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Fletcher Bank Quarry Landfill Site

Environmental Risk Assessment

Churchill Enviro Limited

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1 Introduction

1.1 Site Details

Fletcher Bank Quarry Landfill Site (the Site) is a non-hazardous landfill located near Ramsbottom in Lancashire. The site is operated by Churchill Enviro Ltd (the Operator) under Environmental Permit reference EPR/GP3733FE/V002.

This Environmental Risk Assessment (ERA) has been prepared to support a variation to the current permit referenced GP3733FE to increase the annual waste input to the site from 150,000 tonnes to 350,000 tonnes. No other changes are proposed for the permit.

Reference has been made to Environment Agency (Agency) web based guidance¹ to assess the potential risks associated with proposed changes listed above. Although withdrawn in February 2016, Agency Horizontal Guidance Note H1 - Annex (I) December 2011² provides a good basis for screening the potential risks associated with this type of activity. This risk assessment also provides justification for the use of other more specific risk assessment methodologies where appropriate.

The guidance indicates that the following parameters require assessing:

- Odour;
- Noise and vibration;
- Fugitive emissions including dust, mud and debris; and
- Accidents

The guidance requires that receptors are considered with regard to the proximity of the site. Table 1 of this report identifies the most likely sensitive receptors adjacent to site.

The Agency guidance requires that everyone applying for a new landfill environmental permit (other than a standard rules permit) or variation to an existing permit should present information in the form of risk assessment tables; one table each for odour, noise and vibration, fugitive emissions (including dust, and litter) and pests and vermin and global warming potential. Identification of accidents scenarios and their prevention through operational management should also be detailed.

Each table should identify the hazard, the potential receptors and the pathway from the hazard to those receptors. In addition the tables should also include the preventative risk management practices to be employed along with an assessment of the mitigated risk.

¹ <https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit>

² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/496396/withdrawn_H1_Annex_I.pdf

2 Scope of the Assessment

2.1 Proposed Operations

The original Pollution Prevention and Control (PPC) permit for site issued in 2007 (reference DP3638ST) allowed for acceptance of predominantly inert waste a very low proportion of biodegradable material with the latter comprised of paper, card and wooden packaging. A letter on behalf of the operator was approved by the Agency in September 2014 (1772/L/02/01) that stated the Operators intent to restrict waste types to non-biodegradable non-hazardous waste only. None of the waste types that have been disposed of under the permit have included a biodegradable component. The Agency initiated Permit Variation issued in 2020 included only inert waste as acceptable at a non-hazardous landfill. It is understood that prior to this point the site was considered to be pre-operational and had not accepted waste. Consequently, the potential hazards associated with the disposal activity were significantly reduced.

The proposed operations for this permit variation involve increasing the annual waste input from 150,000 tonnes per year to 350,000 tonnes per year. There will not be any change to the waste types accepted on site, nor to the total capacity of the site. The increase in waste input rates at the facility is not expected to result in an increase in emissions from the site. Each type of emission that may be associated with the site or how the impact from that emission may change with the increased input rates are discussed below.

2.2 Potential Hazards

Odour

The wastes to be brought for disposal at the site are very unlikely to be a significant source of odour. Experience from similarly permitted installations has shown that the low or negligible organic content results in minimal landfill gas generation and no production of malodorous leachate. The existing deposited wastes have not given rise to odorous emissions and the low fraction of biodegradable materials present in the incoming wastes indicates that an odour nuisance is very unlikely. Odour emissions will not be considered further by this assessment.

Noise and Vibration

The risk of excessive noise and vibration associated with the proposed activity will be restricted primarily to movement and operation of site plant. The site is located within an operational quarry in proximity to Ramsbottom to the west of the site. It is possible there will be an increase in noise due to the increased vehicle and plant movements associated increased waste inputs. No other sources of noise emissions are considered relevant to this site. The risks associated with noise emission and appropriate control measures are detailed in Table 2.

Dust

Particulate emissions can arise from the deposit of potentially dry or dusty wastes, uncovered dusty waste deposits, un-vegetated areas (e.g. preparatory engineering works), vehicle

movements on unpaved or dusty roads and settlement of surface water run-off laden with suspended solids.

The weighbridge operator will enforce strict waste acceptance protocols to manage the deposit of potentially dusty wastes. All site haul roads will be maintained and cleaned as necessary to minimise the accumulation of mud or dusty materials. All vehicles leaving site will pass through a wheel wash to remove excess mud, and in addition to this, all vehicles on site shall not exceed the 15 mph speed limit within the site boundary. The risk associated with fugitive dust emissions are detailed in Table 3 and the Dust and Emission Management Plan in Appendix B.

The closest meteorological station with suitable data considered to be representative of site conditions is located at the Bingley Samos located approximately 18.3 miles to the northeast of the application site. Wind statistics have been referenced for this station and are provided in Table 1 below with reference to the relevant receptors identified in the vicinity of the site.

Mud

Mud can be trailed onto the highway by vehicles leaving the site after picking up mud from unpaved roads or from the point of deposit. Access to the site will be via existing well maintained haul roads and wheel wash. A combination of the distance travelled on the internal haul roads and the wheel wash will ensure any accumulated mud will be removed prior to the vehicle leaving site. If a vehicle is observed to be particularly muddy, the driver will be redirected through the wheelwash.

The primary receptor to entrained mud will be the adjoining Whalley Road/A56. The wheel wash will be maintained to ensure efficient operation and the haul roads will be maintained by road sweeper. The access roads and Whalley Road/A56 will be regularly inspected and cleaned as necessary, as part of the current landfill site management controls. The risks associated with entrained mud are considered in Table 4

Litter

Waste Acceptance Protocols will restrict the waste types to be brought to site. These are very unlikely to contain materials which could present a risk of wind-blown litter and will not be considered further by this assessment.

Pests and Vermin

The deposit of putrescible waste in landfills may attract pests and scavengers and also provide a habitat for the breeding or loafing of pests and vermin. As the materials to be accepted for disposal are unlikely to contain anything to attract pests or vermin, the risk associated with the site is considered to be negligible and will not be considered further by this assessment.

Global Warming

The landfill gas risk assessment completed for the site determined that minimal volumes of landfill gas will be generated by the deposited wastes. The volumes are comparable with the benchmark which indicates that active management of landfill gas is not required at the site. Gas monitoring carried out at similar sites indicates that the actual volume of gas produced will be

lower than the surrender criteria detailed in the Environment Agency Surrender Guidance (Ref 5.02). It is therefore expected that the site will present a negligible risk in terms of global warming potential will not be considered further in this assessment.

2.3 Hazard Pathway

When identifying the receptors, the closest and the most sensitive (if different from the closest) have been considered in each direction from the hazard. Account has been taken of the mechanism of transport to the sensitive receptor e.g. proximity to receptor and wind direction for airborne dust. Recent wind direction information has been obtained for Bingley Samos weather station approximately 18.3 miles north east of the site and used to establish hazard pathways to adjacent to the site.

2.4 Probability of Exposure

Probability of exposure is determined by the distance of the receptor to the site and the likelihood of the hazard reaching the receptor i.e. frequency of prevailing wind in that direction. The probability of exposure is irrespective of the type of hazard presented. Where the extent of a receptor extends to encompass more than one of 16 compass points (for example a stretch of woodland positioned east to south east relative to the site) and the distance of this single entity from the site varies, the assessment will be based on the closest distance and the greatest downwind frequency for conservatism. The extent of the receptor over one or more compass points will always be described in a clockwise direction.

2.5 Hazard Receptors

A review of the sensitive receptors in proximity to the site has been undertaken to identify potential sensitive receptors. A list of sensitive receptors listed in Table 1 below. The Sensitive Receptor Location Plan referenced K0047/1/001) accompanies this application in Appendix A and should be referenced in conjunction with this risk assessment report.

Table 1 – Potential Receptors

No	Receptor	Type	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind (%)
DR1	Farm and residential buildings off Bury Old Road	Agricultural	220	N	11
DR 2	Terraced houses off Bamford Road	Residential	205	NNE	10
DR 3	Cross Bank Brook	Surface Water	120	NE	12

No	Receptor	Type	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind (%)
DR 4	Green Hill Farm	Agricultural/ Listed Building	175	NE	12
DR 5	Harden Moor	Recreational	<10	ENE to SSE	7 to 23
DR 6	Bennetts MOT Centre	Commercial	90	WSW	7
DR 7	Marshall's Quarry / Manufacturing Complex	Commercial/Industrial	<10	S	1
DR 8	Public Footpath	Recreational	<10	SW & N	4 & 11
DR 9	Earnest Platt Industrial Unit	Industrial	50	W	5
DR 10	A56 / Whalley Road/M66	Road	155	W	5
DR 11	Residential, church, and HWRC off Whalley Road and A56	Residential / Commercial	130	SW to NW	3 to 7
DR 12	Cross Plant Hire, Bank Hill Farm and Wood Hill Farm	Commercial /Agricultural/ Listed Building	230	NW	3
DR 13	Residential Properties off Bye Road	Residential	100	N	11
DR 14	Public byway, bridleway, right of way	Recreational/Public Right of Way	<10	All directions	0 to 23
DR 15	Twine Valley Farm	Agricultural	85	N	11
DR 16	Harden Brook and associated sinks, issues, waterfall and springs	Surface Water	105	N to ESE	1 to 23
DR 17	Peel Brow residential buildings, primary school & allotment gardens Located to the west of the M66	Educational/Residential /Recreational	405	WSW	7
DR 18	Priority habitat (deciduous woodland)	Protected habitat	20	All directions	0 to 23
DR 19	Priority habitat (Upland Heathland & Blanket Bog)	Protected habitat	110	E to SE	1 to 7
DR 20	Priority habitat (Purple Moor Grass & Rush Pasture)	Protected habitat	330	SSW	2
DR 21	Priority habitat (Lowland Fens & Lowland Heath)	Protected habitat	110	N to NE	10 to 12
DR 22	Lower Red Lees Pasture SSSI	Protected habitat	1340	WNW	6
DR 23	West Pennine Moors SSSI	Protected habitat	1860	W	5

No	Receptor	Type	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind (%)
DR24	Properties off Peel Brow	Residential	215	SW	4

An Agency’s ‘Nature and Heritage Conservation Screening Report’ (ref: EPR/GP3733FE/V003) was received on the 15th December 2021. This highlighted the presence of potentially sensitive habitats at several locations up to 2 km around the perimeter of the site.

Two Sites of Special Scientific Interest were identified within 2km of the site. It is understood that Lower Red Lees Pasture³ was notified in 1994 as a protected site and comprises grassland. The West Pennine Moors SSSI located 1.8km to the west of the site was notified in 2016 and comprises the following habitats⁴: grassland, bog, broadleaved, mixed and Yew woodland, coniferous woodland, dwarf shrub heath, fen, marsh and swamp, grassland, and open water and canals. The West Pennine Moors are understood to provide suitable habitat for breeding bird assemblages.

It should be noted that Fletcher Bank currently operates a bespoke installation that is restricted to deposit of inert waste. The screening distance for non-hazardous landfill (non-putrescible) for SSSIs, SAC, SPAs and Ramsar wetlands is 2km. However, the potential hazards associated with the disposal activity at Fletcher Bank were significantly reduced due to the amendment of the waste types accepted. Waste Operations normally have a screening distance of 1km for protected sites and therefore it has not been considered necessary to consider these habitats further as they are located further than 1km away from the site.

Priority habitats and local wildlife sites of deciduous woodland, heathland, blanket bog, lowland fens, purple moor grass and rush pasture were identified within 500m of the site. The closest and that most likely to be impacted being Harden Moor on the immediate east-northeast boundary which is most likely to be down-wind of the site activities. Fugitive dust emissions are most likely to affect the adjacent habitats, which could disturb animal and bird species or smother vegetation.

The Operator will ensure appropriate controls are in place during windy conditions to prevent dust spreading beyond the site boundary. The Operator may also restrict or suspend activities most likely to generate dust, or refuse inputs that may contain excessive quantities of dusty material. Additionally, the Operator will ensure any temporary stockpiles are minimised or appropriately shielded, or dampened down to reduce wind-whipped dust.

³ <https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s1006305>

⁴ <https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s2000830>

3 Risk Assessments and Accident Management Plans

3.1 Risk Assessments

The specific risk assessments completed for noise, fugitive dust emissions and mud on the road are detailed in Tables 2 to 4 below. In many cases there is an inter-relationship between these specific risk assessments and meteorological conditions and where relevant this has been identified. The pathway is determined by the location of the receptor relative to the site, the distance from the site boundary (m) and the frequency (likelihood) the prevailing wind will blow in the direction of the receptor (%) as determined by windrose data.

3.2 Mitigated Risk

The Mitigated Risk is the residual risk presented by the identified hazard after control measures have been instigated.

3.3 Environmental Accidents

The Agency guidance requires the completion of an Accidents Risk Assessment and Management Plan. This should assess potential hazards associated with the proposed activity not described in the sections above. As described in section 1.1 above, potential environmental accidents attributed to gas, leachate and waste mass stability will be assessed with separate risk assessments.

The Agency guidance document 'Landfill (EPR5.02) How to Comply – Additional Guidance'⁵ do however describe typical accident scenarios associated with landfill. These are assessed in Table 5 below. Detailed operational procedures for the management of the site will be listed in the associated Environmental Management System (EMS)

⁵ Environment Agency (2009) Landfill (EPR5.02) How to Comply – Additional Guidance, Available at<
<https://www.gov.uk/government/publications/landfill-sector-technical-guidance>>

Table 2 : Noise & Vibration Risk Assessment

Hazard & Pathway	No	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind	Probability of Exposure	Unmitigated Consequence	Unmitigated Risk	Risk Management	Mitigated Risk
Noise through air and vibration through ground from: Vehicle / plant movement with delivering and handling of waste	DR 1	220	N	11	Medium - Moderate distance from site	High - Receptor sensitive to noise	Medium	Landfilling activities are unlikely to generate noise in excess of the previously assessed landfilling activities. On site speed limits will be enforced and internal site roads will be maintained to minimise noise / vibration. Appropriate maintenance of site vehicles in accordance with the manufacturer's or supplier's instructions Where practicable, engines to be switched off when not in use. Silencers will be used on vehicles. Should it prove necessary alternatives to reversing beepers on site vehicles will also be considered. Tipping will not be made from height to reduce noise / vibration. Should a noise complaint be received waste deposit operations identified as generating unacceptable noise emissions will be reviewed and appropriate remedial measures taken. This may include a service inspection of the plant to identify the cause or temporarily suspend the activity until repairs or replacements can be made. Planning restrictions will be adhered to at all times	Low
	DR 2	205	NNE	10	Medium -Moderate distance from site	High - Receptor sensitive to noise	Medium		
	DR 3	120	NE	12	High - Close proximity to the site	Low - Receptor not sensitive to noise	Medium		
	DR 4	175	NE	12	Medium - Moderate distance from the site	High - Receptor sensitive to noise	Medium		
	DR 5	<10	E & SSE	0 & 7	Medium - Close proximity to the site	High - Transient recreational use and potential disturbance of habitats	Medium		
	DR 6	90	WSW	7	Medium - Close proximity to the site	High - Receptor sensitive to noise	Medium		
	DR 7	<10	S	1	Medium - Close proximity to the site	High - Receptor sensitive to noise	Medium		
	DR 8	<10	SW & N	4 & 11	High - Close proximity to the site	High - Transient recreational use	High		
	DR 9	50	W	5	Medium - Close proximity to the site	High - Receptor sensitive to noise	Medium		
	DR 10	155	W	5	Medium - Moderate distance from site	Low - Receptor not sensitive to noise	Low		
	DR 11	130	SW to NW	3 to7	Medium - Close proximity to the site	High - Receptor sensitive to noise	Medium		
	DR 12	230	NW	3	Low - Moderate distance from site	High - Receptor sensitive to noise	Medium		
	DR 13	100	N	11	High - Close proximity to the site	High - Receptor sensitive to noise	High		

Hazard & Pathway	No	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind	Probability of Exposure	Unmitigated Consequence	Unmitigated Risk	Risk Management	Mitigated Risk
	DR 14	<10	All directions	0 to 23	High - Close proximity to the site	High - Transient recreational use	High	As above	Low
	DR 15	85	N	11	High - Close proximity to the site	High - Receptor sensitive to noise	High		
	DR 16	105	N to ESE	1 to 23	High - Close proximity to the site	Low - Receptor not sensitive to noise	Medium		
	DR 17	405	WSW	7	Low - Distant from the site	High - Residents and transient recreational use of allotments	Medium		
	DR 18	20	All directions	0 to 23	High - Close proximity to the site	High - Potential disturbance of habitats	High		
	DR 19	110	E to SE	1 to 7	Medium - Close proximity to the site	High - Potential disturbance of habitats	Medium		
	DR 20	330	SSW	2	Low - Distant from the site	High - Potential disturbance of habitats	Medium		
	DR 21	110	N to NE	10 to 12	High - Close proximity to the site	High - Potential disturbance of habitats	High		
	DR 22	1340	WNW	6	Low - Very distant from the site	High - Potential disturbance of habitats	Medium		
	DR 23	1860	W	5	Low - Very distant from the site	High - Potential disturbance of habitats	Medium		
	DR24	215	SW	4	Medium – distant from site	High - Potential disturbance of residences	High		

Table 3 : Dust Risk Assessment

Hazard & Pathway	No	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind	Probability of Exposure	Unmitigated Consequence	Unmitigated Risk	Risk Management	Mitigated Risk
Dust through air from: Vehicle movements or deposit of waste	DR1	220	N	11	Medium - Moderate distance from site, frequently downwind	High - Receptor sensitive to dust	Medium	No excessively dusty wastes to be accepted at the site. On site vehicle speed limit enforced to ensure that vehicle movements do not generate excessive dust. Dampening of site roads/surfaces as necessary using a tanker during dry periods. All vehicles will use wheel wash to prevent mud / dust being trailed onto adjacent roads and creating a hazard / nuisance. A street sweeper will regularly clean site roads of any mud trailed on from site vehicles. Daily visual inspection by site staff at suitable locations taking account of the prevailing wind direction. Weighbridge will conduct assessment of waste inputs and impose controls and restriction on potentially dusty waste (e.g. bagging, rapid cover following placement, refusal to tip). Dusty wastes will be deposited in accordance with the dust management procedure. Dust managed at site in accordance with the Dust and Particulate Management Plan (Appendix A). In the event dust emissions from waste deposits cannot be controlled the causative activities on site	Low
	DR 2	205	NNE	10	Medium -Moderate distance from site, moderately downwind	High - Receptor sensitive to dust	Medium		
	DR 3	120	NE	12	High - Close proximity to the site, frequently downwind	Medium - May be sensitive to excessive dust	Medium		
	DR 4	175	NE	12	Medium - Moderate distance from the site, frequently downwind	High - Receptor sensitive to dust	Medium		
	DR 5	<10	E & SSE	0 & 7	Medium - Close proximity to the site, moderately downwind	High - Dust could impact habitat and be disamenity to users	Medium		
	DR 6	90	WSW	7	Medium - Close proximity to the site, moderately downwind	High - Receptor sensitive to dust	Medium		
	DR 7	<10	S	1	Medium - Close proximity to the site, rarely downwind	High - Receptor sensitive to dust	Medium		
	DR 8	<10	SW & N	4 & 11	High - Close proximity to the site, frequently downwind	Medium - Users may be sensitive to dust	Medium		
	DR 9	50	W	5	Medium - Close proximity to the site, moderately downwind	High - Receptor sensitive to dust	Medium		
	DR 10	155	W	5	Medium - Moderate distance from site, moderately downwind	Low - transient use	Low		
	DR 11	130	SW to NW	3 to7	Medium - Close proximity to the site, moderately downwind	High - Receptor sensitive to dust	Medium		
	DR 12	230	NW	3	Low - Moderate distance from site, rarely downwind	High - Receptor sensitive to dust	Medium		
	DR 13	100	N	11	High - Close proximity to the site, frequently downwind	High - Receptor sensitive to dust	High		

Hazard & Pathway	No	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind	Probability of Exposure	Unmitigated Consequence	Unmitigated Risk	Risk Management	Mitigated Risk
	DR 14	<10	All directions	0 to 23	High - Close proximity to the site, frequently downwind	Medium - Users may be sensitive to dust	Medium	will be stopped until the dust can be adequately controlled.	
	DR 15	85	N	11	High - Close proximity to the site, frequently downwind	High - Receptor sensitive to dust	High		
	DR 16	105	N to ESE	1 to 23	High - Close proximity to the site, frequently downwind	Medium - May be sensitive to excessive dust	Medium		
	DR 17	405	WSW	7	Low - Distant from the site, moderately downwind	High - Receptor sensitive to dust	Medium		
	DR 18	20	All directions	0 to 23	High - Close proximity to the site, frequently downwind	High - Dust could impact habitat	High		
	DR 19	110	E to SE	1 to 7	Medium - Close proximity to the site, moderately downwind	High - Dust could impact habitat	Medium		
	DR 20	330	SSW	2	Low - Distant from the site, rarely downwind	High - Dust could impact habitat	Medium		
	DR 21	110	N to NE	10 to 12	High - Close proximity to the site, frequently downwind	High - Dust could impact habitat	High		
	DR 22	1340	WNW	6	Low - Very distant from the site, moderately downwind	High - Dust could impact habitat	Medium		
	DR 23	1860	W	5	Low - Very distant from the site, moderately downwind	High - Dust could impact habitat	Medium		
	DR24	215	SW	4	Low - distant from site and infrequently downwind	High - Potential disturbance of residences	Medium		

Table 4. Mud Risk Assessment

Hazard & Pathway	No	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind	Probability of Exposure	Unmitigated Consequence	Unmitigated Risk	Risk Management	Mitigated Risk
Mud tracked from site onto public roads by associated site vehicles	DR1	220	N	11	Low - distant from site entrance	High - Loss of traction could cause an accident	Low	All vehicles will use wheel wash to prevent mud / dust being trailed onto adjacent roads and creating a hazard / nuisance.	Low
	DR 2	205	NNE	10	Low - distant from site entrance	High - Loss of traction could cause an accident	Low		
	DR 3	120	NE	12	Low - Not applicable	Low - Receptor not sensitive	Low		
	DR 4	175	NE	12	Low - distant from site entrance	High - Loss of traction could cause an accident	Low	Site staff at the weighbridge and at the tipping face will be vigilant to excessive mud tracked from the site by visiting HGV's and site plant. Any vehicles observed to be carrying mud in their tyres will be directed back through the wheelwash until the wheels are clean before leaving site.	
	DR 5	<10	E & SSE	0 & 7	Low - distant from site entrance	High - Loss of traction could cause an accident	Low		
	DR 6	90	WSW	7	High - Close proximity to the site, users may pass the site entrance frequently	High - Loss of traction could cause an accident	High	A street sweeper will regularly clean the site haul roads and the adjacent shared access and public highway as necessary. The integrity of the haul roads will be regularly assessed to ensure the surface is not accumulating mud that could be tracked off site. Repairs will be made to surfaced roads or where potholes / low points are causing water or mud to accumulate.	
	DR 7	<10	S	1	High - Close proximity to the site, users may pass the site entrance frequently	High - Loss of traction could cause an accident	High		
	DR 8	<10	SW & N	4 & 11	Low - No connection to the receptor	Not applicable	Low		
	DR 9	50	W	5	High - Close proximity to the site, users may pass the site entrance frequently	High - Loss of traction could cause an accident	High	Drivers will be reminded of their responsibility to maintain clean vehicles and not to track mud onto the public highway.	
	DR 10	155	W	5	High - road passes site entrance	High - Loss of traction could cause an accident	High		
	DR 11	130	SW to NW	3 to 7	Low - distant from site entrance	High - Loss of traction could cause an accident	Low		
	DR 12	230	NW	3	Low - distant from site entrance	High - Loss of traction could cause an accident	Low		
	DR 13	100	N	11	Low - distant from site entrance	High - Loss of traction could cause an accident	Low		
	DR 14	<10	N, S, E, W	0 to 23	Low - no connection to site	Low - no impact	Low		
	DR 15	85	N	11	Low - distant from site entrance	High - Loss of traction could cause an accident	Low		

Hazard & Pathway	No	Approx Distance from Site boundary (m)	Direction from Centre of Site	Frequency Downwind	Probability of Exposure	Unmitigated Consequence	Unmitigated Risk	Risk Management	Mitigated Risk
	DR 16	105	N to ESE	1 to 23	Low - Not applicable	Low - Receptor not sensitive	Low		
	DR 17	405	WSW	7	Low – distant from site entrance	High - Loss of traction could cause an accident	Low		
	DR 18	20	N, S, E, W	0 to 23	Low - Not applicable	Low - Receptor not sensitive	Low		
	DR 19	110	E to SE	1 to 7	Low - Not applicable	Low - Receptor not sensitive	Low		
	DR 20	330	SSW	2	Low - Not applicable	Low - Receptor not sensitive	Low		
	DR 21	110	N to NE	10 to 12	Low - Not applicable	Low - Receptor not sensitive	Low		
	DR 22	1340	WNW	6	Low - Not applicable	Low - Receptor not sensitive	Low		
	DR 23	1860	W	5	Low - Not applicable	Low - Receptor not sensitive	Low		
	DR24	215	SW	4	Low – distant from site entrance	High - Loss of traction could cause an accident	Low		

Table 5. Accident Management Plan

Hazard	Receptor	Pathway	Probability	Consequence	Overall Risk	Risk Management	Mitigated Risk
Fuel / engine oil Leak or damage to portable fuel bowser, static fuel storage tank or site vehicles	Groundwater	Base of excavation	Low	High - pollution of groundwater	Medium	Fuel and engine oils stored away from proposed installation with appropriate secondary containment and spillage contingencies; Site vehicles will not be refuelled within installation area; Site vehicles and plant subject to regular preventative maintenance in accordance with EMS procedures.	Low
Fire Uncontrolled burning of residual wastes or site vehicles.	Groundwater	Base of excavation	Low	High - pollution of groundwater through firewater run-off or leaks from damaged equipment	Medium	Wastes to be accepted at site will be have a low organic content and inherently non-combustible in nature, or through production of landfill gas; Site vehicles and plant subject to regular preventative maintenance in line with site EMS procedures; Fire control equipment will be on hand, with major incidents to be dealt with by the Fire Brigade in accordance with site EMS Procedures.	Low
	Receptors listed in Table 1 above	Airborne	Low	Medium odour annoyance - smoke	Medium		
Explosion Compressed gas cylinders, combustion of landfill gas or fuel storage tank	Site staff	Airborne	Low	High - danger of serious injury	Medium	Fuel is stored away from the installation with appropriate controls to prevent fire or explosion (i.e. no smoking on site); Compressed gases not required and therefore present for operation of installation. Site workshop located away from installation with appropriate controls in accordance with EMS procedures; Low organic content of waste will generate negligible volumes of landfill gas and will not present an explosion risk.	Low
	Groundwater	Base of excavation	Low	High - pollution of groundwater through leaks from damaged equipment	Medium		
Wastes deposited Chemical reaction of incompatible wastes	Receptors listed in Table 1 above	Airborne	Low	Medium – odour annoyance or smoke from oxidising agents	Medium	Waste acceptance protocols will exclude the deposit of chemically reactive wastes. Those accepted will be of an inert nature and will not generate noxious gases or contaminating leachate.	Low
Vandalism Damage to site vehicles, fuel bowsers, gas or leachate extraction pipework	Groundwater	Base of excavation	Low	High - pollution of groundwater through leaks from damaged equipment	Medium	Existing site security will prevent access by unauthorised persons. Vehicles will be kept overnight in a secure area with appropriate security measures; Wastes not expected to require exposed active gas or leachate control infrastructure which could be subject to damage.	Low
	Receptors listed in Table 1 above	Airborne	Low	Medium annoyance - odour	Medium		
Leachate Accidental damage to leachate monitoring chamber	Groundwater	Base of excavation	Low	High - pollution of groundwater through leaks from damaged well	Medium	Wastes not expected to require active gas or leachate control infrastructure which could be exposed to damage; CQA supervision will prevent damage to basal drainage pipework with the deposit of waste.	Low

4 Conclusion

The risk assessments detailed in Tables 2 to 5 within this document and the indicates that the increased annual tonnage will be unlikely to cause an increase to the emissions from the site.

Residential and commercial properties in the vicinity of the site are most sensitive to proposed site operations; however the mitigation measures employed at the site ensure these premises are unlikely to be affected by the activity.

Accidents such as fire, explosion or leakages are considered unlikely due to the current and proposed operations on site. Nevertheless, safe site working practices, effective control measures and strict waste acceptance criteria further reduce the potential for such accidents to occur.

Appendix A – Drawings



GENERAL NOTES

- NOTES:
1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM.
 2. DO NOT SCALE FROM THIS DRAWING.
 3. ANY ANOMALIES IDENTIFIED WITH THE DETAILS SHOWN ON THIS DRAWING ARE TO BE BROUGHT TO THE ATTENTION OF FCC ENVIRONMENT (UK) LIMITED PRIOR TO CONSTRUCTION WORKS COMMENCING.
- LEGEND:
- ① Sensitive Receptor Marker
 - Site Boundary

Rev	Date	Description	By	Site	App
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CLIENT
 Churchill Enviro LTD

PROJECT
 Fletcher Bank – Permit Variation Application

DRAWING TITLE
 Sensitive Receptor Plan

STATUS
 FOR CONSTRUCTION

Date	20/12/21	Scale	N/A	Drawn	JM	Check	GH	Appr	JB
Project No.	K0047	Drwg. No.	K0047.1.001	Rev					

Appendix B – Churchill Enviro Emissions Management Plan

Fletcher Bank Quarry Particulate Management and Monitoring Plan

The potential impact of dust upon neighbouring sensitive receptors has been considered with reference to Environment Agency Technical Guidance Note M17, Monitoring Particulate Matter in Ambient Air around Waste Facilities. Version 2 July 2003.

The following operational controls will be routinely undertaken:

Sheeting of all incoming vehicles carrying waste when they are capable of being sheeted (grab wagons do not currently have such a capability) and ensuring sheets are not removed until the vehicle reaches the operational area.

Vehicle speed limits on the access road and within the site will be limited, having regard to the recommendations in the aforementioned guidance, in order to reduce suspension of dusts.

Internal haul roads will be maintained, cleaned and damped as necessary;

Use of wheel-cleaning equipment, supplemented by the use of a mechanical sweeper, to prevent accumulations of mud on the public highway which can dry out and give rise to dust.

Siting the operation away from the most sensitive receptors, taking into account wind direction, on days when the potential for dust generation is high.

The site waste acceptance procedures will identify potential dusty wastes which will be handled to minimise emissions upon deposit (e.g. deposit in the lee of bunds, minimise deposit height or prohibition during certain meteorological conditions).

Damping of site surfaces as dictated by meteorological conditions.

Exposed soil surfaces will be seeded and vegetated as soon as is practicable.

Suspending operations in extreme conditions if none of the above measures are sufficient to prevent dust becoming a nuisance to the nearby receptors.

In order to ensure the above measures are effective monitoring will be undertaken on site. Quantitative directional monitoring has been considered but presents a number of limitations as follows:

monthly monitoring of directional and deposit gauges do not provide 'real time' assessment of dust emissions and therefore do not allow the operator conduct mitigation measures to reduce emissions at the time of occurrence; and directional and deposit gauges provide no means to attribute deposited dust to a particular source, e.g. quarry activities, landfill operations, haul roads, sources internal to the larger site other than the landfill or off-site sources.

As a result of these limitations it is considered appropriate to conduct qualitative monitoring for dust and other airborne fugitive emission to ensure source activities can be identified and mitigation measures can be immediately employed.

It is proposed that, in dry conditions, suitably trained staff conduct qualitative visual assessment of dust emissions on site. Monitoring locations will be selected in operational waste areas and the site boundary downwind of any operational areas. This will involve the observation and recording of the following:

Date & Time of assessment;

Direction of prevailing wind;

Wind speed (qualitative);

Other meteorological conditions affecting likelihood of dust (e.g. rainfall, recent rainfall events and whether site surfaces are dry and dusty or wet);

Location and type of active site activities not associated with the landfill installation (e.g. quarry blasting, quarry rock handling);

Frequency of vehicle movements, and vehicle speeds (qualitative);

Condition of haul roads; and

Other off-site sources of dust.

In the event that a dust nuisance or windblown waste is identified by site personnel:-
Operations causing the dust/windblown waste will be reduced/suspended.
Remedial actions will be taken (including the use of water suppression).
Speed limits may be reduced on the site, if delivery vehicles are causing a dust problem.
Additional wheel cleaning will be employed.
Additional use of the onsite road sweeper will be investigated, if necessary.
'Dusty' waste stockpiles will be covered, if required.

All actions taken will be recorded at the site along with times at which the corrective actions were undertaken and details of any complainant.

Source of Emission	Emission	Nature of Nuisance	Times/Duration	Overall Contribution	Mitigation Measures
Delivery vehicles arriving/leaving	Dust	Dust from loads	Working hours	Low	Ensure vehicles which are capable of being sheeted are sheeted when entering/leaving site laden. Damping down internal roads and surfaces by use of tractor and bowser in dry conditions.
		Dust from vehicle movements in dry conditions	Working hours	High	
Plant movements	Dust	Dust from plant movements in dry conditions	Working hours	Medium	Damping down internal roads and surfaces by use of tractor and bowser in dry conditions
Operations	Dust	Dust from waste deposition	Working hours	Medium	Minimise deposition-heights. Deposit potentially dusty loads in sheltered areas. Suspend operations if necessary.
		Dust blowing off-site in windy conditions	Working hours	Medium	Monitor as per the Particulate Management Plan and revise operations to prevent dust problem or suspend operations if unable to resolve problem and dust is reaching sensitive receptors

General	Dust	Dust from non-operational areas	Working hours	Low	Ensure that non-operational areas with the potential to generate dust are damped down during, and at the end of, the working day in dry conditions.
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COMPLAINT FORM

DATE RECEIVED	COMPLAINT/COMPLAINANT	ACTIONED BY	OUTCOME

<p>FLETCHER BANK PARTICULATE MONITORING CHECK & ACTION REPORT</p> <p>NAME/POSITION</p> <p>DATE AND TIME TO BE RECORDED UNDER DAY</p>	MON	TUE	WED	THURS	FRI	SAT
SITE						
ROADSWEEPER						
TRACTOR BOWSER						
ENSURE SPEED RESTRICTION IS ADHERED TO						
CLEANLINESS OF ROADS						
DUST MONITORING						
WIND DIRECTION W-Ramsbotom, E-WM Quarry, N- Top end of site, S-weighbridge/Marshalls works						
WEATHER CONDITIONS						
OBSERVATIONS/ACTIONS						

ADDITIONALSHEET IF REQUIRED

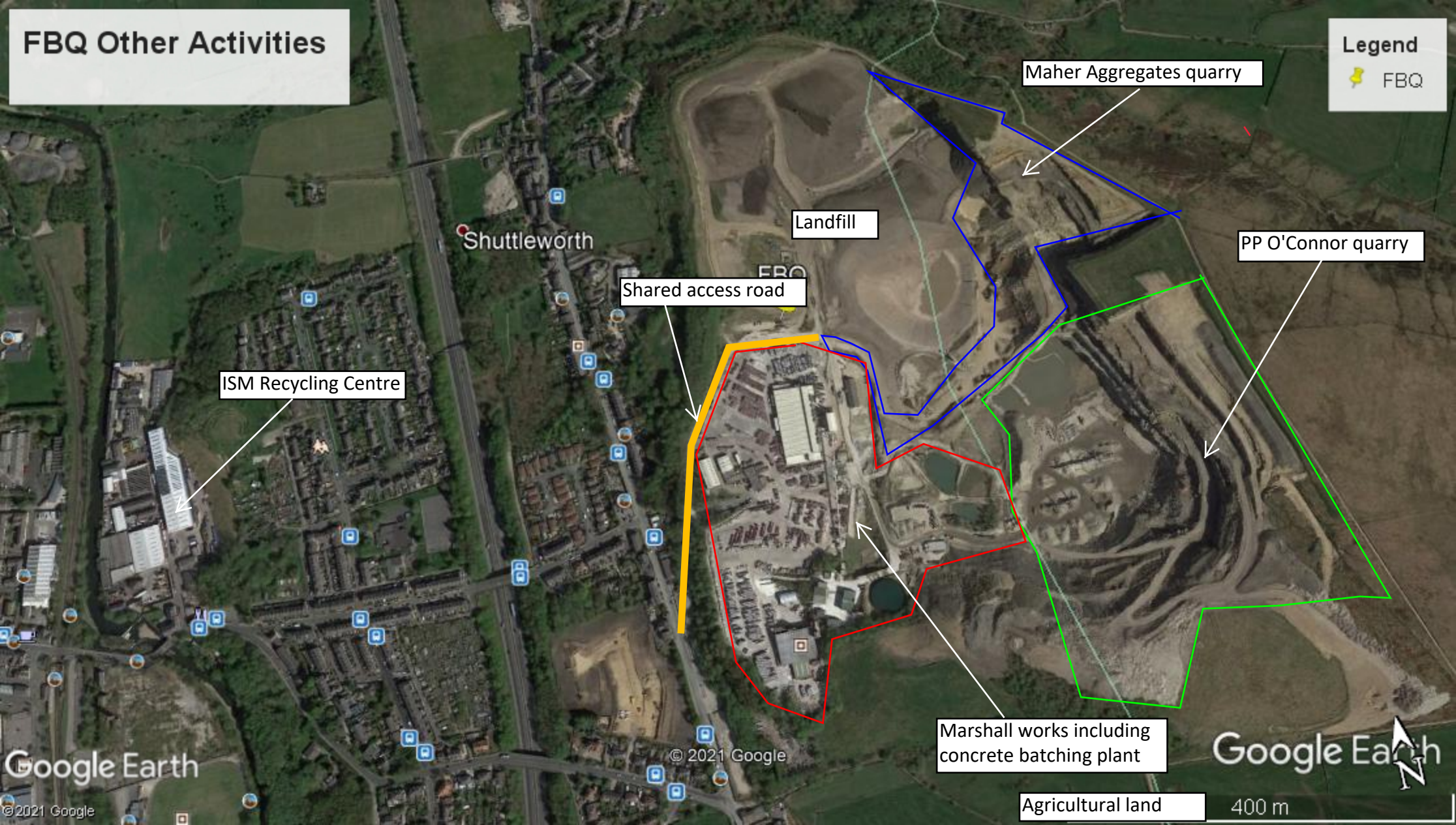
Other Potential Dust-generating Activities

These are marked on the Other Activities Plan

Activity	Orientation	Distance
W Maher Aggregates quarrying	East	Adjacent
PP O'Connor quarrying	South	Adjacent
Concrete batching plant	South	220m
Marshall works	South/South West	Adjacent
Fletcher Bank Quarry shared access road	South/South West	Adjacent
ISM recycling depot, Ramsbottom	West	1 mile

FBQ Other Activities

Legend
📍 FBQ



Maher Aggregates quarry

Landfill

PP O'Connor quarry

Shared access road

ISM Recycling Centre

Marshall works including
concrete batching plant

Agricultural land

400 m

Shuttleworth

FBQ

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