Tamara Hemsley
Regulated Industry Team, Permitting Support, NPS Sheffield
Quadrant 2
99 Parkway Avenue
Parkway Business Park
Sheffield
S9 4WF

Our Ref: 21453458.667

20 July 2023

CONFIDENTIAL

Dear Tamara,

Application reference: EPR-BP3537PP-V011
Operator: Biffa Waste Services Limited
Facility: Eye Landfill variation and consolidation with Willow Farm Landfill
Subject: Response to Non-Duly Made Letter dated 3 July 2023

Thank you for your email dated 3 July 2023 in which you request further information on the above application in order for it to be Duly Made. We have provided your comments in italics below, with our response to each beneath, with attachments referenced.

Odour Management Plan

1. Please provide a new or updated Odour Management Plan (OMP) which covers the extension area. An OMP is required for landfill sites which accept biodegradable waste. This should meet the requirements of our H4 Guidance (https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management). The charge for our assessment of your plan is not included in your baseline application charge. The cost of this is £1,246 – however please see question 15 regarding application fees below.

Biffa has prepared an Odour Management Plan which covers the full proposed permitted area including the Northeastern, Southern and Eastern Extensions. Please refer to **Annex 1**, report ref. Version 1, 12 July 2023.

Habitats and Receptors

2. Orton Pit SAC is within 10km of the site - but this has not been included in the Habitats risk assessment – please update the habitats risk assessment.

We have updated Habitats Risk Assessment to include assessment of Orton Pit SAC. Please refer to **Annex 2**, report ref. 21453458.644 Version A.1.

Emissions Risk Assessment (amenity)

3a. Application form C2, Q6 Environmental risk assessment - refers to document ref: 611. However, supporting statement section 2.2.13, Q6 - the operator states that the environmental risk assessment has been updated to take account of the new boundary and is provided in support of the application as an appendix to the NHMP ref 636. A copy of document ref: 611 has not been provided. Please can you confirm if this is the correct reference and submit as necessary.

Attenborough House, Browns Lane Business Park
Stanton-on-the-Wolds
Nottingham
NG12 5BL
Tel: +44 115 9371111
wsp.com

Reference to document 611 is an error within Application Form C2. The updated Environmental Risk Assessment is presented as Appendix NHMP1 to the Nuisance and Health Risk Management Plan, reference 21453458.636 Version A.0 dated 31 March 2022.

3b. ESID section 3.6.4 refers to section E Amenity risk assessment - but there is no section E to the ESID. Please amend this reference.

Reference to section E Amenity Risk Assessment is an error in ESID section 3.6.4. The correct reference should be to the Nuisance and Health Risk Management Plan, reference 21453458.636 Version A.0 dated 31 March 2022.

Hydrogeological Risk Assessment

4. Provide the baseline and raw monitoring data in excel format for leachate, groundwater and surface water. Please note - previous comment regarding the limited dataset for the Eastern extension and that information from the Eastern Extension should be integrated into the wider understanding of the environmental setting of the whole site and not just the Eastern Extension in isolation.

Please find in **Annex 3** all relevant leachate, groundwater and surface water data in excel format used to support the HRA (ref. 21453458.633 Version A.1 dated 11 May 2022) and subsequent response to the Environment Agency Geoscience Team (ref. 21453458.662 Version A.0 dated 22 March 2023), covering the Northeastern, Southern and Eastern Extensions.

5. Please provide raw monitoring data in excel format with suitable graphical plots for leachate level and groundwater level.

Groundwater Level data in excel format used to support the HRA (ref. 21453458.633 Version A.1 dated 11 May 2022) and subsequent response to the Environment Agency Geoscience Team request for further information (ref. 21453458.662 Version A.0 dated 22 March 2023) is provided in **Annex 3**, covering the Eastern Extension, Northeastern Extension and Southern Extension. Hydrographs are also included within the Annex.

As the Eastern Extension is to date undeveloped, there is no leachate level data available. Leachate level data for the existing Northeastern and Southern Extensions are contained within the Annual Monitoring Reports submitted to the EA on an annual basis.

Groundwater Risk Assessment Modelling

6. A groundwater risk assessment hydraulic containment model has been provided for the extension area, however there is an absence of an assessment of the impact of the eastern extension alongside the existing landfill development covered by the permit. The application is to extend the permit and therefore the assessments should include the cumulative impacts reflective of all areas covered within the future permit – an update is required which covers the whole of the proposed permitted area.

The current Environmental Permit, which this application EPR-BP3537PP-V011 seeks to vary to include the Eastern Extension, covers the Northeastern and Southern Extensions, which are located some 800 m apart linked by the haul road.

The most recent HRA Review for the Northeastern and Southern Extensions was prepared in October 2015 (ref. 6336R1D1). The report presented the long-term leachate, groundwater and surface water datasets for the areas, and also updates to the risk assessment modelling for each extension area, using the Environment Agency's "Contaminant fluxes from hydraulic containment landfills spreadsheet v1.0" (EA, 2004) (hereafter called the 'Hydraulic Containment spreadsheet'). Given the physical separation between the two extensions, separate spreadsheet models were used for each.

The design principles of the Northeastern and Southern Extensions, and the 'normal operating conditions' HRA models for them, are based upon the assumption that hydraulic containment is maintained, with leachate levels below 1 m above the base of the cell, and therefore providing these conditions are maintained there is an inward hydraulic gradient to the landfill cells and a negligible risk of the landfill impacting on the water environment via advective transport of contaminants in leachate through the lining system.

The design principles for the Eastern Extension, and the assumptions made in the modelling for the HRA (report ref. 21453458.633 Version A.1 dated 11 May 2022) are similar to both the Northeastern and Southern Extensions, that of hydraulic containment with leachate levels maintained below 1.4 m above the base of the cell, also providing an inward hydraulic gradient and preventing leakage by advective transport under normal operating conditions.

Given all three extension areas do/will operate under the principle of hydraulic containment under normal operating conditions, the cumulative impact of leakage via advective transport across them is therefore considered negligible.

It is acknowledged however that the role of diffusion as a mechanism for contaminant transport has to be considered as this process occurs irrespective of the successful operation of hydraulic containment. If the diffusive flux out of the landfill is significant compared to the advective inward flux of groundwater, contaminants have the potential to impact on the water environment.

Within the HRA Review for the Northeastern and Southern Extensions, and HRA for the Eastern Extension, the Hydraulic Containment Spreadsheet was used to calculate the potential contaminant concentrations via diffusion through the liner in each extension area. The use of separate models allows the hydrogeological variability local to each extension area to be reflected in each model, for example the elevations of the base of the landfill in relation to the base of the River Terrace Deposits and Oxford Clay, and also allows the full perimeter length around each extension area to be accounted for.

The results of modelling under normal operating conditions are summarised for each extension area in Table 1 below. It is noted that although the last HRA Review for the Northeastern and Southern Extensions was prepared in 2015, the source term used is considered to remain valid as concentrations of priority contaminants since then have been observed to be declining.

Table 1: Summary of Predicted Peak Concentrations from HRA modelling for the Eastern, Southern and Northeastern Extensions

Determinand		Predicted Peak Concentrations at compliance points (mg/l)					
		Southern Extension		Northeastern Extension		Eastern Extension	
	UK DWS/ EQS/ LoQ	River Terrace Deposits	Kellaways Sand	River Terrace Deposits	Kellaways Sand	River Terrace Deposits	Kellaways Sand
Ammoniacal Nitrogen	0.39	2.0E-08	2.0E-08	2.0E-08	2.0E-08	1.8E-08	1.8E-08
Chloride	250	6.1E-08	6.1E-08	6.1E-08	6.1E-08	4.1E-07	4.1E-07
Cadmium	0.0001	3.1E-33	3.1E-33	3.1E-33	3.1E-33	-	-
Nickel	0.02	2.7E-14	2.7E-14	2.7E-14	2.7E-14	-	-
Toluene	0.004	1.7E-29	9.8E-54	1.7E-29	3.6E-98	-	-
Arsenic	0.005	-	-	-	-	1.0E-22	1.0E-22
Mecoprop	0.0001	-	-	-	-	3.6E-64	8.9E-288
Naphthalene	0.002	-	-	-	-	5.31E-39	1.5E-85
Phenol	0.0077	-	-	-	-	4.8E-25	8.4E-105

Note '-' indicates where the substance was not modelled as a priority contaminant.

Results demonstrate that predicted maximum concentrations resulting from each extension area are many orders of magnitude below Environmental Assessment Limits and occur after several thousand years. It is apparent that even if the extension areas were along the same groundwater flow line, the contribution from each of these areas combined, would pose a negligible effect on groundwater.

Furthermore, it is noted that given the groundwater flow direction in the Kellaways Sand is towards the south-east, and the natural flow in the River Terrace Deposits is thought to be to the west and north, given the location, geometry and orientation of each extension area, in the most part they do not lie along the same groundwater flow line and there would not be a significant cumulative impact on groundwater concentrations as a result.

Failure scenarios are also considered in the HRAs for all extension areas, whereby leachate management is not controlled, and leachate head builds up inside the landfill to elevations above the surrounding piezometric surface in the River Terrace Deposits and Kellaways Sand.

Results indicated that it would take greater than 3 years in each extension area for leachate to rise 1 m after failure of the extraction system. Hydraulic containment will still be maintained whilst groundwater levels exceed leachate levels. Given the slow rate of rise of leachate across all extension areas, it is considered that taking into account the frequency of leachate monitoring and reporting, sufficient time is available to reinstate leachate extraction before hydraulic containment of the Site is lost.

As described in detail in the response to question 6 of the Environment Agency Geoscience Team request further information (ref. 21453458.662 Version A.0 dated 22 March 2023) in relation to the leachate management system, the existing extension areas and proposed Eastern Extension are/will be served by common leachate management infrastructure such as the leachate storage tank, however the pipework and pumping systems remain separate for each extension area. Leachate from the Northeastern and Southern Extensions is primarily managed by recirculation only.

Even with the addition of the Eastern Extension there remains flexibility in leachate management options given the capacity of the leachate storage tank and Miscanthus Beds, potential to increase tankering if required and ability to recirculate, not only under normal operating conditions, but should a leachate management failure occur in any of the extension areas.

3 years is considered more than adequate time to manage the additional leachate generated should a failure occur in any of the extension areas, and it is considered very unlikely that a failure in management control would occur across all extension areas simultaneously, or that all leachate management methods would become unavailable at the same time. It is therefore considered that the risk of a cumulative impact from leachate management failure across the Site as a whole is negligible.

7. Provide the data files in their original format.

Please refer to **Annex 4** for the HRA model files.

Landfill Gas Risk Assessment

8. Please provide the GasSim datafiles in their original format.

Please refer to **Annex 5** for the GRA model files.

9. Provide the gas monitoring data in excel format.

Please find excel versions of all gas monitoring data used to support the GRA in **Annex 6**.

Leachate Management Plan

10. Please can you confirm if there are any storage arrangements for leachate prior to recirculation.

There are no proposals to store leachate in the Eastern Extension prior to recirculation. The leachate extracted from the leachate extraction wells will be returned the waste mass to increase evaporative loss and fully utilise the absorptive capacity of the waste, especially during the early stages of waste infilling of individual cells. As discussed in the Leachate Management Plan (ref. 21453458.641) the leachate will be recirculated back into the waste mass using the following techniques:

- Pumping below the working face using temporary pipework or vacuum tanker.
- Via pipework into shallow trenches excavated into recently placed wastes.
- After completion of each cell a leachate re-circulation system will be installed as required beneath the cap.

There are no proposals to temporarily store leachate prior to recirculation, however as described in section 1.7.2.3 of the Leachate Management Plan, the leachate holding tank will be retained for the storage of leachate, and leachate tankered off site from this tank if required.

Discharges to Surface Water

11. Please can you confirm which surface water monitoring and emission points have been renamed from the existing permit (EPR/BP3537PP/V010) and if there are any new or increased discharges.

For clarity, please find attached a new **Drawing 1 – MEPP (S, E and NE Extensions)** which shows existing and proposed leachate, groundwater and surface water monitoring points across the Southern, Northeastern and Eastern Extensions.

There are no changes proposed to existing surface water monitoring and emission points already within the Permit for the Northeastern and Southern Extensions. As shown on the MEPP drawing the following surface water monitoring points for the Eastern Extension, as referenced in the Surface Water Monitoring Plan (report ref. 21453458.642), are additional to those locations already used for the purposes of monitoring surface water for the existing Site and it is requested that these are added to the varied permit:

- SW13 – Upstream of the Eastern Extension;
- SW14 – Downstream of the Eastern Extension; and
- SW15 – Discharge point from the settlement pond in the northwestern corner of the Eastern Extension.

In relation to the discharge point SW15, it is intended that existing Environmental Permit EPR/EB3091VZ that P J Thory holds for the discharge of trade effluent composed of quarry void and excavation dewatering to Cats Water Drain via Outlet 1 (as shown on **Figure 1)**, will be transferred to Biffa with the intention of then incorporating the discharge consent and limits into the varied permit. The limits proposed for SW15 in the SWMP are based upon those already in place within the P J Thory Permit. The P J Thory Permit would then be surrendered. This discharge will continue to be used during development of the Site as a landfill, and once restored as part of the surface water management system within the proposed Wildlife Corridor. SW15 will therefore become a surface water discharge and monitoring point.

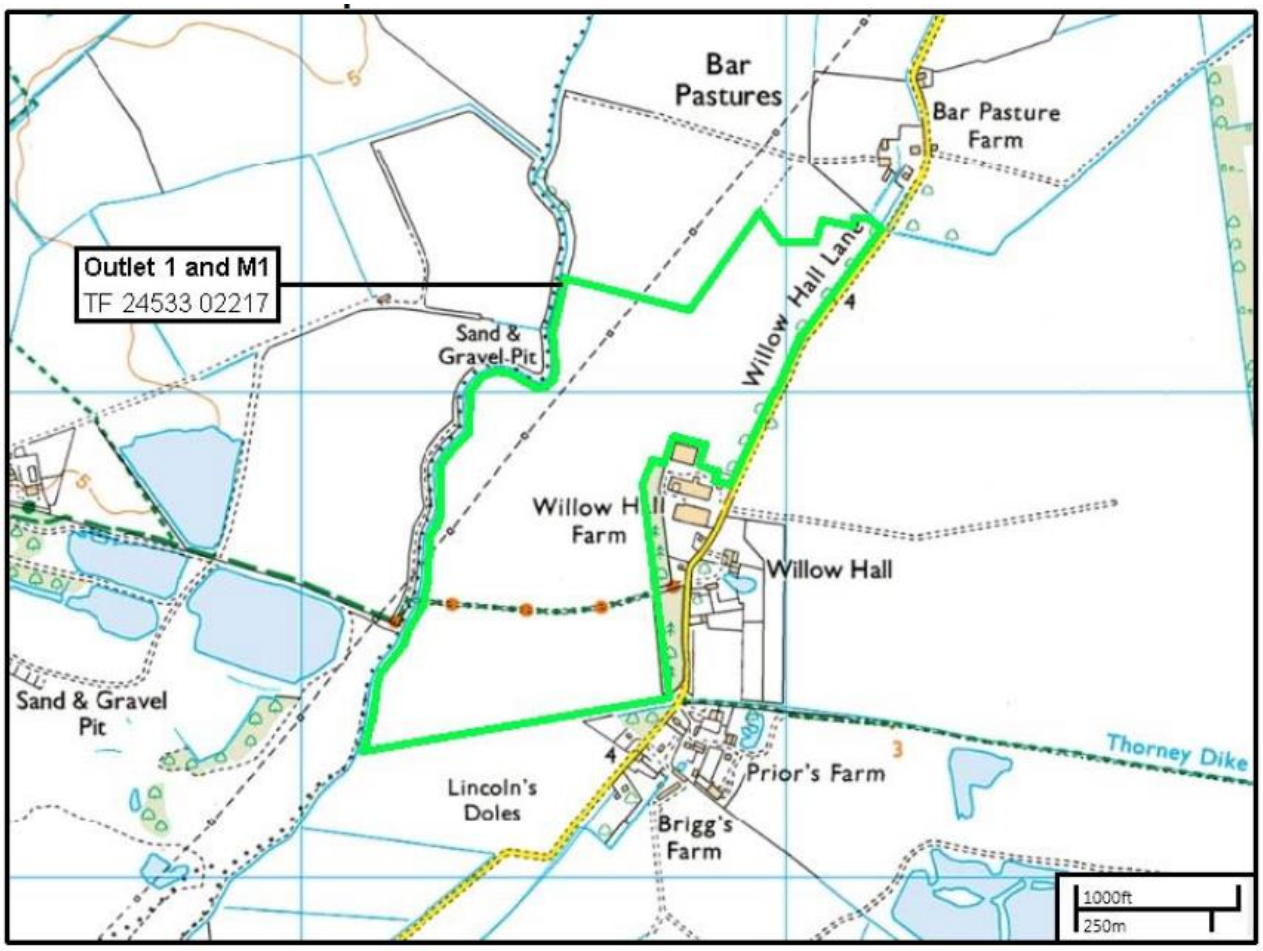


Figure 1: Location of Discharge Point within P J Thory Permit to be transferred to Biffa (taken from Permit

Surface Water Management Plan

12. Provide the surface water datasets in excel format in relation to the SWMP (see also question 5).

Please find excel versions of all baseline surface water data collected to date for points referred to in the SWMP in **Annex 3**.

Only SW13 and SW14 are monitored by Biffa at present in order to determine the baseline ahead of development of the Site.

Dust Management Plan

13. Dust management plan (DMP) for eastern extension ref 638. The DMP includes no details of dust, PM10 or asbestos monitoring – provide an updated version containing this information. See our guidance on dust plans for further details of what these plans usually contain.

Please refer to **Annex 7** for an updated Dust Management Plan in which monitoring of dust has now been included.

In relation to PM_{10}, as now described in detail within the updated Dust Management Plan, the predicted environmental concentration (PEC) of particulate matter estimated to arise from the proposed operations is 15.6 µg/m3. Based on IAQM minerals guidance (2016) given that the predicted background concentration is less than 17 µg/m3, which is considered to cause little risk that the Process Contribution would lead to an exceedance of the annual mean objective, it therefore is not considered that routine monitoring of PM_{10} is required.

It is considered there is also no requirement for asbestos monitoring in the Eastern Extension. The landfill will not accept asbestos contaminated wastes and Biffa do not propose to construct a separate Stable Non-Reactive Hazardous waste cell. Asbestos monitoring will only continue in the existing site downwind of the asbestos disposal cell in accordance with the Permit.

Noise

14. A noise risk assessment has been carried out as included in the Nuisance and Health Management Plan (NHMP) and a brief Noise Management Plan (NMP) is included in section 3.7 of the NHMP which includes a list of reduction methods. As there have been no noise complaints at Eye Landfill or Willow Hall Farm Quarry and Inert Landfill. Therefore I can return the payment for this NMP of £1,246.

Thank you, noted.

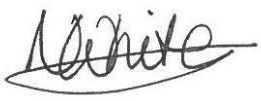
Application Fees

15. As we no longer need the fee of £1,246 for the Noise Management Plan and the additional fee required for the Odour Management Plan is the same amount at £1,246 - I can transfer the money across to the Odour Management Plan and there is no need to submit any additional application fee. Please can you confirm that you are satisfied with this.

Thank you, we can confirm that this is satisfactory.

We trust that the above information satisfactorily addresses your queries. We look forward to receiving confirmation that the application is Duly Made.

Yours sincerely,



Nicola White
Project Manager

AA/JS/TA/NW/ab

cc: Neil Sumner, Biffa Waste Services Limited

DRAWING
Drawing 1 – MEPP (NE, S and E Extensions)

E 522 500 | E 523 000 | E 523 500 | E 524 000 | E 524 500 | E 525 000

N 303 000 | N 302 500 | N 302 000 | N 301 500 | N 301 000 | N 300 500

NORTHERN EXTENSION

EXCLUSION ZONE

NORTHEASTERN EXTENSION

CENTRAL AREA

EASTERN EXTENSION

SOUTHERN EXTENSION

AREA 1 (EXCLUDED FROM REGULATED FACILITY)

SW DISCHARGE

GREEN WHEEL FOOTPATH

Flag Fen

Prior's Fen

Northey

LEGEND

- PROPOSED BIFFA ENVIRONMENTAL PERMIT BOUNDARY EPR/BP3537PP/V011
- EXISTING GROUNDWATER MONITORING BOREHOLE (SAND AND GRAVEL)
- EXISTING GROUNDWATER MONITORING BOREHOLE (KELLAWAYS SANDS)
- EXISTING SURFACE WATER MONITORING POINT
- PROPOSED SURFACE WATER MONITORING POINT
- PROPOSED GROUNDWATER MONITORING POINT (RIVER TERRACE DEPOSITS)
- PROPOSED GROUNDWATER MONITORING POINT (KELLAWAYS SAND)
- EXISTING PERIMETER GAS MONITORING POINT
- PROPOSED PERIMETER GAS MONITORING POINT
- PROPOSED EASTERN EXTENSION LEACHATE EXTRACTION WELL
- EXISTING LEACHATE EXTRACTION / MONITORING WELL (UPSLOPE RISER)
- EXISTING LEACHATE EXTRACTION / MONITORING WELL (VERTICAL)
- PROPOSED EASTERN EXTENSION LEACHATE MONITORING WELL
- ENVIRONMENTAL MONITORING POINT (DUST)

NOTE(S)

1. INDICATIVE POSITIONS SHOWN ONLY. EXACT LOCATIONS TO BE CONFIRMED IN CELL SPECIFIC CQA PLAN.

0 200 400

1:5,000 METRES

wsp

WSP FILE REF	ENGINEER	REVIEWED BY
1002-PA-0001	NW	CMcD

REV.	DATE	DRAWN	DESCRIPTION

Biffa

Biffa Waste Services Ltd
Redhill Landfill Site
Cormongers Lane
Nutfield, Redhill
RH1 4ER
Tel. 01737 765042
Mob. 07921 386021

E-mail phil.mumford@biffa.co.uk

PROJECT	Eye Eastern Extension	DRAWN	ECS
LOCATION	Eye Landfill, Peterborough	DATE	12/07/2023
DRAWING TITLE	MEPP (NE, S and E Extensions)	SCALE(S)	1:5,000
DRAWING No.	1	COMPUTER REF.	E5180801

1002-PA-0001

ANNEX 1
ODOUR MANAGEMENT PLAN (Electronic File)

ANNEX 2
HABITATS RISK ASSESSMENT

REPORT

Biffa Waste Services Ltd

Eye Landfill, Eastern Extension

Habitats Risk Assessment

Submitted to:

Biffa Waste Services Ltd
Coronation Road
Cressex
High Wycombe
Buckinghamshire
HP12 3TZ

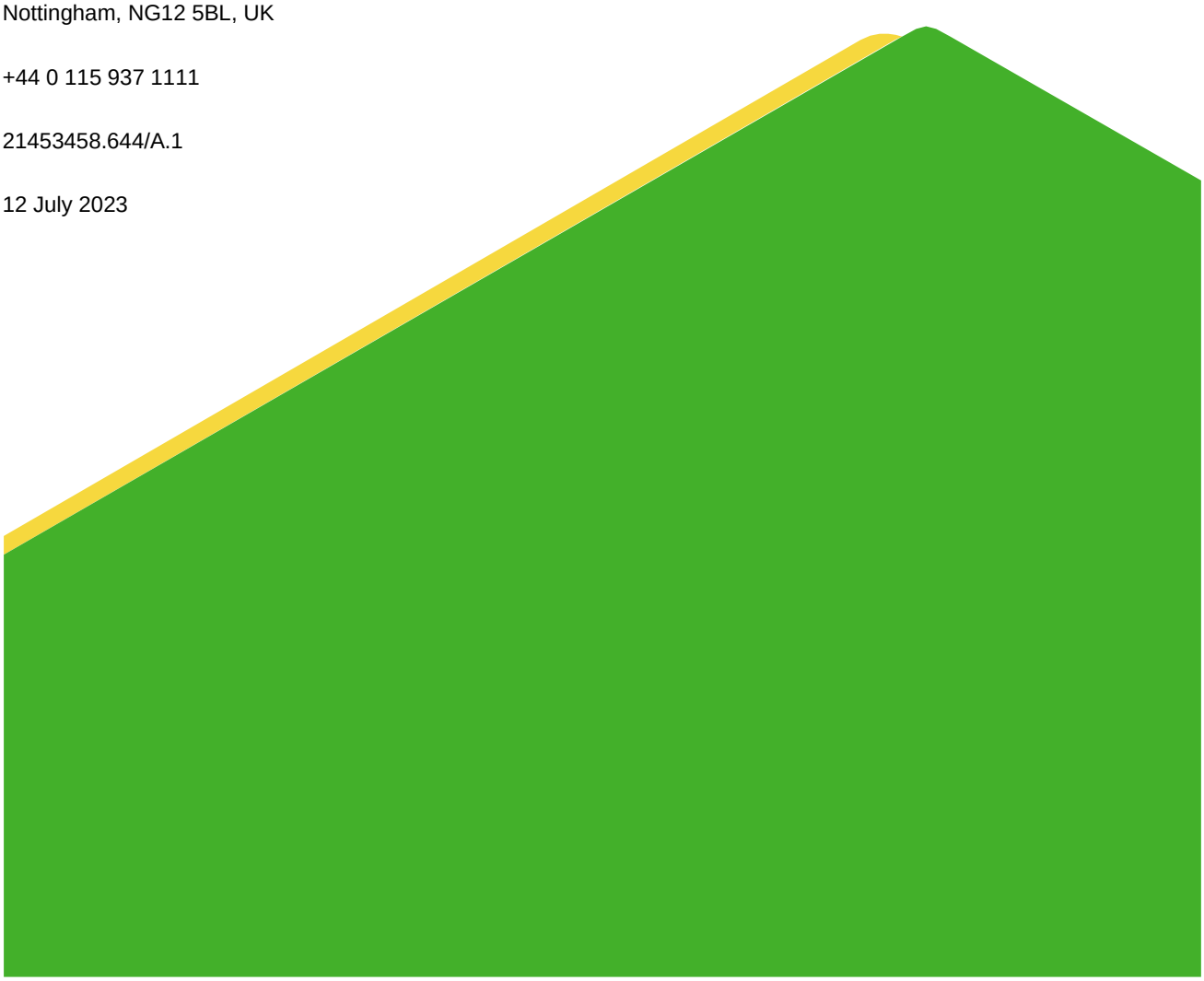
Submitted by:

Golder WSP
Attenborough House, Browns Lane Business Park, Stanton-on-the-Wolds,
Nottingham, NG12 5BL, UK

+44 0 115 937 1111

21453458.644/A.1

12 July 2023



Distribution List

Biffa Waste Services Ltd - 1 pdf

Environment Agency - 1 pdf

Golder, member of WSP UK Ltd - 1 pdf

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FIGURES

APPENDICES

1.0 INTRODUCTION

Biffa has requested Golder, member of WSP in UK (Golder), to prepare an Environmental Permit variation application for the landfilling of non-hazardous and inert waste in an extension to Eye Landfill.

Biffa proposes to develop parts of neighbouring Willow Hall Farm Quarry and Inert Landfill as a non-hazardous landfill (to be called the Eastern Extension) for continuous and uninterrupted landfilling operations after the current Southern Extension at Eye Landfill is completed. The Southern Extension is regulated under Environmental Permit EPR/BP3537PP/V010.

The permitted waste list for the Eastern Extension will be the same as that currently approved for the Southern Extension *excluding* stable non-reactive hazardous waste. Wastes may also be received at the landfill for use in restoration, in accordance with the Environmental Permit.

In accordance with the Conservation of Habitats and Species Regulations 2017 (as amended), a Habitats Assessment is required to determine if a project may affect the protected features of a habitats site. This assessment has been prepared using the Habitats Regulations Assessment Handbook and has been carried out to satisfy the requirements of 'Appropriate Assessment'.

This Habitats Risk Assessment is provided to accompany an Environmental Permit variation application (EPR/BP3537PP/V011) for the Eastern Extension development.

2.0 HABITATS REVIEW

Relevant Habitats sites within a 10 km radius of Eye Landfill and known Habitats sites wholly or partially within 10 km, are shown on **Figure 1**. A sensitivity matrix identifying which species/habitats (features) protected on the Habitat site are sensitive to potential hazards caused by landfill operations is provided in **Appendix HAB1**.

The Nene Washes (SPA/SAC/Ramsar/SSSI) and Orton Pit (SAC/SSSI) were identified as being within 10 km of the Site boundary; it is these Sites which are the subject of the remainder of this report.

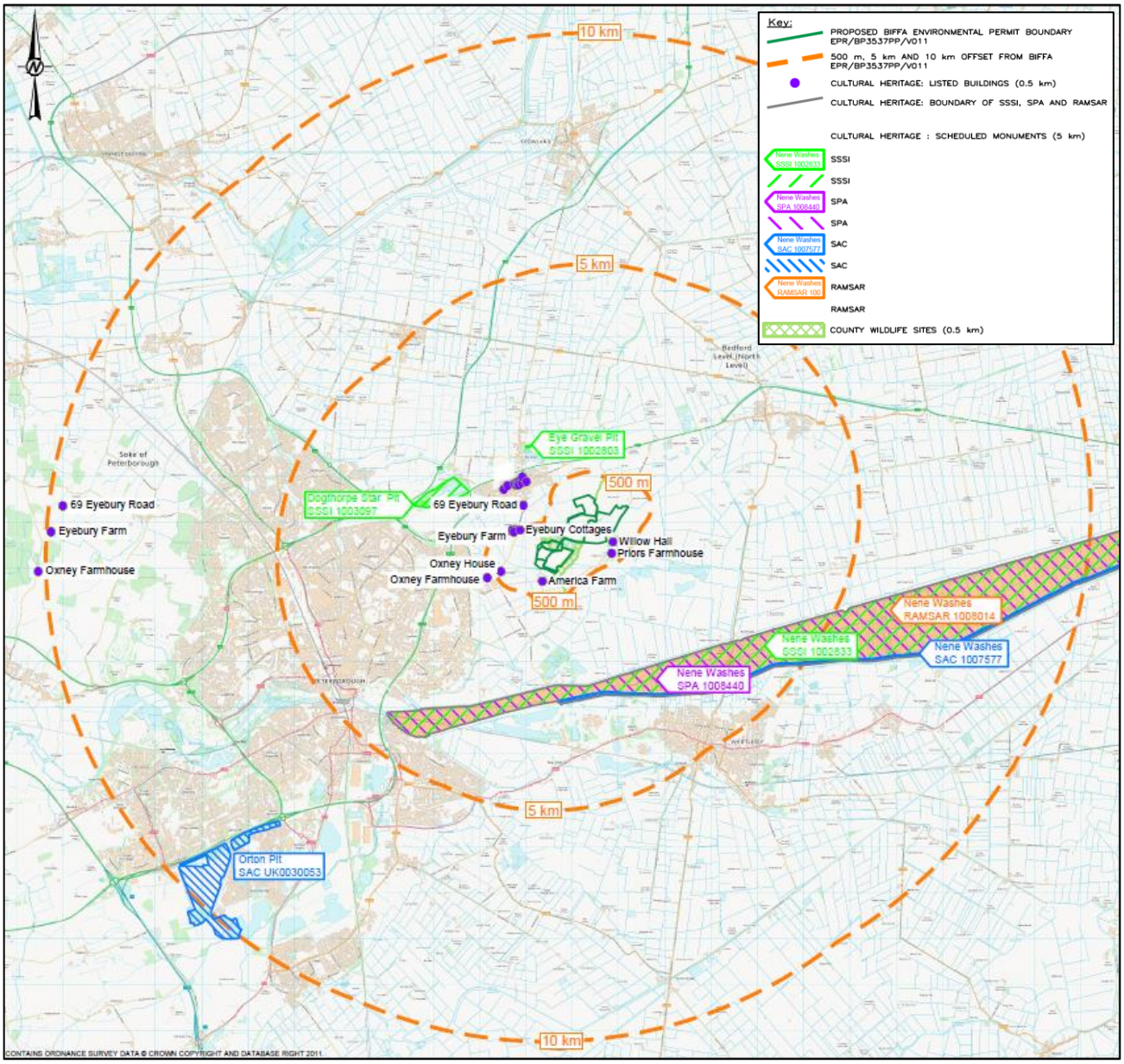

Figure 1: Habitat Sites within a 10 km radius of Eye Landfill

3.0 IDENTIFIED HABITATS SITES (SPA, SAC AND RAMSAR)

Located approximately 2.7 km south of the Site is the Nene Washes (NGR TL 200 977 to TF 395 029), a Habitats Site which has been classified as a SPA, a SAC and a SSSI. Nene Washes is also a Ramsar site, under the Ramsar Convention for its Internationally Important Wetland Species. The Nene Washes is an extensive area of seasonally flooding wet grassland and grazing marsh in the lower reaches of the River Nene, Cambridgeshire, and also comprises areas of open water including Moreton's Leam. The area is of importance for national and international populations of breeding and wintering waders and wildfowl. Information from the Joint Nature Conservation Committee has highlighted the following designated features for each classification (1-3).

Orton Pit is located approximately 9.4 km southwest of the Site (TL 163940), a Habitats Site which has been classified as a SAC and SSSI. Orton Pit contains areas of spoil heaps and pools associated with former brick clay workings. The varied topography has encouraged the development of terrestrial and aquatic habitats which provide the ideal conditions to support the UK's largest known population of Great crested Newt.

3.1 Special Protection Area Designation

The Nene Washes SPA qualifies as 'A wetland of international importance'. The area qualifies under Article 4.2 of the directive (79/409/EC) by regularly supporting at least 20,000 wildfowl. Over winter, the area regularly supports 25,437 individual waterfowl (5-year peak mean 1991/2 – 1995/6) including:

- Blacktailed Godwit *Limosa limosa islandica*;
- Lapwing *Vanellus vanellus*;
- Pochard *Aythya farina*;
- Teal *Anas crecca*;
- Gadwall *Anas strepera*;
- Wigeon *Anas Penelope*;
- Shoveler *Anas clypeata*;
- Pintail *Anas acuta*;
- Ruff *Philomachus pugnax*; and
- Bewick's Swan *Cygnus columbianus bewickii*.

Nene Washes qualifies under Article 4.1 of the Directive (79/409/EC) by supporting populations of European importance during the breeding season, of the following species:

- Ruff *Philomachus pugnax*, 1 individual representing at least 9.1% of the breeding population in Great Britain (Count as of 1993); and
- Spotted Crake *Porzana porzana*, 5 individuals representing at least 10.0% of the breeding population in Great Britian (5-11 males = minimum).

Nene Washes further qualifies under Article 4.1 by supporting over winter:

- Bewick's Swan *Cygnus columbianus bewickii*, 1,718 individuals representing at least 24.5% of the wintering population in Great Britain (5-year peak mean 1991/2 – 1995/6) and
- Ruff *Philomachus pugnax*, 91 individuals representing at least 13% of the wintering population in Great Britain (5-year peak mean 1991/2 – 1995/6).

Nene Washes also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species during the breeding season:

- Black Tailed Godwit *Limosa limosa*, 16 pairs representing <0.1% of the breeding Western Europe/W Africa population (count, as at 1992).

Nene Washes also qualifies under Article 4.2 by supporting populations of European importance overwinter of the following:

- Pintail *Anas acuta*, 1,435 individuals representing at least 2.4% of the wintering Northwestern Europe population (5-year peak mean 1991/2 – 1995/6); and
- Shoveler *Anas clypeta*, 413 individuals representing at least 1.0% of the wintering Northwestern/Central European population.

Orton Pit is not designated as a SPA.

3.2 Special Area of Conservation Designation

Nene Washes is also designated as a SAC due to the presence of the following Annex II species:

- Spined loach *Cobitis taenia*. The spined loach is a small bottom-living fish restricted to rivers and drainage ditches in central England and East Anglia.

Orton Pit is designated as a SAC due to the presence of the following Annex I habitats:

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.

Orton Pit is also designated as a SAC due to the presence of the following Annex II species:

- Great crested newt *Triturus cristatus.* The Great crested Newt is the largest native British newt. Adult newts spend most of the year on land in cover-rich habitats. It moves to aquatic breeding sites, mainly large fish-free ponds, in spring.

3.3 RAMSAR Designation

Nene Washes is also a Ramsar site, designated under the Ramsar convention for its Internationally Important Wetlands Species especially as a Waterfowl Habitat. Nene Washes qualifies under Criterion 6 of the convention by supporting the following:

- Tundra swan, *Cygnus columbianus bewickii*, 694 individuals, representing an average of 2.3% of the population (5-year peak mean 1998/9-2002/3).

The following species were identified subsequent to designation for possible future consideration under criterion 6:

- Black tailed godwit, *Limnos limos islandica*, 482 individuals, representing an average of 1.3% of the population (5-year peak mean 1998/9-2002/3 – Spring peak); and
- Northern pintail, *Anas acuta*, 1848 individuals, representing an average of 3% of the population (5-year peak mean 1998/9-2002/3).

The Ramsar Site also supports the following fauna species at levels of national importance:

- Whooper Swan *Cygnus Cygnus*, 80 individuals, representing an average of 1.3% of the GB population;
- Eurasion wigeon, *Anas crecca*, 2015 individuals, representing an average of 1% of the GB population;
- Northern shoveler, *Anas clypeata*, 343 individuals, representing an average of 2.3% of the GB population;
- Common pondweed, *Aythya farina*, 1795 individuals, representing and average of 3% of the GB population;

- European golden plover, *Pluvalis apricaria apricaria*, 2949 individuals, representing an average of 3% of the GB population; and
- Ruff, *Philomachus pugnax*, 98 individuals, representing an average of 14% of the GB population.

Nationally important floral species occurring at Nene Washes includes the following:

- Fringed water lily *Nymphoides peltata*;
- Hair-like pondweed *Potamogeton trichoides*;
- Marsh dock *Rumex palustris*;
- Fries Pondweed *Potamageton friesii*;
- Narrow Leaved Water Plantain *Alisma lanceolatum*; and
- Sea Barley *Hordeum marinum*.

Invertebrate records suggest that Nene Washes is a good relict fenland fauna for several groups, reflecting the diversity of wetland habitats. Four Red Data Book species have been recorded.

- Aquatic snail *Valvata macrostoma*;
- Water beetle *Agabus undulates*;
- Dragonfly *Libellula fulva*; and
- Hoverfly *Anasimyia interpuncta*.

Orton Pit is not designated as a RAMSAR site.

3.4 Site of Special Scientific Interest Designation

Nene Washes represents one of the country's few remaining areas of washland habitat which is essential to the survival nationally and internationally of populations of wildfowl and waders. Nene Washes is additionally notable for the diversity of plant and associated animal life within its network of dykes. The SSSI comprises eight units, the status of which were assessed in March 2022 by Natural England. Six units were identified as unfavourable recovering and two as favourable.

Orton pit is designated as a SSSI due to its population of great crested newts and a network of oligio-mesotrophic freshwater habitats which support an assemblage of nationally rare and scarce charophyte (stonewort) species. The SSSI comprises six units, the status of which were assessed in March 2004. Four units were identified as unfavourable recovering and two as favourable.

4.0 HABITATS ASSESSMENT

4.1 Stage 1 - Screening

The Eastern Extension has the potential to have a significant effect on Nene Washes (SPA/SAC/Ramsar/SSSI) and Orton Pit (SAC/SSSI), located approximately 2.7 km and 9.4 km respectively from the southern boundary of the Site and therefore should be considered at Stage 2.

4.2 Stage 2 – Appropriate Assessment

All potential hazards from the Eastern Extension were considered for potential significant effect on the Habitats Site and the issues considered are detailed in the sections below.

4.2.1 Toxic Contamination

4.2.1.1 Landfill Gas

The Landfill Regulations require landfill gas to be collected and utilised where possible at landfills receiving biodegradable waste. The installation will include engineered containment, gas abstraction and management systems and therefore landfill gas is not likely to have a significant effect on the Nene Washes or Orton Pit. A landfill gas generation and risk assessment (ref. 21453458.635) has been carried out and this demonstrates that landfill gas emissions will not exceed recognised Environment Agency benchmarks beyond the boundary of the installation.

4.2.1.2 Toxic Leachate

The Site will have a leachate management system. Failure of the leachate management/abstraction system could result in loss of hydraulic containment and advective leakage of leachate from the Site. A hydrogeological risk assessment (ref. 21453458.633) has been carried out and this demonstrates that potential impacts of leachate will not exceed recognised Environment Agency benchmarks beyond the boundary of the installation. Due to the distance of the landfill from the Nene Washes and Orton Pit it is considered unlikely that leachate could have a significant impact.

4.2.1.3 Contaminated Dusts

The Site will accept waste which has the potential to produce dust; however, a number of dust control measures will be in place at the Site to suppress dust. These dust control measures are considered in detail in the Nuisance and Health Management Plan (ref. 21453458.636). Considering the distance of the Habitats Sites from the landfill and the presence of dust mitigation measures at the Site, it is unlikely that dust will have a significant impact.

4.2.1.4 Toxic Waste

The Site will not be accepting hazardous waste. Therefore, there is no risk to the Habitats Sites of toxic waste that would lead to habitat loss.

4.2.2 Smothering

4.2.2.1 Dust

The Site will accept waste and will carry out daily operations, which have the potential to produce dust; however, a number of dust control measures will be in place at the Site to suppress dust. These dust control measures are considered in detail in the Nuisance and Health Management Plan (ref. 21453458.636). Considering the distance of the Habitats Sites from the landfill and the presence of dust mitigation measures at the Site, it is unlikely that dust will have a significant impact.

4.2.2.2 Litter

The Site will accept waste which has the potential to become windblown and produce litter; however, a number of litter control measures will be in place at the Site. These litter control measures are considered in detail in the Nuisance and Health Management Plan (ref. 21453458.636). Considering the distance of the Habitats Sites from the landfill it is unlikely that litter will have a significant impact.

4.2.3 Disturbance

4.2.3.1 Noise/Vibration

The Nene Washes and Orton Pit are at some distance from the landfill site and as such it is unlikely that noise and vibration will have a significant impact.

4.2.3.2 Visual and Human Presence

There will be no requirement for physical intrusion by staff of the operating company or any of its associated activities and will therefore not impact on the Habitats Site. Considering the distance of the Habitats Sites from the landfill it is unlikely that there will be a significant visual impact.

4.2.4 Predation

4.2.4.1 Gulls

Landfill sites accepting domestic/biodegradable or putrescible wastes are likely to attract gulls. Loafing gulls may cause disturbance by their very presence and may impact upon the breeding success of protected species. Bird control measures are considered in detail in the Nuisance and Health Management Plan (ref. 21453458.636). Considering the distance of the Nene Washes and Orton Pit from the Site, it is unlikely that there will be a significant impact.

4.2.4.2 Rodents:

Landfill sites accepting domestic/biodegradable or putrescible wastes are likely to attract rodents. Rodents may cause disturbance by their very presence and may impact upon the breeding success of protected species. Rodent control measures are considered in detail in the Nuisance and Health Management Plan (ref. 21453458.636). Considering the distance of the Nene Washes and Orton Pit from the Site, it is unlikely that there will be a significant impact.

4.2.5 Nutrient Enrichment

4.2.5.1 Nutrient Rich Wastes

The landfill is designed such that the restoration profile will shed surface water, which is intercepted and collected in perimeter ditches before being discharged. The receptors are monitored regularly and as long as the discharge meets the control limits set at this monitoring program it is unlikely that surface water discharges have the potential to cause significant impact. Surface water collected during operations in a cell containing waste will be treated as leachate.

4.2.5.2 Leachate

The Site is fully contained through engineered design and the landfill is not considered to pose a threat to the Habitats Sites through leachate escape. Consideration is also given to the distance of the Habitats Sites to the landfill.

4.2.6 Habitat Loss

4.2.6.1 Surface Water:

Due to the distance of the landfill from the Sites, physical damage caused by surface water discharges are not considered to present a significant impact.

4.2.6.2 Land Encroachment

There will be no access required to the Nene Washes or Orton Pit as a result of landfill operations, so there will be no significant impact.

4.2.6.3 Landfill Gas

The Environmental Permitting Regulations require landfill gas to be collected and utilised where possible at landfills receiving biodegradable waste. The installation will include engineered containment, gas abstraction and management systems and therefore landfill gas is not likely to have a significant effect on the Nene Washes. A gas risk assessment (ref. 21453458.635) has been carried out and this demonstrates that landfill gas emissions will not exceed recognised Environment Agency benchmarks beyond the boundary of the installation. Considering the distance of the Habitats Sites from the landfill it is also unlikely that the construction of boreholes associated with the collection and management of landfill gas will have a significant impact.

4.2.6.4 Explosive Wastes

The Site will not be accepting waste that is explosive. Therefore, there is no risk to the Habitats Sites of explosions that would lead to habitat loss.

4.2.7 Siltation

4.2.7.1 Suspended Solids

The landfill will accept waste types that may give rise to dust although the relevant delivery and waste handling procedures ensure that there will be no significant impact to the Habitats Sites. The distance from the Habitats Sites to the landfill Site and the additional dust suppression management systems further demonstrate that there is no requirement to consider the impact of dust further.

4.2.7.2 Mud

The landfilling and associated activities may give rise to increased mud, although the relevant Site operation procedures will ensure that this is managed. Considering this and the distance of the Habitats Sites from the landfill, it is unlikely that mud will have a significant impact.

5.0 CONCLUSION

It can be concluded from the information supplied, that the Eastern Extension will not adversely affect the integrity of the Nene Washes SPA, SAC, SSSI and Ramsar or Orton Pit SAC and SSSI, as long as management controls remain effective.

6.0 REFERENCES

1) Joint Nature Conservation Committee, Nene Washes SAC, https://sac.jncc.gov.uk/site/UK0030222.

2) Joint Nature Conservation Committee, Information Sheet on Ramsar Wetlands (UK11046), Nene Washes, https://jncc.gov.uk/jncc-assets/RIS/UK11046.pdf.

3) Natural England, Citation on Reasons for Designating the SSSI at Orton Pit, Microsoft Word - 2000482.doc (naturalengland.org.uk).

4) Joint Nature Conservation Committee, Natura 2000 - Standard Data Form for Special Protection Areas (SPA), Proposed Sites for Community Importance (pSCI), Sites of Community Importance (SCI) and Special Areas of Conservation (SPA) Orton Pit, UK0030053.pdf (jncc.gov.uk).

Signature Page

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APPENDIX HAB1

Risk Matrix

Name of European Site: Nene Washes SPA, Ramsar and SAC
Priority Status: High

		Risk	Toxic Contamination				Nutrient Enrichment				Habitat Loss				Siltation		Smothering			Disturbance			Predation/Disturbance		
Landfill associated Hazards			Toxic Leachate	Landfill Gas	Toxic Wastes	Contaminated Dusts	Nutrient rich leachate			Nutrient rich wastes	Monitoring boreholes etc	Landfill gas	Explosive wastes	Land encroachment	Suspended solids	Mud	Dust from wastes	Dust from periphery	Dust/particles from vehicles	Noise/Vibration	Human presence	Visual	Rodents	Gulls/Corvidores	Other birds attracted to site
			Escape to groundwater/Escape to surface water/Discharge point	Leak to atmosphere/Escape through fissure	Offsite spillage/Escape to unlined area	Carried on vehicles off site/Aerial transmission	Discharge to groundwater	Discharge to surface water	Collection and discharge to surface waters	Run off from site surface to surface water	Construction and maintenance	Escape to atmosphere/Escape to land/water outside site	Explosion causing distribution of products to atmosphere	Physical take-up of habitat or buffer zone	Discharge to surface waters	Run off from surfaces/Run off from roads	Airborne from waste discharge area	Vehicular disturbance	Vehicles outside boundary	Through atmosphere to outside of site	People in or around landfill	Removal or change of visual signs on landfill site	Live in surrounding area. Attracted to site by biodegradable wastes. Move into surrounding area	Live in surrounding area. Attracted to site by biodegradable wastes. Move into surrounding area	Live in surrounding area. Attracted to site by biodegradable wastes. Move into surrounding area
SAC/Ramsar species group																									
Ramsar feature only	2.2	Vascular plants, lower plants and invertebrates, wet habitats	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#						
	2.6	Non migratory fish and invertebrates of rivers	#		#	#									#	#									
SPA/Ramsar bird species groups																									
	3.4	birds of lowland wet grasslands	#		#	#	#	#	#	#	#			#			#	#	#	#	#	#	#	#	#
	3.6	Birds of lowland freshwaters and their margins	#		#	#	#	#	#	#				#	#	#	#	#	#	#	#	#	#	#	#

Name of European Site: Orton Pit, SAC

Priority Status: High

		Risk	Toxic Contamination				Nutrient Enrichment				Habitat Loss				Siltation		Smothering			Disturbance			Predation/Disturbance		
Landfill associated Hazards			Toxic Leachate	Landfill Gas	Toxic Wastes	Contaminated Dusts	Nutrient rich wastes	Nutrient rich leachate	Land encroachment	Explosive wastes	Monitoring boreholes etc	Landfill gas	Land encroachment	Explosive wastes	Suspended solids	Mud	Dust from wastes	Dust from periphery	Dust/particles from vehicles	Noise/Vibration	Human presence	Visual	Rodents	Gulls/Corvidores	Other birds attracted to site
			Escape to groundwater/Escape to surface water/Discharge point	Leak to atmosphere/Escape through fissure	Offsite spillage/Escape to unlined area	Carried on vehicles off site/Aerial transmission	Run off from site surface to surface water	Discharge to surface water	Collection and discharge to surface waters	Discharge to groundwater	Construction and maintenance	Escape to atmosphere/Escape to land/water outside site	Physical take-up of habitat or buffer zone	Explosion causing distribution of products to atmosphere	Discharge to surface waters	Run off from surfaces/Run off from roads	Airborne from waste discharge area	Vehicular disturbance	Vehicles outside boundary	Through atmosphere to outside of site	People in or around landfill	Removal or change of visual signs on landfill site	Live in surrounding area. Attracted to site by biodegradable wastes. Move into surrounding area	Live in surrounding area. Attracted to site by biodegradable wastes. Move into surrounding area	Live in surrounding area. Attracted to site by biodegradable wastes. Move into surrounding area
SAC/Ramsar species group																									
	2.2	Vascular plants, lower plants and invertebrates, wet habitats	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#						
	2.1	Amphibians	#		#	#									#	#									

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ANNEX 3
LEACHATE, GROUNDWATER AND SURFACE WATER MONITORING DATA (Electronic Files)

ANNEX 4
HRA MODELS (Electronic Files)

ANNEX 5
GRA MODELS (Electronic Files)

ANNEX 6
GAS MONITORING DATA (Electronic Files)

ANNEX 7
DUST MANAGEMENT PLAN

REPORT

Biffa Waste Services Ltd

Eye Landfill, Eastern Extension

Dust Management Plan

Submitted to:

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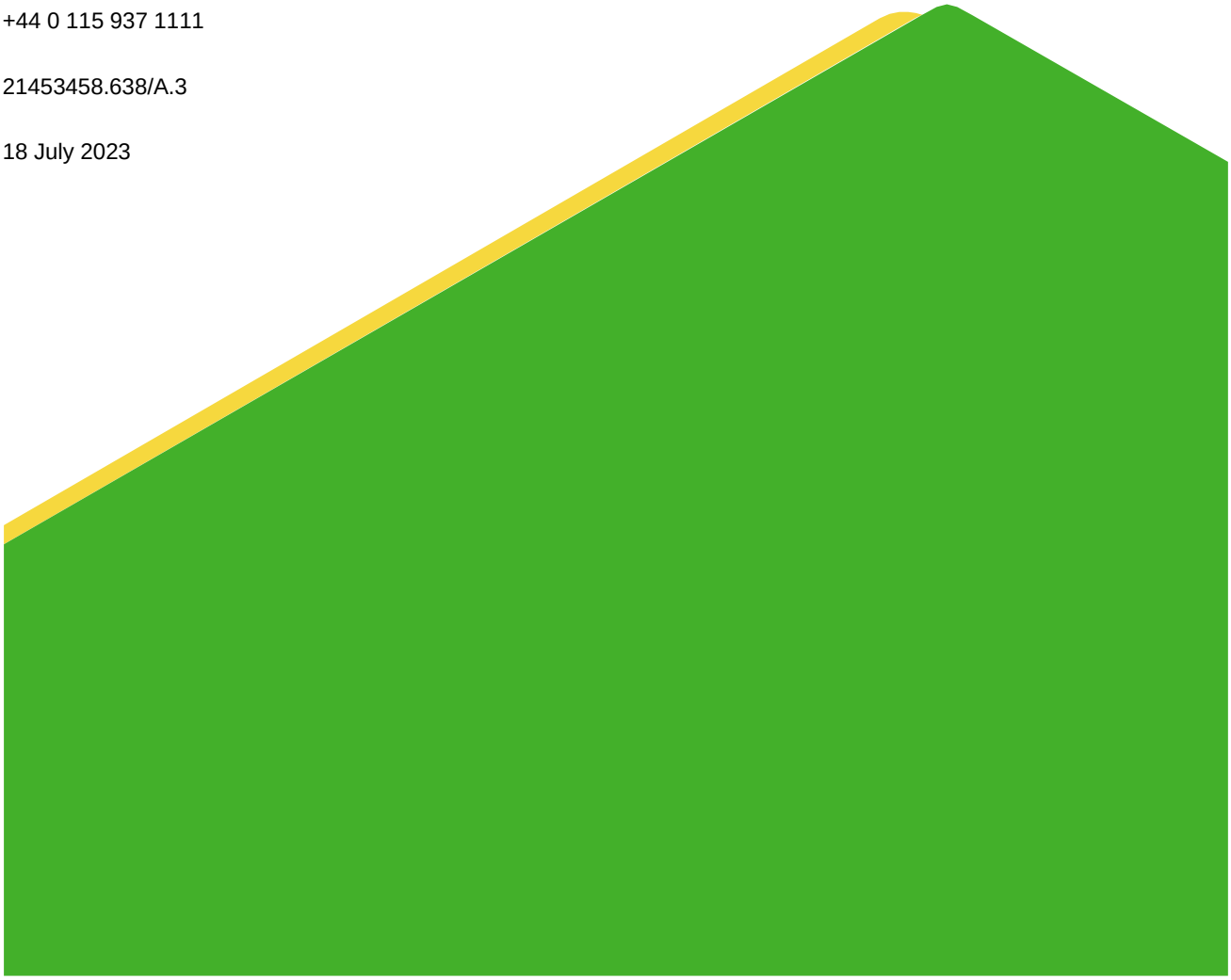
18 July 2023



Distribution List

Biffa Waste Services Ltd - 1 copy (pdf)

Golder, member of WSP in UK - 1 copy (pdf)

Peterborough City Council - 1 copy (pdf)

Table of Contents

1.0 INTRODUCTION

1.1 General

This Dust Management Plan (DMP) has been prepared by Golder, member of WSP in UK (Golder), on behalf of Biffa Waste Services Ltd (Biffa).

The Guidance on *Control and monitor emissions for your environmental permit* requires the provision of a DMP if a bespoke permit covers disposing of household, commercial or industrial waste in a landfill and there are sensitive receptors such as residential housing within 500 m of the installation which applies to the Site (see **Section 1.2**).

This DMP outlines the approach to the management and minimisation of potential dust emissions and assesses dust levels, sources and pathways during operational activities comprising the excavation and movement of top soil, subsoil, bulk/engineered clay fill, and inert waste materials at the site.

The DMP serves as a consistent point of reference for environmental considerations throughout the operational period for Biffa. Potential dust impacts from the landfilling of non-hazardous waste are also managed in accordance with the Environmental Permit and this DMP should be implemented in conjunction with the Nuisance and Health Management Plan. The other potential dust sources were assessed as of low significance.

This DMP is a 'live' document, which shall be updated accordingly as the project is progressed. Consequently, the DMP should be reviewed after 12 months operation at the site and revised as required. The requirements of this DMP may be transferred to a site-specific dust management plan developed in accordance with Biffa's Environmental Management System.

1.2 Site Setting

The Eastern Extension is approximately 1.1 km southeast of the village of Eye and 2.3 km east of Peterborough. It is in a predominantly rural area, surrounded by agricultural fields, other mineral extraction workings, and isolated dwellings. The A47 road is 1,150 m to the north, Eyebury Road is 1,400 m to the west, Oxney Road is 400 m to the southwest (of the Site Reception) and Willow Hall Lane passes down the eastern boundary.

Key residential receptors (measured from the planning application boundary) are located as follows:

- America Farm Cottage – 400 m to S;
- America Farm Commercial Estate – 400 m to SSW;
- Owls Nest and Walnut Cottage – 650 m to SW;
- Willow Holt – 40 m to E;
- Brigg's Farm Cottage – 40 m to SE;
- Willow Hall – 90 m to the E;
- Willow Hall Farm Cottage – 95 m to E;
- Bar Pasture Farm – 95 m to NE
- Tanholt Farm – 240 m to N;
- Tanholt Cottage – 310 m to NNW;
- Eyebury Cottages and new residential property – 550 m to NW;
- Eyebury Farm – 630 m to WNW; and
- Oxney Grange - 270 m to WSW.

Pode Hole Quarry is a sand and gravel quarry (operated by Aggregate Industries) to the north which is (at its closest point) adjacent to the Site but also extends northeast to the A47 road. Different parts of the quarry are connected via an internal road that extends under Willow Hall Lane.

Pasture House Farm Quarry is another sand and gravel quarry (operated by Land Logical Group) about 1,000 m to the northeast adjacent to the A47 road and accessed from Willow Hall Lane.

The Cat's Water Drain flows north to south and forms the boundary between Eye Landfill and Willow Hall Farm Quarry and Inert Landfill. It a natural watercourse which has been canalised adjacent and downstream of the sites. There is an agricultural reservoir and other surface water features 500 m to the southeast.

Key statutory receptors are as follows:

- Eye Gravel Pit (SSSI) – 2,130 m to N;
- Eye Green (LNR) – 1,710 m to N;
- Dogsthorpe Star Pit (SSSI) – 1,980 m to NW;
- Dogsthorpe Star Pit (LNR) – 1,980 m to NW;
- Nene Washes (SPA) – 2,600 m to S and SE;
- Nene Washes (Ramsar) - 2,600 m to S and SE; and
- Nene Washes (SAC) – 3,200 m to SSE.

The nearest non-statutory designated nature conservation sites including the following:

- Eye Green Local Nature Reserve (LNR) - 1,710 m to the N;
- Dogsthorpe Star Pit LNR - 1,980 m to the NW; and
- Eyebury Road Pits County Wildlife Site (CWS) – which is located within Eye Landfill and linked to Biffa's ongoing restoration and ecological management including the Wildlife Corridor, Clear Water Lagoon and silt lagoons.

Cultural heritage features within 1.0 km of the site boundary include:

- Scheduled Monument, Iron Age and Roman settlement at Bar Pastures – 0 m to North;
- Scheduled Monument, Bowl barrow 780 m east of Bar Pasture Farm – 780 m to East;
- Scheduled Monument, Two bowl barrows 940 m south east of Bar Pasture Farm – 1,000 m to East;
- 2 Nr Grade II* Listed buildings at Oxney House – 500 m to SW;
- 4 Nr Grade II Listed buildings at Eyebury Farm – 610 m to WNW;
- 1 Nr Grade II Listed building 69 Eyebury Road – 840 m to NW;
- Grade II Listed building at Willow Hall – 90 m to East; and
- Grade II Listed building at Prior's Farmhouse – 95 m to SE.

Bar Pastures Scheduled Ancient Monument (SAM) is located immediately north of Willow Hall Farm Quarry around Bar Pastures Farm. It is part of a settlement of Iron Age and Roman date, with a drove and associated ditches, rectilinear yards and other enclosures, some of which contain the remains of buildings. It is located on a gravel terrace about 1 km west of what was, formerly, the edge of the peat fen. Archaeological features are visible as low earthworks and as buried features within the underlying gravel below the depth of ploughing.

A second SAM comprises two bowl barrows, approximately 800 m east of the site situated on gravel islands along the prehistoric fen edge. These comprise earth mounds with encircling ditches associated with burials. The ditches have been infilled and the deeper remains are protected by Fen deposits.

Bridleway/Footpath Eye 3 runs in an east to west direction across Eye Landfill and across the Application Site. It forms part of the Peterborough Green Wheel - a recreational route around the city with 'spokes' out from the centre.

1.3 Site Operations

Biffa would like to extend its existing landfill operations at Eye Landfill by developing parts of Willow Hall Farm Quarry and Inert Landfill as a non-hazardous landfill (to be called the Eastern Extension) for continuous and uninterrupted landfilling operations after the current Southern Extension at Eye Landfill is completed.

Willow Hall Farm Quarry and Inert Landfill is located immediately to the east of Eye Landfill and is operated by PJ Thory Ltd (Thory). It is an active sand and gravel quarry which is being restored to a low level, flat lying restoration through the progressive importation of inert waste.

Re-development as a non-hazardous waste landfill requires this application to provide a new scheme for the excavation and movement of underlying clay materials, excavation and relocation of inert waste already deposited, and changes to the approved phasing and restoration contours. The new scheme will reduce the overall landfill footprint, bring forward and enhance some areas of restoration including the Green Wheel path, and provide an extension to Biffa's existing Wildlife Corridor.

The proposed development is summarised as follows:

- Ongoing mineral extraction operations at Willow Hall Farm Quarry will continue and be completed by Thory to existing timescales; however, the ongoing restoration by the placement of inert waste would cease subject to approval of Biffa's planning and Environmental Permit variation applications.
- With permissions in place, Biffa proposes to commence preparation works and landfilling in early 2024. Preparation works will include the new Site Reception and haul road. It will also include backfilling the southeast corner of Willow Hall Farm Quarry closest to residential properties with clay and completing restoration in advance of landfilling.
- Landfilling would commence in the southwestern corner and move anticlockwise and then progressively northwards. The site would receive some 3.23 Mm^3 of waste (pre-settlement, pre-restoration) over the period from 2024 to 2038 followed by completion of restoration.
- Inert waste already placed by Thory at the north end of its Inert Landfill would be excavated by Biffa and re-deposited in a dedicated inert landfill area between the transmission line and the Cat's Water Drain. Inert waste would be placed to a low-level and restored to just below surrounding ground level to provide an extension to Biffa's existing Wildlife Corridor.
- Areas to the south of the Green Wheel path would not be filled with waste. Instead, Biffa would excavate Oxford Clay from the base of the quarry and place it, together with sub-soil and top soil, to a low level restoration and return it to agriculture as soon as possible after completion of mineral extraction operations by Thory.

2.0 2.0 LEGAL COMPLIANCE

This DMP is based on measures to ensure legal compliance and to establish good management practice and includes compliance with the following:

- Air Quality Standards Regulations 2010 (as amended); and
- Environmental Protection Act 1990.

Biffa will comply with the DMP in order to meet relevant air quality legislation and best practice with regard to loss of amenity and nuisance due to the impact of dust emissions. In the UK, there is no official Air Quality Standard (AQS) level for the total dust deposition rate that would be considered to create a nuisance. An 'unofficial' nuisance dust deposition rate widely accepted is an annual mean of 200 $mg/m^2/day$ for the total dust deposited.

3.0 RECORD KEEPING

The Site Manager or nominated deputy will be responsible for dust management and for maintaining a register of monitoring which will be made available for auditing and inspection.

An up-to-date copy of the DMP will be maintained at the Site Reception office.

Records of formal visual site inspections (undertaken daily, and more frequently during periods of high winds, by the Site Manager or nominated deputy) and any complaints will be maintained. The following points will be noted with regards to visual inspections and response to complaints:

- Any elevated dust levels, meteorological conditions and any actions undertaken;
- Any increase in the frequency of site inspections and dust issues on-site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions;
- Any exceptional incidents that cause dust emissions, either on-or off-site, and the action taken to resolve the situation; and
- Full details of any dust complaints including complainant name, location and contact details, identification of cause(s), and any appropriate measures taken to reduce emissions in a timely manner.

4.0 AUDITING AND REVIEW

Audits of the DMP will be undertaken by Biffa. The audit will check that all necessary documentation is held. Visual monitoring and complaints records will be audited to ensure that full records are kept, and all necessary information is recorded. An audit schedule will be arranged but will include an annual audit, as a minimum requirement.

To ensure the DMP remains 'fit for purpose' for the duration of the project, it will be regularly reviewed and updated to facilitate efficient and effective delivery of the project legal and environmental commitments. A log will be kept including a summary of the update and a record of the review.

Reviews of the DMP will be undertaken and recorded by Biffa with the findings of the reviews reported to the Site Manager and other staff members as required.

The requirements of this DMP may be transferred to a site-specific dust management plan developed in accordance with Biffa's Environmental Management System.

5.0 POTENTIAL FOR EMISSIONS

Dust and emissions arising from excavation, soil movement and restoration activities can cause health risks to receptors and nuisance and annoyance to local residents and businesses. The level of dust emitted will be dependent on the activity undertaken, the location of the activity on Site, and the nature of the dust. The generation and dispersion of the dust will be influenced by other meteorological factors such as wind speed and direction and/or, periods of dry weather. Traffic movements have potential to generate dust emissions as vehicles move within the site.

In general terms, adverse dust impacts from sand and gravel quarry-type activities are uncommon beyond 250 m (and beyond 400 m from hard rock quarries) measured from the nearest dust generating activities. It is commonly accepted that the greatest impacts will be within 100 m of a source, and this can include both large (>30 µm) and small dust particles[1]. From the nature of the proposed operations, adverse impacts due to nuisance dust are therefore most likely to be experienced within this distance.

The principal potential sources of airborne dust associated with the proposed development include:

- Soils (top soil and subsoil) stripping, stockpiling and replacement;
- Excavation of inert waste;
- Loading and tipping;
- Inert fill and engineered fill operations;
- Bulk filling (with clay materials) of areas to the south of the Green Wheel path;
- Landscaping works with the extension to the Wildlife Corridor;
- Haulage of material around the site; and
- Wind blow across stripped areas, stockpiles and other loose bare surfaces.

Potential dust impacts from the landfilling of non-hazardous waste are managed in accordance with a Nuisance and Health Management Plan regulated by the Environment Agency in accordance with the Environmental Permit. The other potential dust sources were assessed as of low significance.

6.0 MITIGATION MEASURES

6.1 General

Excavation, soil movement and restoration activities are transient operations where a number of processes take place over relatively large areas but for relatively short periods. Dust emissions can occur at a number of stages, but these can be significantly controlled by best practice such as:

- Appropriate design and phasing of the works including layout and working procedures;
- Using and properly maintaining carefully selected equipment;
- Understanding the potential for dust emissions to occur;
- Training and supervising site staff in dust control; and
- Applying appropriate mitigation measures.

[1] Institute of Air Quality Management (2016). Guidance on the Assessment of Mineral Dust Impacts for Planning (v1.1)

A range of dust control and mitigation measures are set out. These include dust containment, where dust emissions are minimised through use of appropriate equipment and systems; dust suppression, where dust emissions are controlled by the use of water sprays etc. and dust management, where the potential for dust emissions to occur are reduced through effective control of site operations.

Standard good practices as detailed in PGN 3/08(12)[2] are relevant to the proposed development. The essence of the guidance is the control of emissions through good site management. The points below identify mandatory mitigation measures and recommended best practice:

6.2 Weather

As an over-riding requirement, if during dry windy weather any operations are identified as causing or likely to cause visible emissions across the site boundaries, or if abnormal emissions are observed within the site, the Site Manager or nominated deputy will immediately modify, reduce or suspend those operations until either effective remedial actions can be taken or the weather conditions giving rise to the emissions have moderated.

6.3 Soils Stripping, Removal from Stockpiles/Bunds and Reinstatement

Soils handling is generally a short-lived seasonal activity and there usually is flexibility as to its timing.

Topsoil may give rise to airborne dust during stripping, removal from stockpiles/bunds and reinstatement operations, particularly as they are likely to be handled in a dry friable condition.

Subsoils/overburden tend to be damper and more cohesive than the top soils and are less likely to be a significant source of dust. The significance of the potential impacts will be reduced by the short duration of soils handling in any one season.

Unacceptable dust emissions can be controlled by minimising working of soil in very dry, windy conditions, by reducing drop heights at material transfer points and controlling vehicle speeds.

Soils handling shall be suspended when the wind conditions would be likely to result in visible dust being carried towards off-site receptors. Soil storage mounds shall be seeded as soon as practicable for stabilisation and to reduce the risk of wind-blow from exposed surfaces.

6.4 Inert Waste Excavation

Inert waste, already deposited by Thory at the north end of the Site, will be extracted ‘as-dug’ and a dry working method will be employed to maintain the quarry in a dry condition. There will be a requirement for excavation dewatering and discharge of water from the quarry.

Additional control measures (such as wetting down with water sprays or trailed bowser, or cessation of activities in unsuitable weather conditions) will be employed if there is a risk of visible dust from the extraction faces being blown over the site boundary towards off-site receptors.

6.5 Loading and Tipping

Loading and tipping operations within the working area are unlikely to result in visible dust emissions. However, drop heights shall be controlled during all loading and tipping operations, particularly of soils near sensitive boundaries to minimise the entrainment of dust into the atmosphere.

[2] Process Guidance Note (PGN) 3/08 (12) *Statutory guidance for quarry processes* (Defra, 2012)

6.6 Inert Fill Operations

The proposed inert fill operations (Cells 19 and 20) will deal principally with cohesive materials; consequently, the filling operations are unlikely to result in any significant dust emissions.

6.7 Site Haulage

Haulage of soil materials across the Site is typically considered the greatest source dust. The impact is increased over longer distances when speeds tend to be greater, and more effort is required to maintain a smooth damp running surface.

On site vehicle movements will be used to transport material between areas of excavation and restoration which has the potential to generate dust and some of which will take place adjacent to the site boundaries. Where practicable, all site traffic will keep to designated haul routes to reduce the creation and subsequent entrainment of fine material into the atmosphere.

Standard good practices for site haulage include:

- Avoiding abrupt changes in horizontal and vertical alignment;
- Regular clearing, grading and maintenance of haul routes;
- Keeping to the designated site speed limit;
- Ensuring that heavy plant is fitted with upswept exhausts and radiator fan shields;
- Evenly loading vehicles to avoid spillages; and
- Regular application of water, whether by bowser or by fixed sprays, in dry conditions.

Haul routes across the surface of the site shall be located where possible in positions which are remote from sensitive site boundaries.

6.8 Road Transport

Vehicular access to Eye Landfill is via the existing 700 m long entrance road from Eyebury Road to the Site Reception. The entrance road connects to Eyebury Road with a T-junction arrangement. The entrance road is surfaced in concrete with signage and traffic calming measures.

Nearly all vehicles arriving at the Site will carry non-hazardous waste managed in accordance with a Nuisance and Health Management Plan regulated by the Environmental Permit.

6.9 Wind Blow across Bare Ground and Stockpiles

During dry conditions, wind-blown dust emissions are potentially significant and might be carried for a considerable distance when strong winds blow across large open areas of loose or bare ground. During soil stripping, wind-blown dust might be raised from the freshly exposed surface.

Strong winds may blow directly at the inert waste extraction face as prevailing winds blow from the southwest but, due to its inherent dampness, dust is only likely to be raised during prolonged dry weather and is unlikely to be in significant quantities.

The effects of wind blow across stripped surfaces, unpaved vehicle circulation areas, stockpiles and areas of bare ground will be managed by ensuring that:

- The extent of such areas is kept to a minimum;
- Loose materials are removed or treated, and
- Such areas are wetted down as necessary.

During dry conditions, unpaved circulation areas and the surfaces of stockpiles in the open will be watered using fixed sprays or a water bowser.

6.10 Other Matters

General matters and the management of the site can affect the likelihood of significant dust emissions. These include:

- The use of clean water for dust suppression to avoid recirculating fine material;
- High standards of housekeeping to minimise track-out and wind-blown dust; and
- Effective staff training in respect of the causes and prevention of dust,

7.0 MONITORING

7.1 Dust Monitoring

Due to the location of the Site with respect to off-Site receptors, is it proposed that dust monitoring is carried out during excavation and filling activities at the Site at the following locations:

- EMP5 – South-western corner of the Site;
- EMP6 – South-eastern corner of the Site;
- EMP7 – Eastern boundary of the Site;
- EMP8 – Eastern boundary of the Site; and
- EMP9 – North-eastern corner of the Site.

These monitoring locations are shown on **Drawing ESID13 – Monitoring and Extraction Plan**.

A visual assessment of deposited and airborne dust shall be made by the Site Manager or designated member of staff at a minimum frequency of once per week at the above locations. Assessment may also be made by a suitably qualified member of staff during the monitoring round of the leachate and gas monitoring points.

In addition, sampling of deposited dust will be undertaken on a quarterly basis, at the same locations over a 24-hour period. Monitoring will be carried out in accordance with technical guidance note M17 'Monitoring Particulate Matter in Ambient Air around Waste Facilities'. In the event that the results exceed a limit of 200 mg/m^2/day, investigation will be made, and further control measures implemented if required.

7.2 PM_{10} Monitoring

The potential impact of PM_{10} can be determined by comparing the total predicted environmental concentration (PEC) of particulate matter estimated to arise from the proposed operations, with the Air Quality Standard annual mean objective of 40 µg/m^3. The PEC can be determined by combining the existing background ambient concentration (AC) and the expected process contribution (PC). The background concentration for PM_{10} at the nearest National Grid Reference (NGR) square to the Site (524500, 301500) as obtained from Defra's website (https://uk-air.defra.gov.uk/data/laqm-background-home) for 2022 is 15.6 µg/m^3.

The IAQM minerals guidance (2016) states "If the long-term background PM10 concentration is less than 17 µg/m^3 there is little risk that the Process Contribution (PC) would lead to an exceedance of the annual-mean objective and such a finding can be put forward qualitatively, without the need for further consideration, in most cases." Based on this IAQM minerals guidance (2016) and given that the predicted background concentration is less than 17 µg/m^3, it is concluded that there is little risk that the Process Contribution (PC) would lead to an exceedance of the annual mean objective, and it therefore is not considered that routine monitoring of PM_{10} is required.

8.0 MAINTENANCE OF PLANT AND EQUIPMENT

Effective control of airborne dust emissions requires the maintenance and proper operation of all plant and equipment, including fixed and mobile dust extraction and suppression equipment. A programme of planned maintenance will be carried out on all plant and equipment in accordance with the manufacturers' recommendations to ensure that it operates at optimum efficiency.

Stocks of essential spares and consumable items will be held at the site or kept readily available for use at short notice.

Any malfunction or breakdown leading to abnormal emissions will be dealt with promptly and operations will be modified or suspended until normal working can be restored. All such malfunctions, and the actions taken, will be recorded in the site logbook.

9.0 SITE MANAGEMENT

The Site Manager shall exercise, either personally or by delegation to suitably trained and responsible staff, day-to-day control of the site. The Site Manager will be responsible for the satisfactory working of the whole site and for ensuring full compliance with the Dust Management Plan.

Staff at all levels shall receive the necessary training and instruction in their duties relating to all operations and the potential sources of dust emissions. Particular emphasis will be given to plant and equipment malfunctions and abnormal conditions.

The Site Manager shall ensure that customers and suppliers are aware of the need to comply with the provisions of this plan so far as they are relevant to their activities on site.

Any member of staff who fails to comply with the provisions of the dust management and monitoring plan shall be re-trained as necessary.

10.0 EMERGENCY RESPONSE

An emergency response procedure, to be followed in the event of a major dust emission, shall be kept at the site office. For the purposes of emergency response, major dust emissions will be defined as including:

- Visible dust crossing the site boundaries;
- Persistent fugitive dust from transport or plant movements; and/or
- Persistent wind-blown dust.

The contact details of key personnel will be listed in the procedure.

11.0 COMPLAINTS

All dust complaints shall be recorded and reported to the Site Manager or nominated deputy, who shall investigate the circumstances and ensure that the necessary corrective measures are taken. A prompt response will be made to the complainant and a record, including copies of all correspondence and telephone file notes, will be made in the complaints register.

The Environment Agency shall be notified of any dust complaint received by the Site or, conversely, the Environment Agency may notify Biffa of any dust complaint which it may receive. Biffa shall liaise with the Environment Agency in considering the findings of any subsequent investigation and any corrective measures which may have been taken.

In the event of any substantiated complaint, the effectiveness of the Dust Management Plan shall be reviewed.

Signature Page

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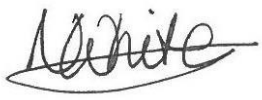

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