L.B. Silica Sand Limited
Reach Lane Quarry Landfill - Soil Wash Plant
Reach Lane, Bedfordshire

EPR/HP3094SQ

Dust Emission Management Plan (DEMP)

Document Ref: 213461/DEMP

November 2024

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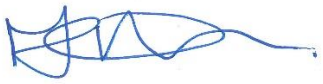

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APPENDICES

1.0 INTRODUCTION & SCOPE

1.1 This dust emissions management plan (DEMP) sets out how the risk of poor air quality emissions will be managed at the aggregate and soil recycling facility operated by L.B. Silica Sand Limited. This assessment is solely for the aggregate and soil recycling facility alone, and not of the Landfill which is covered under a separate document[1].

1.2 The site is located off Bryants Lane, Bedfordshire within an active quarry. The activity is nestled within the wider Landfilling and Quarry activities, and is covered under the Landfill permit (EPR/HP3094SQ) This plan forms part of the dust and emissions management systems for the site.

1.3 The purpose of this plan is to:

- minimise the emissions of dust, particulates and NO_2 produced by site activities, as far as is practicable, using appropriate best practice measures; and
- mitigate the potentially adverse impacts of the residual emissions of dust, particulates and NO_2 after all appropriate control measures have been applied with due regard to the sensitivity of the local surroundings.

1.4 This management plan incorporates industry good practice including to ensure the air quality emissions risk remains low during the site's operation. The plan has been developed following the principals set out in the EA dust control guidance, and SPG Mayor of London Guidance and City of London Code of Practice for Deconstruction and Construction Sites[2]. The relevant guidance in these plans relates primarily to construction processes which are consistent with those operated at the manufacturing site and present good industry practice.

1.5 The movement, storage and placement of waste may generate particulates and litter. The sources of emissions and associated controls are described in Section 3 of this plan. The plan sets out the proactive and reactive measures that will be implemented to control the emissions during standard and abnormal operational circumstances. These controls are described in subsequent sections.

1.6 In the event that the implementation of controls fails, corrective actions will be identified and implemented. The Site Manager will be responsible for implementation of the DEMP on site and site operatives will be provided with copies of this plan and trained on its implementation. Additional copies of the latest revision can be found in the site office and welfare area.

1.7 The material recycling processes can generate particulates and litter. The associated controls are described in Section 4 of this plan. The plan sets out the proactive and reactive measures that will be implemented to control the emissions during standard and abnormal operational circumstances. These controls are described in subsequent sections.

1.8 The scope of this management plan follows the Environment Agency's (EAs) requirements set out in the Dust and Emissions Management template (released October 2018) and Policy SI 8 of the London Plan 2021. Monitoring is in line with EA Guidance M17.

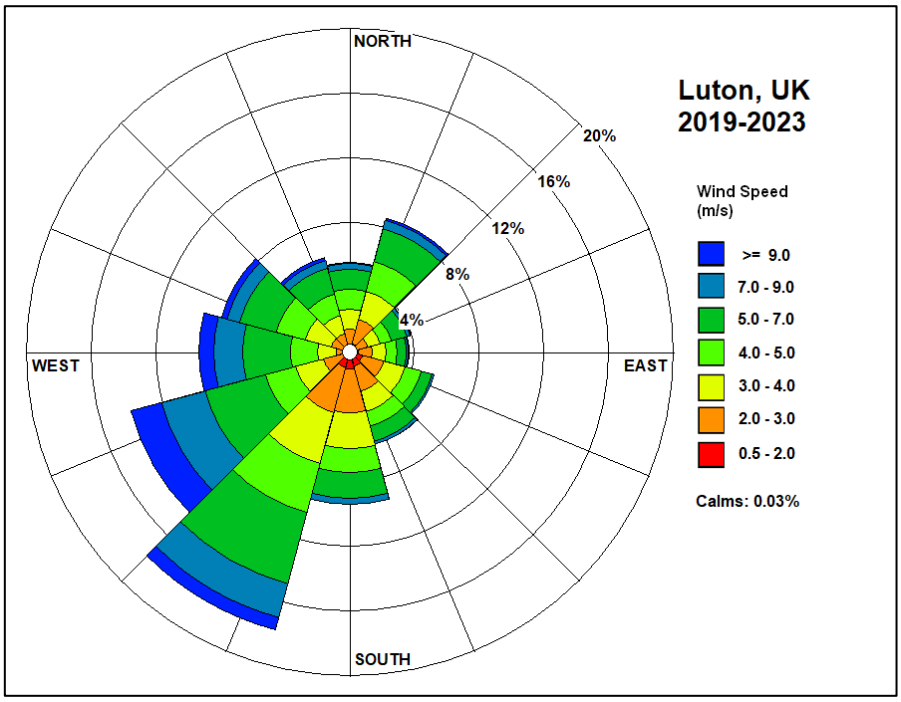
[1] Refer to ECL, *Dust Emissions Management Plan,* ref. ECL.020.01.01/DEMP Rev 2 for details on dust management and control for the Landfill operations.

[2] Guidance used as it is the most authoritative for the type of operations at the site.

2.0 SENSITIVE RECEPTORS & BASELINE CONDITIONS

Baseline Conditions

2.1 The frequency of exposure and likelihood of any fugitive emissions on sensitive land uses is determined by the magnitude of release, proximity of receptors and prevailing meteorological conditions. Meteorological wind data for five years, has been acquired. The wind data has been taken from the Met Office Station in Luton. This data is considered representative of the site. The prevailing wind direction is from the west / south-west quadrant.



2.2 The soil wash plant is located within the quarry void, below the surrounding ground level. The immediate land use to all directions (140 m north, 220 m west, 390 m south and 400 m west) is land either under sandstone quarry activities or landfill activities subject to their own site specific DEMP to prevent, monitor and control dust and vehicle emissions.

2.3 The nearest sensitive receptors downgradient of the predominant wind direction are the residential receptors off Gig Lane to the south, Overend Green Lane to the west and the village of Heath and Reach to the west. The nearest is at Overend Green Lane circa 280 m from the site boundary where there is also the public right of way (PRoW), agricultural land use and the public highway. These are considered the most sensitive receptors as a result of the predominant wind direction from the west and south west.

2.4 DEFRA Air Quality Management Areas (AQMAs) data[3] shows the site and the surrounding area is not within an AQMA Boundary.

2.5 An air quality / dust assessment was completed by Smith Grant LLP (SGP)[4] to support the previous application to extend the extraction of mineral at Reach Lane Quarry (planning reference CB/19/01753/MW). A period of dust monitoring was completed between 11th September 2019 and 12th December 2019. The activities at the time included mineral extraction, mineral processing (screening), stockpiling, loading of HGVs, internal transport and tipping. The mineral processing at this time was not for the treatment of waste, but for the processing of site-won mineral wastes only. The dust deposition rates were between 17-93 mg/m^2/day, which is well below the 200 mg/m^2/day threshold. The assessment is referred to for information/context only and does not form part of this management plan.

[3] "Department for Environment, Food and Rural Affairs." *AQMA Interactive Map*, uk air.defra.gov.uk/aqma/maps/. Accessed 3 Sept. 2024.
[4] Smith Grand LLP, Letter Report ref. R2421B-SGP Reports-BR01 dated 24th January 2020.

Sensitive Receptors

2.6 Table 2.1 sets out the potential sensitive receptors to dusts, by either land use or proximity to the operation. The table supplements drawing 213461/D/003A and 003B, which provides a visual guide to the area sensitivity. With the dominant wind direction from the west / south west, the most sensitive receptors are the residential properties off Overend Green Lane, users of the PRoW and public highway, as well as the agricultural fields and any potential livestock.

Table 2.1. Sensitive receptor locations relative to the site boundary of the soil wash plant activity

Land Use Type	Name	Approximate distance from permit boundary
Residential	Off Overend Green Lane	280 m east
	Reach and Heath Village	250 m west
	Off Gig Lane	400 m south
	Off Eastern Way	515 m south
	Leighton Buzzard Town	1010 m south
Educational	St Leonards (Heath & Reach) V A Lower School	550 m west
	Heath Barn Pre-School	620 m west
Industrial	Stone Lane Quarry	220 m north
	Fox Corner Quarry	470 m north
	Eastern Way Quarry Complex	644 m south east 900 m north east 1006 m east
Commercial	Wind Farm	1003 m east
Public Transport	Reach Green Bus Stop	290 m north west
	Various Bus Stops on Woburn Lane and Bird's Hill	68 m west 380 m north 480 m south west 624 m south west
Recreational	Public Footpaths	160 m north, north east 278 m east 500 m south
	Bryants Lane Sports Ground	200 m north
	Horse Stables	430 m south
	Allotments	530 m south west 674 m south west
	Sports Pitch	620 m west
	Thrift Road Recreation Ground	715 m south west
	Leighton Buzzard Golf Club	850 m south west
	Fishing Ponds(Jones Pit)	904 m north east
Environmental	Kings Wood and Bakers Wood And Heaths (SSSI)	470 m north 665 m north west 730 m west
	Kings Wood and Rushmere (NNR)	553 north 875 m west 850 m north west
	Double Arches Pit (SSSI)	520 m east
	Woodpasture and Parkland BAP Priority Area	470 m north 730 m north west
	Ancient Woodland	470 m north 670 m north west
	Priority Habitat	447 m west 470 m north 740 m east 740 m west 840 m south 992 m south west
	Nine Acres Pit (SSSI)	970 m south east
Agricultural	South of Gig Lane	381 m south
	East of Overend Green	400 m east
	South of Eastern Way	500 m south
Surface Waters	Reservoir	450 m south

Table 2.1. Sensitive receptor locations relative to the site boundary of the soil wash plant activity		
Land Use Type	**Name**	**Approximate distance from permit boundary**
	Unnamed Ditches	422 m south 500 m north west 900 m south
	Unnamed Ponds	430 m East 950 m South
Other	Heath and Reach Vet Surgery / Kingswood Farm Kennels and Cattery	560 m North East
	Heath and Reach Cemetery	850 m South West
	St Leonards Church	920 m South West

Local Dust Contributors

2.7 Table 2.2 sets out the potential dust emitters, by proximity to the soil wash plant activity boundary.

Table 2.2 Potential dust emitter activities within 1 km of the soil wash plant activity			
Company	**Address**	**Type of Business**	**Approximate distance from site boundary to centre of emitter**
L.B. Silica Sand Limited	Reach Lane Quarry, Reach Lane, Heath And Reach, Leighton Buzzard, Bedfordshire, LU7 0AL	Quarrying activity and management of inert or extractive waste at quarry	On-site
Fox (Owmby) Limited	Stone Lane Quarry, Woburn Road, Sandhouse, Heath and Reach, Central Bedfordshire, MK17 9HD	Inert landfill	220 m north
Eastern Way Quarry Complex / Aggregate Industries	Various	Quarrying activities	644 m south east 900 m north east 1006 m east
N/A	Various agricultural fields	Agricultural activities	Surrounding area (north, east south)

3.0 OPERATIONS AT REACH LANE QUARRY SOIL WASH PLANT

Waste Operations

3.1 The operations on site involve treatment and storage of non-hazardous, inert mineral based waste to produce recovered aggregates for onward recovery by manual and wet mechanical segregation, screening and washing. These processes are undertaken by excavator or within the bespoke soil washing facility. There is a > 100 mm oversize made from the wet processing. The majority of the processing on site is by wet processing therefore the materials are wet and risk of potential fugitive emissions are low.

3.2 The annual throughput is 250,000 tonnes with a maximum storage capacity at any time of 75,000 tonnes. There is a maximum of circa 25d0 tonnes of recovered aggregate in the recovered bays ready for re-use. The waste types to be imported to the site are predominantly from construction and development sector, consisting of non-hazardous and inert mineral based materials. The grain size varies from > 100 mm down to < 63 µm. The more friable lower grain size is present in the feedstock and within the sand and filter cake fractions.

3.3 Table 3.1 sets out the waste streams, waste management activities and the potential for fugitive particulate emissions. The dust risk derives from the finer fraction which can become airborne during dry conditions and without abatement controls. Appendix A has the source pathway receptors for all potential dust activities below.

Table 3.1 Waste streams and description potential for fugitive particulate emissions without mitigation

Description	Processes	Potential for fugitive particulate emissions without mitigation
Haulage and site operation	Import and export of waste.	Possible exhaust emissions and fugitive dusts from loads from vehicles (NOx, PM10 (<10 µm) and Total Suspended Particulates (TSP)).
		Possible: Wind entrainment of dust on operating surface and haul route.
Movement and placement of Inert / Non-Hazardous waste streams	Tipping of waste and temporary storage	Possible: Wind entrainment of dust on operating surface and haul route.
	Loading of material onto hoppers or other vehicles and placement into the ground	Possible wind entrainment of lighter waste fraction. As the material is transferred or dropped onto the ground there is the potential for wind entrainment of fines. Exhaust emissions and fugitive dusts from the vehicles in operation.
	Screening of waste	Mechanical breaking and abrasion of the waste can cause particulates to be emitted. If these become entrained, they can become airborne.
		As the material is transferred on conveyor or dropped onto the ground there is the potential for wind entrainment of fines.
		Exhaust emissions and fugitive dusts from the plant in operation (NOX, PM10 (<10 µm) and Total Suspended Particulates (TSP)).
	Transfer of material and manual segregation into stockpiles	Possible emissions from the movement of plant over the operational area if there is significant build-up of mud and waste.
		Possible emissions during the bulk loading of segregated waste.
Storage of Waste	Storage of material or waste within stockpiles	Possible wind entrainment of waste.

3.4 Dust and emission controls are outlined in Section 4.

Plant and Equipment

3.5 The delivery plant involved are sheeted 8-wheel delivery lorries with an emission rating of Euro 5 and above. The deliveries are with either standard, sheeted tipper lorries, or sheeted skip loaders at a rate per day compliant with planning permission.

3.6 All plant is maintained in line with manufacturer's specification. If plant must be replaced, the replacements will be of the lowest emission standard possible at the time of purchase. There are no generators on site.

Wheel Wash

3.7 There are two types of wheel wash near the site entrance and weighbridge. The two types of wheel washes are as follows:

- A passive water bath: The HGV drives over inverted steel angles within a water bath. The vibration from the movement, and the motion of the tyre in the bath loosen and remove any soil / dust / debris.
- An active wheel wash: The wheel wash nozzles, positioned on either side of the HGV, pressure wash debris and dust off the tyres and lower body.

3.8 The weighbridge is in use during all seasons of the year, and is compulsory for all existing vehicles to use upon egress.

3.9 The runoff water is captured in a water recycling tank located adjacent to the wheel wash. The recycling tank removes debris via sedimentation so that it may be recirculated in the system. The recirculation of runoff water reduces the overall water consumption and water demand for wheel washing. The first wheel wash has an automated barrier come down to ensure the HGV remains on the wash for the full spray cycle duration.

3.10 The wheel wash is are assessed to be effective when HGV vehicles leaving site are visually clean and free of dirt and debris. In turn, this should mean that the haul route and Public Highway should also be free of dirt and debris. Other signs of monitoring will be reviewing the whole wash cycle; as well as condition of the internal haul route surfacing.

3.11 The vehicle will be inspected following use of the wheel wash to ensure that the trackable debris has been removed from the vehicle. Vehicles which still contain significant trackable debris after using the wheel wash will be redirected to go through the passive and active system again.

3.12 In the event that the wheel washes are operational but fails to remove dirt/debris from an HGV due to excessive dirt and debris, excessive dirt and debris will be manually removed by an operative using a shovel and bowser with pressure hose.

3.13 The wheel washes will be inspected regularly by a trained operative to make sure it is fully operational. Where there is failure of a wheel wash, repairs will be made within 48 hours and alternative temporary wheel washing will be sourced. Alternative temporary wheel washing will likely be manual washing by an operative manned with a shovel, bowser and pressure hose.

4.0 DUST & PARTICULATE MANAGEMENT

Sources of Fugitive Particulates and Control Processes

4.1 The potential dusts include fine particulate matter which consist of inhalable fractions (total suspended particulates (<100 µm) and the more dangerous respirable fraction (less than PM_{10}). Such dust types are termed as friable. Friable dusts may occur in hardcore and aggregate waste.

4.2 There will be no point source emissions of air pollutants. Any release will be fugitive. All processing operations and waste storage are screened by design and location within the wider quarry.

4.3 All unloading, loading, storage and waste processing will be completed within the activity boundary. The control measures for dust and particulate management are outlined in Table 4.1.

Table 4.1 Control measures				
Ref	**Abatement Measure**	**Description/Effect**	**Overall Consideration and Implementation**	**Trigger for Implementation**
Preventative Measures				
1	The main site entrance is of impermeable concrete hardstanding, and the remainder of the site is maintained permeable hardstanding.	Only one access point from the site to the public road. Easy visual identification of mud/dust at point of entry /exit. No mud generated and point of exit / entry from the haul route to the access at Reach Lane / Any mud/ dust brought to site on HGVs is easy to clean.	The access / egress is regularly cleaned by a road sweeper (which is dedicated) to limit risk of dust from residual waste and dust picked up on the tyres. The sweeper on site at all times. A trained operative will inspect the access / egress with the external road daily to determine whether there is beginning to be an accumulation of dust/mud on the access, as well as inspection of maintained impermeable hardstanding.	Excess mud/ dust will be identified in daily visual inspections.
2	Soil wash plant operations within an existing quarry void	The soil wash plant is located within a quarry void which sits below the surrounding landscape. The location of the soil wash plant acts as a screen to reduce the effects of wind whipping and disturbance of particulates. In the event that wind whipping and disturbance occurs, it is likely that the particulates will remain within the permit boundary.	This is inherent in the location of the wash plant operational area.	Always implemented.
3	Soil wash plant operations are a wet process.	The soil wash plant is a wet process which is unlikely to cause a dust nuisance with the exception of the hopper. The means all materials have a as produced moisture content. This lasts longer in the sands/clay. The 10 mm, 20 mm, 40 mm and 75 mm aggregates do not have any friable fraction and are of low dust potential.	The wet processing is inherent in the soil wash plant design.	Implemented at all times.

Table 4.1 Control measures				
Ref	**Abatement Measure**	**Description/Effect**	**Overall Consideration and Implementation**	**Trigger for Implementation**
Preventative Measures				
4	Fixed wheel wash	Maintenance of vehicles leaving the site reduces the buildup and distribution of fine particles and mud on access points and haul routes. The wheel wash removes debris from the wheels and undercarriage of vehicles. It comprises a passive water-bath, and an active water spray system. It uses the passive action of the tyre movement and jet nozzle sprays.	The wheel wash is located on concrete near the weighbridge. The wheel washes uses water re-circulation to minimize water loss therefore much easily maintained during drier periods. The system can also achieve some level of rainwater harvesting within the winter wetter months.	All HGVs leaving the site must use the wheel washes. Excess mud/ dust will be identified in daily visual inspections. Cleaning of the silt tank and cleaning of the infrastructure is undertaken as per manufacturer's recommendations. HGVs leaving the site and the site internal haul route; as well as the external road will be monitored/inspected to provide visual feedback on effectiveness and use of the wheel wash. The before and after visual condition of HGVs will also be reviewed. The inspection will be by a trained operative.
5	Integrated misting systems on crusher / screener	Dampening of the soil / atmosphere during processing will reduce the amount of particulates released during the activity.	The screener and crusher will be fit with an integrated misting system to allow dampening of the soil / atmosphere during processing. The integrated misting system is connected to an IBC, typically 1 m^3 of water. The IBC water will be fed from the mains water supply and will likely trickle-feed the IBC continuously to keep full.	The integrated misting systems will be operation during the crushing and screening during dry or windy conditions. The site conditions will be assessed during the daily visual inspection. Dry conditions will include periods of drought defined as > 35 °C over 3 days consecutively or no rainfall in 14 days) and high winds (defined as > 25mph on any day).
6	Stockpiles will be at natural angle of repose and compacted at the end of each day.	Stockpiled material will be stockpiled lower than their natural angle of repose, which increases the stability of the stockpile. Increased stability reduces the effect of wind whipping and of material slumping which has the potential to cause sporadic dust clouds.	The angle of repose is the critical angle at which a material can be stockpiled without slumping. The stockpiled material should be compacted using an excavator bucket at the end of each day to reduce the impact of wind and rain against the material.	Always implemented.
7	Controlled stockpile height and location.	Stockpile heights will be limited to minimize the distance over which dust, debris and particulates could be dispersed by wind. The main mechanism behind the control of stockpile heights is to prevent wind whipping, by ensuring the material is located at least 0.5 m	All stockpiles will be well screened by either the soil bund around the operational area or the height of the former quarry face. In the event of identified wind whipping on site, access to stockpiles will be made available by excavator to reduce stockpile height.	Always implemented. To note, the bays are for stockpile delineation only and are not a dust control.

Table 4.1 Control measures				
Ref	**Abatement Measure**	**Description/Effect**	**Overall Consideration and Implementation**	**Trigger for Implementation**
Preventative Measures				
		below the natural screening on site or at least 1.5 m below the former quarry face. The stockpile heights range from 0 m up to 10 m but there will always be freeboard from top of the site bunding or top of quarry void.	Stockpiles height will be visually monitored in line with the housekeeping checklist in Appendix C.	
8	Water suppression using mobile water bowsers with jet nozzle attachments.	Dampening down of stockpiles, haul routes and during the tipping of waste reduces the suspension and re-suspension of dust and particulates. Dampening down of waste being loaded into the hopper.	This method of dust suppression will be implemented during dry and windy conditions where excessive dust emissions are observed to be leaving the site boundary. Visual observation will be conducted by all employees on the site and will be noted in the Site Diary. This will minimise dust emissions.	Implemented during dry, dusty conditions. The site conditions will be assessed during the daily visual inspection. Dry conditions will include periods of drought defined as > 35 °C over 3 days consecutively or no rainfall in 14 days) and high winds (defined as > 25mph on any day). Dry conditions will also include visual observations of dust leaving the site boundary.
9	All delivery lorries or other vehicles will be sheeted.	All lorries will be 8-wheel enclosed, sheeted lorries or vehicle with equivalent dust controls. Vehicles will be sheeted upon arrival, departure and during transit. This prevents the escape of debris, dust and particulate from vehicles as they travel.	Operative responsible for ticket collection will enforce compliance with sheeting/ equivalent dust controls if dust control is inadequate.	This is always implemented with the exception that vehicles will temporarily uncover for visual inspection at the weighbridge or gate, then re-cover for the transit to the designated tipping location. If non-compliance is observed, a strike will be given, which when tallied up to 3 strikes for repeat offenders, the haulier will be contacted and driver banned from site.
10	Drop heights and double handling minimised.	Drop heights and double handling minimised at all times. Minimising drop height and handling will reduce the distance over which debris, dust and particulates disperse by wind.	Operatives who drive front loader and excavator will be briefed on the need to minimize drop heights.	Always implemented.
11	Site wide speed limit set at 10 mph for all HGVs	Minimisation of fugitive emissions from site surfacing/ vehicle wheels/ loads by keeping vehicle speed low. Reduced speed will also minimise the disturbance of any dust, debris or particulates on the haul routes.	All drivers delivering waste will be subject to signage reminders of speed limit, dust controls and by the operator at the ticket office. Driver's under the Operator's primary control will be subject to a site induction and toolbox talks.	Always implemented. If non-compliance is observed, a strike will be given, which when tallied up to 3 strikes for repeat offenders, the haulier will be contacted and driver banned from site.
12	Anti idling policy	Limit the fugitive emissions from vehicles by implementing an anti-idling policy. An anti-idling	All drivers delivering waste will be subject to reminders of the anti-idling policy by the	The site operates an anti-idling policy which is implemented at all times.

Table 4.1 Control measures				
Ref	**Abatement Measure**	**Description/Effect**	**Overall Consideration and Implementation**	**Trigger for Implementation**
Preventative Measures				
		policy reduces the emissions from a vehicle by limiting emissions to during activities only.	Operator at the ticket office. Driver's under the Operator's primary control will be subject to a site induction and toolbox talks.	If non-compliance is observed, a strike will be given, which when tallied up to 3 strikes for repeat offenders, the haulier will be contacted and driver banned from site.
13	Visual monitoring inspection	Visual monitoring will be completed daily by nominated site operative, where wind direction, airborne dust, dust soiling and weather conditions will be monitored. The visual monitoring results will be recorded in the Site Diary. These conditions will be monitored using online weather internet sources (Met Office website). Notes of weather conditions off site may also be noted if different from on site notes. This will inform the need to use additional preventative measures. To note, all staff including site operatives have a duty to check for identifiable or potential dust risk all of the time.	The number of visual inspections will be increased in accordance with the weather conditions and following an emissions incident or complaint. The inspections will be undertaken during normal operating hours, not during breaks. The inspection will include check of concrete surfacing, access point at Longwood Lane, acceptance of loads and tipping/loading activities. The visual monitoring locations are shown in the Monitoring Plan.	At least one visual inspection will be undertaken per location per day. During dry / windy conditions more inspections will be undertaken per day. The observations from the visual inspection should be recorded in the Site Diary. In the event of dust identification, the procedure and actions set out in Section 5 of this DEMP will be implemented.
14	Air emissions awareness training	All staff receive internal air emissions awareness training at site induction and through regular toolbox talks to engender awareness on emissions reduction.	All staff receive internal air emissions awareness training at site induction and through regular toolbox talks	All staff receive internal air emissions awareness training at site induction and through regular toolbox talks
15	Routine servicing of plant and equipment.	All plant and equipment will be routinely serviced in line with manufacturers' guidance.	All plant and equipment will be routinely serviced in line with manufacturers' guidance.	Frequency of servicing will take be undertaken in line with manufacturer's guidance, or as faults or excessive emissions are identified.
16	Plant and equipment will be switched off when not in use	Plant and equipment will be switched off when not in use to reduce excessive emissions.	The importance of this measure will be reinforced during the daily briefing, site induction and during site walkovers (as part of the daily site inspection) by the Site Manager and the site operative nominated for visual dust monitoring.	During site walkovers (as part of the daily site inspection) by the Site Manager and the site operative nominated for visual dust monitoring, operatives will be reminded to switch off their engines if idling is identified. Incidences will be recorded in the visual monitoring checklist (Appendix C) and appropriate action taken upon repeat offences.

Table 4.1 Control measures				
Ref	**Abatement Measure**	**Description/Effect**	**Overall Consideration and Implementation**	**Trigger for Implementation**
Preventative Measures				
17	Higher Tier generators used where possible (currently no generators used on site – this measure is only in the event generators are required and not fed by mains electricity supply).	There are currently no generators on site. For permanent infrastructure requiring constant power, in the very unlikely event it is not fed by main electric power, Tier 4 compliant generators will be used. For short term operations, as a minimum, Tier 2 or 3 will be used (where electricity cannot be provided).	Any procurement of generators will be aware of the classification and the need for the more suitable Tier 4 standard, where practically possible.	Any procurement of generators will be aware of the classification and the need for the more suitable Tier 4 standard, where practically possible.
18	Dusty load response procedure	Upon entering the site, loads are inspected on the weighbridge by staff member responsible for waste ticket collection/examination. Waste composition information is relayed onto machine driver and yard manager via two-way radio. A second inspection is undertaken during tipping. If an unacceptably dusty load is identified at either of these stages, the load will be returned to the waste producer. If the load has been tipped, it will be re-loaded under suppression from handheld hoses adsorbing any dust generated. To note, it is the overall responsibility of the Site Manager to implement the dusty load response procedure.	The inspection at weighbridge should not overly disturb the dusty load. In the event dust is identified at the weighbridge stage, additional handheld misting can be applied using mobile bowser and hose. In the unlikely event that a dusty load is accepted, the load will be dealt with under dust controls. The waste producer will be notified, and an investigation initiated to prevent recurrence.	Inspection and identification of dusty loads undertaken at ticket office and during tipping.
19	Good housekeeping	A daily litter pick will be undertaken by a nominated site operative. This will prevent build up of debris and airborne emissions of waste.	If litter has migrated offsite as identified, litter pick will also cover external highway. In the event that there is an escape of litter from the confines of the site and into the local environment, it will be the responsibility of the site staff to arrange for litter picking of the affected areas within the working day. The operation or delivery generating the escape of litter will be stopped and thereafter controlled to minimise further releases and any container releasing fugitive material will be covered or removed from site immediately. An excessive spillage of materials anywhere within the site or on the adjacent highway will be dealt with immediately by sweeping of the	Visual Inspections will identify unacceptable conditions and trigger the litter pick in addition to the daily scheduled litter pick. Records of inspections or remedial actions will be made in the site diary.

Table 4.1 Control measures				
Ref	**Abatement Measure**	**Description/Effect**	**Overall Consideration and Implementation**	**Trigger for Implementation**
Preventative Measures				
			surface and litter picking if required. Such a spillage and the action taken will be recorded in the site diary. The EA can inspect the daily site diaries during inspections.	
20	Records of visual site inspections recorded	Records of visual site inspections recorded in Site Diary and on visual monitoring checklist (Appendix C).	Records allow for easy review and identification of dust sources in the event of complaints/ emission incident etc.	Results and checklist of visual inspections are to be filled out and recorded each time.
21	Cease and/or reduce operations during high winds and/or prevailing wind conditions.	Operation during high winds and / or peak prevailing wind conditions would result in the mobilization of dust and particulates in greater proportion than under normal conditions. Ceasing operations during these times would reduce peak pollution events.	This will reduce the dust and particulate pollution in the short term but is not a long-term solution.	This will be implemented as a result of the daily visual inspections by the nominated operative and is dependent on the local weather conditions and proposed activities for the day.

4.4 Water for suppression will be primarily sourced from onsite mains supply source (conservatively assessed as 50 m^3 per day).

4.5 The wate use of the wheel wash is an overestimate as the wheel wash re-ciruclates the water. There is also access to some lined ponds

4.6 The estimated worst-case water consumption of on-site operations is calculated below. The worst case scenario is likely to be during hot, dry and windy conditions.

Table 4.2 Onsite worst-case water consumption

Dust suppression Activity	Worst Case Water Consumption (per day)
Maintenance (cleaning, washing down)	Estimated at 0.5 m^3
Road Sweeper	0.9 m^3 water tank re-filled 10 times per day = 9 m^3
Wheel wash	20 m^3 needed. Top up of 1 m^3 per day (estimated)
Dust suppression for tipping, loading hopper and dust suppression of haul routes	1,000L water bowser empties x 10 refill = 10 m^3
Total	**40.5**

1. Water consumptions taken from WRAP 'Case Study: Water Efficiency on construction site'.
2. The operating working hours are taken from the Operational Plan. These are conservative and do not include break times.

4.7 Based on the worst-case scenario in Table 4.2, the water capacity at the site can accommodate site operations.

4.8 The total worst-case water consumption is assessed to be 40.5 m^3 per day. The available water from mains supply source is conservatively assessed to be 50 m^3 per day. This does not include any on site contained water sources.

4.9 In the event water supply fails, the Operator will cease all operations. This would occur in liaison with the Local Authority and Environment Agency.

5.0 FUGITIVE EMISSIONS MONITORING

5.1 A daily site inspection will be undertaken by the Operator including potential sources that day, the control of dusts and the provision of controls. This information will be recorded in the Site Diary. To note, any site operative can report incidents to their line manager and appropriate actions will be taken immediately. The inspection will be undertaken by the Site Manager and/or a nominated site operative who has been given appropriate internal training by Site Manager and/or Technically Competent Person (TCP), and/or environmental consultant. In the event the Site Manager is not at the site, the On-Duty Manager and/or nominated site operative will be expected to undertake the site inspection. The Site Diary is kept in the site office / welfare unit. Corrective actions are outlined in Section 6 and will be recorded in the Site Diary and effectiveness monitored.

5.2 The visual inspection will be performed on foot, allowing adequate opportunity to identify emission sources. A visual inspection will be performed within the activity boundary and main site entrance which are shown on drawing 213461/D/005. The Site Manager and/or nominated site operative should observe at each location for a minimum of 2 minutes. The visual monitoring will be undertaken prior to ceasing operations each day. Inspection of static objects (cars, storage containers, plant) will be used to gauge the extent of dust soiling and will be wiped clean so an accurate judgement can be performed on the subsequent inspection. To note, no out of hour visual monitoring provision is deemed necessary given control measures applied.

5.3 Weather conditions (temperature, precipitation and wind speed/direction) will be recorded in the Site Diary using a value obtained from on-site weather station or from internet source daily (Met Office website). After completion of the inspection, the inspected wind directions will be compared against the desktop inspection. The comparison will be for information only.

5.4 A minimum of 2 visual inspections will be undertaken per day. During dry / windy conditions, 3 inspections will be undertaken per day. One of the checks will be before cessation of works each day. The inspections will be undertaken during normal operating hours, not during breaks. The inspections will include check of impermeable hardstanding, acceptance of loads, crushing / screening and tipping/loading activities. To ensure this system is operating effectively, it will be reviewed monthly by the Site Manager. If found to be ineffective (e.g. recurring identification of dust sources on site, poorly filled out forms), the methodology and frequency of the monitoring will be reviewed, revised and briefings will be implemented. This is the responsibility of the Site Manager.

5.5 The daily inspections will have a trigger threshold of visual dust in the form of a visible dust (this may be in plume form or separated, this may also just be felt on your skin rather than visible) within the site, as a result of vehicle movements, wind whipping or material handling. This trigger threshold is an internal site action threshold only and not a compliance threshold. There is no severity to visual dust: if it is seen, the response procedure (set out in section 5.6 to 5.9 below) must be implemented.

5.6 In the unlikely event this threshold is breached, the Site Manager or nominated site operative will notify the Site Team and the response procedure will be initiated. The Site Manager is responsible for the implementation of the incident response procedure. The response procedure actions are set out below. When triggered, the Site Manager and/or nominated site operative will assess the operations, waste type being handled and deliveries immediately prior to the alarm being activated;

- If the source cannot be ascertained with certainty, the Site Team will temporarily cease the most likely operation;
- If the source is within the site's control, the Site Team will take appropriate action in terms of dust/particulate abatement to ensure further observations do not encounter the same emissions for a similar activity. Actions will include:
    - Review of the activity's dust control measures;
    - Increased frequency of the existing control measures; and
    - Temporarily suspending likely works until suitable abatement can be introduced.
- If an effective control measure cannot be identified and the internal trigger level is identified again within 30 minutes of the first identification raised; and the wind direction indicates it could be from

the site; the source activity will be temporarily suspended. The activity will not resume until sufficient controls have been achieved (i.e. no visible identification). Visual inspection frequency will be every half an hour during the response procedure, until incident is closed out.

- If there are more than three incidents within a month, further targeted quantitative dust monitoring will be undertaken to establish source and effective control measures. Details of the quantitative monitoring is set out in section 5.7.

5.7 Quantitative monitoring will be undertaken within 10 working days (this covers consultant lead in times and procurement) of when the final of three incidents is identified. The quantitative monitoring will be one of the following and will be in accordance with the standard set out in M8 EA guidance:

- Pumped (active) sampling of PM10 onto filter paper; Gravimetric analysis; or
- Light-scattering optical particle counter

5.8 The monitor will be set up in accordance with supplier recommendations and environmental consultant's procedures. The focus of the monitoring will be on determining the source activities and measurements will be collated within 10 m, within 30 m and at boundary in upwind and downwind locations. This will only be undertaken in dry conditions (to recreate similar conditions to the breaches and to preserve integrity of the equipment). Monitoring will also be undertaken at specific receptors to account for any complaints/concerns.

5.9 The monitoring equipment and consultant will be carried out under MCERTS accreditation. The quantitative dust monitoring PM10 threshold will be 75 µg/m^3 over a 5-minute period average. If the quantitative action threshold is exceeded; and the wind direction indicates it could be from the site; the site will identify and cease the likely source operation until measured PM10 concentrations drop below the action threshold for a 30-minute period.

5.10 The internal action observation exceedance will be logged in the Site Diary and a report of the exceedance and corrective action response to the local EA officer via email within 1 week. To note, these are internal identifications of dust on site. Any exceedance which is not from the site but from an adjacent third-party activity, will be noted in the Site Diary.

5.11 All complaints will be logged and dealt with appropriately in accordance with the Operator's complaint procedure (shown in Appendix B). Operations and additional controls are in accordance with Appendix B.

5.12 All monitoring data will be made available to the Local Authority and Environment Agency, upon request or as specified within the Environmental Permit. This will include any reporting or notification response or contextual information regarding the monitoring data. This will be undertaken within 10 working days of when the monitoring data is issued.

Controls in the Event of Abnormal Fugitive Emissions

5.13 In the event that abnormal fugitive particulate emissions (including during accident, emergencies or adverse weather conditions) are identified during site inspections the following controls should be applied:

- take immediate action to cease operations;
- investigate the incident;
- record the incident and the remedial site action in the Site Diary; and
- the DEMP will be updated accordingly and issued to the EA for review.

5.14 Remedial actions are dependent on the source but may include, but not limited to:

- Increase the frequency of road sweeping along the operational hardstanding and public roads;
- Deploy more misting systems, including manual hosing down, specifically targeting certain locations;
- Limit activities to fewer hours each day (in addition to the standard controls being implemented);
- Stop accepting waste types which are likely to have more friable dust potential; and
- Remove the dusty waste from site under dampened conditions immediately (under suppression systems);

- Consider sheeting or removing targeted stockpiles.

5.15 In periods of drought (defined as > 35 °C over 3 days consecutively or no rainfall in 14 days) and high winds (defined as > 25mph on any day), operations will be limited in the following ways:

- Limit activities to fewer hours each day;
- Limit the number of activities at any one time;
- Wet down loads and stockpiles;
- Limit the number of loads accepted proportional to the reduction in activities;
- Deploy more misting systems, specifically targeting tipping and loading activities, including manual hosing down of stockpiles; or
- If no limited or no water is available, the Operator will operate in accordance with section 4.8 of this DEMP.

5.16 In the event that these controls do not resolve fugitive particulate emissions at the site, key source activities will be suspended until suitable arrestment systems are implemented. These systems will be implemented in agreement with the Local Authority and the EA. The systems may include permanent use of remedial actions or alternative measures, as agreed. In the event that the implemented systems change, the DEMP will be reviewed and amended accordingly.

6.0 DEMP MANAGEMENT, TRAINING & RESPONSIBILITIES

Management Responsibilities

6.1 The staff member responsible for implementation, updating and review of this document is the site manager. The site manager is given appropriate training regarding this document upon induction. Upon each document revision and review by site manager, a final review of the document and evaluation of training will be undertaken by senior management. Site Managers are outlined below and one will always be on site and on call.

Table 6.1 Site Management

Name	Position
Jim Duffy	Operations Director
Lee Armstrong	Compliance Manager
Shane Weedon	Quarry Manager

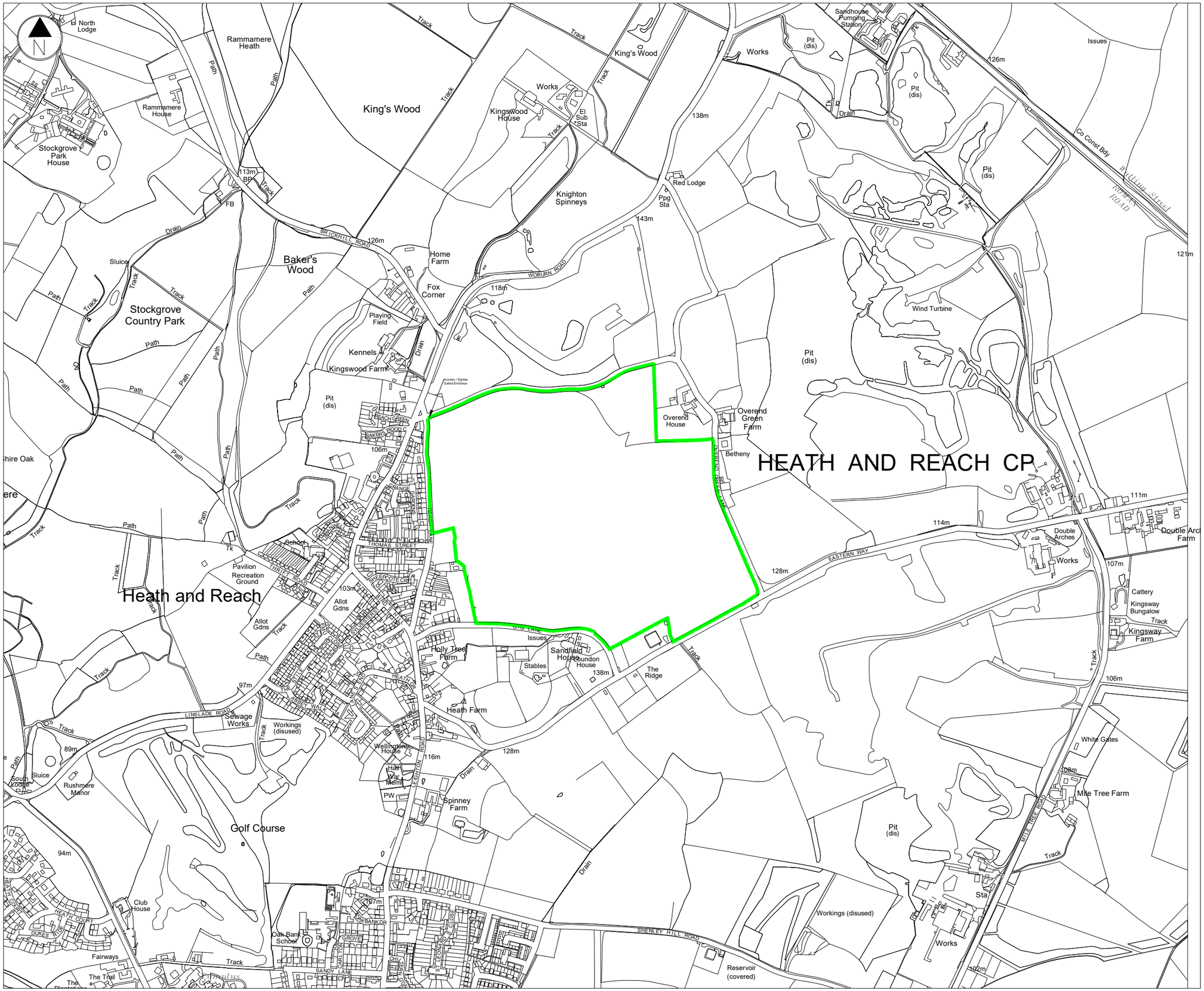
6.2 All site operatives will receive internal dust and emissions training. Training is included within the site induction (upon the start of employment), during daily site briefings, and through tool box talks.

6.3 As a minimum, this plan will be reviewed by the site manager on an annual basis to ensure that it is up to date, addressing the dust risks of the operations at any time. The plan will be reviewed by Senior Management either following an emissions incident quantified by a substantiated complaint, a monitoring threshold exceedance or observed emissions over the boundary or change to the processing plant. The review procedure will be undertaken within 1 month of the incident to allow any further data to be interpreted. The review will ensure mistakes are learnt from and new/improved methods will be integrated.

6.4 The main site telephone number, including site emergency number is displayed on the exterior of the site boundary on signage and the site telephone number and email are found on the website. Complainants are readily able to contact site management through different avenues, allowing their concerns to be addressed in a timely manner.

6.5 The operator regularly engages with the local parish council by means of attending meetings, email correspondence and phone calls. In the event there are significant changes to the site processes the local council will be contacted to discuss these details and provide further information to the residents of the locality. The Operator has previously invited local groups and local MP for site tours to raise awareness of the good work. Invitation is granted on a case by case basis and would be subject to the Operator's discretion.

DRAWINGS



KEY

Permit Boundary (EPR/HP3094SQ)

Rev.	Details	Drawn / Chkd.	Date

Project

213461
Reach Lane Quarry Landfill
Reach Lane Quarry, Bryants Lane
Bedfordshire, LU7 0AL

Title

Site Location Plan

AA Environmental Ltd
Units 4-8
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Environmental Consultants

Scale	Date	Drg. No.	Rev.
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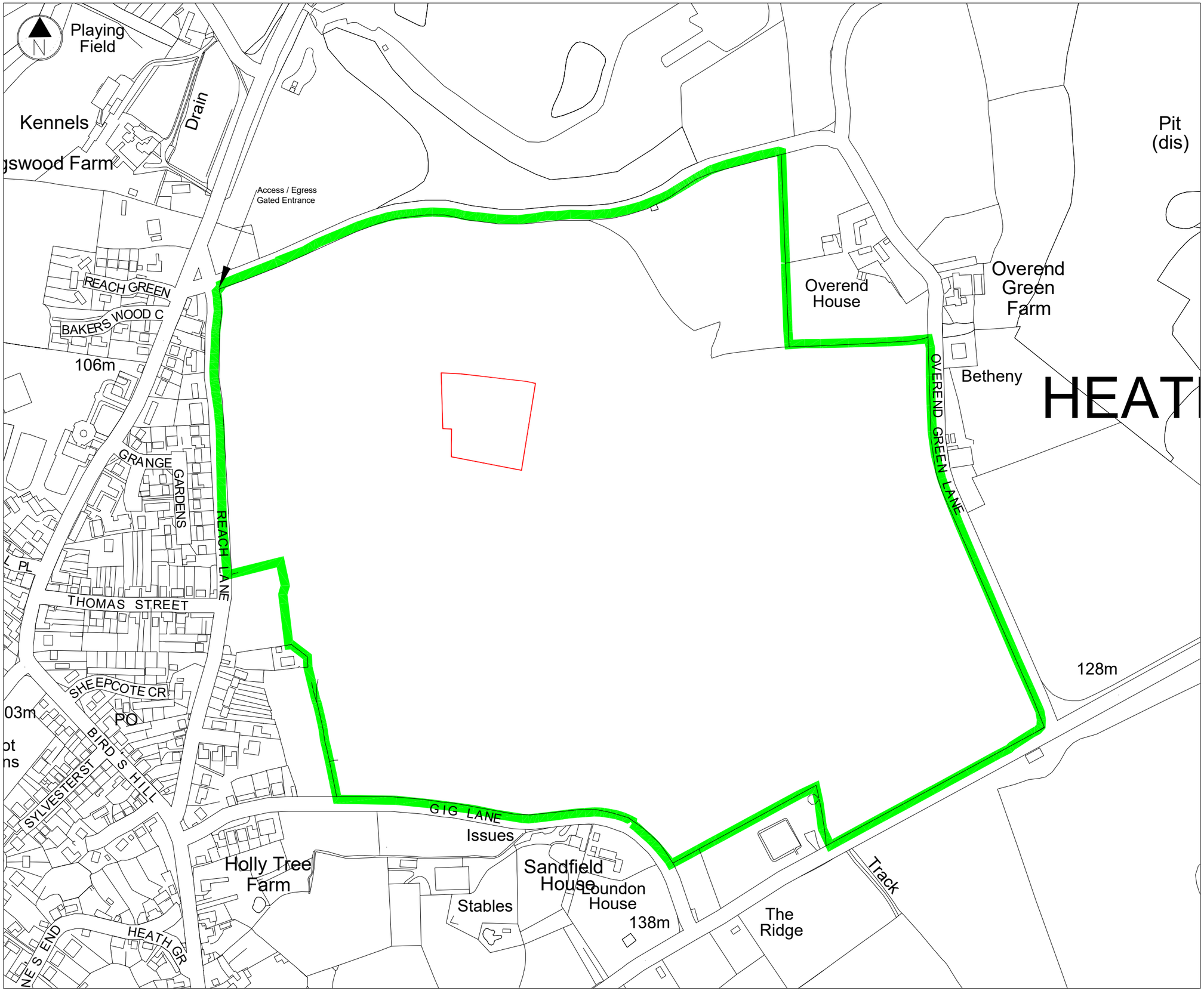
	Drawn: SM / Chkd.: EB		



Rev.	Details	Drawn / Chkd.	Date

Project

213461
Reach Lane Quarry Landfill
Reach Lane Quarry, Bryants Lane
Bedfordshire, LU7 0AL

Title

Activity Boundary Plan

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Scale	Date	Drawn	Chkd.	Drg. No.	Rev.
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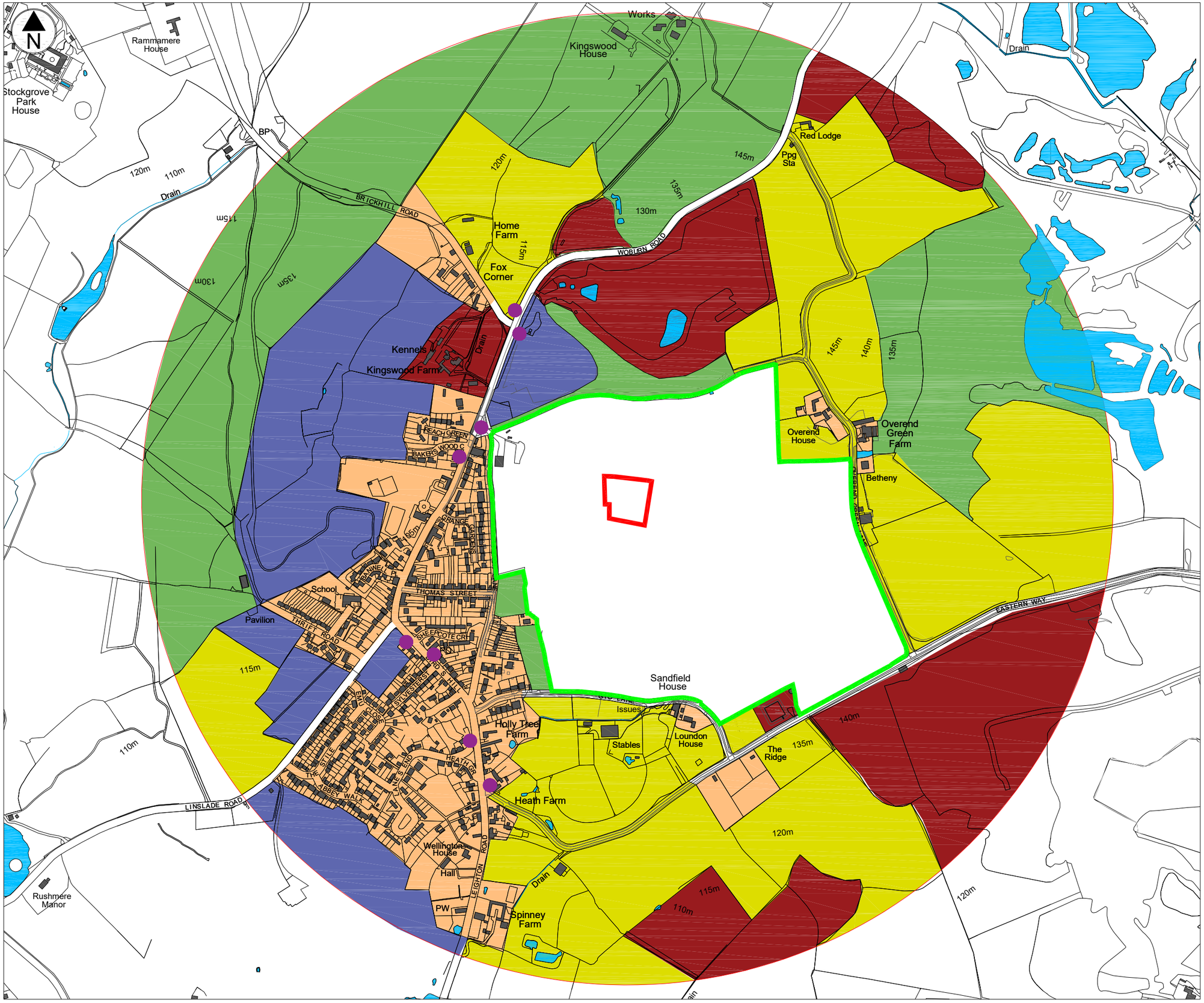

Key

- Residential receptors
- Environmental receptors
- Agricultural receptors
- Industrial/commercial receptors
- Recreational receptors
- Surface waters
- Bus stop
- Permit boundary
- Soil wash plant activity
- 1 km radius around soil wash plant activity

Rev.	Details	Drawn / Chkd.	Date

Project

213461
Reach Lane Quarry Landfill
Reach Lane Quarry, Bryants Lane
Bedfordshire, LU7 0AL

Title

Environmental Receptors Plan

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Scale	Date	Drg. No.	Rev.
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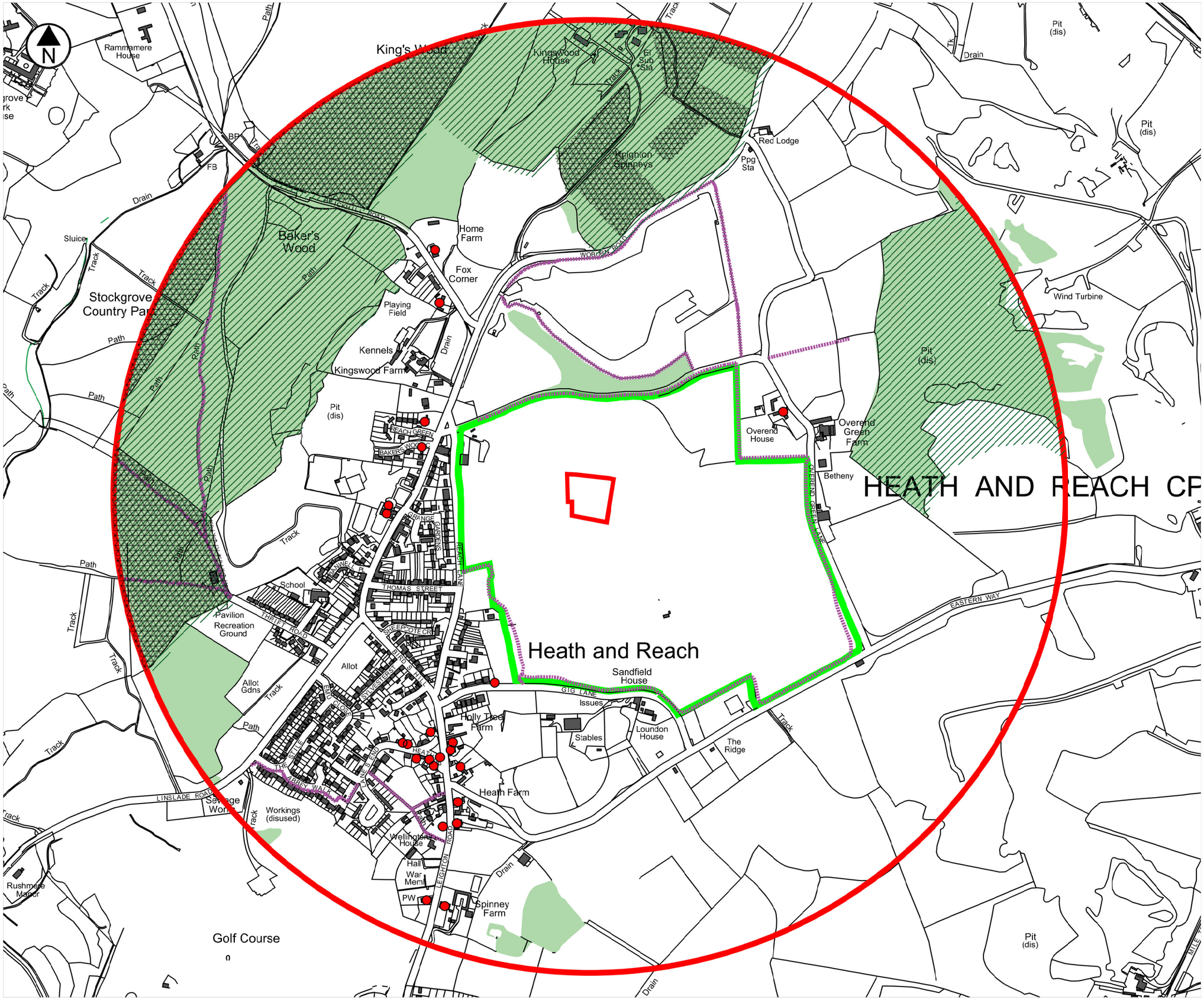

Key

- Woodlands
- Site of Special Scientific Interest (SSSI)
- Naticnal Nature Reserve (NNR)
- Local Wildlife Site (LWS)
- PROW (Public Rights of Way)
- Listed buildings
- Permit boundary
- Soil wash plant activity
- 1 km radius around soil wash plant activity

Note:
Woodlands encompass priority habitats, ancient woodlands as well as statutory designated areas.

There are no SPA, Ramsar sites within 1 km of the soil washing acitivity.

No Scheduled Monuments or World Heritage Sites within 1 km of the soil washing activity.

Rev.	Details	Drawn / Chkd.	Date

Project
213461
Reach Lane Quarry Landfill
Reach Lane Quarry, Bryants Lane
Bedfordshire, LU7 0AL

Title
Cultural and Natural Heritage Plan

AA Environmental Ltd
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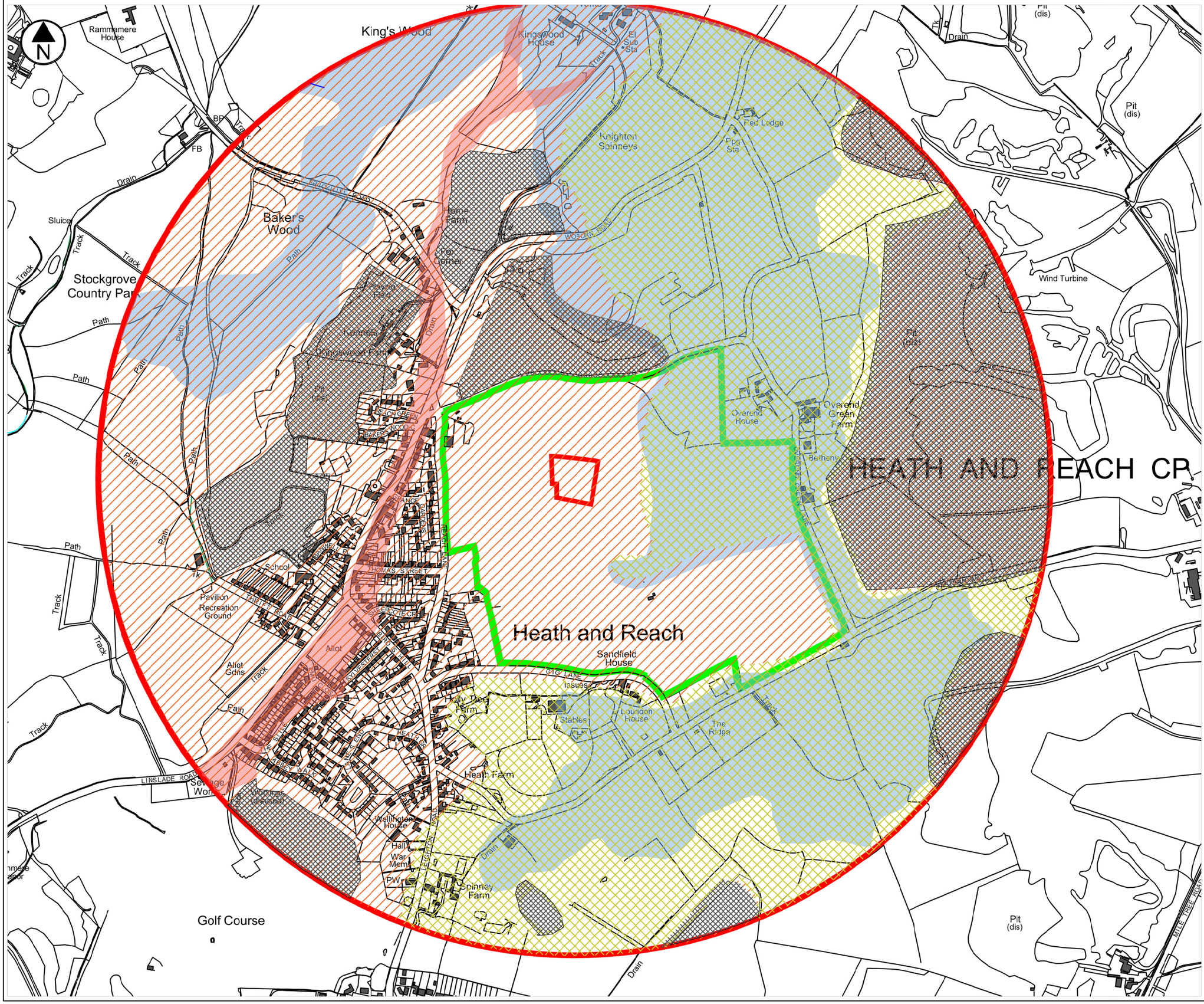
Key
Permit boundary
Soil wash plant activity
1 km radius around soil wash plant activity
Indicative Oadby Diamicton (Superficial Deposits)
Indicative Head Deposits (Superficial Deposits)
Indicative Woburn Sands (Bedrock Geology)
Indicative Gault Formation (Bedrock Geology)
Land subject to quarrying, active or closed landfills
HEATH AND REACH CP
Heath and Reach
King's Wood
Baker's Wood
Stockgrove Country Park
Golf Course
Rammamere House
Kingswood House
Knighton Spinneys
Fed Lodge
Wind Turbine
Pit (dis)
Overend House
Overend Green Farm
Bethany
Sandfield House
Holly Tree Farm
Loudoun House
The Ridge
Stables
Heath Farm
Wellington House
Spinney Farm
Pavilion Recreation Ground
Allot Gdns
Allot
School
Sewage Works
Works (disused)
Drain
Track
Path
Rev.
Details
Drawn
Chkd.
Date
Project
213461
Reach Lane Quarry Landfill
Reach Lane Quarry, Bryants Lane
Bedfordshire, LU7 0AL
Title
Local Geology
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Scale
1:8,000@A3
Date Oct'24
Drawn SM
Chkd. EB
Drg. No.
213461/D/003C
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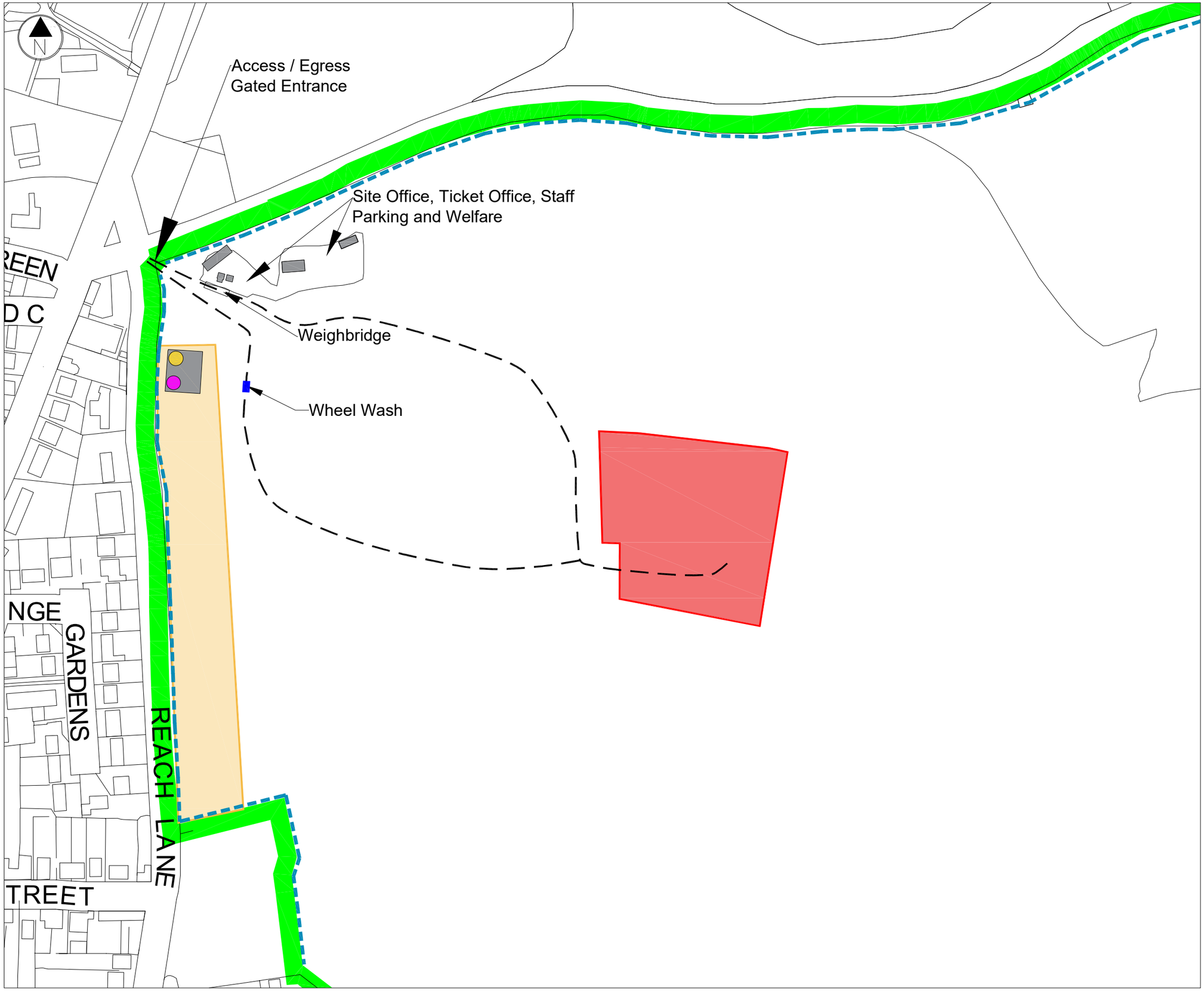

KEY

- Permit Boundary
- Soil Wash Plant Activity
- Storage and Plant Maintenance Area
- Traffic Flow
- Workshop
- COSSH Storage
- Spill Kits
- Security Fencing

Notes

The security fencing surround the entire permit area perimeter.

Rev.	Details	Drawn / Chkd.	Date

Project

213461
Reach Lane Quarry Landfill
Reach Lane Quarry, Bryants Lane
Bedfordshire, LU7 0AL

Title

Site Layout Plan: Wider Site

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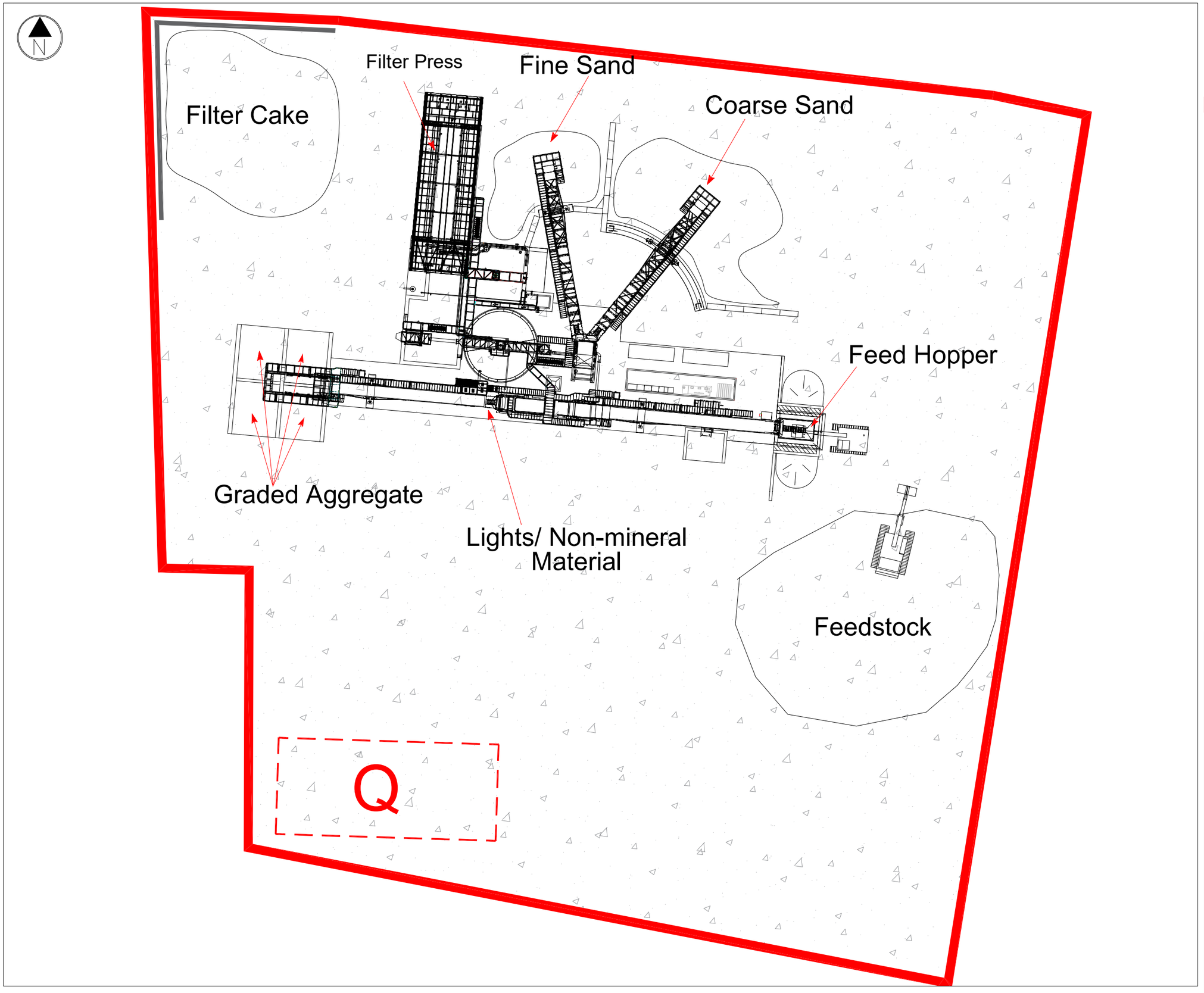

KEY

- Permit Boundary
- Soil Wash Plant Activity
- Impermeable Concrete Surface
- Q — Quarantine Area
- Lego Block Wall

Rev.	Details	Drawn / Chkd.	Date

Project

213461
Reach Lane Quarry Landfill
Reach Lane Quarry, Bryants Lane
Bedfordshire, LU7 0AL

Title

Site Layout Plan: Soil Wash Plant

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Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:400@A3	Sept'24	213461/D/004B	
	Drawn: SM / Chkd.: EB		

Appendix A
Source, Pathway Receptor Table

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted
Dust, mud and debris from vehicle operations	Tracking dust on wheels and vehicles, then mud dropping off wheels/vehicles when dry Debris falling off lorries Re-suspension of particles during movement ; atmospheric dispersion	Surrounding receptors listed in Table 2.1	Visual soiling, resuspension as airport particulates	Site wide speed limit set at 10 mph for all HGVs. Hand sweeping and road sweeping implemented, with access point swept and maintained daily. Weather will be monitored and site operations limited accordingly./ higher frequency of implemented dust, debris and particulate controls. Clearing of debris by front loader and manual sweeping at the start and end of each shift and as identified during visual inspection. Road sweeper to maintain integrity of the impermeable hardstanding at the access/egress point of the haul route. All HGVs leaving the site must use the wheel wash. Lorries covered at arrival, exit and during transit on site – they will only unsheet at the inspection point of the weighbridge, and again when tipping / loading.
Tipping, storage, sorting and loading of waste.	Atmospheric dispersion	Surrounding receptors listed in Table 2.1	Airborne particulates	Main process is inherently a wet screening process with 10 % water minimum added to the products (clay and sands). The 10 mm, 20 mm, 40 mm and 75 mm are heavy aggregates with no friable fraction and are of low dust potential. Minimising drop heights and design of internal layout to minimise double handling. Stockpiles will be compacted before the end of each day. All stored material will be stored at less than the angle of repose for that material.
Vehicle exhaust emissions	Atmospheric dispersion	Surrounding receptors listed in Table 3.1	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength. Regular maintenance in line with manufacturer guidance.

Appendix B
Complaints Procedure & Form

Complaint Form

Complaint Form Reference No.	

Date of Complaint	

Details of Complainant			
Name			
Address			
Contact Number		**Email Address**	
Nature of Complaint			
Reported To		**Date of Incident (if different to date of complaint)**	
Corrective Measure Taken			
Follow up Communication with Complainant			
Preventative Measure Taken (if any)			
Sign off		**Close out Date**	

Complaints Procedure

INTRODUCTION

This Complaints Procedure outlines how the Operator will respond in the event of a complaint. A complaint may arise relating to the site permitted activities involving a nuisance (dust, noise, odour, pests). This procedure contains information on how any complaint will be investigated and any actions taken as a result of the complaint.

KEY CONTACTS

The key contacts will be shown on the site notice board at the site entrance. Alternatively, any complaints can be made at the site to any site operative and/or the Site Manager.

PROCEDURE

1. Any complaints made will be immediately logged by the Site Manager and/or Site Operative. In the event a complaint is made to a Site Operative, the Site Operative will refer the complaint to the Site Manager. If able to do so, the complainant details will be taken on initial contact either by phone or in person.

2. The Site Manager (or nominated operative) will discuss any concerns with the complainant directly within 1 working day of the complaint being made; and request contact details to notify the complainant of any updates/corrective measures. The complain will be logged using the Complaint Form (attached) and given a unique reference number.

2. The Site Manager will review the site activities and ensure control measures are in accordance with the Site's Management Systems.

3. The Site Manager will investigate the location of concern raised in relation to the site i.e. at a local receptor location and/or public highway to inspect the impact on the receptor.

4. The Site Manager will notify the complainant of any updates to the control measures / site operations. Control measures may be corrective and/or preventative and include additional control measures and/or increase the frequency of an existing control measure. Alternatively, the design of the site operations may change to decrease nuisance to that receptor.

5. In the event the same issue persists, the Site Manager will further review site operations and control measures. This may require a temporary cessation of certain operations whilst additional measure is implemented. The works will not recommence until further control measures have been incorporated and a review of effectiveness has been agreed / witnessed by the Site Manager. The complainant will be kept abreast of further measures.

RECORDS

On site Records
A copy of this procedure is kept on site and briefed to all site operatives upon site induction. Any identified complaints, incidents or accidents, as well as corrective measures, are recorded in the Complaint Form. Copies of the complaint forms are kept on site.

Review
This procedure is reviewed on a yearly basis or post-incident to ensure it remains up-to-date with the site operations. The review procedure would involve the Senior Management Team and site team collectively to establish the root cause and the best available control techniques. The review will take place within 1 month of the incident.

Appendix C
Site Checklist

-

M O'Brien Group Document: Site Inspection Check Sheet

Week Commencing:

Daily Check	Mon	Tue	Wed	Thu	Fri	Sat	Sun
TCM signed in?							
Waste/materials stored in correct area (see SOP)?							
Pile sizes checked (see WOSP)?							
Condition of yard – surface integrity, spillages							
Condition of roads – cleanliness, surface condition							
Wheelwash functionality – is it in operation?							
Dust – visual assessment, check for complaints							
Dust – dust suppression infrastructure functionality							
Noise – monitoring completed, check for complaints							
Odour – assess odour, check for complaints							
Litter – litter around site, check for complaints							
Pests – presence of flies, rats etc.							
Security – fencing, containers							
Fuel/oil storage – drip trays, leaks, spillages							
Site ID board – condition, information correct?							
☑ if OK or nothing to report ☒ if not, record in facility diary/complaint or incident form							

Weekly Inspections	Comments
Permit & EMS – available and up to date?	
Duty of Care documents – checks current & recorded?	
Mobile & static plant maintenance – checks completed?	
Perimeter fencing and gates – condition	
Accommodation/welfare facilities – toilets, mess	

Monthly Inspections	Comments
Warning/information signs – suitability, condition	
Fire extinguishers / safety equipment	
First Aid boxes – contents & position	
Plant maintenance schedules	

M O'Brien Group Crusher/Screener Maintenance Check List

Daily Check	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Diesel Tank – Check and Top Up Level							
Engine Oil – Check and Top Up Level							
Engine Coolant – Check and Top Up Level							
Water Tank (if fitted) – Check and Top Up Level							
Hydraulic Oil – Check and Top Up Level							
Hydraulic, Water & Fuel Hoses – Check for damage/leaks							
Belts, Rollers & Drums – Inspect condition & movement							
Safety Guards – Make sure all present & attached							
Grizzly Bars – Make sure free from obstruction/blockages							
Screener Decks – Make sure free from blockages							
Crusher Chamber – Make sure free from obstruction							
Crusher Lubrication System – Inspect for damage/wear							
Emergency Stops – Operate & reset all							
Walkaround Inspection – Visually inspect working area							

☑ if OK or nothing to report
☒ if not, record in facility diary/complaint or incident form

Weekly Inspections	Comments
Panes & Bolts – Check all present & secure	
Jaw Plates – Check for wear and damage	

Monthly Inspections	Comments
Bearings – Grease	
Toggle Assembly – Inspect for damage/debris	
Belt	
Plant maintenance schedules	

Comments/Notes:

Checks carried out by: Print Name _____ Signed _____ Date _____

Reviewed by Manager/Director: Print Name _____ Signed _____ Date _____