MICK GEORGE

DUST EMISSIONS MANAGEMENT PLAN

CROSS LEYS QUARRY
LEICESTER ROAD
THORNHAUGH
PETERBOROUGH
PE8 6NH

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SiriUS Environmental

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Information Sheet

DUST EMISSIONS MANAGEMENT PLAN (DEMP)
CROSS LEYS QUARRY, LEICESTER ROAD, THORNHAUGH, PETERBOROUGH, PE8 6NH

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DUST EMISSIONS MANAGEMENT PLAN

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1.0 INTRODUCTION

1.1 Scope & Background

1.1.1 This Dust Emissions Management Plan (DEMP) has been prepared by Sirius Environmental Limited (Sirius) on behalf of Mick George Limited ('Mick George') in support of a revised scheme of restoration for the former quarry at Cross Leys Quarry, Thornhaugh, Peterborough. Mick George Ltd are seeking to re-focus the waste recovery operations from the southern and eastern sections of the former mineral working to an area to the north and west of the previously approved restoration areas (this includes the area partially restored via a Paragraph 9 Exemption). These changes are proposed due to the presence of Great Crested Newts (GCNs) in the waterbodies located in the southern area of the site.

1.1.2 The revised scheme of restoration has been designed in order to preserve and enhance biodiversity and habitats within the southern section. The revised plans would still retain an element of the approved scheme, with the northern area remaining agricultural. To achieve agricultural restoration in the north-western section of the site, the proposal seeks to import around 395,000m^3 of inert restoration materials to raise the levels within the quarry void to create a gentle domed profile which would improve the surface water drainage and resultantly provide a superior quality of agricultural grazing land.

1.1.3 The DEMP considers the potential for the generation of fugitive dust emissions from the delivery and deposition of waste into the active tipping area, as well as the subsequent handling and compaction of the waste. This DEMP outlines the site conditions, operational processes and controls to be applied and the monitoring to be undertaken to avoid potential nuisance and environmental harm from occurring.

1.1.4 This DEMP has been prepared with cognisance to the materials being processed and therefore considers appropriate measures for the control of potential emissions from the facility. A copy of this document will be kept on site in the office for staff and personnel to refer to when needed. This is a live document which will be updated where necessary.

1.2 Site Location and Layout Description

1.2.1 This DEMP relates to the permanent deposit of waste as a recovery operation to support the restoration of Cross Leys Quarry. The application site is located approximately 2.8km south-west of the village of Wittering and approximately 16 km west north-west of Peterborough city centre. The site has the postcode PE8 6NH and is centred on National Grid Reference (NGR) TF 02900 00536. The site is situated to the immediate south of the A47. The location of Cross Leys Quarry relative to its surroundings is presented in **Drawing No. MG1002/14/01**. Additionally, the proposed site boundaries are shown in **Drawing No. MG1002/14/02.**

1.2.2 Cross Leys Quarry is situated within Peterborough City Council Local Authority and is not situated in or within 2km of an Air Quality Management Zone (AQMZ).

1.2.3 The current planning permission for the site stipulates that prior to commencement of restoration of the quarry, a Dust Management Scheme is required to be submitted and approved by the local Mineral Planning Authority. This planning condition was discharged in April 2022. This DEMP considers the main infilling activities utilising imported material.

1.2.4 The site layout and proposed waste restoration phasing plans are illustrated in **Drawing Nos. CL5/1 to 5/5.**

1.2.5 The site will comprise of access roads, internal haul routes, a weighbridge and wheel cleaning equipment. Site offices and welfare facilities will also be present on site.

Operational Hours

1.2.6 The site operational hours will ensure that works carried out at the site will not continue into unsociable hours. Working hours will be restricted to:

- Monday – Friday: 0600 – 1900 hrs
- Saturday: 0600 – 13.00 hrs
- Sunday / Public Bank Holidays: Closed

1.2.7 Maintenance of plant and equipment will be undertaken during operational hours only.

2.0 SENSITIVE RECEPTORS

2.1 Receptor Identification

2.1.1 The quarry is located within a rural setting in which there are a limited number of residential properties located within 2km of the site. The A47 trunk road is located to the immediate north of the quarry, whilst agricultural land and woodlands dominate areas beyond all boundaries of the site. The nearest residential property (Wittering Lodge) is located to the north of the south-eastern section of the quarry, ~125m from the operational extents of the future waste activities. Cross Leys Farm and the adjacent cottages are located ~515m and ~460m respectively, to the south of the extent of future waste operations.

2.1.2 Collyweston Great Wood and Easton Hornstocks SSSI, National Nature Reserve (NNR) and ancient woodlands extend across an area of a distance of over 2.5km to the west/north west of the quarry. Bonemills Hollow SSSI extends ~1.7km to the northeast from immediately beyond the A47, to the north of the quarry. Bedford Purlieus Woods SSSI is located ~440m to the east/south east of the future waste operations boundary. Part of Bedford Purlieus Woods is also designated as an NNR, and large parts of which are also designated as ancient woodland, is its nearest point ~780m to the east/south east of the future waste operations boundary. There are no RAMSAR sites, Special Areas of Conservation (SACs) or Special Protected Areas (SPAs) located within 2 km of the site boundary. Additionally, as previously alluded to, Cross Leys Quarry does not lie within an Air Quality Management Area (AQMA) or a Source Protection Zone (SPZ). Wittering Coppice Woodland is a protected habitat, namely a deciduous Ancient Woodland and lies adjacent to the site's western boundary.

2.1.3 The RAF Wittering Airfield, is situated approximately 1.6km to the north of the site. Businesses within 2km of the site include East Northants Resource Management Facility (situated ~ 1.3km south west of the site), a logistics company (PC Howard Limited) which is situated ~1.25km to the south west of the site and the Thornhaugh Landfill site (~1.25km to the south east).

2.1.4 DEFRA's "Magic Map" Application indicates that the historic land use in the area (250m grid) primarily consists of Enclosed Agriculture (including ancient, pre-modern and modern forms), with patches of woodland and forestry. This is interspersed with settlements, unimproved land and areas of Industry. For example, the area upon which the site lies is depicted as having historic landscape classifications of both enclosed agriculture and industry (which is a reference to the presence of the quarry).

2.1.5 The site is within a Flood Zone 1, which means that the land has been assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).

2.1.6 The site overlies a principle bedrock Aquifer which is classified as being of high vulnerability owing to soluble rock risk. The Bedrock geology over the north-western section of the site comprises Lower Lincolnshire Limestone, while the bedrock geology of the south-eastern section of the site consists of Upper Lincolnshire Limestone.

2.1.7 A summary of surrounding land uses, features, classifications and receptors is included within **Table DEMP1.**

Table DEMP1: Local land uses, features, classifications and receptors and their relevant distances from the boundary of future waste operations (within 1km).

ID	Receptor Name	Type of Receptor	Approximate nearest distance from the operational boundary	Direction from the future operational areas
R1	Principle Aquifer (Lincolnshire Limestone)	Groundwater	Underlying	N/A
R2	Priority Species	Flora and Fauna	On Site	N/A
R3	A47	Public Highway (Main Road)	Adjacent	North
R4	Collyweston Great Wood & Easton Homstocks & Wittering Coppice Woodland	National Nature Reserve (NNR), Special Site of Scientific Interest (SSSI), Ancient Woodland & Protected Habitat – Deciduous Woodland.	Adjacent+	West
R5	Agricultural Land	Agricultural	20m+ Adjacent+ 200m+ 150+	North Northwest East South
R6	Wittering Lodge	Residential Property	125m	East & Northeast
R7	Bonemills Hollow	Special Site of Scientific Interest (SSSI), Protected Habitats – Lowland Calcareous Grassland & Lowland Fens.	25m+	North
R8	Bedford Purlieus	SSSI, Protected Habitat – Deciduous Woodland/ National Nature Reserve (NNR) & Ancient Woodland	440m+/780m	East and Southeast
R9	Cross Leys Farm	Industrial (Agricultural) Property	380m	South
		Residential Property	515m	
R10	Cross Leys Farm Cottages	Residential Properties	460m	South
R11	Public Footpaths / Bridle Ways	Public Right of Way	970m	Southeast

2.1.8 The waste related restoration operations will be restricted to the north-western area of the current operations, as illustrated in **Drawing No. MG1002/14/02**. Please note, the approximate distances quoted in **Table DEMP1** are in relation to the intervening distance between the receptor and the future operational area, not the Environmental Permit boundary. The sensitive receptors identified in **Table DEMP1** are depicted upon **Drawing No. MG1002/14/10.**

2.2 Meteorological Setting

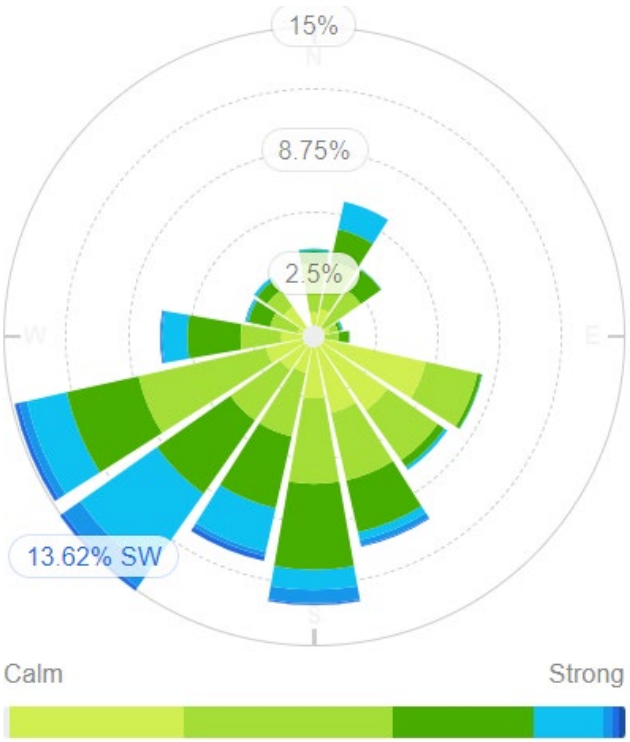
2.2.1 The fugitive emissions of dust from the site could be affected by local weather conditions.

2.2.2 The impact of weather conditions has been taken into account by using regional climate data which has been sourced from the recording station located at Wittering Airfield (situated at 52.6111, -0.459), which lies approximately 1.7km to the north of the site.

2.2.3 The predominant local wind direction is from the south-western quadrant with the prevailing winds originating from the southwest and west-south-west, as seen in **Figure DEMP1.** Winds from these directions amount to ~ 27% of the wind. Wind from east and south-east, occurring relatively less frequently, with winds from the northwest and north occurring infrequently.

Figure DEMP1: Wind rose for Wittering Airfield meteorological recording station – five-year 2018-2023 annual average

Direction	Proportion
N	3.88%
NNE	6.09%
NE	3.63%
ENE	1.31%
E	1.57%
ESE	7.57%
SE	7.16%
SSE	9.45%
S	11.78%
SSW	10.08%
SW	13.62%
WSW	13.46%
W	1.08%
WNW	3.10%
NW	3.22%
NNW	0%



Source: www.willyweather.co.uk

2.3 Additional Sources of Dust and/or Other Emissions

2.3.1 **Table DEMP2**, lists the other potential sources of dust and emissions such as Nitrogen Dioxide located within 1km of the facility.

Table DEMP2: Additional Potential Sources of Dust and/or Other Emissions within 1km of the site

Name	Address	Type of Business	Distance from the site (m)	Direction from the site
Various	Farmland	Agricultural	Adjacent	All
A47	N/A Public Highway	Public infrastructure	Adjacent	N

3.0 OPERATIONS AT CROSS LEYS QUARRY LANDFILL

3.1 Site Activities

3.1.1 The infilling/restoration of the site will require the deposit ~395,000m^3 of inert material over an anticipated period of between 2 and 10 years, subject to material availability. It is proposed that up to 400,000 tonnes of waste will be imported to the site each year. Subject to the provisions of the Environmental Permit, areas of the site to be tipped with inert waste would be engineered. This would involve regrading of the quarry floor that has yet to receive any restoration materials and the placing and compacting of a layer of cohesive material to create an Artificially Established Geological Barrier (AEGB).

3.1.2 Waste codes 17 05 06 and 19 13 02 are to be removed from the current list of wastes currently permitted for deposit at the site.

3.1.3 The waste codes to remain on the permit include inert wastes deriving from mineral/mining, construction, demolition and excavation activities.

3.1.4 The restoration of the quarry will be carried out under system of management accredited under ISO14001 (Environmental Standard Certification), ISO9001 (Quality Management System Certification) and ISO45001 (Occupational Health & Safety Management System Certification).

Waste Deliveries

3.1.5 Waste will be delivered via the entrance to the quarry located off the A47 which runs adjacent to the northern site boundary. Waste will be delivered in fully sheeted HGV's. The site access road is metalled for ~150m from its junction with the A47. Delivery vehicles will comprise engines with Euro 5 emissions rating of above.

3.1.6 Wastes will only be delivered to the site once adequate information has been provided by the waste producer (or broker) to fully characterise the waste and assess against the site's Waste Acceptance Criteria.

3.1.7 Waste vehicles entering the site will proceed to the weighbridge where they are checked in by the Weighbridge Clerk and their details recorded onto the facility's dedicated computer logging system. To ensure that the waste transfer note accompanying the assignment adequately identifies the imported material, a conformance check is carried out by a trained member of staff.

3.1.8 Access to the tipping area is via temporary haul roads. Within the site the haul road would be of a temporary nature and would be transient throughout the continued operations in order to effectively serve the relevant restoration areas. At the tipping area, the HGV will reverse to a designated point to deposit the load. The handling of the restoration material is limited to minimise the release of dust.

Waste Storage

3.1.9 Following the successful completion of the waste-acceptance checks, incoming wastes will be directed to the active tipping area for immediate deposition, which limits waste handling. Any wastes that require further verification testing to be carried out will be temporarily stored within the restoration void area pending the receipt of testing results.

Waste Deposit

3.1.10 All material deposited at the site will be inspected to ensure it conforms to the materials authorised under the Permit. Records will be maintained of the weight, nature and composition of the restoration materials deposited at the site.

3.1.11 Following deposition, the restoration material will be compacted by a tracked dozer, which passes and re-passes over the imported material to ensure that it is adequately compacted. This helps to conserve void space and reduce the differential settlement that can occur once landfilling has been completed.

3.1.12 The infilling/restoration of the site will require the deposit ~395,000m^3 (~ 790,000 tonnes) of inert material over an anticipated period of between 2 and 10 years as a rate of up to 400,000tpa, subject to material availability.

3.2 Potential Sources of Dust

3.2.1 Due to the nature of the proposed inert material to be deposited, the handling and deposition of the waste may result in dust generation. Dust may be generated during waste deliveries via vehicle movements and the deposition and compaction of the waste at the landfill's active tipping face, particularly in dry conditions.

3.2.2 A list of proposed wastes to be permitted at the site with the potential to produce dust and their storage / processing method is presented in **Table DEMP3**.

Table DEMP3: List of proposed wastes to be permitted at the site with the potential to produce dust and their storage / processing method

Potentially Dusty Waste types	Example EWC Code / Description	Max Throughput (tonnes/week)	Storage Area	Process
Mineral and mining wastes	01 – Waste resulting from exploration, mining, quarrying and physical and chemical treatment of minerals	The total amount of waste to be accepted at the site is 400,000 tpa	Incoming wastes will be directed to the active tipping area for immediate deposition. Any wastes that require further verification testing to be carried out will be temporarily stored within the restoration void area pending the receipt of testing results.	Temporary storage (if wastes require further verification testing) and permanent deposit
Construction, demolition & excavation wastes	17 01 01, 17 01 02, 17 01 03, 17 01 07 – concrete, bricks, tiles, etc.			
Wastes from waste management facilities	19 12 09 – minerals			
Municipal Wastes	20 02 02 – soils and stones			

3.2.3 Please note, the total volume of waste permitted to be accepted at the site for restoration purposes is 400,000 tonnes. It is considered that all waste types accepted at the site have the potential to create dust, therefore the derivation of a weekly throughput is unnecessary. Notwithstanding this, a weekly tonnage estimation can be approximated should the Environment Agency feel this is necessary.

3.2.4 Accordingly, dust may arise from the following activities which could be blown off-site towards nearby receptors:

- Materials transport, unloading and deposition operations;
- Temporary storage prior to deposit in the void (this will only occur when abnormal circumstances prohibit the direct tipping of waste into the void); and
- Internal plant and vehicle movements

3.2.5 The potential sources of dust and particulate (PM_{10}) generation at the site and the associated proposed management for the control of fugitive emissions are further discussed in **Section 4.0**.

3.3 Mobile Plant and Equipment

3.3.1 The site currently implements the use of the following equipment for the landfilling operations:

Table DEMP4: Equipment currently utilised on site

Description	Make	Model	Emission Rating
Dozer	CAT	D6T	Tier 4
Excavator	CAT	320EL	Tier 4
Articulated Dumper Trucks	CAT	730	Tier 4

3.3.2 No mobile plant is currently on site at present, but when utilised it is typically leased or hired and operated using low sulphur fuel.

3.3.3 Site infrastructure and plant will be inspected daily for damage and wear by site personnel as part of daily Operation and Management inspections. Any defects noted during these daily inspections will be logged and reported to the maintenance team, so repairs can be scheduled.

3.3.4 Records of inspections will be maintained in a site log. All plant items and equipment will be serviced and maintained according to manufacturer's schedules and recommendations to minimise the risk of breakdown.

3.3.5 Trained maintenance staff will carry out plant repairs quickly where required. Mobile plant repairs will be undertaken as soon as practicable, dependant on the availability of spares. In the event a replacement of the plant / equipment is required, the replacement will be of the lowest emission standard possible at the time of hire or purchase.

3.3.6 The site will implement a 'no-idling' policy whereby vehicles, plant and equipment will be switched off when they are not in use to reduce the emissions at the site.

3.4 Other Considerations

Water Usage / Availability

3.4.1 All waters used to support dust mitigation requirements at the site will be sourced from the groundwater feed pond systems that will form part of the current site and proposed final restoration scheme.

In the Event of Drought

3.4.2 The primary source of water for utilisation in dust management purposes is groundwater, which is unlikely to be as affected by drought conditions as, by way of example, a surface water source. It is suggested that the groundwater source may only fail should rainfall in the area reduce over a long period of time i.e. one or more successive winters. Should this be the case, the decrease in groundwater supplies could be anticipated and consideration will then be given to the use of an alternative source of water to support dust suppression requirements.

3.4.3 Mechanical sweepers will also be used to manage dusty residues on metalled sections of internal site areas to reduce water demand. Surface binders can also be used on both metalled and non-metalled surfaces.

4.0 DUST AND PARTICULATE (PM_{10}) MANAGEMENT

4.1 Site Management & Responsibility for Implementation of the DEMP

4.1.1 There will be a trained and responsible manager, with the appropriate technical competence qualification to manage the facility. The relevant qualified person will be on site for an appropriate duration of time during working hours to maintain the site logbook and carry out regular daily visual inspections of fugitive emissions from the site. The Technically Competent Manager (TCM) will be responsible for the implementation of the Dust Emissions Management Plan (DEMP) at the site.

4.1.2 The Site Manager will ensure that this DEMP is enforced on site, and its contents are communicated to all employees, visitors and contractors working at the site as part of the induction process.

4.1.3 Should an off-site fugitive dust emission complaint be received, it will be the Site Manager's responsibility to investigate the cause and take corrective action where necessary. In summary, these individuals will:

- Assume responsibility for the management of the site;
- Ensure personnel and operatives are advised of their roles to minimise the generation of dust;
- Conduct visual monitoring at the downwind site boundary daily or immediately following a complaint (this may be carried out by an appointed person);
- Deploy suitable dust mitigation measures based on visual observation and unfavourable weather conditions (e.g. dry weather with high winds which may aid in dispersion);
- Review the performance of the operatives and efficiency of dust emissions reduction measures;
- Ensure that records are maintained; and
- Ensure that equipment is maintained.

4.1.4 A written programme of maintenance will be developed and implemented for all aspects of site operations. Maintenance will include:

- Routine scheduled inspections;
- Preventative maintenance activities;
- Reactive maintenance activities in the event of any plant breakdown – this will be minimised at all times.

4.1.5 The DEMP will be reviewed should management practices require updating.

4.1.6 A summary of dust control techniques is provided in **Section 4.3**, **Table DEMP 4** and **Table DEMP5**.

4.2 Potential Sources of Fugitive Dust and Other Emissions

4.2.1 Fugitive dust emissions may occur during site operations as a result of material handling activities, movement of vehicles on the access road and within the site, abnormal operating conditions and exhaust fumes from on-site plant, delivery vehicles and staff / visitor cars.

4.2.2 Based on the information presented in the previous sections, it is considered that if unmitigated the potential risks of adverse health and nuisance impacts associated with dust and particulate emissions from the site are **Moderate to Very High** for the following reasons,:

- Residential property Wittering Lodge (R6) is situated downwind of the prevailing wind direction and is within 200m of proposed operational areas;
- Designated nature conservation areas are located to the immediate west and ~25m north of the operational areas.

4.2.3 The Source-Pathway-Receptor routes are detailed in **Table DEMP5**, which also includes dust control measures intended to break the source-pathway-receptor model for the identified sources.

4.3 Control of Fugitive Dust and Other Emissions

4.3.1 Considering the **Very High to Moderate** inherent risks associated with potential fugitive dust emissions from the operations, a dust control scheme has been prepared in order to provide further confidence that the potential for any adverse impacts will be further reduced. Control measures for abating dust emissions will be based on best management practices. The preventative and remedial measures to control dust and other emissions at the site are summarised in **Table DEMP5** and **Table DEMP6**.

4.3.2 Details of the water supplies available at the site to support dust control operations is discussed in **Section 3.4.**

4.3.3 Site staff will inspect the water bowser daily to ensure the equipment is operational and to look for signs of normal wear and tear, as well as damage. The mobile water bowser will be fully maintained in line with manufacturer's recommendations. When the mobile water bowser is offline for maintenance, the Site Manager, TCM or a Nominated Deputy will arrange for supplementary dust suppression to be present on site. The number and type of supplementary dust suppression systems will be determined by the TCM utilising their technical knowledge and operational expertise. The Site Manager and TCM will ensure that supplementary dust suppression systems arrive on site prior to the commencement of any dust suppression maintenance works and will remain on site for the duration of these works. Furthermore, the supplementary dust suppression systems will remain on site until the TCM has confirmed that the on-site dust suppression systems are fully functional.

4.3.4 All material collected via manual or mechanical sweeping is likely to principally consist of inert quarry dusts and fines. Subject to initial inspection and testing to confirm the absence of contaminations, this material will be disposed of within the landfill.

Table DEMP5: Source-Pathway-Receptor Model for Dust Emissions at the Cross Leys Quarry

Source	Pathway	Receptor	Type of Impact	Dust Control Measures
Mud	Tracking of mud, dust and debris on wheels and vehicles which may drop off when the wheels / vehicle is dry.	See list of potential sensitive receptors in **Table DEMP1**	Visual soiling, also consequent resuspension of airborne particles once dry.	Delivery vehicles will be fully sheeted to ensure fugitive emissions of dust and debris does not occur in transit. A screening bund will be constructed along the eastern edge of the operational area and maintained until the material is required to support the formation of the final restoration soil profile. A maximum vehicle speed limit of 15mph will be enforced at the site and will be communicated via signage and staff training. This will reduce the risk of wheels kicking up mud and / or dust on site surfaces which may become airborne. A mobile water bowser will be on site at all times which will be used to dampen down or wash dusty areas including haul routes, delivery vehicles, plant and equipment used on site and the waste deposits. A mechanical sweeper will be used to manage mud and debris deposits at the site access and A47. Daily visual dust monitoring will be conducted to identify any mud or dust on site surfaces as soon as possible to allow for remediation (such as cleaning with the water hose). Good housekeeping will be implemented at the site.
Waste deliveries	Dust and debris falling off transport vehicles, particularly for waste deliveries and dispatches of potentially dusty wastes.	See list of potential sensitive receptors in **Table DEMP1**	Visual soiling, also consequent resuspension as airborne particles once dry.	All waste will be delivered to site in fully sheeted HGV's to prevent fugitive emissions. Delivery vehicles will enter and exit the site via the paved access road; prior to exit from the site the vehicle will be washed down via the mobile water bowser. Delivery vehicles will use the internal haul routes which will be dampened down where necessary. A screening bund will be constructed along the eastern edge of the operational area and maintained until the material is required to support the formation of the final restoration soil profile. A maximum vehicle speed limit of 15mph will be enforced and communicated effectively to reduce the risk of dust suspension via delivery vehicles wheels. Upon delivery, waste will be directed straight to the active tipping face of the landfill for deposit. This will reduce the handling of the waste as (apart from in abnormal circumstances) the waste will not be stored on site prior to deposit.

Source	Pathway	Receptor	Type of Impact	Dust Control Measures
Mobile plant and equipment for the lifting and movement of waste materials	Dust and debris falling off plant and equipment and atmospheric suspension once dry. Movement of potentially dusty wastes resulting in atmospheric dispersion.	See list of potential sensitive **receptors in Table DEMP1**	Visual soiling and consequent resuspension from plant and equipment as particles become airborne once dry. Airborne particles via dust plumes as material is deposited and moved.	Drop heights will be minimised during unloading and waste deposit to avoid dusty plumes. A mobile water bowser will be available on site to dampen down dusty waste where required to reduce dusts suspension. This will also be used to clean plant and equipment used on site as part of the 'good housekeeping' regime. A screening bund will be constructed along the eastern edge of the operational area and maintained until the material is required to support the formation of the final restoration soil profile. The use of bulldozers for the compaction of the deposited waste will occur within the landfill void, therefore the side walls will provide some shelter against the wind during this activity.
Vehicles for transport of material within the site	Dust and debris falling off vehicles within the site when dry and subsequent atmospheric dispersion.	See list of potential sensitive receptors in **Table DEMP1**	Visual soiling, also consequent resuspension as airborne particles once dry.	On-site transportation distances will be kept to a minimum. A wheel wash will be used to clean vehicles prior to movement off-site. Metaled section of roads will be swept during dry weather to limit visible dust emissions. A mobile bowser will be used to provide dust suppression along loose, dusty surfaces at the site. A vehicle speed limit of 15mph will be enforced at the site and communicated via signage and staff training to reduce the risk of dust suspension due to vehicle wheels. The site access road and reception area will comprise of engineered surfacing which will be washed down where required.
Vehicle exhaust emissions	Atmospheric dispersion.	See list of potential sensitive receptors in **Table DEMP1**	Airborne particulates.	All road going vehicles servicing the site will have either Euro 5 or Euro 6 emission classified engines. Drivers will be advised by site operatives to not leave vehicles idle when engine power is not required.
Non-road going machinery exhaust emissions	Atmospheric dispersion.	See list of potential sensitive receptors in **Table DEMP1**	Airborne particulates.	Operational site plant will achieve Stage V non-road going vehicles emission standards. A 'no idling' policy will be adhered to whereby plant and equipment will be turned off when not in use.

Table DEMP6: Preventative and remedial measures to be used on site to control dust and other emissions

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
Preventative Measures			
Engineered site surfacing where possible	The site access road will be engineered to enable cleaning and reduce the amount of dust, particulates and debris that is generated at ground level by vehicles entering and leaving the site.	The engineered site surfaces will be cleaned and maintained as good practice.	This will be implemented for the duration of the site's operational period. There are no limitations to this abatement measure.
Site speed limit, 'no idling' policy and minimisation of vehicle movements on site	The site will have a maximum speed limit of 15mph in order to limit the amount of dust suspension by vehicles' wheels. Vehicle movements on site will be kept to a minimum to avoid dust suspension. A 'no idling' policy will be employed at the site to reduce unnecessary emission from vehicles on site.	These measures are employed as good practice.	These measures will be utilised for the duration of the site's operational period.
Minimising drop heights when unloading and depositing material into the landfill void.	During waste unloading, drop heights will be minimised to prevent significant plumes from being generated.	These measures are employed as good practice.	These measures will be utilised for the duration of the site's operational period.
Good housekeeping	A consistent, regular housekeeping regime will be employed at the site to ensure regular checks are carried out and that any issues that may arise are identified and dealt with as soon as possible. This also prevents dust and particulate build up.	This abatement measure is easy to implement and ensures staff vigilance with regards to potential emissions from the site. Staff particularly target areas where dust and particulates may gather. Site personnel will complete daily visual checks on the condition of the operational areas and cleaning will occur several times per week, or more frequently if deemed necessary.	This abatement measure will be implemented for the duration of the site's operational period. This abatement measure will be carried out in conjunction with other cleaning as necessary such as hosing down site surfaces.
Sheeting of vehicles	This prevents the escape of debris, dust and particles from vehicles in transit.	This abatement measure is implemented as appropriate measures.	This will be implemented for the duration of the site's operational period. There are not considered to be any limitations to this abatement measure.

Abatement Measure	Description / Effect	Overall Consideration and Implementation	Trigger for Implementation
Use of a mobile water bowser for dampening down and cleaning site surfaces	Water will be used to dampen down and wash off residual materials from site surfaces to prevent dust emissions. In the unlikely event that vehicles entering the site are heavily soiled with mud or debris, they can be cleaned. Where required and visible mud, dust or debris is present on delivery vehicles, prior to leaving the site they will be washed down to prevent tracking onto public highways.	This abatement measure is implemented as appropriate measures. The washing down of surfaces with water have proven results. The water bowser will be connected to a water supply from onsite surface water lagoons and / or groundwater.	This will be implemented for the duration of the site's operational period. There are not considered to be any limitations of this abatement measure. Site staff will inspect vehicles entering and exiting the site and advise drivers if the vehicle needs to be cleaned in any capacity. Site personnel will observe site surfaces and undertake cleaning with the water bowser when appreciable dust is seen.
Remedial Measures			
Use of a mobile water bowser for dampening down site surfaces, vehicles, plant and equipment	The cleaning of site surfaces, vehicles, plant and equipment will ensure that any dust or debris that has settled is dampened down and washing into the appropriate surface water drainage route. This will ensure that suspension and airborne dispersion does not occur.	This method is highly effective at reducing the risk of dust emissions and preventing the build-up of particulates on site surfaces.	This will be implemented when required for the duration of the site's operational period and will be undertaken when appreciable dust or debris is observed on site surfaces. This method is considered to be highly effective.
Sweeping of roads during dry weather to limit visible dust emissions and the tracking of mud and debris	The sweeping of roads during dry weather will limit the suspension and airborne dispersion of dust and particulates.	This method is highly effective at reducing the risk of dust emissions and preventing the build-up of particulates on site surfaced.	This will be implemented when required for the duration of the site's operational period and will be undertaken when appreciable dust or debris is observed on site surfaces.

4.4 Dust Action Plan

4.4.1 If dust is observed, an unacceptable dust impact is caused at a nearby sensitive receptor and / or a justified complaint is received by the site management, the 'Dust Action Plan' will be implemented. Potential Sensitive Receptors within 1km of the site are identified in **Drawing No. MG1002/14/10** and summarised in **Table DEMP1.**

4.4.2 It is the responsibility of all site personnel to maintain a visual awareness of fugitive dust emissions during the working day as part of the continual proactive environmental monitoring. Any significant dust emissions observed with the potential to travel beyond the site boundary will be reported to the Site Manager who will be responsible for investigating the cause and taking immediate action, i.e. the implementation of the Dust Action Plan to minimise further emissions.

4.4.3 If an activity at the site results in the generation of unacceptable levels of dust, then that activity shall cease until sufficient measures have been adopted which prevent or minimise the dust emission. Unacceptable levels of dust are classified as visible plumes of dust identified which have the potential to leave the site boundary. Unacceptable dust impacts off site include evidence of settled dust on surfaces of the nearest sensitive receptors that are directly attributable to operations associated with this Management Plan.

4.4.4 The Site Manager or TCM will also be responsible for daily recording of monitored dust levels and conditions that could lead to the potential for fugitive emissions of dust to occur. General daily visual checks / observations will also be carried out by all operational staff as part of their normal operational procedures which will consider the potential for fugitive emissions in a proactive manner, this will be in relation to:

- Dry surfaces where mud or debris is present
- Any part of the site where movement of vehicles can generate dust
- Any part of the site where dust can be generated by wind
- Material handling operations (such as waste deposit and compaction in the landfill void)

4.4.5 The Site Manager of TCM will record the findings of these daily inspections and use a graded scale of dust occurrences together with responses, as outlined in **DEMP7.**

Table DEMP7: Graded Scale of Dust Occurrences to be used in the Daily Inspections

Score	Condition	Action Required
0	No visible dust.	None.
1	Visible dust travelling up to 5m from the source.	Dampen surfaces down, review operations and weather conditions, and take further preventative actions as appropriate.
2	Visible dust travelling and reaching the sides of the quarry void, or edge of stripped areas during restoration.	Dampen down and reduce / relocate any operations causing the release; review operations and weather conditions, and take further preventative actions as appropriate to prevent further releases.
3	Visible dust outside of the operational area.	Carry out emergency dampening down and treatment of source areas; carry out inspections at the site boundary to ascertain the extent and amount of dust migration; advise MPA and provide a plan for any modification to operations to prevent recurrence.

4.4.6 The Site Manager / TCM shall implement adequate dust suppression measures to control dust from any activity which has the potential to generate unacceptable emissions of dust.

4.4.7 The control measures discussed in **Section 4.3** shall be employed to minimise dust.

4.4.8 If routine visual monitoring, continual proactive monitoring or monitoring in response to a complaint identifies the generation of significant visible volumes of dust, including dust on site (such as dust on plant and equipment or engineered surfaces) and airborne dust either migrating off site or having the potential to cross the site boundary and impact identified receptors, then the following actions will be taken by the TCM of nominated deputy:

- Take immediate steps to establish the cause of the abnormal emissions.
- Upon identification of the emission cause, the offending operation shall be suspended (if a mechanical source) or isolated (if a passive source) and corrective actions shall be undertaken.
- Implement corrective action, such as the use of a mobile water bowser for cleaning site surfaces or wheel washing.
- Offending emission sources shall be suspended / isolated until corrective actions have been completed or adverse weather conditions have subsided.
- Once corrective actions have been completed, or adverse weather conditions have subsided, activities at the offending emission source will recommence under supervision from the TCM or nominated deputy for 30 minutes.
- If no further dust emissions are observed, then activities can continue without TCM (or nominated deputy) supervision.
- If further emissions are observed, activities will be suspended again, and the relevant corrective actions / supervision will be repeated until no longer required.
- All actions and explanations will be recorded within the site logbook / diary.

4.4.9 In the event that the control methods cease to adequately deal with an emission of dust, appropriate arrangements will be made by the TCM to suspend operations until the situation that gave arise to the emission has been resolved. The Environment Agency will be informed at the earliest appropriate opportunity or by the end of the operational hours.

4.5 Visual Dust Monitoring

4.5.1 Routine visual monitoring for dust will be carried out daily within the operational hours of the site by the Site Manager or nominated deputy. Inspections will generally look out for the presence of dry, dusty external surfaces and for any dust being whipped by wind. External site access roads will also be included in the inspection to ensure that delivery vehicles entering and exiting the site are not tracking mud, dust and debris onto the public highway.

4.5.2 Whilst carrying out their roles on site, site staff will observe the ground, surfaces, equipment and immediate environment to check whether dust is being emitted from the site.

4.5.3 The results of the daily visual dust monitoring will be recorded on a check sheet for the site, included as **Appendix DEMP1.** These records will be kept on site in the office.

4.5.4 The Site Manager will review the feedback from the visual monitoring by reviewing the check sheet and conducting spot checks themselves. These reports will be provided to senior management for review.

4.5.5 In the event that dust is detected, additional visual dust monitoring will be carried out. Should complaints from neighbouring receptors be received, additional visual monitoring will be carried out to identify the source and remedial action implemented.

4.6 Particulate Matter Monitoring

4.6.1 The site does not require Particulate Matter Monitoring as it is not within an AQMA and owing to the waste types and emission sources at the site, there are limited sources of fine exhaust emissions.

5.0 REPORTING AND COMPLAINTS RESPONSE

5.1 Engagement with the Community

5.1.1 Mick George Limited will operate an open communication channel with the occupants of Wittering Lodge. The Site Manager or TCM will liaise with the occupants every quarter for the first year of operation, and annually thereafter to determine if the facility is causing a definable adverse impact off site. Appropriate contact information (e.g. telephone number and e-mail) will also be displayed at the site entrance.

5.1.2 The Site will be a reliable source of information to the community and readily available to answer any questions or queries. Active participation in the community will ensure that communication channels such as emails and phone calls are welcomed, and an appropriate response is formed by the Site/ Operations Manager, TCM or nominated deputy.

5.1.3 The Site will also operate a comprehensive complaint reporting and resolution procedure which can be utilised by members of the public and neighbours.

5.2 Means of Contact

5.2.1 The facility will be readily contactable to outside organisations and to members of the public. The site signage board (placed in a visible location such as the site entrance) will contain the necessary details for both the site operations and the Environment Agency, including contact details and the site's Environmental Permit Reference number.

5.2.2 Contact details will also be made available through the local community liaison groups. Therefore, should an off-site issue arise, the complainant has a means of getting in touch with the operator.

5.2.3 Any complaints received directly to site during operational hours will be notified to the Environment Agency as soon as possible and at the latest by the end of operating hours on the same day. Any complaints received outside of operational hours will be notified to the EA by the end of the operational hours for the next working day to ensure that a thorough investigation process can be completed.

5.2.4 As part of the facility operation and development, a community engagement plan will be developed if found to be necessary, the purpose of which would be to identify all sensitive receptors and formulate a communications plan. The community engagement plan will detail the complaints management and reporting procedures, this will include, but will not be limited to:

- Information provided to the local neighbours (via the Environment Agency) regarding the point and method of contact for the Facility in the event dust emissions has been detected or they want to discuss any activities etc at the Facility;
- Advice provided to the neighbours that any complaints / concerns will be addressed immediately following identification / notification and contingency action implemented; and
- The neighbours will be informed of any corrective action and a follow up call will be carried out if necessary.

5.3 Reporting of Complaints

5.3.1 Any complaints received directly to site from members of the public or via the Regulatory bodies (including the EA and Local Authority) will be recorded and further observational monitoring will be instigated at the location of the complaint and on site to determine the extent and location of the fugitive emission, and the materials and / or process at the source will be identified in order to assist in the investigation and determining the source of the emission, as much information and detail about the complaint as possible will be recorded.

5.3.2 Should a complaint be received, a 'Dust Complaint Form' will be completed which includes the following information:

- Complainant name, address and telephone number.
- The time and date of the complaint, dust, weather conditions, temperature and wind strength and direction.
- Results of the latest visual dust monitoring and the Operation and Maintenance Daily Inspection carried out by facility personnel.
- Complainant's description of dust.
- Other complaint comments regarding dust emissions.
- Any other previous known complaints relating to the installation (all aspects, not just dust).
- Any other relevant information.
- Operation conditions at the time of the offending dust emission (e.g. waste loading / unloading, noting any abnormal conditions that may have contributed to the complaint.
- A summary of the actions taken and the final outcome.
- Confirmation of who filled in the form and who approved it (complete with the date and signatures)

5.3.3 Records of complaints received (i.e. Dust Complaint Form) will be kept in the appropriate file in the site office for inspection and review by both internal and external personnel. Copies will also be held at the company's Head Office.

5.4 Complaint Screening

5.4.1 As part of each fugitive emission complaint received, these will be objectively addressed against the wider environment to ensure that the source of the emission is traced back to the correct source. It is essential to correctly identify the source of the dust emissions to ensure that mitigating measures can be applied effectively and appropriately. If necessary, the complaint will also be assessed against previous records to place the nature of the complaint into context.

5.5 Complaint Investigation

5.5.1 In the event that fugitive emissions are found to be causing a problem at or around the facility, as determined and confirmed by investigation into off site complaints or during routine monitoring; measures will be taken to determine the source, and the following courses of action as detailed below shall be taken within 24 hours of complaint receipt:

- Additional dust monitoring as detailed above to identify the extent of the plume and potential cause for the dust i.e. waste material and / or process;
- Examination of the operational activities at the site at the time of the dust complaint or dust identification;

- Examination of the meteorological conditions at the time of the complaint or dust identification;
- Carry out a review of the operational procedure and process controls and instigate any control measures immediately following identification of the problem;
- Further dust monitoring will be carried out to ensure the issue has been addressed and to monitor the effectiveness of any control measures undertaken.

5.5.2 Due to the potential for dust emissions to be generated from both operational activities (e.g. movement of vehicles and operation of equipment (e.g. for compaction of the deposited waste)) and passive dust sources, such as road surfaces, it is proposed that site operations are not to be suspended until such a time as the source is identified. Upon identification of the dust emission, this source will be isolated and appropriate mitigation measures will be applied.

5.5.3 Once the complaints investigation process has been completed, the findings will be collated and a formal written response summarising the findings of the investigation (and action taken) will be provided to the complainant. This response will be submitted to the complainant within five full working days from the date on which the complaint was received. If a summary response cannot be generated in this timeframe, the complainant will be informed of the progress and advised on when the summary response document will be provided.

5.5.4 Records of complaints received (i,e. completed Dust Complaint Forms), as well as the summary report, will be kept in the appropriate file in the site office for inspection and reviewed by both internal and external personnel.

5.6 Management Responsibilities

5.6.1 The complaints will be handled by the Site Manager who will investigate it as soon as possible (within 24 hours). Upon filling out the ‘Dust Complaint Form’, the Site Manager will review the site conditions and come to a conclusion on how best to tackle the issues raised by the complainant. Once an action is in place, the Site Manager will ensure that the complainant is informed, and the final outcome will be recorded on the ‘Dust Complaint Form’.

5.6.2 Where more than one complaint is received within a month, senior management will be notified, and appropriate remedial measures will be identified and implemented accordingly.

6.0 ACTIONS, CONTINGENCIES & RESPONSIBILITIES DURING PROBLEM EVENTS

6.1 Default Procedures

6.1.1 In the event that an emission of dust is identified during the normal course of operations, either through daily routine monitoring, or in response to off-site complaints, the default procedure will be to investigate the emission in line with **Section 5.5** above which is an appropriate response to both off site complaints as well as on site investigations following on from routine inspections.

6.1.2 It is the responsibility of the site management team (Site Manager / TCM and associated supervisors) to ensure procedures as set out in the DEMP are put into action.

6.1.3 Should any new "lessons learnt" be identified as part of an investigation into an emission of dust, they will be considered by Site Management and incorporated into the DEMP to prevent a re-occurrence.

6.2 Emergency Procedure

6.2.1 Monitoring for dust emissions will be undertaken during a time in which extreme release of dust is experienced e.g. delivery of material to site, waste hauling or waste deposition into the landfill void. Mist / water sprays will be utilised if necessary and operations which may lead to increase dust emission will be temporarily suspended.

6.2.2 Consideration will also be made as to the suspension of receipt of dusty/powdery wastes.

6.3 Event Reporting

6.3.1 In the event of any significant environmental emergency / incident, a representative of Mick George Limited ('Mick George) will notify the Environment Agency by telephone immediately, but first having due regard for the incident at hand and any remediation actions required to ensure the safety of site personnel and the immediate environment.

6.3.2 Details of any environmental incident will be confirmed to the Environment Agency in writing by the next working day after identification of the incident. This confirmation will include the time and duration of the incident, the receiving environmental medium or media where there have been any emissions as a result of the incident, an initial estimate of the quantity and composition of any emission, the measures taken to prevent or minimise any further emission and a preliminary assessment of the cause of the incident.

6.3.3 Any incident notified to the Environment Agency will be investigated, and a report of the investigation sent to the EA. The report will detail (as a minimum):-

- the circumstances of the incident;
- an assessment of any harm to the environment; and
- the steps taken to bring the incident to an end.

6.4 Problem Resolution

6.4.1 Once the identified problem has been rectified, a report will be prepared assessing the nature of the incident and the actions taken to resolve the issue. Additionally, the report will detail the changes that could be made to the

operational practises which would ensure, wherever possible, that the issue would have less of a chance of arising again in the future.

6.4.2 This Dust Emissions Management Plan and the dust / particulate related assessments of risks presented in the Environmental and Accidents Risk Assessment (*Doc. Ref: MG1002/07*) will also be reviewed if management practices require updating.

6.4.3 This information will be provided to the Environment Agency in accordance with the Event Report procedures discussed in **Section 6.3,** above. Any improvements or amendments to operational practices will be discussed with the EA prior to their implementation.

7.0 REPORT CLOSURE

7.1.1 This Dust Emissions Management Plan (DEMP) outlines the overall approach to be taken by the Mick George Limited to ensure that dust emissions are minimised, measured and remediated as necessary.

7.1.2 Given the application of appropriate documented management techniques at the site, the potential for fugitive emissions of this nature will be strictly limited. Therefore, the risk to the nearest residential receptor and immediate ecological receptors is low.

7.1.3 Additionally, given the management techniques in place it is considered that the risk to the nearest residential receptors (Wittering Lodge) located north-east of the site is low.

7.1.4 By implementing best practice measures to control and mitigate the generation and transportation of dust, it is considered that dust emissions from the site can be adequately controlled.

7.1.5 This document will be subject to on-going review and revision where necessary. This review will be undertaken in response to events which may occur on site, and also to ensure that it accords with the latest regulations and associated guidance documents. The review of the DEMP for the site will occur at least once per annum. All revisions to the document will be recorded and details of said revisions will be described as part of the required record relating to document review.

DRAWINGS

APPENDICES

APPENDIX DEMP1

Visual Dust Monitoring Check Sheet

MICK GEORGE

Visual Dust Monitoring Check Sheet	Date:	Ref. No.:
Name of site personnel carrying out visual dust monitoring		
Monitoring location		
Time and date of monitoring		
Time since last visual monitoring checks (days)		
Site activities being carried out at the time of monitoring (e.g. waste unloading)		
Weather Conditions (e.g. dry, rain, high winds etc.)		
Temperature (e.g. Very warm, warm, mild, cold or °C (if known))		
Wind Strength and Direction (e.g. light, steady, strong, gusting)		
Description of dust on site (i.e. no dust visible, some areas of very light dust covering surfaces, thick layer of dust on site surfaces)		
Dust from the site visible on public access roads? (Y/N)		

Has road sweeping already been carried out at the time of visual monitoring? (Y/N)	
Monitoring personnel's description of dust	
Any other relevant information	
Potential on-site sources that could give rise to dust (in the event that dust is observed)	
Actions taken in the event that dust is observed on site surfaces or on public access roads (e.g. hosing, road sweeping, use of browser etc.)	
Final Outcome (were actions taken successful?)	
Date and time of next scheduled visual dust monitoring	

Form Completed by:		**Signed:**	
		Date:	

Approved by:		**Signed:**	
		Date:	