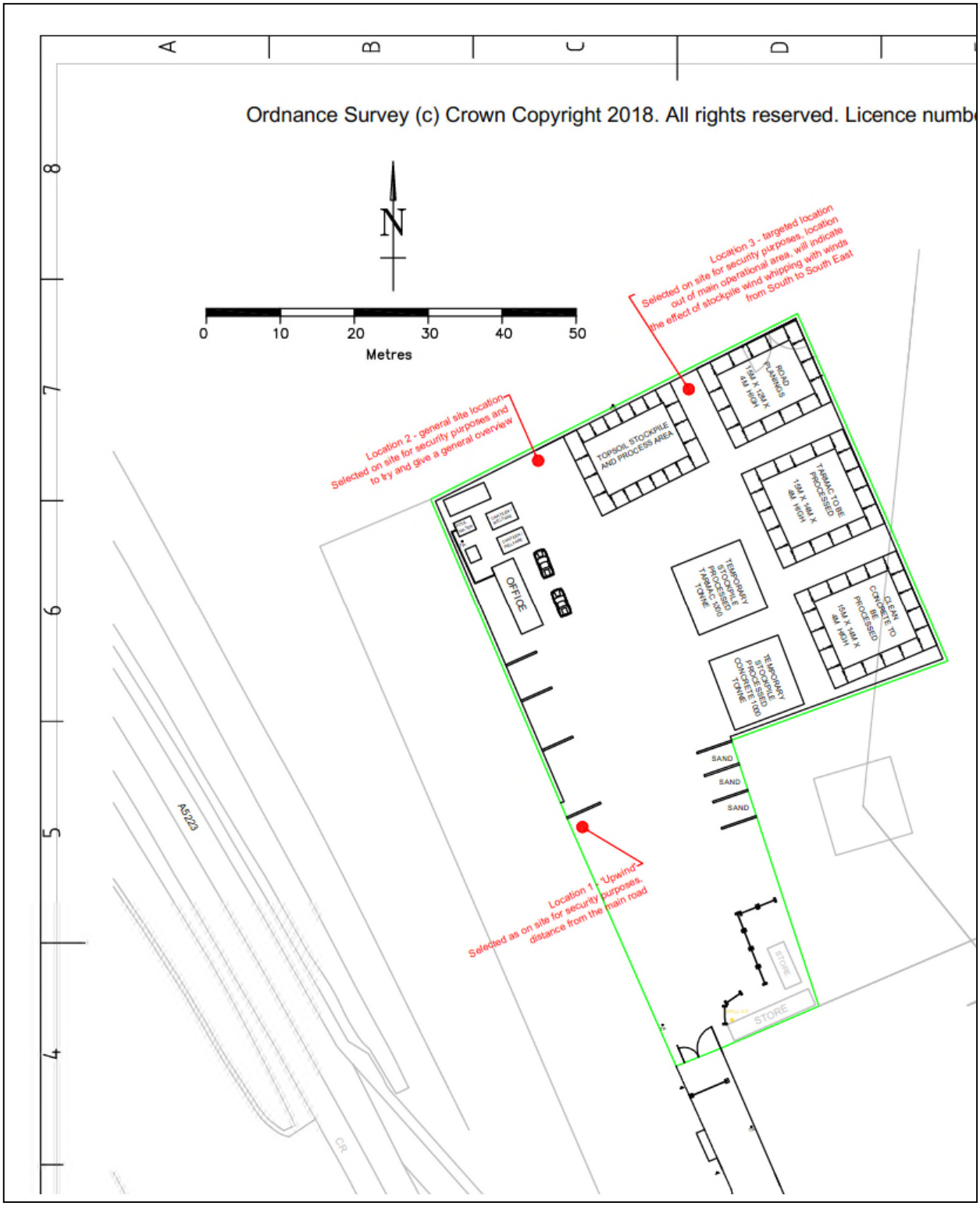
The proposed location for the Frisbee gauges (Gross Dust Deposition) are shown in Drawing No. DRM/05/A. These locations take into account the following factors;

- Security (concerns over vandalism and theft of gauges if left outside the perimeter of the site or at sensitive receptors).
- Meteorological conditions (winds predominantly from the southwest) and the need to have a minimum of one dust gauge "upwind" and one dust gauge downwind. Due to the security issue the "upwind" gauge is located on site near the site entrance. It has to be considered in any interpretation that this site is not a true reflection of background readings as the gauge will be influenced by site activities and winds from the northeast.
- There are currently no major obstructions such as buildings on site, although planning has been gained for a building. The monitoring locations will be reviewed once buildings and/ or bays are constructed to check that the data collected is still relevant.
- Overhang from trees would affect any dust gauge monitoring to the East of the site, where the trees come close to the site boundary and do not provide a 20m distance from the tree dripline to locate a gauge.

- Gauges will not be located within 30m of the A5223 as this will have the ability to influence results, particularly any PM_{10} and $PM_{2.5}$ from the combustion of fuel.

The location of the monitor is shown in Figure 4.1 below.

Figure 4.1 Location of PM monitoring equipment at DRM Aggregate Solutions Ltd



4.2 Operation of the PM Monitoring Equipment

Richard Marsh has overall responsibility for the implementation of this DEMP.

It is proposed to use Frisbee Gauges to monitor the dust deposition rates from the site operations. This work will be undertaken by an external consultant.

Data will be reported from the consultant to DRM Aggregate Solutions Ltd within 1 month of the end of the sampling period. This data will be sent electronically and will be kept on site as a part of the EMS and site diary.

The action level proposed is 200mg m^{-2} day^{-1} as this is the threshold at which complaints are likely.

Any breeches of this action level will be investigated and a report produced which will look at the weather conditions, site operations, external activity, site diary records and mitigation measures employed during the monitoring period to determine if the source is likely to be DRM Aggregate Solutions Ltd and if so the effectiveness of the mitigation measures employed.

Review of the dust deposition monitoring results will take place once received and a judgement can be made about the effectiveness of the mitigation measures employed during this period. This may highlight areas where potential improvements are required.

4.3 Quality Assurance/Quality Control and Record Keeping

The following records will be kept;

i) The make and model of the monitoring equipment
ii) When, how and by whom the data is checked
iii) When and by whom the equipment is routinely inspected;
iv) If the equipment is damaged and/or no longer able to collect reliable data.

4.4 Equipment and Data Management

Richard Marsh has overall responsibility for the implementation of this DEMP.

DRM Aggregate Solutions may use third party environmental consultancies to carry out both routine and any non-routine monitoring.

Any problems or questions encountered by Richard Marsh can be resolved by asking the relevant consultancy that they use.

4.5 Reporting of Data

This DEMP forms part of a bespoke permit application and as such there are no permit conditions for reporting of dust monitoring.

4.6 Additional Detailed Monthly Reporting

The action level proposed is 200mg m^{-2} day^{-1} as this is the threshold at which complaints are likely.

Any breeches of this action level will be investigated and a report produced which will look at the weather conditions, site operations, external activity, site diary records and mitigation measures employed during the monitoring period to determine if the source is likely to be DRM Aggregate Solutions Ltd and if so the effectiveness of the mitigation measures employed.

5. Actions when alarm is triggered.

There are no alarms associated with the dust gauges.

The action level proposed is 200mg m^{-2} day^{-1} as this is the threshold at which complaints are likely.

Any breeches of this action level will be investigated and a report produced which will look at the weather conditions, site operations, external activity, site diary records and mitigation measures employed during the monitoring period to determine if the source is likely to be DRM Aggregate Solutions Ltd and if so the effectiveness of the mitigation measures employed.

6. Reporting and Complaints Response

Any complaints of dust and particulates received by DRM Aggregate Solutions Ltd will be recorded in the site dairy. The following details will be recorded;

i. Name of complainant
ii. Date
iii. Time
iv. Location of complaint
v. Nature/ description of the complaint

An investigation will then be conducted looking at the following points;

vi. Weather conditions (wind speed, direction, rainfall, humidity)
vii. Site activities at and around the time of the complaint
viii. External causes/ sources of dust
ix. Any dust mitigation measures in use at the time of the complaint
x. Results of visual walk around of the site perimeter undertaken in a response to the complaint and additional to the routine monitoring.
xi. Conclusions of the investigation to be recorded in the site diary.

Deadline for completing an investigation into a complaint - 2 working days to respond to complaint.

6.1 Engagement with the Community

DRM Aggregate Solutions Ltd works with Telford and Wrekin Council who own the adjoining yard which is currently used for storage of road planings containing coal tar. There are no other adjoining/ neighbouring businesses.

If DRM Aggregate Solutions needed to get information out to the local community then they could contact the local councillor for the site.

Contact details for the local councillors are given below;

Ward	*Details*
Ketley	Cllr Sam Millward Thomas
	samuelthomas@mail.com
	01952 404434
Hadley & Leegomery	Cllr Leon Murray
	Leon.murray@telford.gov.uk
	01952 380263

6.2 Reporting of Complaints

Complaints will be reported to Richard Marsh as Director and Dawn Marsh as the nominated TCM so that they are aware of the potential issues that may need addressing and additional expenditure that may be required.

If required by the environmental permit dust monitoring complaints will be reported.

The form in Appendix A will be used for complaints.

6.3 Management Responsibilities

Complaints will be investigated by either Richard Marsh as the Director or Dawn Marsh as the nominated TCM for the site. They will sign the form in Appendix A when complete to show the acknowledgement and action taken in the event of a complaint.

6.4 Summary

This DEMP has been produced to support the bespoke permit application for DRM Aggregate Solutions Ltd. This DEMP forms part of the overall EMS for the site and provides information on how to minimise the effects of dust deposition on the surroundings.

APPENDICES

Appendix A - Dust Complaint Form

Customer Details	
Customer Name -	
Address – Postcode -	
Customer 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 management plan need to be updated -	
Date that the dust management plan was updated -	

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