



## **Environmental Risk Assessment**

### Meridian Water Waste Recovery Permit Application

March 2024

**Waterman Infrastructure & Environment Ltd**

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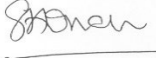


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**Quality Assurance – Approval Status**

This document has been prepared and checked in accordance with Waterman Group’s IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

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<b>Issue</b>	<b>Date</b>	<b>Prepared by</b>	<b>Checked by</b>	<b>Approved by</b>
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**Comments**

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## Disclaimer

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We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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## Glossary

- The permitted site – this refers to the proposed permitted area as defined in Plan D-ESSD1C.
- Meridian Water Strategic Infrastructure Works (SIW) – the enabling works required in advance of the construction of Phase 2 of the Meridian Water Development. The works will occur across two adjacent areas termed Phase 1 SIW and Phase 2 SIW – collectively ‘the SIW site’ for the purposes of the EP application documents.
- Development Zones (DZ) – specific areas in Phase 2 Meridian Water Development Referred to in planning documents. As shown on Plan D-ESSD1D.
- Edmonton Marshes flood relief storage basins – to be excavated as part of the SIW at the eastern end of the site as part of the SIW in DZLV1. The waste the subject of this EP application will arise from excavation into the former Lee Valley Trading Estate landfill to create part of the flood relief storage basins.

### Glossary

## 1. Introduction

### 1.1 The Brief

Waterman Infrastructure & Environment Limited (“Waterman”) is instructed by Taylor Woodrow Construction, the civil engineering arm of Vinci Construction UK Limited (“the applicant” and “the operator”) to prepare an application for an Environmental Permit (EP). The EP application is to authorise the permanent deposit of waste on land as a recovery activity. The waste recovery is for previously deposited (waste) soil and stones to be used in the Strategic Infrastructure Works (SIW) at Meridian Water, Enfield, London.

The Meridian Water scheme is an ambitious 25 year £6bn regeneration project led by the London Borough of Enfield (LBE). This Environmental Setting and Site Design report is required to support the waste recovery EP application.

The permitted site is centred at approximate National Grid Reference 535601 191831.

### 1.2 Context

The Meridian Water scheme is a regeneration project led by the London Borough of Enfield (LBE). The permitted site is one small part of the wider Meridian Water scheme. The permitted site is centred at approximate National Grid Reference 535601 191831.

Overall, the Meridian Water scheme will deliver:

- 10,000 new homes;
- 6,000 high quality jobs, a further 10,000 construction jobs;
- new train station;
- schools, healthcare provisions and other local services; and
- naturalisation of the Pymmes Brook and improved waterside public green spaces.

The first phase of the scheme (“Meridian One”) was granted full planning permission and is underway. The new Meridian Water station opened in 2019, the first new school in 2017 and the first 950 homes are scheduled for completion in 2026 at Willoughby Lane.

LBE is now bringing forward Phase 2 of the Meridian Water scheme. Phase 2 is a residential led mixed use scheme including up to 2,300 new homes, various non- residential uses including workspace and a new school. To enable Phase 2, the SIW are required to prepare the development area including the implementation of flood mitigation measures.

Earthworks material will be excavated from various locations across the SIW site where the level needs to be lowered to provide flood storage basins or to create a suitable development platform level. Some material will be suitable for reuse in earthworks without treatment, other material will require remediation (regulated by separate mobile treatment plant permit). Material confirmed to be suitable for reuse will be moved to various locations in the SIW site where levels need to be raised. The cut and fill locations are shown on plan D-ESSD4.

Most of the material to be excavated and / or treated will be reused in accordance with the Definition of Waste: Development Industry Code of Practice (DoWCoP). However, some excavation will be necessary in an area that is considered by the Environment Agency (EA) to be an historic landfill site (Lee Valley Trading Estate Landfill located at the eastern end of the SIW site and shown on plan D-ESSD2E).



The waste recovery green line boundary is shown on plan D-ESSD1C, with the SIW site boundary on plan D-ESSD1A. The actual locations where waste will be deposited will depend on the detailed sequencing of the works (so dependent on factors including progress of remediation works) and the time taken by the EA to determine the EP application. The balance of fill placed in the waste recovery areas will be placed in accordance with the DoWCoP.

Treatment of waste will be limited to sorting at the point of excavation to separately remove any gross contamination or large lumps of hard materials. Waste suitable for recovery will be stored in stockpiles, until required for use in earthworks in the permitted site. Waste may also be treated with lime or cement for moisture control and / or creation of capping material. Both applications will be for geotechnical improvement so should not require waste regulatory controls. However, should the EA disagree, the treatment will be carried out under mobile treatment plant permit and the relevant List of Waste codes included for in the waste recovery EP application.

### 1.3 Report Structure and Scope

The EP application requires an Environmental Risk Assessment (ERA). This ERA has been developed using relevant EA guidance<sup>1</sup>, and Waterman's standard approach to conducting an ERA for an EP application.

A Dust and Emissions Management Plan has also been submitted with the EP application. The dust control section of this ERA is a summary, for detailed dust prevention and mitigation measures refer to the DEMP.

#### Reference documents

Technical information prepared for the Meridian Water Development Area has been utilised where appropriate. Including but not limited to that prepared for:

- the planning applications for the scheme;
- documents required to fulfil planning conditions (e.g. Construction Environmental Management Plan (CEMP));
- data and analysis from ground investigation;
- waste classification analysis of samples collected from the former landfill area;
- specification for materials suitable for reuse in the earthworks; and
- detailed design (highways, drainage, landscaping).

Particularly:

- Taylor Woodrow – CEMP SIW-TWC-XX-XX-PL-W-000002;
- Taylor Woodrow – DEMP SIW-TWC-XX-XX-PL-W-000040; and
- Waterman – Conceptual Site Model, Environmental Setting and Site Design Report (ESSD) presented as part of the EP application.

Risks to controlled waters from the use of waste are considered in the Hydrogeological Risk Assessment (HRA) and risks to human health and the environment from ground gases are covered in detail within the Landfill Gas risk assessment (LGRA), both of which may be found elsewhere in the EP application bundle. The ERA focusses on localised emissions with the potential to cause nuisance / amenity and health impacts to the various human receptors nearby (e.g. residents, school pupils, workers, visitors), as well as to ecological and arboricultural receptors immediately surrounding the site. This ERA also considers accidents with the potential to cause pollution including of controlled waters.

<sup>1</sup> [Risk assessments for your environmental permit - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit) (accessed May 2022)

Taylor Woodrow's general and environmental management policies and procedures are in place for the Meridian Water SIW and will be applied as appropriate to the permitted activities. Taylor Woodrow documents referred to are included elsewhere in the application bundle.

Where EA templates have been used to structure the report, any sections that are not applicable to the activity have been included for completeness, with an explanation of why they are not relevant.

Plans and drawings referred to in this report are to be found in the "ESSD drawings and information bundle" submitted as part of the EP application.

#### **1.4 Limitations and Constraints**

Waterman has endeavoured to assess all information provided to them during the preparation of this document. But makes no guarantees or warranties as to the accuracy or completeness of the information.

The conclusions resulting from this report are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

## 2. Site Location and Setting

### 2.1 Location and Surrounds

The location of the permitted site can be seen on the site location plan (D-ESSD1C), submitted with the EP application.

The local authority for the site is LBE.

The entirety of LBE is in an Air Quality Management Area (AQMA) for Particulate Matter (PM<sub>10</sub>) and Nitrogen dioxide (NO<sub>2</sub>)<sup>2</sup>.

The permitted site sits within what is referred to as the SIW. The area where the waste is being excavated from lies in the northeast of the SIW. The SIW is secured by perimeter hoardings which are shown on plan D-ESSD6A included in the ESSD drawings and information bundle. The boundary of the SIW can be seen on plan D-ESSD1A.

Three watercourses flow north to south through the SIW – Pymmes brook, Salmon Brook and the River Lee Navigation. The watercourses are maintained at water levels approximately 0.5m below surrounding ground levels.

The land uses and receptors immediately surrounding the boundaries of the SIW in each direction are:

#### North

There are several commercial land uses including a Wickes, Ravenside retail park and Troubadour Meridian studios theatre company.

The A406 North Circular runs along the northern boundary of the SIW, and just beyond it lies an energy from waste recovery facility.

#### East

On the eastern boundary is the River Lea Diversion Channel.

Land uses to the east of the site include an industrial estate that contains a former waste transfer station, commercial sites such as Safestore Self Storage and Costco. Further east, across the A406, is a residential land use area.

#### South

The industrial estate off Harbet Road extends to the south and southeast.

Sensitive receptors such as the Banbury Reservoir lies to the southeast, and Tottenham Marshes are directly south of the SIW.

In the southwest is another industrial estate that can be accessed from Leaside Road.

#### West

The western area contains large commercial use buildings, such as Tesco.

Beyond the A1055 Angel Edmonton Road (Meridian Way) is the Meridian Water train station, the former Kimberly Road Gasholder site, a residential area and Meridian Angel Primary School.

<sup>2</sup> [AQMA Details - Defra, UK](#) (accessed May 2022).

## 2.2 Site Layout and Infrastructure

The permitted site is within the Phase 2 Meridian Water SIW. Access to the SIW will be regulated by security staff who will be present at all times. Once within the SIW the permitted area is open and readily accessible by internal haul routes.

The SIW site has these features relevant to the ERA:

- access to the SIW will be through several entrances (a plan showing the site access points is provided in the ESSD drawings and information bundle submitted in support of the EP application (D-ESSD6A)) ; and
- entrance to the SIW will be controlled by security staff at all times.

The existing fence lines at the SIW site consists of a mixture of fence types and include mesh, solid and chain-link fencing. The fences will, as far as possible, be retained and repaired (if required). Where the site needs to be secured new fence lines will be erected, which will be either solid hoardings, mesh fences or moveable barriers depending on location and construction constraints.

Fence lines will also be maintained or installed within zones as required to maintain segregation between members of the public and construction activities e.g. along Harbet Road and Towpath Road. The permitted site will be open to the wider SIW site.

Hoarding detail is shown on plan D-ESSD6A in the ESSD drawings and information bundle. More information on the hoarding present at the SIW site can also be found in the Construction & Logistics Plan<sup>3</sup> included in the Taylor Woodrow document bundle.

The permitted site will receive waste arising from elsewhere in the SIW – no waste will be imported from outside the SIW.

## 2.3 Other Potential Emitters in the Local Area

The location of the permitted site can be seen on the site location plan in the ESSD drawings and information bundle, submitted with the EP application.

Other potential emitters of emissions such as dust and particulates or noise in the vicinity of the permitted site may evolve during the course of construction of the SIW. Currently these include:

### Taylor Woodrow – SIW

A range of demolition, remediation, earthworks and construction activities will be taking place in the SIW during the life of the EP. These activities will inevitably provide emission sources for noise and dust.

### Meridian Water London

There are a number commercial and industrial premises near the development including Tesco supermarket, Hastings Wood Trading Estate, Ravenside retail park and Edmonton incinerator. These businesses will contribute to emissions (e.g. noise, particulate emissions from vehicles) in the area.

### Meridian Water – Phase 1

Commenced in August 2021, Phase 1 of the Meridian Water Scheme has begun construction. Aiming to deliver over 700 residential units, this active construction site it will generate noise, vehicle emissions and airborne particulate matter (PM<sub>10</sub>).

<sup>3</sup> Reference: SIW-TWC-XX-XX-PL-W-000022, Revision 4, dated March 2023

#### Roads

A406 that borders the northern part of the SIW and minor roads in the area will contribute in terms of noise, and vehicle emissions and airborne particulate matter (PM<sub>10</sub>).

#### Railway

The mainline electrified railway to the Meridian Water station is located to the west of the SIW and will contribute in terms of noise.

### 3. Sensitive Receptors

The ESSD identifies sensitive receptors to consider in the vicinity of the SIW, which include:

- receptors sensitive to air quality and amenity impacts (noise) (including residential properties, schools, community centres, health centres);
- ecological receptors within e.g. 50m of the site; and
- existing local conditions e.g. ambient air quality (borough-wide) and baseline noise levels.

Human populations close to the site include the following:

- residential properties – Sinclair Road, Westward Road, Maple Avenue;
- residential properties – Willoughby Lane, Kimberley Road;
- Meridian Angel Primary School;
- West Lea School Meridian Campus; and
- Murrayfield Care Home.

Commercial use sensitive receptors:

- Tesco supermarket and accompanying petrol station.

Special consideration should be given to the commercial use receptor given its proximity to the SIW and the large number of customers that will be present during operational hours. As stated in the CEMP, the noise climate at the majority of the sensitive receptors is dominated by transportation noise sources, namely road and rail. Baseline noise and dust monitoring has been undertaken at representative locations in advance of the Phase 2 Meridian Water SIW to confirm the existing conditions.

There are also commercial receptors near the stretches of public highway along which vehicles including those carrying waste from the excavation area to the deposit areas will travel.

Amenity and environmental features as well as human receptors have been identified including:

- Pymmes Brook;
- Salmon Brook;
- River Lee Navigation;
- River Lea Diversion Channel;
- Banbury Reservoir;
- Wild Marsh East and Wild Marsh West Hiking areas;
- Tottenham Marshes and Tottenham Marshes East;
- deciduous woodland; and
- Frederik Knight Sports Ground.

Surface waters – those listed above are assumed to be protected by the measures in place in the CEMP and this ERA which limit any impact on human and other environmental receptors closer to the site. The surface waters listed above are considered only in the risk assessment for fugitive emissions from accidents and incidents in the ERA.

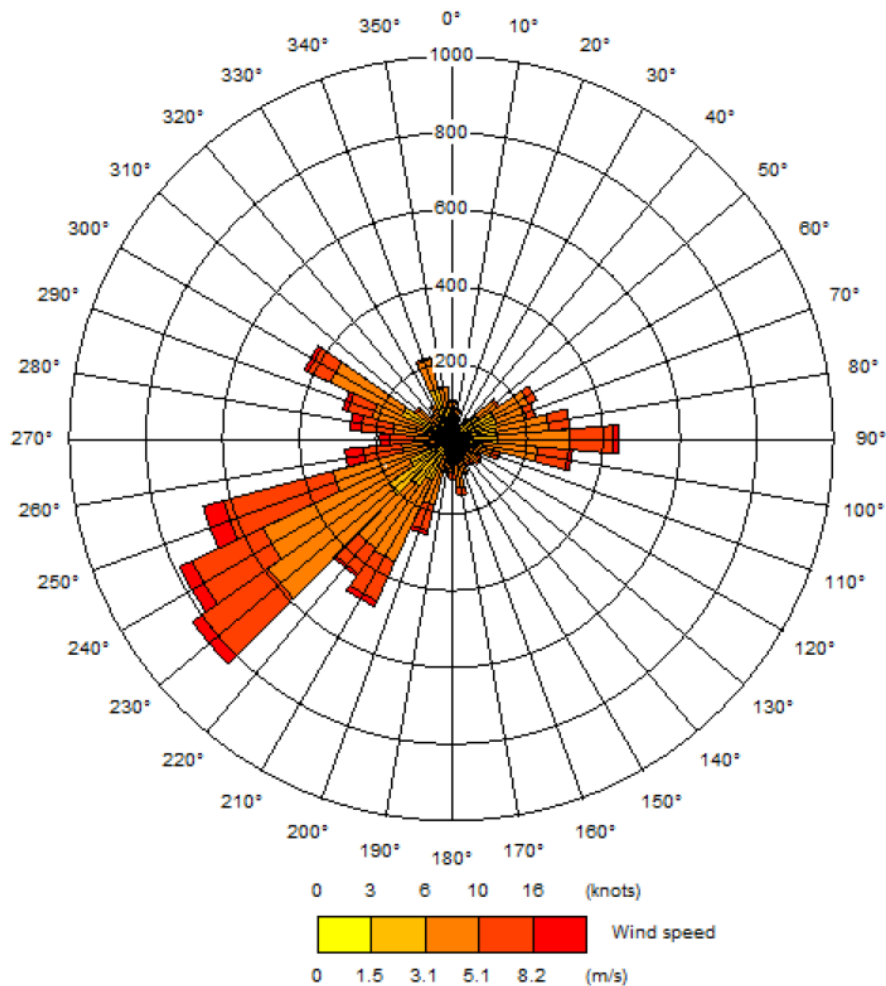
Groundwater – the entire area of the Meridian Water SIW is situated in groundwater source protection zones (SPZ1 and SPZ2). The HRA and ESSD accompanying the EP application should be referred to for further detail. Groundwater is considered only in the risk assessment for fugitive emissions from accidents and incidents in the ERA.

### 3.1 Receptors Map and Table

A map showing sensitive receptors within a 500m radius from the boundary of the SIW is included in the ESSD drawings and information (D-ESSD2A).

The windrose from a weather station approximately 13km southeast at London City airport for 2019 is included on the plan D-ESSD2A and reproduced below – it shows the prevailing wind direction across the SIW is in a south-westerly direction.

Figure 1 London City Airport Windrose 2019



Due to the nature and scale of the proposed activity, and the plausible range of impact from emissions, receptors within a 250m radius are detailed in the table below.

Table 1: Sensitive receptors within 250m of the SIW<sup>4</sup>

Receptor type	North and north-east	East and south-east	South and south-west	West and north-west
<b>Human</b>				
Residential properties	-	Sinclair Road, Westward Road, Maple Avenue and other properties extending beyond 250m (to the north-east, east and south-east)	-	Willoughby Lane*, Kimberley Road* and other properties extending beyond 250m
Commercial premises (hotels, offices, retail)	Wickes, Argos, Troubadour Meridian Water Studios, Decathlon	Costco, B&Q,	-	Tesco store and petrol station, Premier Inn
Industrial premises	Edmonton Trade Park, Edmonton Solid Waste Incineration Plant, Camden Plant	Safestore Self Storage Chingford	Arriva bus depot, Stratstone Land Rover vehicle repair centre, warehouses and a variety of other industrial premises	Air conditioning system supplier and other industrial premises
Public places (squares, parks, places of interest, sports and recreation)	River Lee Navigation and River Lea Diversion Channel (green corridors with tow paths)	River Lee Navigation and River Lea Diversion Channel (green corridors with tow paths)	Wild Marsh East and Wild Marsh West Hiking areas	Frederik Knight Sports Ground*
Community and health centres	-	-	-	-
Places of worship	-	-	-	-
<b>Vulnerable populations</b>				
Hospitals	-	-	-	-
Schools	-	-	-	Meridian Angel Primary School*
Care homes	-	-	-	-
Other (childcare, convalescent, other medical facilities)	-	-	-	-
<b>Infrastructure and utility</b>				

<sup>4</sup> \* denotes receptors to the west of the railway which were not included for consideration in the TW DEMP



Receptor type	North and north-east	East and south-east	South and south-west	West and north-west
Roads; Main and arterial Local / residential routes	A406 North Circular Road Various local roads	A406 North Circular Road Various local roads	A1055 Watermead Way Various local roads	A1055 Angel Edmonton Road Various local roads
Electricity; Cabling Pylons Substations	-	-	Tottenham Marsh Electricity	-
Gas; Above ground networks Gas holders	-	-	-	Kimberley Road Gasholders (derelict)*
Generators, turbines	Edmonton Solid Waste Incinerator (power plant)	-	-	-
Sensitive built environment (solar panels, air conditioning systems, car parking areas)	Meridian Grand car park, Ravenside retail park car park	Costco Chingford car park	-	Tesco car park
Water supply for human consumption	-	Banbury Reservoir	-	-
<b>Ecology and arboriculture</b>				
Designated sites	Pymmes Brook (site of protected species)	Banbury Reservoir, River Lea (Local Wildlife Sites (LWS) and sites of protected species)	Tottenham Marshes and Tottenham Marshes East (Local Wildlife Sites (LWS))	-
Habitats (including trees to be retained)	Pymmes Brook, River Lee Navigation, River Lea	Banbury Reservoir extends from close to the site to over 500m away, River Lea	Pymmes Brook, River Lee Navigation, River Lea Diversion Channel, deciduous woodland (protected habitat)	-

### 3.1.1 Ecology and arboriculture

Management of the impacts of the works on ecology and arboriculture are outlined in CEMP.

The CEMP, which is submitted in the Taylor Woodrow document bundle, outlines the key receptors, species and habitats that have been considered and will be protected during the lifetime of the scheme. It takes in to account the baseline data derived from surveys in June of 2019<sup>5</sup> and a more recent Preliminary Ecological Appraisal (PEA) in May 2021<sup>6</sup>.

The immediate surrounds of the permitted site are considered in this ERA. Including five designated nature conservation sites (which are listed in Table 1) and a further nine designated sites with 2km of the SIW area. All sites listed previously are referred to in the nature and heritage conservation screening report that was conducted by the EA, the report itself may be found in the ESSD drawings and information bundle (ESSD3B).

The River Lee Navigation and Pymmes Brook also run through the SIW adjacent to the waste recovery area in places. The PEA concluded that the length of the River Lee Navigation that enters the SIW does not support any protected species. Consent from the Canals and Rivers Trust will be requested, and risk assessments will be undertaken in advance of any work in the vicinity of the River Lee Navigation. The PEA concluded the River Lea Diversion Channel adjacent to the eastern boundary had the potential to support a range of species, but none were noted by the surveys in 2018.

Protection measures and information regarding monitoring are detailed in the CEMP and the DEMP.

<sup>5</sup> Ecology Baseline Surveys (MWP2-2.7 / MWSIW-2.7, June 2019) as reported by Arup as part of the ecology chapter of the Environmental Statement (ES), chapter accessible [Enfield Planning Portal Meridian Water Phase 2](#) (Accessed August 2022)

<sup>6</sup> Preliminary Ecological Appraisal (PEA) (reference SIW-WAT-XX-XX-RP\_Z\_900001, dated July 2021)

## 4. The Operation

### 4.1 Description of Activity

Waste will be excavated from the historic landfill located within the SIW boundary.

The waste will be excavated by excavator and placed into 8-wheel tipper trucks (20 tonnes) and sheeted. The trucks will travel a short distance on public highway, before re-entering the SIW area to place waste either in stockpiles (pending recovery) or in permanent deposit locations within the waste recovery area. The tip and subsequent contouring of stockpiles will be assisted by excavator.

In the deposit locations, an area (e.g. within the groundworks for a street) will have been prepared. The waste will be tipped into the area and rolled out using a road roller.

Stockpiling of waste is inefficient (double handling costs) and will be avoided as far as possible. Where stockpiling cannot be avoided, stockpiles will be constructed on existing concrete surfaces with surfaces sealed using the back of the excavator bucket.

When stockpiled waste is required for deposit, it will be loaded into a 8 wheel tipper truck or dump truck using an excavator, and taken to the deposit location.

The deposited waste will be compacted (rolled) immediately (same day). During the period between compaction and covering with the next layer of waste or the final surface finish, the waste will be checked daily and dampened if necessary.

### 4.2 The Waste

#### 4.2.1 Composition of waste

The composition of the waste is set out in detail in the Waste Acceptance Procedures (WAP), HRA and LGRA all submitted as part of the waste recovery EP application. For the purposes of this ERA the waste is limited to non-hazardous soils and soil-like Made Ground.

The wastes defined by List of Waste codes are set out in Table 2 below.

#### 4.2.2 Excavation

Based on recent ground investigations, it is anticipated the excavated waste will not require remediation to enable its use in earthworks although it may require treatment with lime or cement for geotechnical purposes (moisture control) or to create capping materials.

On excavation, any gross contamination and hard materials will be isolated and disposed of. Large pieces of concrete or brickwork will also be removed at the point of excavation. Isolated items of waste will be removed by contracted waste carrier.

Items of deleterious material such as wood or plastic will be hand or machine picked for offsite recovery or disposal to ensure the material's compliance with the physical specifications for earth works material.

All waste intended for recovery will be assessed to verify compliance with specified criteria (specification) for the project as set out in the WAP. The management measures in the ERA are appropriate for the waste to be used.

#### Waste codes

The excavated material falls into the following waste code:

Table 2: Proposed Site-derived waste classification

<b>EWG code</b>	<b>EWG description</b>	<b>Limitations</b>
17 05 04	soil and stones other than those mentioned in 17 05 03	Limited to site-derived material meeting the chemical and physical specifications for the works
19 03 05	stabilised wastes other than those mentioned in 19 03 04	Limited to site-derived material meeting the chemical specifications for the works and requiring treatment for moisture content control to meet the physical specification for the works.
19 03 07	solidified wastes other than those mentioned in 19 03 06	Limited to site-derived material meeting the chemical specifications for the works and requiring treatment for moisture content control to meet the physical specification for the works.
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01	Limited to site-derived material meeting the chemical specifications for the works and requiring treatment for moisture content control to meet the physical specification for the works.

### 4.3 Operating Hours

Normal working hours<sup>7</sup> for the Meridian Water SIW are:

- Monday to Friday 08:00 – 18:00;
- Saturday 08:00 – 13:00.

Waste handling activities will not take place outside of the designated hours.

#### 4.3.1 Out of hours

The SIW will be secured at all times by staffed security gates and patrols out of hours including weekends and bank holidays. Security staff present overnights will have access to CCTV feeds in the site office.

### 4.4 Plant and Equipment

#### 4.4.1 Trucks and mobile plant

Mobile plant on-site will be leased from a subcontractor.

All vehicles used will conform with LBE's sustainability commitments (either Stage VI Euro or FORS Gold compliant)<sup>8</sup>.

All vehicles will be compliant with London Low Emission Zone standards<sup>9</sup>. Heavy Goods Vehicles (HGV) and specialist heavy vehicles will be Stage VI of EU Directive 97/68/EC compliant.

The project is subject to the Mayor of London's Opportunity zone, as such Non-Road Mobile Machinery (NRMM) will be Stage IV of EU Directive 97/68/EC compliant.

<sup>7</sup> The working hours are as set out in the CoCP and Planning Condition 7 of the planning permission, unless alternative arrangements are made with the prior agreement of LBE.

<sup>8</sup> MW Environmental Sustainability Strategy - Appendix A - Objectives Vision and Requirements.pdf ([enfield.gov.uk](https://enfield.gov.uk)) (accessed August 2022)

<sup>9</sup> Your vehicle and LEZ - Transport for London ([tfl.gov.uk](https://tfl.gov.uk)) (accessed August 2022)

Evidence of such compliance will be supplied by the subcontractor prior to the plant being delivered to the SIW.

A NRMM register will be maintained for the duration of the permitted activity. A copy of the template NRMM register to be used is included within the Taylor Woodrow document bundle.

Plant fuel consumption and idling will be monitored by onboard telemetry. Stationary vehicles will be requested to switch off their engines rather than idle.

All plant are on a programme of planned preventative maintenance (PPM).

#### 4.4.2 Maintenance Strategy

Mobile plant supplied by the subcontractor will be fully maintained with current examination certificate where required.

Servicing and maintenance of the mobile plant will be undertaken as per the manufacturer's recommendations.

#### 4.4.3 Dust suppression equipment

Dust suppression equipment will be used for the permitted activity including;

- mobile dust suppression cannons: Dehaco TERA 60 GTM;
- mobile automiser units: Air Spectrum;
- dust suppression bowser - 1000 or 2000l (haul road dust suppression towing bowser);
- road sweeper (hired and used weekly or when necessary); and
- jet wash (used for more localised suppression and wheel wash).

## 5. Environmental Emissions

This section will outline in brief the emissions to the environment that could occur on site, with respect to the permitted activity. This information will also include the likelihood of emissions being generated and their respective impacts on receptors. Mitigating and preventative measures for the categories of emissions listed below will also be discussed.

The permitted activity will potentially generate the following fugitive emissions:

- noise;
- dust;
- mud;
- litter;
- pests;
- odour; and
- other fugitive emissions, for example spillage of fuel or fire due to an accident.

In line with EA guidance on conducting a risk assessment, certain environmental risks will be deemed not applicable and excluded. These emission risks include:

- any discharge, for example sewage or trade effluent to surface or groundwater;
- release of bioaerosols, for example from shredding screening and turning organic waste, or from stack or open point source release such as biofilter;
- any global warming potential from the activity (due to the duration of the project being less five years): and
- impacts of climate change (due to the duration of the project being around one year, and the primary purpose of works being to mitigate flood risk).

### 5.1 Noise and Vibration

The risk assessment for noise and vibration is presented in Table 3.

The impact of noise and vibrations due to SIW on sensitive receptors was deemed not significant by noise surveys conducted by Arup in 2018<sup>10</sup>. Due to distance from high sensitivity receptors, the nearest being Meridian Angel Primary School, predicted construction noise levels would not have exceeded significance thresholds.

Taylor Woodrow has developed a Noise and Vibration Management Plan (NVMP) for the SIW which sets out the processes and procedures to be implemented to enable compliance with relevant noise and vibration standard and requirements. The document is included in the Taylor Woodrow document bundle submitted alongside the waste recovery EP application. Prior to works commencing and at 6-monthly intervals during the works, Taylor Woodrow will make applications to LBE for consent under Section 61 Control of Pollution Act 1974. The application and consent process will set out how noise and vibration from the SIW site will be managed using Best Practicable Means (BPM). Further information may be found in the NVMP.

Noise and vibration monitoring will be employed to establish environmental baselines, which will then be used to develop a noise model, in support of a Section 61 application.

Real time noise and vibration monitoring will be used in the SIW as necessary, these data can be used by the environment manager to make decisions regarding corrective measures if necessary.

<sup>10</sup> Noise and vibration chapter of the ES, accessible at [Enfield Planning Portal Meridian Water Phase 2](#) (Accessed August 2022)

### 5.1.1 Monitoring

Real-time noise measurements will be monitored on 24/7 basis as the works progress. Noise measurements will take the form of short term  $L_{Aeq}$  measurements over the relevant period. Noise measurements will also be taken with a hand-held meter as required.

Vibration monitoring equipment will be installed at the northern boundary of DZ5 and within the Troubadour Hub building to the west of DZ7. Monitors will measure vibration in real time on a 24/7 basis. Measurements will be monitored through an online web-based system by the Taylor Woodrow Environmental Team and the respective construction teams for the work packages.

The proposed locations of the noise and vibration monitors are shown on plans in Appendix A (reproduced from the NVMP). Full details of the monitoring programme, data assessment and responses to exceedance of agreed limits can be found in the NVMP.

## 5.2 Dust

The dust risk assessment with control measures can be found in Table 4. For a full description of the dust risk assessment and dust management control measures refer to Taylor Woodrow's DEMP. The DEMP also describes the monitoring programme in greater detail than this ERA.

The dust risk assessment presented in Table 4 determines the risk to sensitive receptors to be low.

Given that the wider SIW activities will also have the propensity to emit dust, dust emission limits for the entire construction site including the waste recovery EP activity will be considered to have been breached if dust is observed at the wider construction site boundary. The permitted activity will be investigated as a potential source if the dust monitors in the located in the SIW (the proposed positions of which are shown in Appendix A) trigger an alert. Refer to the DEMP for further details regarding the alert system and trigger action plan.

The EA DEMP template requires the following other possible related emissions be taken into account in relation to the permitted activity:

- mud and debris on the public highway; and
- litter.

Any debris and litter in the waste will be separated at the point of excavation to prevent any entering the permitted area.

Mud and runoff in the permitted area will be mitigated by a number of measures such as not allowing vehicle washing within the permitted area. The vehicles that operate within the permit boundary including dump trucks and mobile plant will only move between the SIW and the permitted area using internal access routes, and therefore cannot cause track out onto surrounding roads. The 8-wheel tipper trucks that will transport the waste material from the point of excavation to the recovery area in the SIW on public highways will be sheeted, wheel washed (as required depending on site and weather conditions) and restricted to only traveling relatively short distances on public highways.

Litter is discussed in a later section in the context of its potential to attract pests or provide harbourage.

Additional consideration has been given to the commercial users to the west of the SIW. Due to being close to the SIW, Tesco staff and customers may be more exposed to dust than other receptors. In accordance with the Control of Asbestos Regulations 2012, the respective site clearance subcontractor, remediation & earthworks subcontractor, and the demolition subcontractor shall produce asbestos management plan and register relevant to their works and maintain these documents for the duration of the works.

### 5.2.1 Monitoring

Real time air quality monitoring of PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>x</sub> will be deployed in the SIW. PM<sub>10</sub> and Total Suspended Particulate (TSP) levels will be tracked to monitor air quality. The proposed locations of the air quality monitors are shown in Appendix A (reproduced from the DEMP).



### 5.3 Mud and Debris

The risks from mud and debris on the public highway and mud as a source of dust on drying out are considered in the assessment. See Table 4 for dust risk assessment and Table 5 for mud and debris on the public highway.

### 5.4 Litter and Pests

The litter and pests risk assessment with control measures can be found in Table 56.

Food will not be consumed within or around the permit boundary other than within designated staff welfare facilities, which manages a potential source of litter and potential food source to attract pests.

Insects can also find harbourage in standing water. Procedures are in place to prevent infestations from taking hold within the permit boundary and the SIW.

### 5.5 Odour

The odour risk assessment with control measures can be found in Table 7:

Any contaminated waste will be isolated at source and kept segregated (wrapped or bagged if necessary) until appropriate disposal. This includes contamination by hydrocarbons or biological debris. Other potentially malodorous wastes such green waste will not be handled within the proposed permit area.

Potential odour sources are:

- drains and bins;
- earthy smells, emitted from the waste stored; and
- exhaust fumes from vehicles and plant on site.

### 5.6 Emissions from Accidents and Incidents

The emissions from accidents and incidents risk assessment with control measures can be found in Table 8.

This section covers all other emissions, including the unintentional emissions that arise from accidents.

Accidental fugitive emissions sources could include;

- fires;
- spillages of fuel; and
- invasive species.

No burning of waste or other fires are allowed anywhere in the SIW construction site. Accidental fires are possible but highly unlikely in permitted area. Potential ignition sources and fuel will be limited to the mobile plant used. In the event of a fire occurring, the vehicle and its vicinity will be evacuated. The emergency services will be called to attend to the fire.

Mobile plant will be active in the permitted area, as such the possibility of fuel leakage or spillage exists. Activities such as mobile plant parking, fuel storage and refuelling will only be allowed to occur in specific locations on the SIW.

A copy of the Diesel Delivery & Plant Re-fuelling Procedure<sup>11</sup> is included within the Taylor Woodrow document bundle.

<sup>11</sup> Issue 1, dated September 2022

Routine testing of environmental emergency response is in effect in the SIW. Supporting toolbox talks and event scenarios will be employed to reinforce the need for emergency preparedness.

In the event of a serious spillage that is beyond the capacity of the project team, a specialist response unit will be deployed to contain and control the spillage.

The eastern side of the SIW has extensive invasive non-native species (INNS) contamination. Taylor Woodrow is remediating the ground in the affected area. Eradication by herbicide and excavation is being used to remove the following weeds from site;

- japanese knotweed;
- giant hogweed;
- himalayan balsam;
- floating pennywort; and
- cotoneaster.

The INNS contamination will not be present in the permitted area; however they are present in the vicinity of the source of the waste. This will be mitigated as surface vegetation and topsoil will be removed prior to beginning the bulk excavation. Staff will be vigilant to the possibility of INNS regrowth and employ appropriate protocols to ensure that any INNS contamination that remains is removed at source and prevented from entering the permitted area.

## 6. Environmental Management Procedures

### 6.1 General Management Principles

Taylor Woodrow will employ their general management principles to activities in the permitted area. Where applicable, Taylor Woodrow will ensure that the site is kept in good order at all times. Taylor Woodrow will follow a 'good housekeeping' policy, including the following requirements:

- open fires are prohibited at all times;
- rubbish will be removed at frequent intervals and the site kept clean and tidy; and
- hoardings will be frequently inspected, repaired and re-painted as necessary.

### 6.2 Environmental Incidents

Taylor Woodrow will use the VINCI Footprint online reporting and investigation tool. Staff working in the permitted area will be inducted and given appropriate toolbox talks on the environmental implications of incidents and the correct manner in which to respond.

Every subcontractor will ensure that all environmental incidents are reported to Taylor Woodrow. Any incident will be appropriately investigated by a responsible manager who will receive the full co-operation of all subcontractors involved. In the event of a major incident, a report will be written from compiled witness statements and photographic evidence will be used to assist in the investigation. Incidents will be reported to relevant regulatory authorities as required.

Example environmental incidents include:

- chemical, fuel or oil spills or leakages;
- major chemical, fuel or oil spill; and
- breach of noise, air quality or dust limits.

Spillages of fuel from plant and vehicles will be dealt with in accordance with the Spillage Response Procedure (see CEMP included in the Taylor Woodrow document bundle). The Taylor Woodrow emergency spillage procedure<sup>12</sup> is also included in the Taylor Woodrow document bundle.

### 6.3 Staff Training

Site specific training will be adapted to best mitigate the environmental risks present. The Engineers, managers and site supervisors that attend the site will be asked to complete the Site Environmental Awareness Training Scheme (SEATS). The contents and courses within the SEATS will be controlled by the Environmental Manager and based on environmental aspects relevant to the permitted activities and SIW construction activities more generally.

The remainder of operatives, staff and sub-contractors will be inducted in the significant environmental aspects and the employed means of mitigation.

Supplementary toolbox talks will be delivered by the Environmental Manager to staff to compliment the site induction. These talks or briefings will address a range of topics and will be given throughout the project duration, as necessary. The subjects that will be included in the toolbox talks are:

- archaeology – prior to start of excavation works;
- contaminated land;
- general project environmental requirements;
- heritage – listed buildings;

<sup>12</sup> Issue 1, September 2022

- implementing BPM (noise and dust);
- noise constraints (S61);
- waste management and storage; INNS; and
- water conservation and management.

An online training record will be maintained by the Environmental Manager for Taylor Woodrow Employees.

## 6.4 Site Environmental Inspection

The Environmental Manager will be responsible for surveillance of the permitted area. They will evaluate performance against the environmental commitments, legal requirements of the EP and associated management systems. This will take the form of regular site inspections to monitor compliance, there will be both, daily and weekly inspections. Inspection procedures **are** provided in the Taylor Woodrow document bundle submitted in support of the EP application.

Daily inspections will be conducted to ensure compliance with permit conditions and environmental management plans (e.g. CEMP, DEMP, Noise and Vibration Management Plan) . The environmental manager checks will include but are not limited to:

- visible, audible or olfactory emissions and pollution;
- site boundaries (including the boundary of the SIW construction site perimeter hoardings, haul roads, site access and adjacent public highways), checking security and whether any noise or dust are present;
- stockpiles are orderly and as they should be;
- stormwater and run-off management; and
- condition of roads traversed by waste carrying vehicles.

Weekly inspections will be conducted to ensure that all fuels, oils and chemicals have appropriate secondary containment and well-functioning mitigation measures in place such as deployable booms, oil skimmers and silt settlement tanks. This inspection will also cover site drainage systems, to ensure their integrity, and that there are no chemicals stored or in use in their vicinity. Any refuelling activities will take place away from drainage and be restricted to specifically designated locations. The designated locations will feature impermeable surfacing and readily available access to spill kits.

## 6.5 Complaints Procedure

Taylor Woodrow's pre-existing complaints procedure that is currently in use within the Meridian Water development scheme will be applied to the permitted activity.

All complaints, enquiries and compliments are to be recorded in the 'Community Contact Record' (CCR). The individual who receives a communication is responsible for recording that interaction in the CCR and notifying the Community Stakeholder Manager and the relevant Section Manager responsible the specific work package / activity which is or may be giving rise to complaint.

An acknowledgement/holding response will be sent as soon as possible whilst further investigation is carried out.

The Community Stakeholder Manager will regularly monitor the CCR to ensure it is being utilised effectively and any contact with the public is closed out successfully. A copy of the CCR<sup>13</sup> is included in the Taylor Woodrow document bundle.

<sup>13</sup> Document reference: SIW-TWC-XX-XX-DB-W-000003

The Senior Site Supervisor (SSS) will be the listed contact on notice boards, hoardings and other necessary publications. A mobile phone will be provided to specifically deal with such contact and for messages to be left during out of hours. For complaints made out of hours, the SSS will record these on the CCR and contact the complainant.

A designated email address for the public to contact the project will also be setup and included alongside the contact mobile number. The SSS, Community Stakeholder Manager and relevant TW Project Team members will have access to this inbox, to monitor and respond to communication that comes in.

## 7. Risk Assessment Tables

Table 3: Noise and vibration risk assessment

Noise						
Hazard	Receptor	Pathway	Risk management techniques	Probability of exposure	Consequence	Overall risk
Sources of noise and vibrations: <ul style="list-style-type: none"> <li>• dump truck and mobile plant;</li> <li>• road roller;</li> <li>• road vehicles on public highway;</li> <li>• engines;</li> <li>• reverse alarms;</li> <li>• mechanical handling e.g. tipping of waste; and</li> <li>• equipment e.g. dust suppression equipment</li> </ul>	Local human population – residents, workers, visitors including to Tesco and Wickes Local ecology	Airborne	Reduction at source: There is a “no idling” policy to limit engine run times Operational hours are limited as below – no engine noise, waste handling or equipment running overnight. <ul style="list-style-type: none"> <li>• Monday to Friday 08:00 – 18:00</li> <li>• Saturday 08:00 – 13:00</li> </ul> Double handling of waste will be minimised. Subcontractors are required to use plant compliant with relevant noise limits. Plant with combustion engines fitted with silencers. Directional sounder reversing alarms used as far as possible. Screening: Hoarding information can be found in section 2.2. Acoustic blankets or screens shall be employed where noisy activities take place. Methods of working:	Low  The activity may be audible but is unlikely to cause discomfort or annoyance	Noise and vibration at receptors are unlikely to cause offence	Low

Noise						
Hazard	Receptor	Pathway	Risk management techniques	Probability of exposure	Consequence	Overall risk
			<p>The material handled is not noisy when dropped. There is no dropping from height.</p> <p>A road roller will be working at the deposit locations, a potential source of vibration.</p> <p>Management: The rolling activity will be investigated if an alert of issue is identified. The duration of the activity is limited.</p> <p>Machines (dump trucks and excavators) are well maintained, lubricated moving parts.</p> <p>There is no unnecessary revving of engines.</p> <p>Dust suppression equipment is switched off when not required.</p> <p>A complaints handling procedure is in place.</p> <p>Baseline and real time monitoring will inform remedial actions, as necessary</p>			

Table 4: Dust risk assessment

<b>Dust</b>						
<b>Hazard</b>	<b>Receptor</b>	<b>Pathway</b>	<b>Risk management techniques</b>	<b>Probability of exposure</b>	<b>Consequence</b>	<b>Overall risk</b>
<p>Mud as a source of dust:</p> <p>Mud can turn to dust when it dries out</p> <p>Mud can be tracked onto site by vehicles and mobile plant, or churned up on unsurfaced areas of ground</p> <p>Mud can be tracked onto public highways during waste transport (Argon Road)</p>	<p>Mud and dust may be visible to local human population</p> <p>Road users</p> <p>See entry below for dust receptors</p>	<p>Resuspension of dust into airborne dust</p>	<p>Reduction at source:</p> <p>Prior to using public highways, vehicles will be pass through wheel wash.</p> <p>Management:</p> <p>Regular cleaning of hardstanding using wet sweeping</p> <p>Haul roads will be dampened with fixed or mobile sprinklers.</p> <p>Temporary access roadways are provided for vehicles travelling within the SIW to the permit area, either tarmac which can be washed, or crushed concrete which prevents mud churn.</p> <p>Daily inspection of road conditions will be conducted on the section of road used for waste transport.</p> <p>Exposure controlled by limiting vehicles to traveling less than 500m on public highways.</p> <p>Road sweeper will be available for deployment on public highways to maintain road condition</p>	<p>Low</p> <p>The moisture levels and integrity of site surfaces is managed to prevent mud, and so prevent it from drying to dust</p> <p>See entry below for dust probability of exposure</p>	<p>Dust and mud could be visible to receptors overlooking the site and result in complaints</p> <p>See entry below for dust consequence</p>	<p>Low</p>



<b>Dust</b>						
<b>Hazard</b>	<b>Receptor</b>	<b>Pathway</b>	<b>Risk management techniques</b>	<b>Probability of exposure</b>	<b>Consequence</b>	<b>Overall risk</b>
<p>Dust generated from: Vehicles and mobile plant moving around the site kicking up dust.</p> <p>Dump trucks and tipper trucks tipping waste.</p> <p>Excavators (mobile plant) handling waste</p> <p>Wind whipping dust from the surface of stockpiles and exposed permanent deposit locations.</p> <p>Release from site surfaces (not just the ground including around plant and equipment)</p> <p>Mud drying out on public highways becoming dust (Argon Road)</p> <p>Releases from road vehicles carrying waste on public highway (Argon Road)</p>	<p>Local human population – residents, workers, visitors including to Tesco and Wickes</p> <p>Commercial users (e.g. Tesco, Wickes)</p> <p>Road users</p> <p>Railway line</p> <p>Local ecology and arboriculture</p>	<p>Airborne dispersion</p>	<p>Reduction at source: It is dampened, if necessary, prior to mechanical handling and placement in stockpiles or at permanent deposit locations</p> <p>The amount of stockpiled waste held on site pending placement will be minimised.</p> <p>Prior to using public highways, vehicles will be pass through wheel wash.</p> <p>Double handling of waste will be minimised.</p> <p>Management: Laid waste will be compacted immediately where practicable. Any temporary stockpiles will be dampened and sealed with back of excavator bucket as necessary to minimise release of dust.</p> <p>Surfaces will be constructed over the waste as soon as practicable. Exposed surfaces will be inspected daily and kept dampened if required.</p> <p>Temporary access roadways provided for vehicles travelling from</p>	<p>Low</p> <p>Control measures minimise the possibility of dust beyond the site boundary</p>	<p>Damage to health or nuisance (dust soiling of cars, windows)</p> <p>Smothering (trees and other flora)</p>	<p>Low</p>

Dust						
Hazard	Receptor	Pathway	Risk management techniques	Probability of exposure	Consequence	Overall risk
			<p>excavation area to the deposit areas will utilise existing hard surfacing. If it is necessary to construct temporary haul roads, crushed concrete / recycled aggregate will be used for the construction.</p> <p>Daily inspection of road conditions will be conducted on the section of public highway used for waste transport.</p> <p>Road sweepers will be available for deployment on public highways to maintain road condition.</p> <p>Public highway bound 8-wheel tipper trucks will be sheeted.</p> <p>Compliance inspections will be carried out daily. Frequency will be increased during periods of dry, windy weather or during activities with a higher potential for dust generation.</p> <p>A daily briefing is provided, including dust mitigation measures depending on the weather conditions and the activities for the day.</p> <p>A monitoring programme</p>			

Dust						
Hazard	Receptor	Pathway	Risk management techniques	Probability of exposure	Consequence	Overall risk
			<p>is in place including fixed PM<sub>10</sub> monitors which will trigger an alert if the agreed levels are breached. Prompting an investigation and remedial action.</p> <p>Maximum speed limits 5mph</p> <p>Screening:</p> <p>Hoarding information can be found in section 2.2.</p> <p>Methods of working:</p> <p>Rolling will commence as soon as practicable at the deposit locations after the material is place, to compact the ground and minimise dust release.</p> <p>Dust suppression equipment is used including mobile dust suppression cannons, to suppress airborne dust and a fire hose to dampen waste material and surfaces.</p>			

<b>Dust</b>						
<b>Hazard</b>	<b>Receptor</b>	<b>Pathway</b>	<b>Risk management techniques</b>	<b>Probability of exposure</b>	<b>Consequence</b>	<b>Overall risk</b>
Particulate emissions	Local human population – residents, workers, visitors including to Tesco and Wickes  Road users	Atmospheric dispersion	<p>Dump trucks and mobile plant meet relevant regulatory standards for emissions.</p> <p>All relevant vehicles operated by the appointed Sub-Contractors will comply with London Low Emission Zone standards.</p> <p>HGV's will be Euro VI compliant.</p> <p>Low sulphur diesel is used.</p> <p>There is a no idling policy to limit engine run time.</p> <p>As far as possible vehicles used on site will have upward exhausts to minimise risk of resuspending dust.</p> <p>All on site mobile plant is subject to PPM by the supplier.</p>	<p>Low</p> <p>Control measures minimise the possibility of dust beyond the site boundary.</p> <p>Demolition and construction activities are expected to generate elevated levels of PM<sub>10</sub>, PM<sub>2.5</sub> &amp; nitrogen dioxide.</p>	Damage to health	Low

Table 5: Mud and debris risk assessment

<b>Mud and debris</b>						
<b>Hazard</b>	<b>Receptor</b>	<b>Pathway</b>	<b>Risk management techniques</b>	<b>Probability of exposure</b>	<b>Consequence</b>	<b>Overall risk</b>
Mud and debris on the public highway	Mud may be visible to local human population. Road users	Tracked onto public highways during waste transport (Argon Road)  Debris (waste) falling from vehicles	Reduction at source: Prior to using public highways, vehicles will be pass through wheel wash.  Management: Tipper trucks are sheeted to contain the waste.  Daily inspection of road conditions will be conducted on the section of public highway used for waste transport.  Road sweepers will be available for deployment on public highways to maintain road condition	Minimal with control measures in place	Nuisance, increased potential for road accidents	low

Table 6: Litter and pest risk assessment

<b>Litter and pest</b>						
<b>Hazard</b>	<b>Receptor</b>	<b>Pathway</b>	<b>Risk management techniques</b>	<b>Probability of exposure</b>	<b>Consequence</b>	<b>Overall risk</b>
Litter	Local human population – residents, workers, visitors including to Tesco and Wickes  Road users	Litter on the ground or wind blown	The waste is not likely to contain items that could be considered litter. However, there may be fly-tipped household waste present that will be isolated at source. These items will not be allowed in the permitted area.  Site security limits the possibility of fly-tipping.	Minimal with control measures in place	Nuisance	Low
Pests: Rats, foxes, Scavenging birds	Local human population – residents, workers, visitors including to Tesco and Wickes  Local ecology	Attracted by food or harbourage and then direct transmissions	Food sources within the permitted area will be limited to litter / waste arising from staff welfare facilities. Welfare waste will be secured to prevent access by scavenging animals and regularly removed from the site.  Compliance inspections will be carried out daily.  Pest management procedures will be in place and enforced by Site manager.  Activities taking place in the surrounding SIW will be an effective deterrent against pests seeking harbourage.	Minimal with control measures in place	Nuisance, disease transmission, loss of amenity  Predation	Low
Flies and insects	Local human population – residents,	Breeding in	Pest management	Minimal with control measures in	Nuisance, disease	Low

<b>Litter and pest</b>						
<b>Hazard</b>	<b>Receptor</b>	<b>Pathway</b>	<b>Risk management techniques</b>	<b>Probability of exposure</b>	<b>Consequence</b>	<b>Overall risk</b>
Mosquitos	workers, visitors including to Tesco and Wickes	still pooled water on site and then direct transmission	procedures will be in place and enforced by Site manager.	place	transmission, loss of amenity	

Table 7: Odour risk assessment

Odour						
Hazard	Receptor	Pathway	Risk management techniques	Probability of exposure	Consequence	Overall risk
Exhaust fumes from vehicles or mobile plant	Local human population – residents, workers, visitors including to Tesco and Wickes	Atmospheric dispersion	<p>Dump trucks and mobile plant meet relevant regulatory standards for emissions.</p> <p>No idling policy in place to limit engine run time.</p> <p>All vehicles will comply with London Low Emission Zone standards.</p> <p>HGV's will be Euro VI compliant.</p> <p>Low sulphur diesel will be used</p>	Minimal with control measures in place	Nuisance, loss of amenity	Low
Odour from general operation (house keeping) Bins and drains	Local human population – residents, workers, visitors including to Tesco and Wickes	Atmospheric dispersion	<p>Compliance inspections will be carried out daily. If offensive odours are identified, the cause will be investigated and remedied.</p> <p>Site security will limit the potential for fly-tipping occurring within the permitted site.</p>	Minimal with control measures in place	Nuisance, loss of amenity	Low
Odour from waste	Local human population – residents, workers, visitors including to Tesco and Wickes	Atmospheric dispersion	<p>Hydrocarbon or other odorous contamination of waste is unlikely. Gross contamination will be isolated at point of excavation. Such contaminated materials will not be allowed in the permitted area.</p> <p>Note that remediation taking place on the SIW will be undertaken in accordance with measures agreed under separate mobile treatment permit.</p> <p>Water used in dust suppression activities is precisely utilised to minimise run-off. Odours from stagnating water will not occur.</p> <p>Compliance inspection will take place daily.</p>	Minimal with control measures in place	Nuisance, loss of amenity	Low



Table 8: Emissions from accidents and incidents risk assessment

Accident						
Hazard	Receptor	Pathway	Risk management techniques	Probability of exposure	Consequence	Overall risk
<p>Fire (vehicle fire possible)</p> <p>Emissions to air and generation of contaminated fire water</p>	<p>Local human population – residents, workers, visitors including to Tesco and Wickes</p> <p>Railway line</p> <p>Road users</p> <p>Local ecology</p> <p>Land</p> <p>Groundwater</p> <p>All surface waters close to and downstream of the site (Pymmes Brook, River Lee Navigation, River Lea, Banbury reservoir)</p>	<p>Smoke / airborne ash and soot.</p> <p>Downward transmission through underlying geology</p> <p>Direct run-off from site across ground surface</p>	<p>Vehicles will be appropriately maintained. Vehicles will not be used for excessive periods without engine breaks.</p> <p>Emergency response procedures will be in place.</p> <p>The duration and spread of a fire would be limited.</p> <p>Fire extinguishers are located around the site, some items of mobile plant have onboard fire suppression.</p>	<p>Minimal with control measures in place</p>	<p>Damage to health and nuisance (soiling of cars / windows), loss of amenity</p> <p>Pollution of land and controlled waters</p>	<p>Low</p>
<p>Spillage (of fuel from vehicle or during use of fuel tanks)</p>	<p>Land</p> <p>Groundwater</p> <p>All surface waters close to and downstream of the site including their ecology</p>	<p>Direct contact</p> <p>Downward transmission through underlying geology</p> <p>Direct run-off from site across ground surface</p>	<p>Emergency spill kits and appropriately trained staff will be available in the permitted area</p> <p>A specialist response unit will be dispatched to contain and clean-up the</p>	<p>Minimal with control measures in place</p>	<p>Pollution of land and controlled waters</p> <p>Acute impacts on fish and invertebrates</p>	<p>Low</p>

Accident						
Hazard	Receptor	Pathway	Risk management techniques	Probability of exposure	Consequence	Overall risk
	(Pymmes Brook, River Lee Navigation, River Lea, Banbury reservoir)		<p>spillage if the site team cannot contain it</p> <p>Fuel and maintenance oils / grease are stored in bunded tanks or stores. Staff are trained in their use. Fuel is not left dispensing unsupervised. Tanker deliveries of fuel are supervised.</p>			
Invasive species	<p>Unauthorised intruders</p> <p>Local ecology and arboriculture and recreational users of such areas</p>	Direct contact	<p>Site security to prevent unauthorised access and direct contact with e.g. giant hogweed</p> <p>Management of invasive species and protection of notable species in line with various legislation.</p>	Minimal with control measures	Damage to health, deleterious impact on local ecosystem, nuisance, loss of amenity	Low

## **APPENDICES**

### **A. Monitoring location plans**

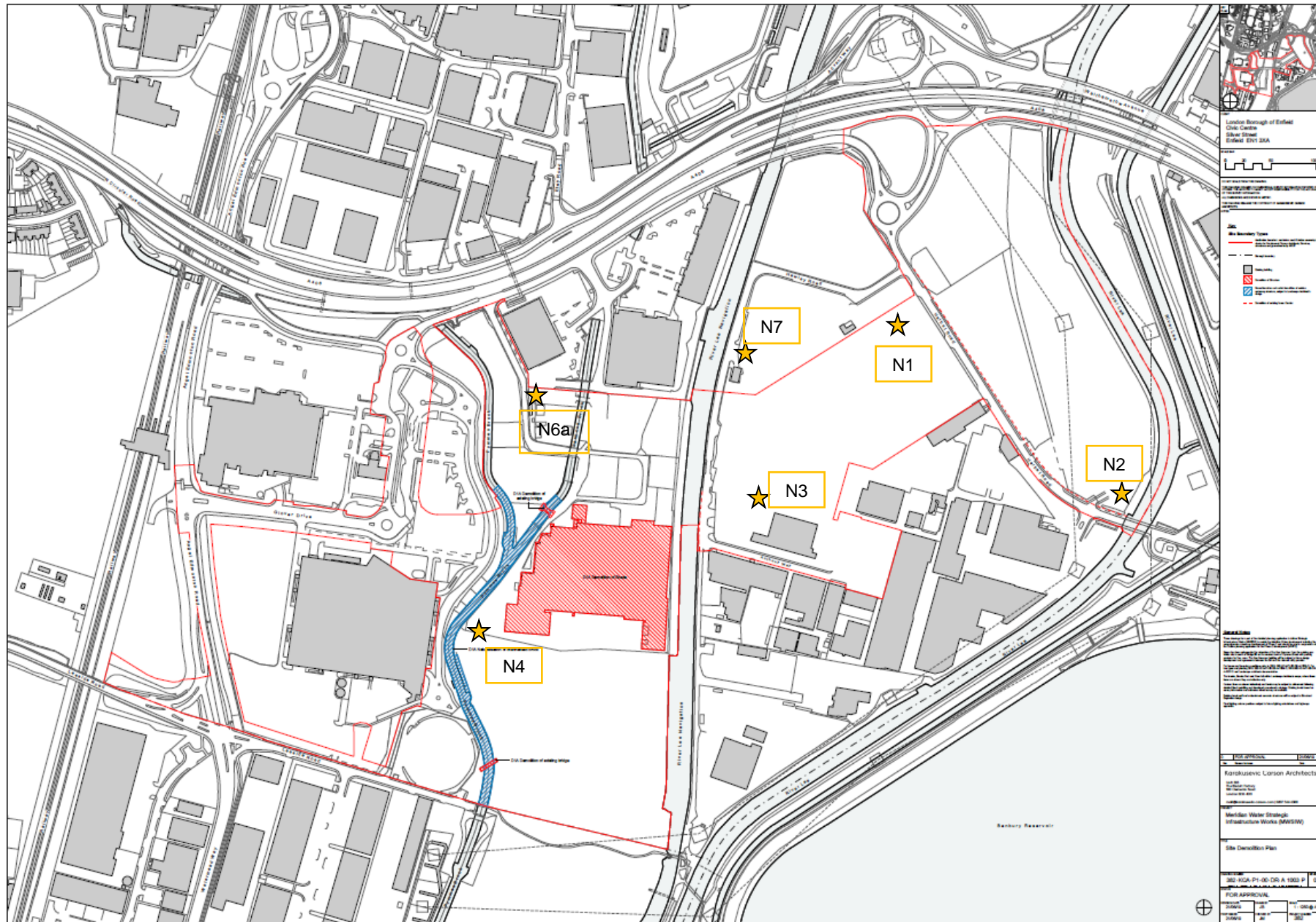
Noise monitoring locations

Vibration monitoring locations


Dust monitoring locations

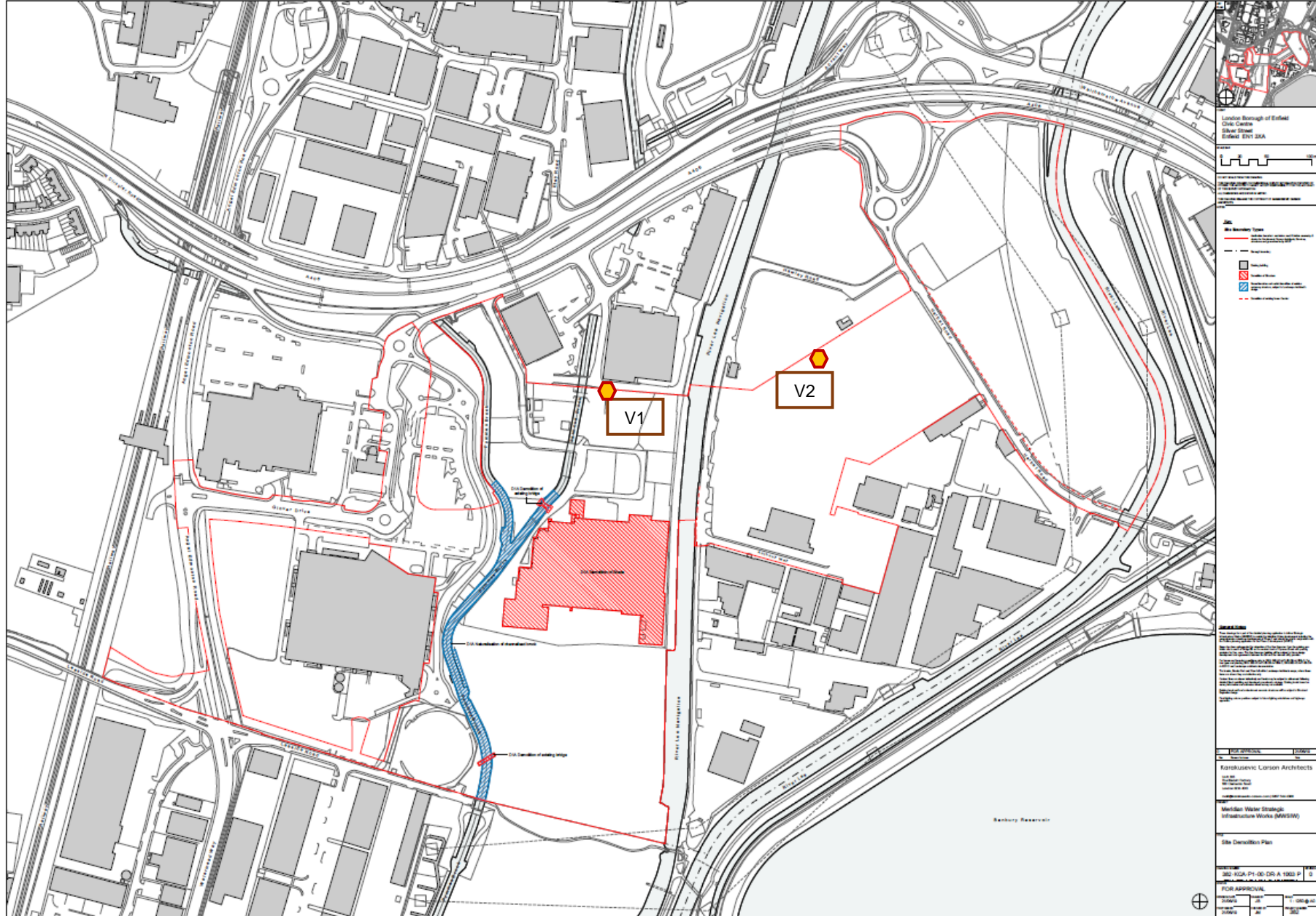
### **Appendices**

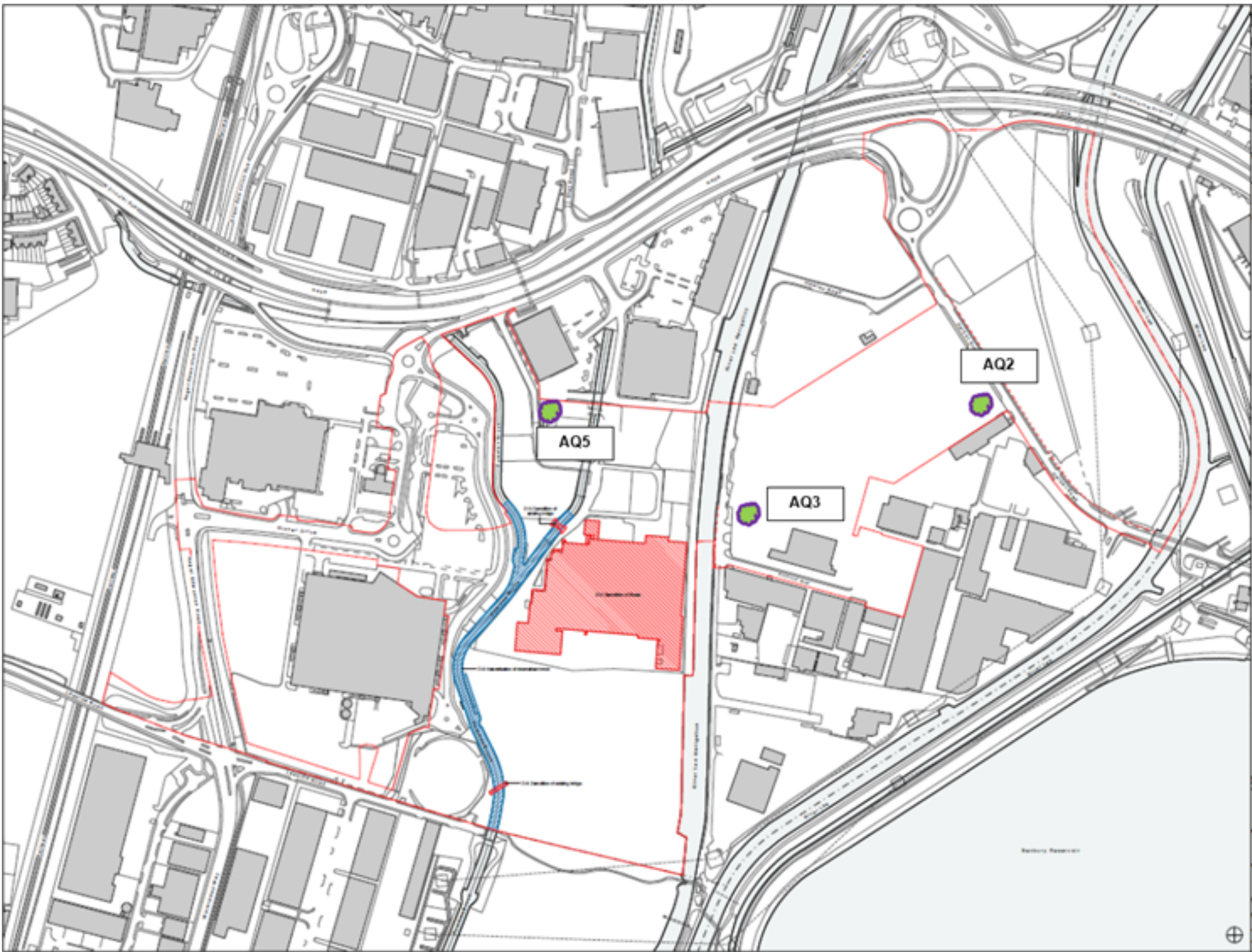
Noise Monitoring Locations ★





Vibration Monitoring Locations 





Project Name: [Redacted]  
 Date: [Redacted]  
 Scale: 1:500



Legend:  
 - Red outline: Project Boundary  
 - Blue line: Water Feature  
 - Purple circle: Access Point  
 - Red square: Building Footprint

Project Information:  
 Client: [Redacted]  
 Architect: [Redacted]  
 Date: [Redacted]

Notes:  
 1. All dimensions are in meters.  
 2. The map is for informational purposes only.  
 3. No liability is accepted for any errors or omissions.  
 4. The map is subject to change without notice.

Prepared by:  
 [Redacted]  
 Date: [Redacted]

Checked by:  
 [Redacted]  
 Date: [Redacted]

Scale: 1:500  
 Date: [Redacted]

FOR APPROVAL:  
 [Redacted]  
 Date: [Redacted]



# We are Waterman, where every project matters

We deliver progressive, sustainability-driven environmental and engineering consultancy services across every sector. We think differently, and we're harnessing our collective expertise to deliver greener, healthier and well-connected communities, networks and built environments.

Based in strategic locations throughout the UK and Ireland, our team of specialists is at the forefront of tackling the climate emergency and forging a path to a Net Zero built environment.

## UK & Ireland Office Locations

