



**U M B R E L L A**  
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## Noise and Vibration Management Plan

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**CIWM**

**Affiliated Organisation 2022**

Together, we stand for a world beyond waste

**Site Address:**

**Rock Solid Processing Limited**  
Bromborough South Dock CH62 4RY



**Registered Office:**

Unit 3 Grampound Road Industrial Units  
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England  
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**Application Reference:**

EPR/HP3444QP

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016.1\_05\_006

**Issue Date:**

20/07/2023

## Document Control

Document Title	Reference	Client	Status
Noise and Vibration Management Plan	016.1_05_006	Rock Solid Processing Limited	FINAL

## Document History

Version	Issue date	Author	Checked	Description
D1	24/10/2022	AIL	AIL	Drafted for bespoke installation application pack, Client review.
V1	30/11/2022	AIL	AIL	Approved by client for submission to Environment Agency (EA).
V2	20/07/2023	AIL	AIL	Following further enhanced pre app advice from the EA further amendments to the activities table to be more reflective of the application.

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**Drawings**

Title	Reference
Permit Boundary	016.1_09_001
Monitoring Locations	016.1_09_005
Sensitive Receptors 1 km Plan	016.1_09_002

**Appendices**

Appendices	Title
Appendix A	100104167-MDD-00-RP-EN-0009_Bromborough Dock_Noise Report
Appendix B	OS.02.04.F01 Emission Complaint Form I1 270720

## 1 INTRODUCTION

This Noise and Vibration Management Plan (NVMP) accompanies the application for a bespoke waste installation by Umbrella Environmental Limited on behalf of Rock Solid Processing Limited EPR/HP3444QP at Bromborough South Dock CH62 4RY. The site location is shown in Figure 1 Site Location

Rock Solid are contracted to reprocess the IBA arising from the Energy from Waste (EFW) plant at Protos, Grinsome Road, Chester CH2 4RB, Ince and Dublin Dublin Waste to Energy Facility, Pigeon House Road, Dublin 4. Eircode: DO4 N2 P2 . Rock Solid already hold a number of contracts of this type across the UK for the reprocessing of Incinerator Bottom Ash (IBA) to produce IBA aggregate (IBAA) and the recovery of ferrous and non-ferrous metals. The resultant products are suitable for use as recycled aggregates in place of virgin materials in unbound and bound applications. Rock Solid Processing Limited's parent company Rock Solid B.V. also have many years' extensive experience of reprocessing IBA and the production of resultant IBA aggregates in the Netherlands.

Waste that arrives via site from Ireland t dock side is unloaded via bucket loader deposited in to a trailer and is subsequently transported to the site for sorting and blending meaning the offload/handling of the IBA from the cargo ship onto the trailer is apart of the overall transportation of the ship and the transfer of waste does not happen until it is tipped in the permitted area, All activities waste activities will occur within the permit boundary

This document summarises the application for a bespoke waste installations permit allowing for IBA to be accepted, stored and treated. With some appropriate IBAA material to be blended and used under a regulatory position statement.

## 1.1 Site Location

The site is approximately 40174 m<sup>2</sup> and is located at Bromborough South Dock CH62 4RY.

The National Grid Reference (NGR) is SJ 34947 84720, Eastings and Northings 334947 , 384720 and What Three Words location, ladder.values.thick.

The wider industrial area is accessed by the A 41 and New Chester road located to the west of the site, with the site itself accessed by Dock road. The site is bounded to the north west by the Dibbinsdale Brook and Port Sunlight River Park, while to the north east by Mersey Wharf and the River Mersey. The south east boundary is bounded by warehouses operated by Mersey Wharf. The south west boundary is formed by Dock Road South.

Figure 1 Site Location



## 1.2 Sensitive Receptors

Table 1 Receptors in Prevailing Wind Direction Within &lt;1 km

ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	Site Workers	On site	-
	Site Visitors	On site	-
1	Mixed Commercial Light industrial, shipping etc.....	Adjacent	S
<b>PUBLIC RIGHTS OF WAY (PROW)</b>			
	None	-	-
	Various local roads	0-2000	N,E,S,W
	River Mersey	54	N,E
<b>DESIGNATED SITES (European) SSSI, RAMSAR SPA etc...</b>			
1	New Ferry	26	NE
3	New Ferry	83.5	NE



### 1.3 Wind Rose

Wind rose shows the prevailing wind direction for the waste site. Which is west south westerly. The weather station this wind rose is taken from is Liverpool NW, L3 6, north north east of the site approx. 5 km from site.

Figure 2 Wind Rose

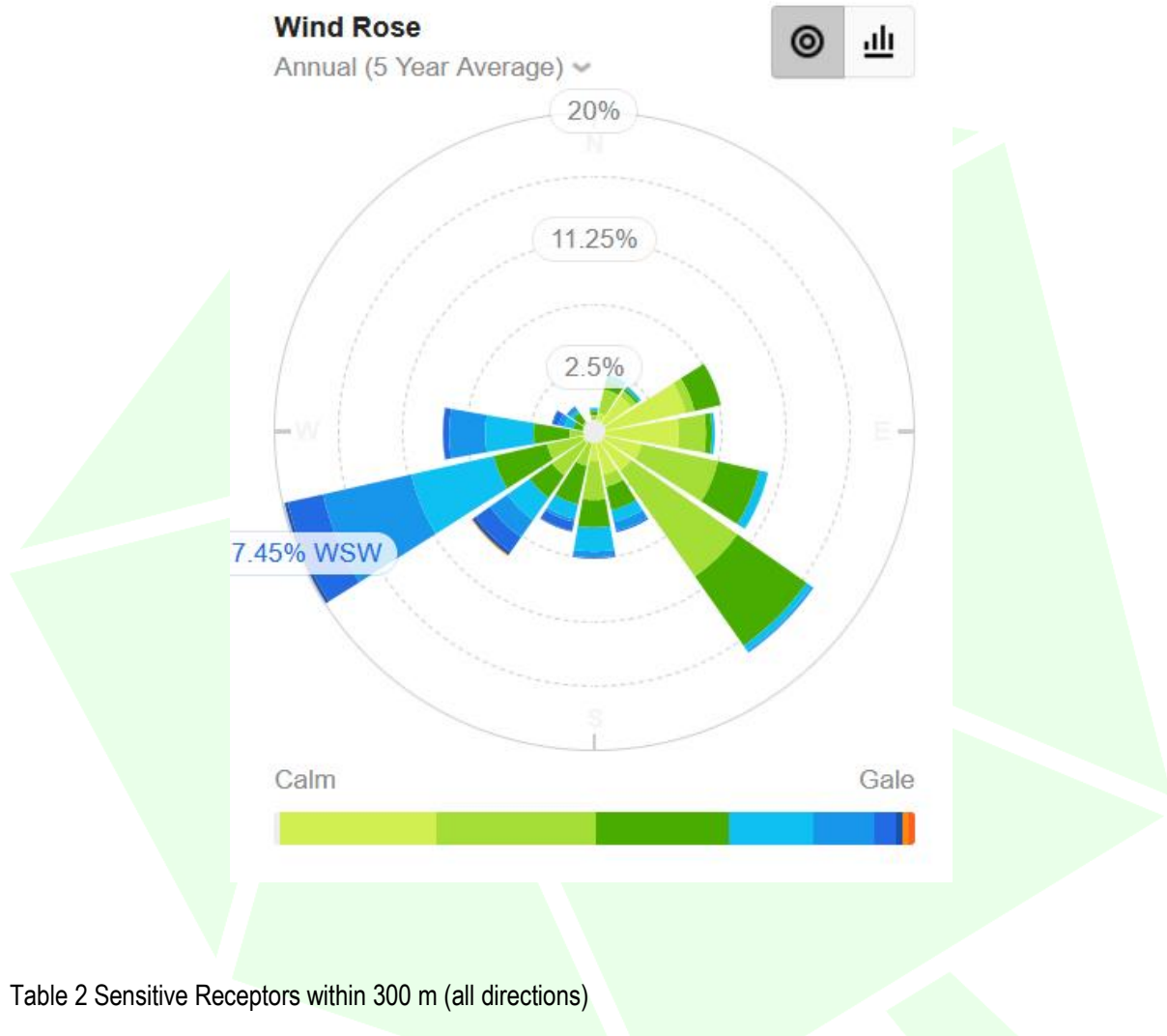


Table 2 Sensitive Receptors within 300 m (all directions)

ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	Site Workers	On site	-
	Site Visitors	On site	-
<b>RESIDENTIAL</b>			
1	Pool Lane, Ashton Way, Boniface Close, York Street, South View, The Green, Manor Place	185	S
<b>PUBLIC RIGHTS OF WAY (PROW)</b>			
1	Port Sunlight River Park	20	N
17	Maritime Cricket Club	128	S

18	Rainbow Corner Park	237	SW
<b>SURFACE WATER</b>			
	River Mersey	54	N,E
	Dibbinsdale Brook	10	NW
	Inland river not influenced by normal tidal action.	59	NW
	Inland river not influenced by normal tidal action.	83	NW
	Inland river not influenced by normal tidal action.	94	NW
	Inland river not influenced by normal tidal action.	128	NW
	Inland river not influenced by normal tidal action.	131	SW
	Inland river not influenced by normal tidal action.	167	NW
	Inland river not influenced by normal tidal action.	236	NW
<b>GROUNDWATER</b>			
<b>DESIGNATED SITES (European) SSSI, RAMSAR SPA etc...</b>			
1	New Ferry	26	NE
3	New Ferry	83.5	NE
<b>NON DESIGNATED SITES (but of impact to permitting)</b>			
<b>LISTED BUILDINGS AND PARKS</b>			
2	10-16, YORK STREET	286	SSW
3	18-24, YORK STREET	289	SSW
4	26-32, YORK STREET	296	SSW

Figure 3 Location of Noise Sensitive Receptors

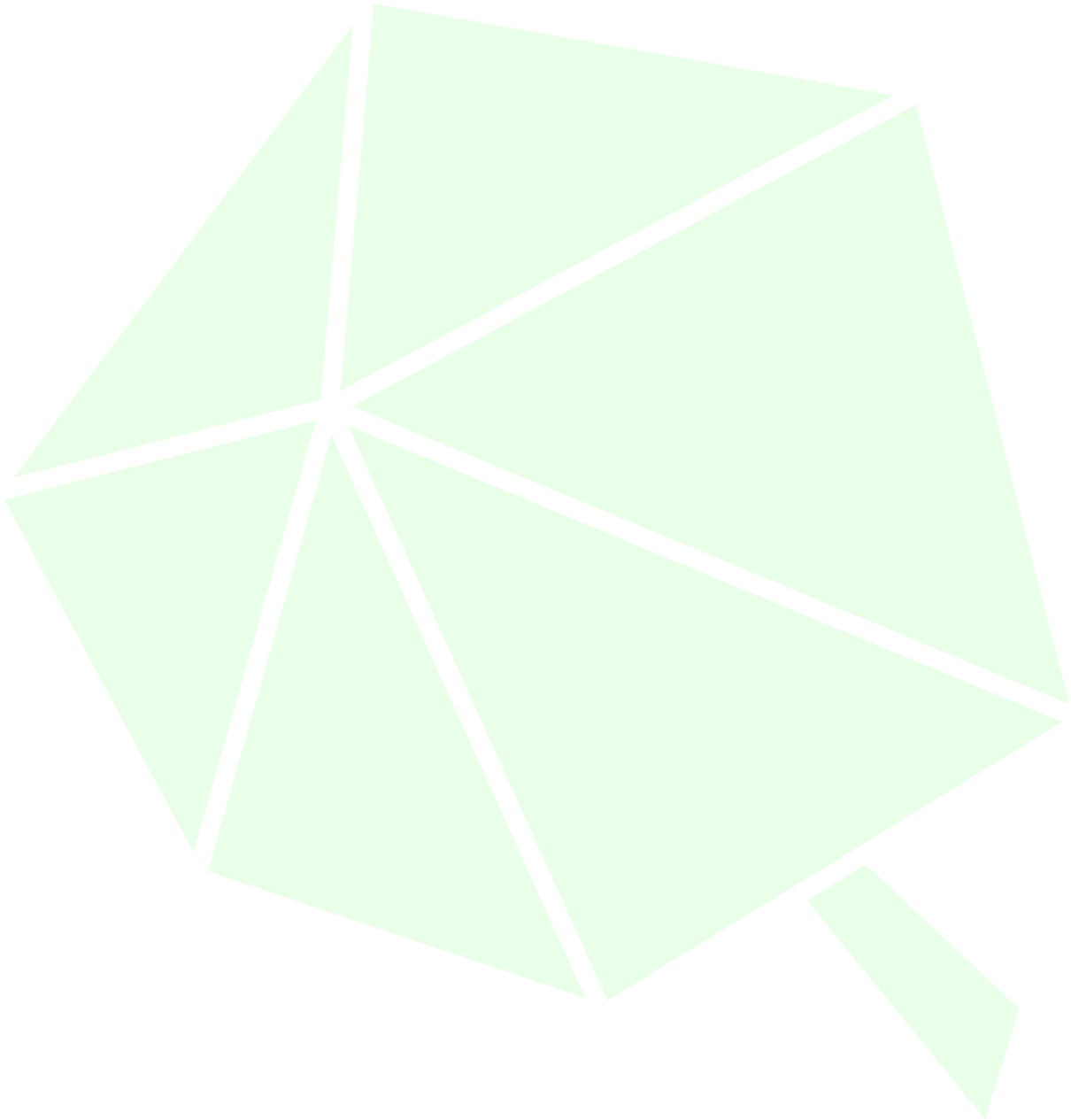


(Source: appendix A)

Table 3 Most at Risk Receptors

Receptor type	Receptor ref (nia)	Description	Distance from site (approx.)	Direction
<b>HUMANS AND PROPERTY</b>	NSR1 Sparks Croft	Residential	375	NW
	NSR2 Marine Drivee		412	W
	NSR3 Pool Lane		191	SW
	NSR4 York Street		268	SSW

	NSR5 The Green		307	S
	NSR6 Future Residential		321	W



## 2 OPERATIONS

Waste is brought in to site either by road or by boat. If by boat it is loaded in to dumpers on the wharf and driven the final few 100 metres to site.

Waste is tipped in designated areas. All processing of waste IBA occurs inside a building with processed IBA being stored externally post processing.

Site is designed to reduce double handling as much as possible with a clear in and out flow of material.

### 2.1 Waste Deliveries

All vehicles will be sheeted or containerised to contain the load. Whether it arrives by road or boat. Sheeting is required for both loaded and empty vehicles. Dumper trucks will transport the material from boat to site across the wharf. The potential source of dust emissions will be the movement of wheeled plant and vehicle movement during delivery and tipping. Vehicle speeds onsite will be restricted to 10 mph. Tipping will be supervised and if required dampening down of material will occur, however, all waste arrives damp (15 – 30 % moisture content).

All incoming loads will be pre-booked. Visual inspections of the load and Duty of Care documentation shall be reviewed for accuracy in accordance with the Waste Acceptance Procedure (See below) and retained for a minimum of 2 years.

### 2.2 Waste Processing

All processing activities will occur within a building. Only storage will occur externally.

### 2.3 Waste Acceptance Procedure

Waste is accepted from only pre-approved sites via an agreed contract and waste description. No ad-hoc waste deliveries are accepted to site.

Individual waste deliveries are inspected on arrival on site and during the tipping process. If waste is deemed to be non-compliant the Technically Competent Manager (TCM) or appropriately trained employee can reject the waste and send it back to the producer.

An annual Waste Transfer Note will be used for IBA that arrives from the pre-approved suppliers which will record amounts, day of transfer and type of waste, including EWC code.

Waste code	Description
<b>19</b>	<b>Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use</b>
<b>19 01</b>	<b>Waste from incineration or pyrolysis of waste</b>

19 01 12	Bottom ash and slag other than those mentioned in 19 01 11(not containing hazardous substances)
19 12	<b>Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising)not otherwise specified</b>
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 Incinerator Bottom Ash only

Site layout is shown in the Site Layout Plan (2022-000-01G). The site benefits from a bund to the east and south of the permitted activities. These bunds will act as a pathway breaker for noise. There are also large bunds to the south and northern boundaries. This will act as a wind break to prevent transmission of noise off site. The IBA stockpiles will also act as a bund and break the pathway for noise and vibration transmission.

Operating machinery will be located in the approx. centre of the site and is up wind of the bunds and IBA storage piles.

The principal sources of noise and vibration on site are:

Machine	Brand	Type/ Variant Code
Swing Shovel Tracked 360	Leibherr	R934C
Swing Shovel Tracked 360	Leibherr	R944C
Load Shovel	Leibherr	L586
Load Shovel	Leibherr	L580
Mobile Screening Unit	Keestrack	Giant e8
Portable Generator	SDMO	R220
Hand Sorting Cabin	Phairon	Genus
Windsifter	Phairon	Ventum
Mobile Crusher	Kleemann	MR122Z
Mobile Metal Separator	Phairon	Ultra
Mobile Metal Separator	Phairon	Forta
Mobile Metal Separator	Phairon	Optima

To reflect the findings of the noise assessment appendix C crushing and screening activities will only take place internally.

### **3 NOISE MANAGEMENT**

#### **3.1 Responsibility for Implementation**

Responsibility for the implementation of the NVMP is the Technically Competent Manager (TCM) and Senior management and in their absence an appropriately designate and trained person.

The effectiveness of the plan will be monitored on a daily basis and reviewed as required in the event it is shown not to be adequately limiting noise levels experienced at the nearest noise sensitive properties.

All staff will be made aware, via toolbox talks and by training as required of the NVMP, its requirements and their role within it..

#### **3.2 Sources and Control of Noise**

##### **3.2.1 Delivery and Removal of Waste**

The speed of passage, the nature and condition of surfaces and proximity of haul routes to sensitive receptors all affect the level of noise generated and experienced at noise sensitive receptors.

The most effective way of reducing noise generation is to limit site speeds and ensure that haul roads are maintained. The location of haul routes reduces the noise experienced beyond the site in this case, routes need to be kept as far as possible from sensitive receptors.

The tipping of wastes is not considered a significant source of noise. The movement of plant has been identified as the biggest contributor to overall noise generation.

The hours of operations are limited to periods when background noise levels are higher to reduce the noise impact of operations conducted within the site.

Mobile plant and machinery should be well maintained and effectively silenced. In addition, it needs to be operated by, for example, shutting down equipment not

being used and avoiding excessive revving so that noise generation is minimised. The use of broadband reversing alarms also reduces the overall level of disturbance.

Weather conditions, including in particular wind speed and direction, have an impact on the noise experienced beyond the site and management of the site needs to consider this when the wind direction is towards the noise sensitive receptors.

##### **3.2.2 Processing of Waste**

#### **3.3 Noise Monitoring**

Noise monitoring is carried out daily. An audial inspection of operations within the site along the nearest boundary to noise sensitive receptors.

Detection of any unusually loud or tonal noises will be investigated, the source identified, and remedial measures put in place to minimise if not eliminate the source.

Record of the results of the monitoring together with any mitigation measures, required will be recorded in the Site Event Log in appendix H of the Environmental Management System 016.1\_05\_002

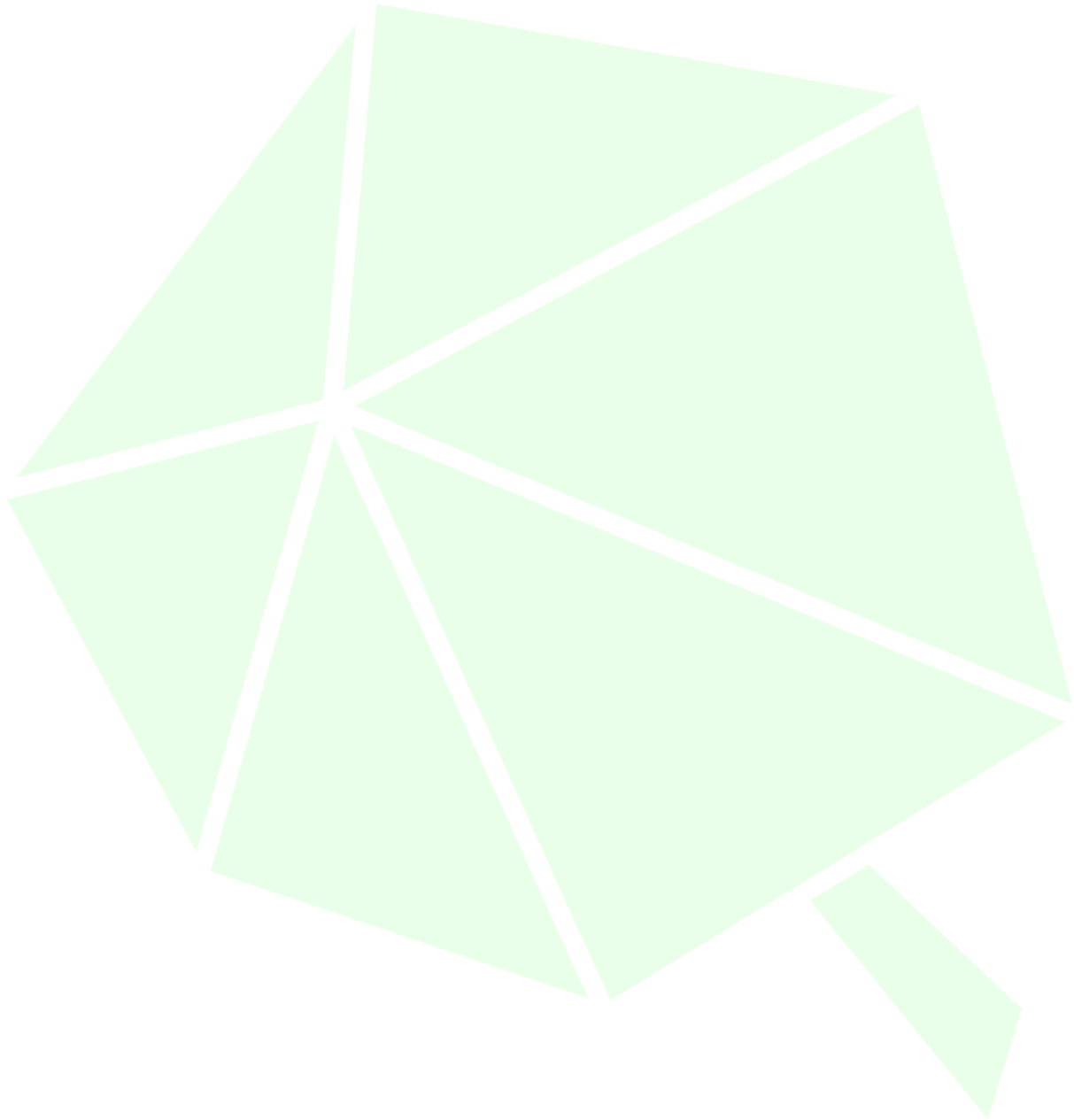




Table 4 Control of Noise Impacts

ABATEMENT MEASURE	DESCRIPTION / EFFECT	OVERALL CONSIDERATION AND IMPLEMENTATION
Site / process layout in relation to receptors	<p>All noisy operations are to be carried out within constructed bunds.</p> <p>Crushing &amp; screening activities only take place in the approx. centre of permit area.</p>	<ul style="list-style-type: none"> <li>• The site layout has the advantage of the fact that all processing will occur within a building.</li> <li>• All processing activities will take place in the middle of permitted area. IBA stockpiles also surround the processing equipment providing an acoustic screen minimising the noise experienced at the nearest noise sensitive receptors.</li> <li>•</li> </ul>
Hours of operation	<p>Daylight working hours only and no operations to take place when ambient noise levels are low</p>	<ul style="list-style-type: none"> <li>• The site shall only operate (including deliveries, processing, stockpiling and collections) between the following hours:</li> <li>• Site operations are split, vehicles movements between 07:00-17:00 and processing 07:00-19:00 Monday to Friday.</li> <li>•</li> <li>• No operations shall take place on Sundays or Public Holidays.</li> </ul>
Reversing alarms	<p>Broadband reverse alarms/Peaks in noise emissions</p>	<ul style="list-style-type: none"> <li>• All vehicles will be fitted with broadband reverse alarms.</li> </ul>

<p>Operation and maintenance of plant and machinery</p>	<p>Poorly maintained and operated machinery has the potential to increase noise emissions</p>	<ul style="list-style-type: none"> <li>• All vehicles, plant and machinery will be operated and maintained in accordance with manufacturer’s specifications</li> <li>• to keep noise generation to a minimum.</li> <li>• Equipment should be shut down when not in use, where this is practicable</li> </ul>
<p>Access road use and maintenance Internal haul roads</p>	<p>Limiting noise generated within the site</p>	<ul style="list-style-type: none"> <li>• The access roads should be well maintained and vehicles using the road should limit their speed to below 10 mph and avoid any excessive revving.</li> </ul>

Table 5 Source-Pathway-Receptor

SOURCE	PATHWAY	RECEPTOR	TYPE OF IMPACT	WHERE RELATIONSHIP CAN BE INTERRUPTED
<p>Delivery of waste</p>	<p>Atmospheric dispersion</p>	<p>Residential properties, local ecology</p>	<p>Disturbance by increase in noise levels above background levels</p>	<ul style="list-style-type: none"> <li>• Limiting hours of operation</li> <li>• Using broadband reversing alarms</li> <li>• Maintaining plant and equipment</li> <li>• Operating plant and equipment in such a way as to minimise noise emissions</li> </ul>

<p>Waste Processing</p>	<p>Atmospheric dispersion</p>	<p>Residential properties, local ecology</p>	<p>Disturbance by significant increase in noise levels above background levels</p>	<ul style="list-style-type: none"> <li>• Limiting hours of operation</li> <li>• Screening &amp; crushing undertaken internally.</li> <li>• Using broadband reversing alarms</li> <li>• Maintaining plant and equipment</li> <li>• Operating plant and equipment in such a way as to minimise noise emissions</li> </ul>
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### **3.3.1 Monitoring Location**

When required after 2 or more noise complaints either by the EA, Local authority or member of the public, monitoring will be carried out at locations are shown in monitoring locations plan 016.1\_09\_005.

Detection of any unusually loud or tonal noises will be investigated, the source identified, and remedial measures put in place to minimise if not eliminate the source.

Record of the results of the monitoring together with any mitigation measures, required will be recorded see appendix B.

### **3.3.2 Reporting of Data**

Findings will be recorded and on request submitted to the EA.

### **3.4 Mitigation**

No mitigation is required see appendix A for noise impact assessment.

## 4 REPORTING AND COMPLAINTS RESPONSE

### 4.1 Reporting of Complaints

The nominated person responsible for responding to complaints and implementing the complaint procedure is the TCM.

If complaints are received in relation to the activities covered by the Environmental Permit e.g. noise, dust etc., these will be discussed with the TCM and, where necessary, action taken to deal with immediate consequences.

In the event that a complaint is received either directly from a neighbouring resident or indirectly via a regulatory body. The name, address and contact details of the complainant will be sought.

- name;
- address;
- contact details;
- date(s) and time(s) to which the complaint relates; and
- nature of the complaint and any other details which may assist in the identification of the source, activity or circumstances which prompted the complaint.

The Operations TCM will then investigate the complaint to determine the cause and implement any corrective and preventative actions.

Timescales will be determined for follow-up of the corrective actions and determination of their effectiveness.

The complaints information and subsequent investigation will be recorded in Rock Solid Processing Limited Emission Complaint Form appendix B.

The timings and description of the complaint will be analysed in conjunction with the activities and meteorological conditions logged on site within 1 working day to identify the offending source or activity. The complainant may be asked to keep on

ongoing log for correlation with the site operational log. Once the source or activity is identified suitable mitigation measures will be implemented without delay.

Where the complaint relates to noise, mitigation measures will ensure noise levels as set out in Table 2 are not exceeded. Where the complaint relates to vibration mitigation measures will be introduced as necessary to minimise any impacts. Where these levels are not exceeded but complaints continue, a review of noise and vibration mitigation measures will be undertaken to ensure the operations are as quiet as possible and do not cause unreasonable disturbance.

The complainant will be contacted to check that the mitigation has been effective.

#### 4.2 Management Responsibilities

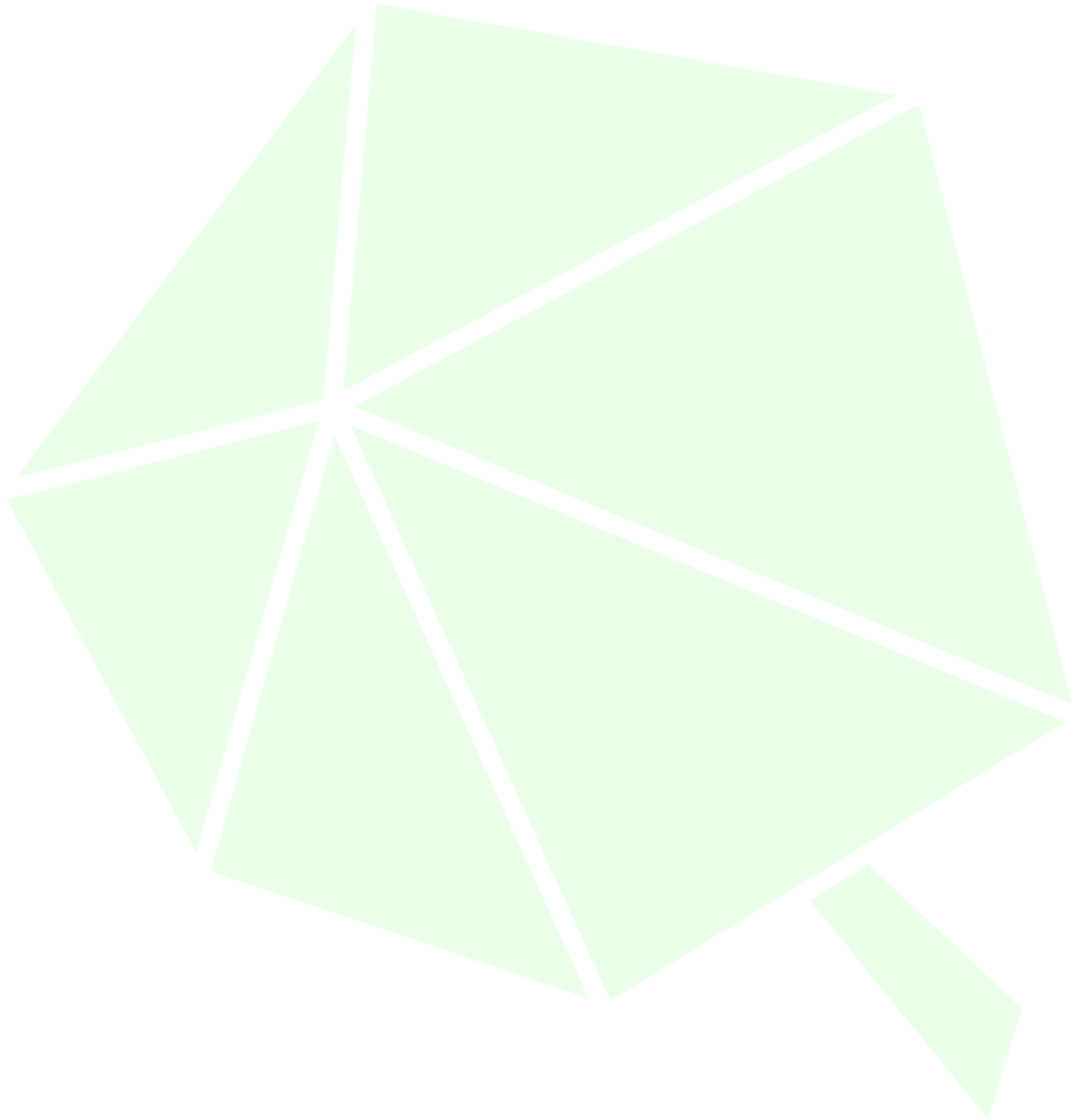
The nominated person responsible for responding to complaints and implementing the complaint procedure is the Technically Competent Manger.

Contact Details:

NAME	CONTACT DETAILS
TBC	Tel: TBC
	Email: TBC

## 5 SITE AND EQUIPMENT MAINTENANCE

All site equipment will be maintained as per manufacturer's guidelines or at least annually and records kept, as a minimum.



## 6 RECORD KEEPING

As a minimum, the following records must be kept to ensure compliance with the requirements of the Environmental Permit:

- A copy of the permit
- Risk assessments
- Competence and training records
- Duty of Care documentation and Environment Agency waste returns
- Other legally required documents
- Operational procedures
- Compliance records
- Complaints Record

Records must be retained for 6 years unless they relate to off-site environmental or health effects, or the condition of the land or groundwater when they shall be retained until permit surrender.



## 7 MANAGEMENT PLAN REVIEW

The NVMP will be reviewed as a minimum at least annually or following any substantial change in site operations or complaint of dust, particulate matter emissions or at the request of the Environment Agency.

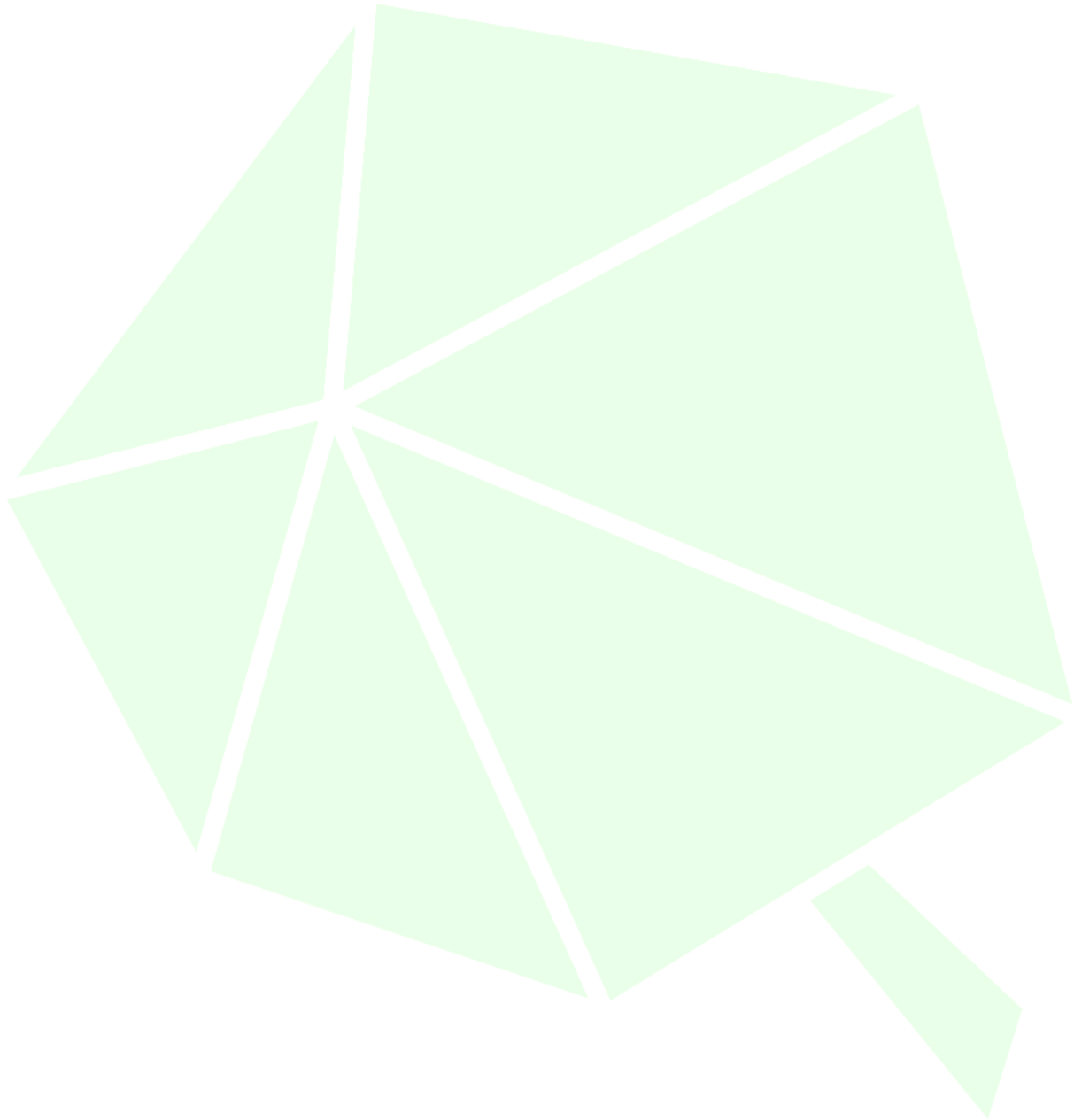
Other activities which may prompt review of the NVMP are variations to the environmental permit, accident, complaint, breach or a change in the site setting or sensitive receptors.

Where the review requires changes, this will be documented and maintained with the site records, for example, waste storage volumes, types of waste, changes to abatement measures, new or altered equipment.

## 8 AVAILABILITY NVMP

All site operational staff will be trained in the contents of the NVMP to ensure compliance and consistent operation of waste activities.

A copy of the NVMP will be made available at the site for reference purposes and is available on request to the Environment Agency and other interested parties.



## 9 SUMMARY

The NVMP seeks to ensure that by the adoption of industry best practice and appropriate measures, dust emissions are adequately controlled within the site and do not cause any significant impacts on amenity or the environment beyond the permit boundary.

This NVMP describes how the operator is fully committed to operating responsibly and in compliance with the Environmental Permit.

The NVMP will be reviewed annually and in the event of any complaint regarding noise or vibration to ensure its provisions remain effective.



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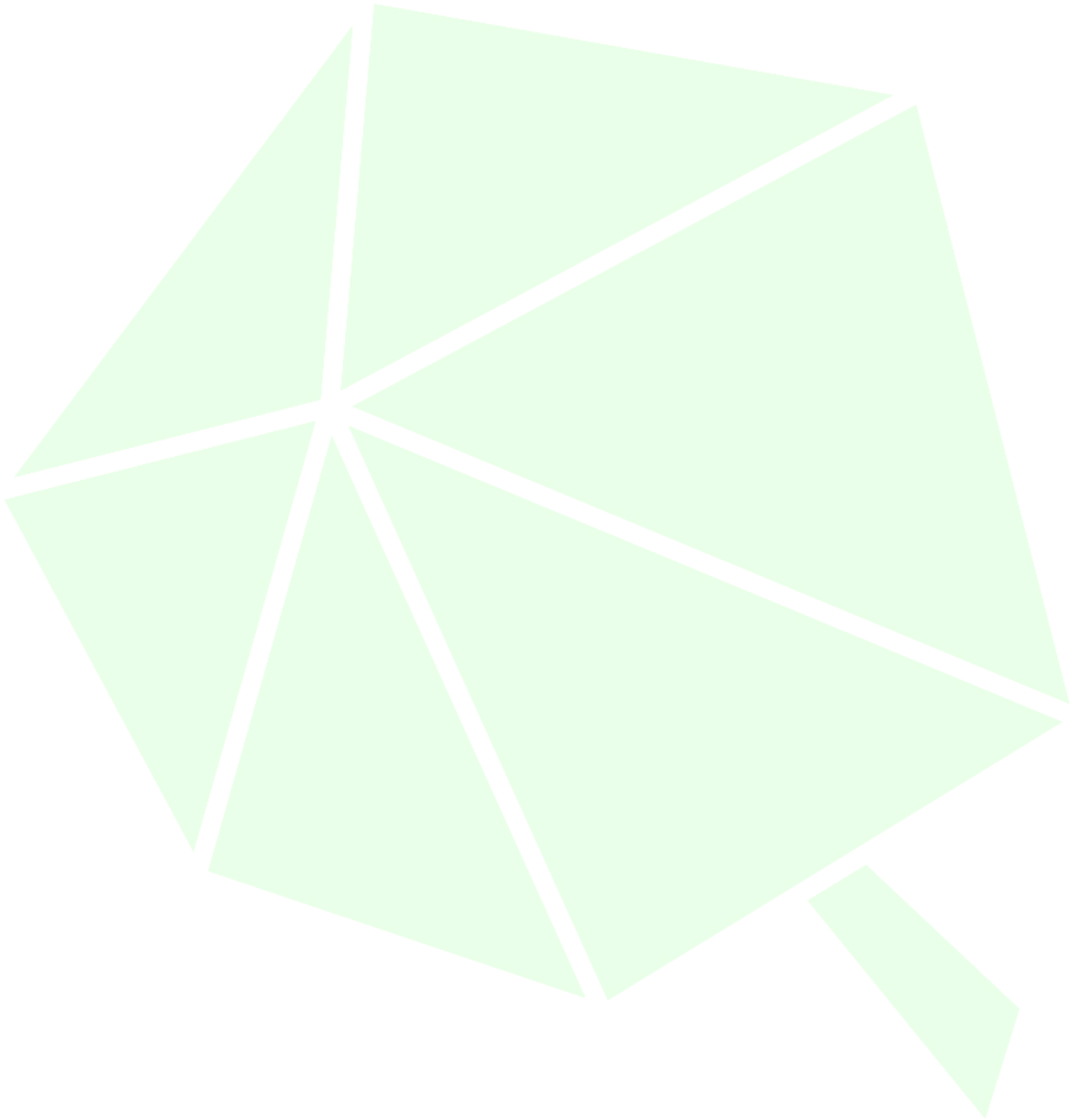
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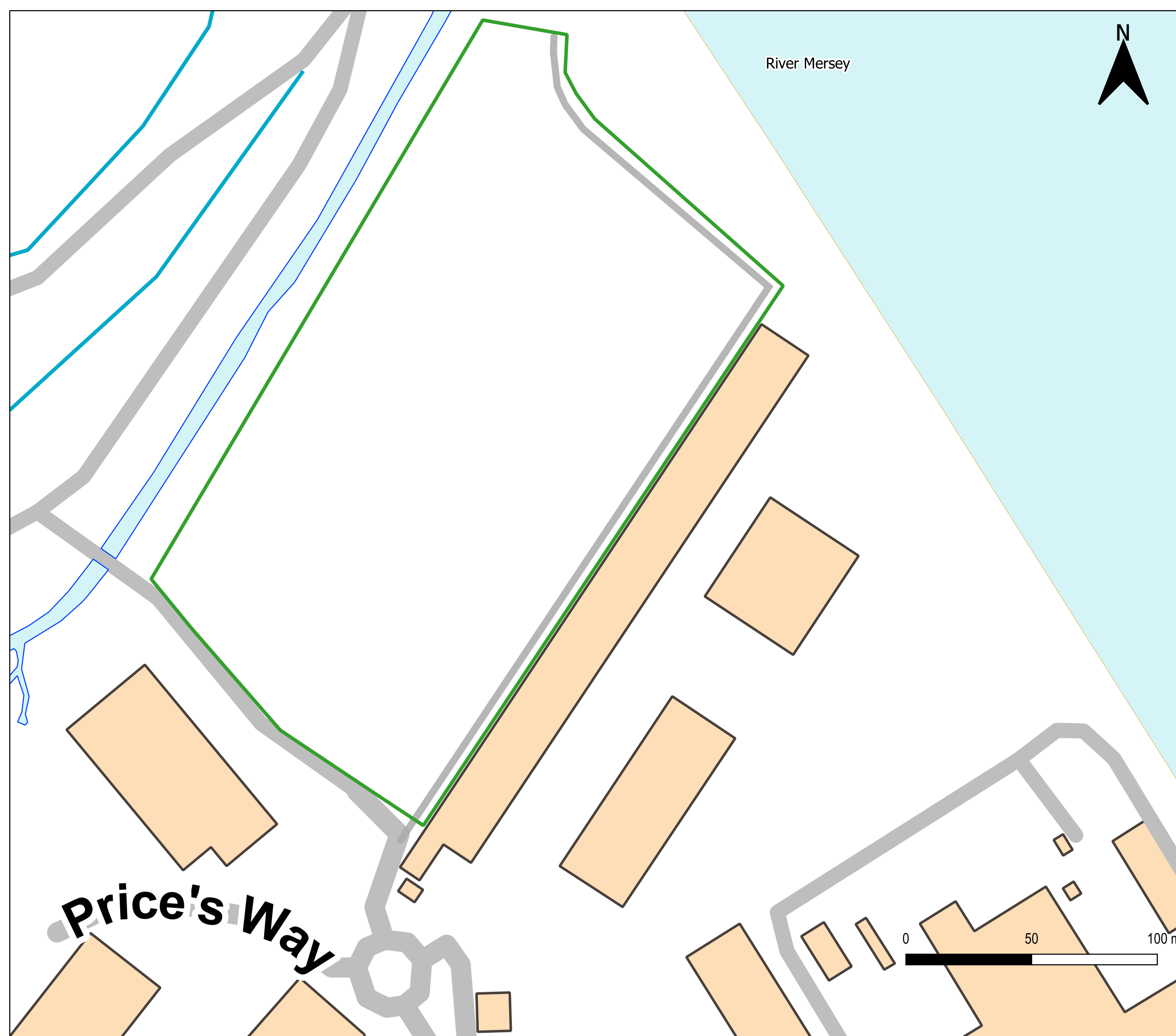
**[www.umbrella-environmental.co.uk](http://www.umbrella-environmental.co.uk)**

**[andrew@umbrellaenvironmental.co.uk](mailto:andrew@umbrellaenvironmental.co.uk)**

**Mob: 07498 671713**

# Drawings





Key:

— Permit Boundary



Drawing Title: Permit Boundary
Ref: 016.1_09_001
Scale: 1:1400 (A3)
Date: 2022-11-30
Revision: REVA
Drawn By: AIL
Address: Rock Solid Processing Ltd, Bromborough South Dock

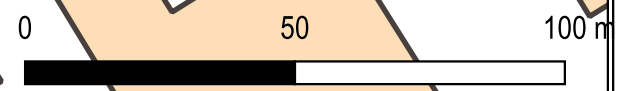
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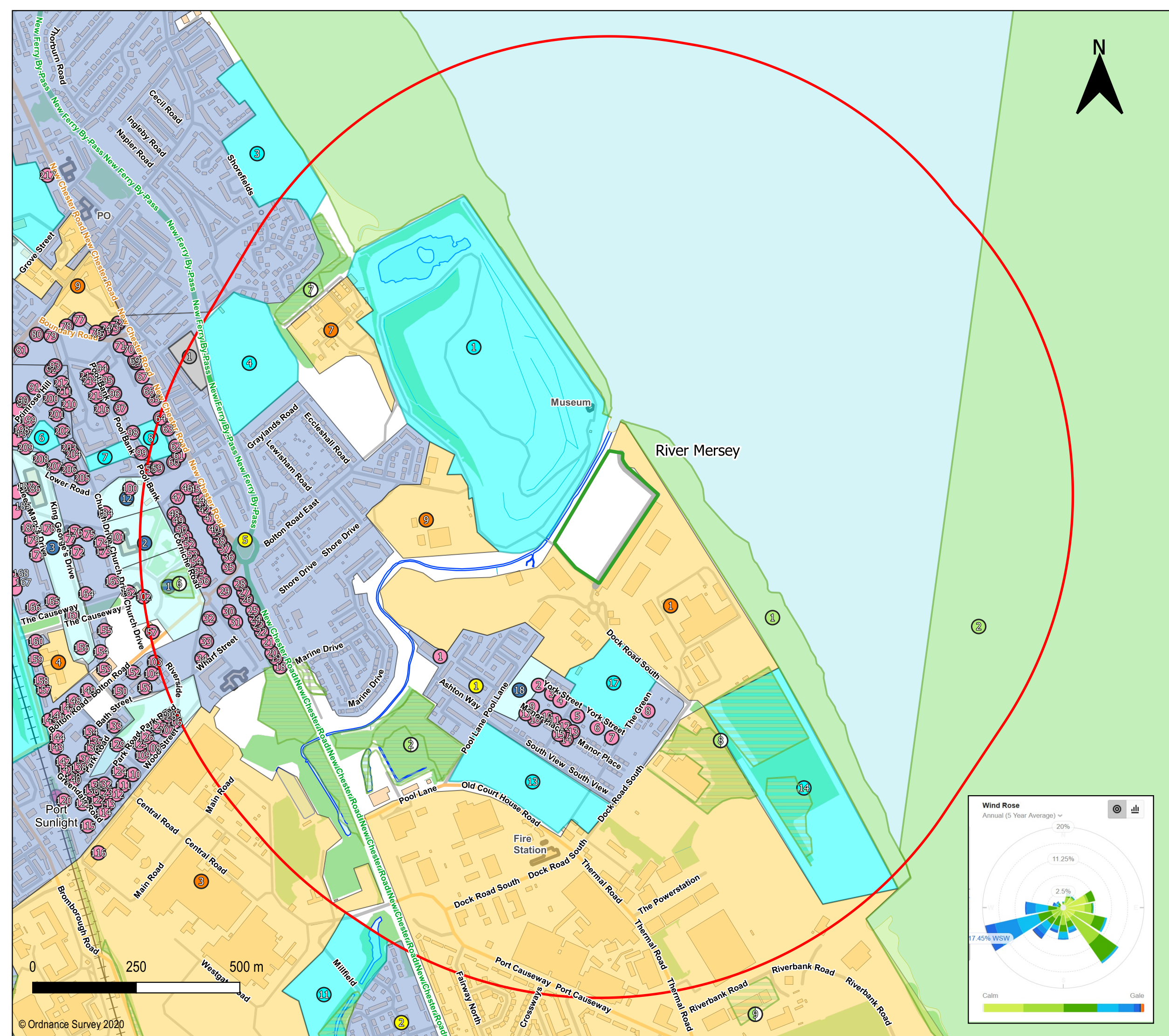
**RockSolid**  
FROM WASTE TO VALUE



**Price's Way**

River Mersey



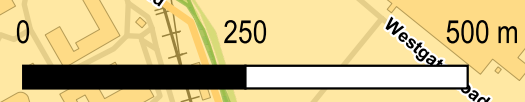
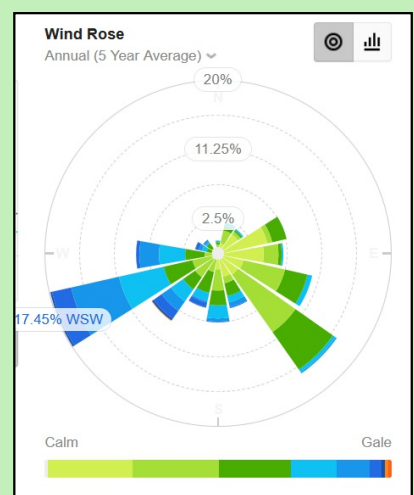


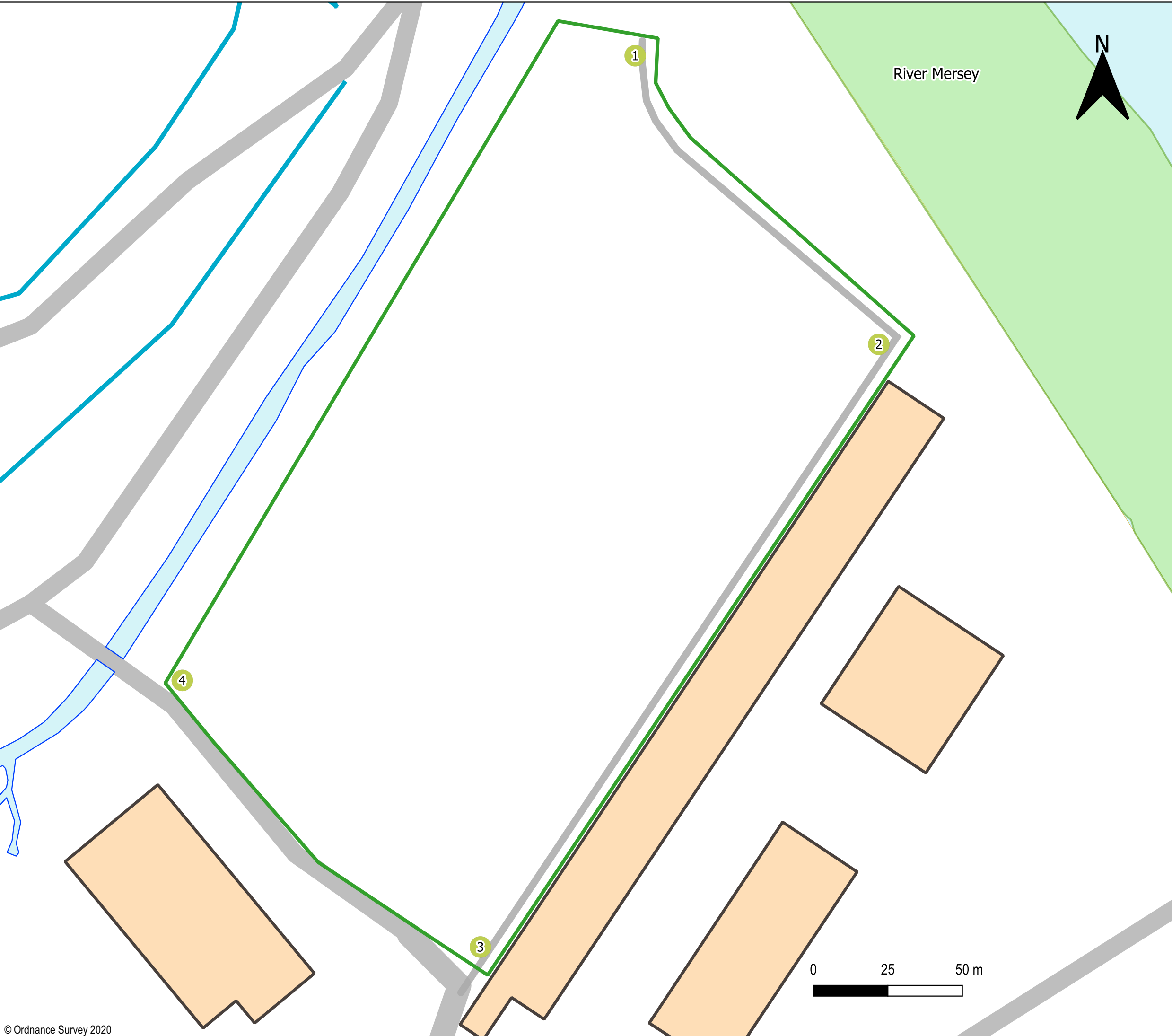
- Key:
- Permit Boundary
  - 1 Km Buffer
  - Heritage ID
  - Non Designated Site ID
  - Non Designated Site Area
  - Critical Infrastructure ID
  - Critical Infrastructure Area
  - Designated Site ID
  - Designated Site Area
  - Commercial ID
  - Commercial Area
  - Recreational ID
  - Recreational Areas
  - Public Use ID
  - Public Use Area
  - Agricultural ID
  - Agricultural Area
  - Residential ID
  - Residential Area



Drawing Title: Sensitive Receptors 1 km  
 Ref: 016.1\_09\_002  
 Scale: 1:8500 (A3)  
 Date: 2022-11-30  
 Revision: REV A  
 Drawn By: AIL  
 Address: Bromborough South Dock CH62 4RY

Changelog:  
 - N/A





Key:

- Permit Boundary
- Monitoring Locations

Drawing Title: Monitoring Locations  
 Ref: 016.1\_09\_005  
 Scale: 1:1200 (A3)  
 Date: 2022-11-30  
 Revision: REV A  
 Drawn By: AIL  
 Address: Bromborough South Dock CH62 4RY

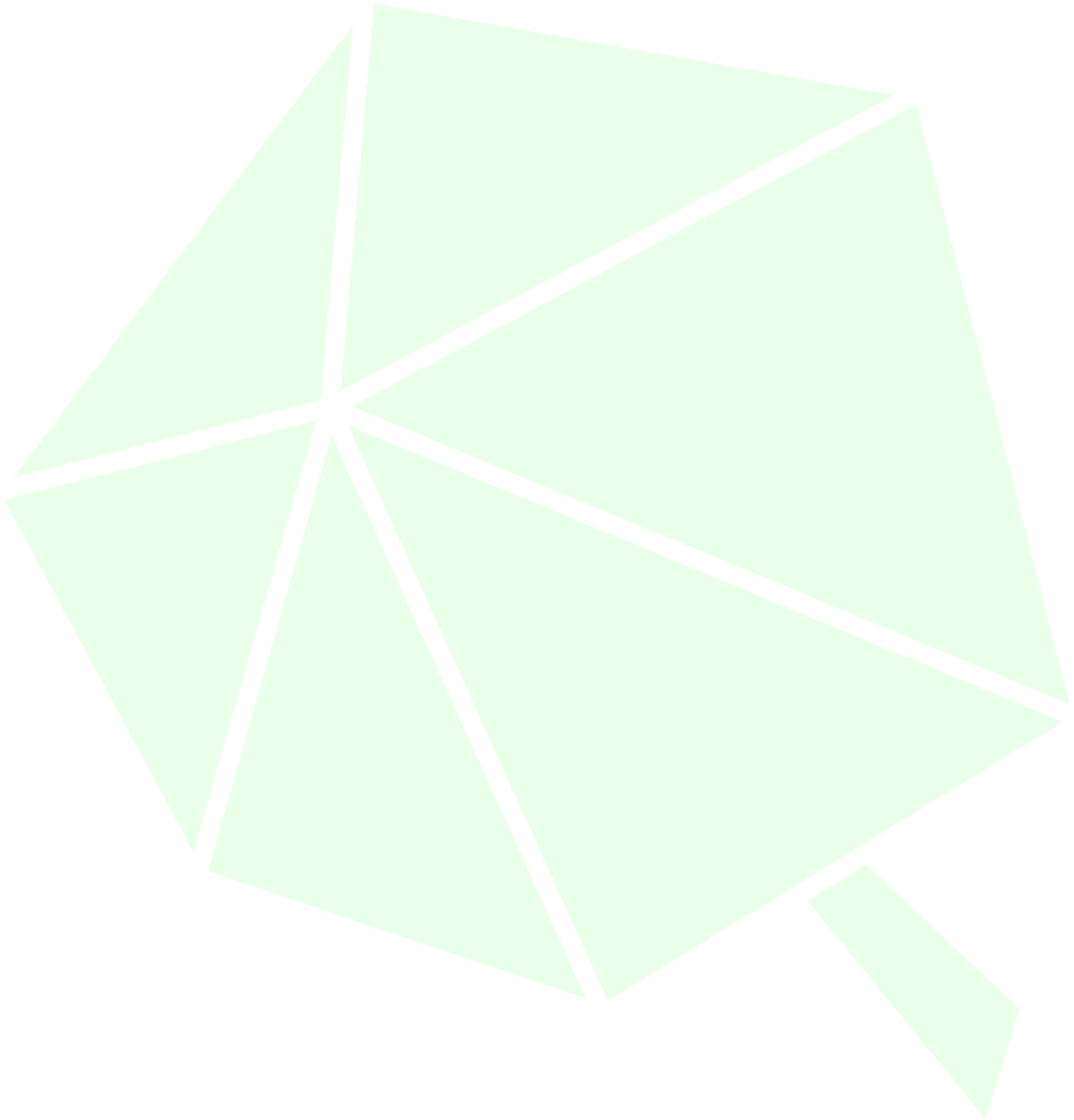
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**RockSolid**  
 FROM WASTE TO VALUE

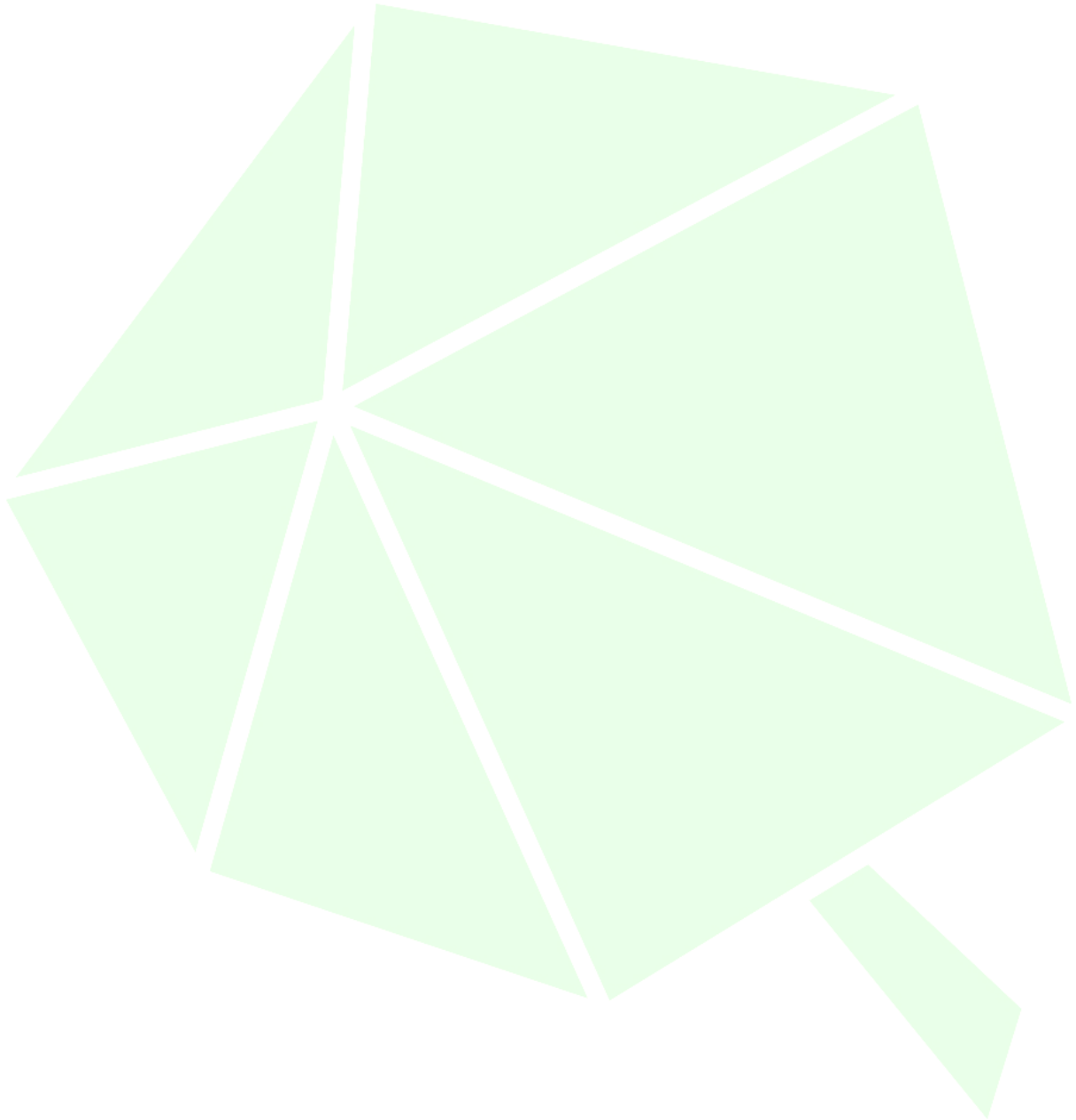
**UMBRELLA ENVIRONMENTAL**  
 PROTECTING YOUR BUSINESS



# Appendices



# App A



A large teal graphic on the left side of the page, consisting of a triangle at the top and a trapezoid below it, forming a shape that resembles a stylized 'M' or a building facade.

# **Bromborough Dock IBA Processing Facility**

Noise Impact Assessment

October 2022

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# **Bromborough Dock IBA Processing Facility**

## **Noise Impact Assessment**

October 2022

# Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
P01	05/10/22	Jian Leow Tom Brooks	Andrew Monk Steel	Adrian Morgan	Issued as per the validation requirements for the planning application

**Document reference:** 100104167-MDD-00-RP-EN-0009

**Information class:** Standard

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# 1 Introduction

Covanta Energy (hereafter, 'Covanta') is proposing the development of an aggregate processing facility, parking provision and ancillary development (hereafter, 'the proposed development'). This is an incinerator bottom ash (IBA) processing facility to manufacture incinerator bottom ash aggregate (IBAA) from the IBA to recover the metals and produce secondary aggregate for use in the construction industry. IBAA is a heterogeneous product which minimises landfill and reduces the need to quarry new materials.

## 1.1 Document scope

This report describes an assessment of operational noise impacts and sets out the Best Available Techniques (BAT) in relation to the control of noise emissions. A qualitative construction noise assessment has also been included as the full details of the construction methodologies and programme were not available at this stage.

## 1.2 Description of the proposed development

The proposed development is located within the Bromborough Dock (South) Landfill Site, Dock Road South, Bromborough, CH62 4SU (approximate Grid Reference: SJ 34950 84720). The site was chosen due to its suitability and location to the new energy recovery facility under construction at Protos and access to the wharf to enable import of material by boat from the Dublin facility.

The site is bounded to the north west by the Dibbinsdale Brook and Port Sunlight River Park, while to the north east by Mersey Wharf and the River Mersey. The south east boundary is bounded by warehouses operated by Mersey Wharf. The south west boundary is formed by Dock Road South.

The closest noise sensitive receptors (NSRs) are located along Sparks Croft, approximately 340m from the north west site boundary and Pool Lane, approximately 200m southwest of site boundary. A site location plan is provided in Appendix 1 for reference.

The proposed development will incorporate the construction of a processing building with adjoining office, a storage area for processed materials, stockpile areas and a laydown area. Ancillary development will also include building services such as a weighbridge, rainwater tank, wheel washing, lighting, fire detection and alarm systems, electrical and mechanical services and communication systems, surface water and foul water drainage and security palisade fencing. A separate building may be provided for onsite laboratory and maintenance facility. Access to site would be available via Dock Road South by land and via Mersey Wharf by boat.

The proposed development would generate sound from the following sources:

- Material haulage by land and boat
- Stockpile of materials
- Processing building
- Mobile plant and vehicles
- Fixed installations which comprise of mechanical and electrical equipment

## 2 Planning policy and guidance

### 2.1 National planning policy

#### 2.1.1 The National Planning Policy Framework (NPPF), Defra, 2021

The National Planning Policy Framework (NPPF)<sup>1</sup> was adopted by the Government in July 2018 and was subsequently updated in February 2019 and July 2021. It sets out the Government's planning policies for England and how these are expected to be applied.

Paragraph 174 of the NPPF states that: *“Planning policies and decisions should contribute to and enhance the natural and local environment by: e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability”*.

Paragraph 185 of the NPPF states that planning policy and decisions should aim to: *“Mitigate and reduce to a minimum, potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life.”* and *“identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason”*.

Paragraph 187 reintroduces the ‘Agent of Change’ principle – *“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”*

#### 2.1.2 Noise Policy Statement for England, Defra (NPSE), 2010.

The NPSE<sup>2</sup> sets out the following aims in line with its long-term vision of promoting good health and quality of life through the management of noise.

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development is to:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life.

#### 2.1.3 Planning Practice Guidance

Planning Practice Guidance (PPG)<sup>3</sup> provides guidance on how the policy set out in NPPF may be interpreted in practice for a wide range of issues. There is a subsection of PPG relating specifically to noise: *“Local planning authorities’ plan-making and decision taking should take account of the acoustic environment and in doing so consider:*

- *Whether or not a significant adverse effect is occurring or likely to occur.*

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<sup>1</sup> Ministry of Housing, Communities and Local Government, The National Planning Policy Framework, 2021.

<sup>2</sup> DEFRA, *Noise Policy Statement for England*, 2010

<sup>3</sup> Ministry of Housing, Communities and Local Government, *Planning Practice Guidance*, 2019.

- Whether or not an adverse effect is occurring or likely to occur.
- Whether or not a good standard of amenity can be achieved.

*In line with the Explanatory Note of the NPSE, this would include identifying whether the overall effect of the noise exposure (including the impact during construction wherever applicable) is, or would be, above or below the significant observed adverse effect level...*

## 2.2 Local Policy

### 2.2.1 Wirral Local Plan 2021 – 2037

The Wirral Local Plan 2021 – 2037 submission draft contains the following policies for noise:

- Policy WS 7.2 ‘Privacy and Amenity’ states “Development proposals must take account of the privacy and amenity of the developments users and neighbours. Proposals will be required to:...adequately address issues of vibration, noise, dust, fumes, odour, light pollution, air quality, waste collection and microclimatic conditions likely to arise from any use or activities as a result of the development or from neighbouring uses or activities”.
- Policy WD 10 ‘Non-residential uses in primarily residential areas’ states “Proposals for non-residential and community uses within the Primarily Residential Areas shown on the Policies Map will be permitted subject to the proposal: ... not resulting in unacceptable impact on neighbouring uses, such as noise and disturbance, on-street parking and deliveries by vehicle use and other outdoor activities ... incorporating adequate noise insulation and attenuation where appropriate”.

## 2.3 Legislation

### 2.3.1 Environmental Protection Act 1990, Part III (EPA)

The Environmental Protection Act 1990<sup>4</sup> sets out the requirement for local authorities to investigate potential statutory nuisance and describes ‘Best Practicable Means’ (BPM). BPM may be used as a defence against claims of statutory nuisance, assuming that the measures taken by the site operator to control emissions from the site accord with the requirements of BPM, which are defined as:

“Reasonably practicable having regard, among other things, to local conditions and circumstances, to the current state of technical knowledge and to the financial implications”.

### 2.3.2 Environmental Permitting Regulations

Permitted facilities are subject to the Environmental Permitting (England and Wales) (Amendment) Regulations 2018<sup>5</sup> which, for facilities that require a permit to operate, take precedence over the requirements set out in the EPA.

The facilities that require permit to operate were defined as facilities that:

- carry out Part A(2) or Part B activities
- run a Part A(2) or Part B installation or mobile plant

where Part A(2) activities listed as:

- refining gas
- metal works, eg producing pig iron or steel, casting ferrous metal, operating forge hammers or applying fused metal coatings

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<sup>4</sup> The Stationery Office, *Environmental Protection Act*, 1990.

<sup>5</sup> The Stationery Office, *The Environmental Permitting (England and Wales) Regulations*, 2018.

- melting non-ferrous metals
- surface treating metals and plastic materials
- grinding cement clinker or metallurgical slag
- glass manufacturing
- cellulose fibre reinforced calcium silicate board manufacturing
- ceramic product manufacturing, including roof tiles and bricks
- non-hazardous or animal waste incineration
- manufacturing wood based boards
- new tyre manufacturing
- disposing of or recycling animal carcasses or waste

While Part B activities relates to any activities that will cause emissions to the air.

The primary consideration for permitted facilities to demonstrate that all reasonable steps are being taken to control emissions from the site are to meet the requirements of BAT. There is no singular definition of BAT as it varies for different types of facilities and at different locations. Whilst BPM requires that the measures “have regard ... to the current state of technical knowledge...”, BAT requires that the measures employed are the best available.

This does not, however, mean that there should be no regard to cost, reasonableness, and local conditions. Typically, a cost benefit analysis may be required to investigate and justify which measures may be regarded as ‘best available’, given the circumstances.

## 2.4 Guidance/ Standards

### 2.4.1 BS 4142 Methods for rating and assessing industrial and commercial sound

British Standard BS 4142:2014+A1:2019<sup>6</sup> entitled ‘*Methods for rating and assessing industrial and commercial sound*’, provides guidance for assessing a new industrial sound source in mixed residential and industrial areas. The methods described in this standard assess the likely effects of the new sound source on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

The level of sound from proposed new plant, the ‘*rating level*’, is predicted in terms of the A-weighted equivalent continuous sound level dB  $L_{Aeq}$  and compared to the existing ‘background sound level’, in terms of  $L_{A90}$ . The  $L_{A90}$  is to be representative of the period being assessed. If the new sound source is impulsive, intermittent, or tonal in nature, then a penalty is added to the ‘rating level’ to account for the character of the noise.

The outcome of the assessment is defined in BS 4142:2014+A1:2019 with the following points that relate to the difference between the background sound level and the rating level:

- Typically, the greater this difference, the greater the magnitude of the impact.
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse

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<sup>6</sup> British Standards institution, BS 4142:2014+A1:2019 ‘*Methods for rating and assessing industrial and commercial sound*’, 2019.

impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

#### 2.4.2 Design Manual for Roads and Bridges: LA111 2020 (LA111, 2020)

DMRB LA 111<sup>7</sup> Provides guidance on the assessment of impacts from noise and vibration that may result from road projects. The guidance is used in the assessment to determine a methodology for assessing road traffic noise during the construction of the proposed development.

#### 2.4.3 International Standard Organization (ISO 9613-2, 1996)

ISO 9613-2<sup>8</sup> provides a calculation methodology for the prediction of environmental noise levels. The method described in ISO 9613 covers the major mechanisms of sound propagation between noise source and receiver location.

This methodology is implemented in the acoustic modelling software DataKustik CadnaA 2021 which has been adopted for calculation of operational noise from the proposed development.

#### 2.4.4 The Noise Advisory Council (NAC, 1978)

The NAC 1978<sup>9</sup> provides methodology to assess the anticipated sound level,  $L_{Aeq}$ , for road traffic noise with low flows. NAC 1978 states that road traffic consist of the movement of a collection of discrete vehicles and traffic noise is the sum of individual vehicle noises and is presented in an idealised equation.

### 2.5 Consultation

Initial contact was made with the Environmental Health Officer (EHO) of Wirral Council on the 8 July 2022. The email set out the details of the proposed assessment methodology and noise survey plan. For the noise survey, it was proposed that two noise monitoring locations would be used to determine representative background sound levels at the closest NSRs and would include a weekday and weekend period. For the assessment methodology, it was proposed to use the guidance from Section 11 of BS 4142:2014+A1:2019 “where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact depending on the context”.

A response was received from the Wirral Council EHO on the 18 July 2022. It was noted that the noise survey proposals were sufficient, and it was suggested that a rating level limit of 5 dB below the existing background sound levels should be applied.

The Wirral Council EHO was contacted on 22 July of 2022 with respect to the assessment of road traffic noise. As it was not possible to obtain traffic data to undertake a full assessment of the additional HGV movements due to the proposed development. It was therefore proposed to undertake a qualitative approach to the assessment of operational road traffic noise, which will be informed by the noise measurements taken close to Dock Road South. The EHO responded and accepted the proposed approach.

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<sup>7</sup> Highways England. Design Manual for Roads and Bridges LA111: Noise and Vibration. London: Highways England, Revision 2, May 2020.

<sup>8</sup> International Organization for Standardization. ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors: Part 2 General method of calculation. Geneva: ISO, 1996.

<sup>9</sup> The Noise Advisory Council, A Guide to Measurement and Prediction of the Equivalent Continuous Sound Level  $L_{eq}$ , Report by a Working Party for the Technical Sub-Committee of the Council, 1978.

## 3 Assessment Methodology

### 3.1 Modelling Approach

An acoustic model was developed using DataKustik CadnaA 2021 acoustic modelling software to calculate the specific sound levels from the proposed development using the methodology of ISO 9613-2. This is a widely accepted industry standard that is used for industrial sites and a suggested validated calculation method in BS 4142:2014+A1:2019.

The model includes existing features including the industrial area west of the site. The acoustic model assumes that the surrounding terrain is a mixture of hard and porous ground (ground absorption,  $G = 0.5$ ).

The noise emission levels for noise-emitting equipment represented in the model is summarised in Table 3.1.

**Table 3.1: Operational noise levels for plants of the proposed development**

Operational activity	Associated plant	Sound pressure level, dB(A) at 10m	Source reference
IBA delivery via road	27t trailers	79	BS 5228 Table C.11.16
Unloading of IBA via boat	55t Volvo A60H dumpers	111*	Manufacturer's specification sheet
	Mantsinen 120 discharging crane	71	BS 5228 Table C.4.41
IBAA export	27t trailers	79	BS 5228 Table C.11.16
Primary aggregate delivery via road	27t trailers	79	BS 5228 Table C.11.16
Unloading of primary aggregate via boat	55t Volvo A60H dumpers	111*	Manufacturer's specification sheet
Metals export via road	27t and 18t trailers	79	BS 5228 Table C.11.16
IBA industrial recycling process	Mobile screening unit	81	BS 5228 Table C.10.14
	Portable generator	66	BS 5228 Table C.4.78
	Mobile crusher	84	BS 5228 Table C.1.15
	Mobile metal separator	101*	Greystone Quarry, 2012 <sup>10</sup>
Storage area material haulage	Liebherr L586 wheeled loader	107*	Manufacturer's specification sheet
	Liebherr R934C tracked loader	103*	Manufacturer's specification sheet

\*Expressed as A-weighted sound power level.

The IBA industrial recycle process and all associated equipment takes place inside a semi enclosed facility (An open-air side north of site to allow for material haulage). The semi-enclosed facility includes a processing hall and storage hall connected to each other (combined dimensions of 70m x 100m x 16m). The breakout noise from the semi-enclosed facility were

<sup>10</sup> Proposed new eddy current separator and pre-shredder, Greystone Quarry, Noise Impact Assessment, 24 Acoustics Ltd., 2012

calculated with the assumption that the walls made from concrete blocks with low absorption materials at internal surfaces.

The calculated breakout noise for each surface of the facility is summarised in Table 3.2.

**Table 3.2: Summary of breakout noise levels for the semi-enclosed facility**

Building surface	Lw per unit area, dB/m <sup>2</sup>
Open air side	94
Side walls	79
Ceiling	79

The HGV noise on site was modelled as a point source at a height of 2m moving along a specified path.

All receptors are calculated at 4m above ground level and the predicted results are expressed in free-field conditions.

## 4 Baseline Noise Survey

### 4.1 Methodology

A noise survey was undertaken between 14 and 20 July 2022 and consisted of two long term noise monitoring locations. The purpose of the survey was to determine the background sound levels representative of the closest noise sensitive receptors to the proposed development. The measurement locations are illustrated in Figure 4.1.

An attended measurement was also undertaken for the purpose of determining the existing baseline noise levels for users of the Port Sunlight River Park. This measurement location is also shown in Figure 4.1.

All measurements were undertaken by consultants competent in environmental noise monitoring and completed in accordance with the principles of BS 7445-1<sup>11</sup>. Descriptions of the site, noise climate and weather conditions were noted for each measurement. Photographs were taken of each position to allow ease of repeatability of the measurement.

All meters and field calibrators held current calibration certificates obtained under laboratory conditions traceable to UK and/or International Standards and were calibrated to meet the Class 1 specifications of IEC 61672-1<sup>12</sup>. Before and after each measurement session, the reference calibration level of each of the sound level meters used was checked using a field calibrator. Variations of no greater than 0.2 dB were noted over the measurement session for each of the meters.

An inventory of the equipment used for the surveys is shown in Table 4.1.

**Table 4.1: Summary of noise measuring equipment used**

Item	Make and Model	Serial Number
Calibrator 1	Rion NC-75	34913593
Sound Level Meter 1	Rion NL-52	01143538
Sound Level Meter 2	Rion NL-52	00754168
Sound Level Meter 3	Rion NL-52	00743137

Source: Mott MacDonald

The relevant measurements were performed more than 3.5m away from any walls or vertical reflecting surface (i.e. the measurements were taken under free-field conditions). The microphones were supported using either a tripod or a fixed, metal pole at a height of 1.2 - 1.5m above the ground and fitted with a windshield suitable for outdoor use.

Details of the relevant measurement locations are provided in Table 4.2 and displayed in below.

<sup>11</sup> British Standards institution *Description and measurement of environmental noise – Part 1: Guide to quantities and procedures* (2003).

<sup>12</sup> International Electro-technical Commission 61672-1 Electroacoustics – Sound level meters – Part 1: Specifications (2003).



**Table 4.2: Noise monitoring location description**

Measurement Location Reference	Location Description	Location OS Grid Reference	Measurement Duration
LT1	Garden of the Autism Together residential home.	SJ 35090 84253	6 days
LT2	North-west of the BlockWalls storage site, next to the back gardens of properties on Sparks Croft.	SJ 34543 84896	6 days
ST1	Port Sunlight River Park	SJ 34819 84814	15 mins

## 4.2 Weather Conditions

A Vantage Vue 6250 meteorological station was deployed to measure temperature, wind speed and rain fall between 14 and 20 July 2022. Throughout the monitoring period, temperatures ranged between 11°C and 36 °C. The high temperatures recorded were due to a heat wave during 18 and 19 July 2022. Noise data is omitted when recorded rainfall is greater than 2mm/h (slight shower) and wind speeds greater than 5m/s.

## 4.3 Measurement Results and Observations

### 4.3.1 Observations

#### 4.3.1.1 LT1

A mix of noise sources dominated the acoustic environment at LT1. These consisted of road traffic noise from the A41 road located west of the noise monitoring location, road traffic noise from local roads which included Dock Road North and Bolton Road East, noise from wind rustling overgrown vegetation and occasional noise of an industrial nature from BlockWalls.

Other noise sources included aviation noise from aircraft arriving and departing from John Lennon Airport and dog barking.

#### 4.3.1.2 LT2

The dominant noise source at LT2 was road traffic noise from HGV movements on Dock Road South. Other noise sources included a low frequency hum from building services noise anticipated to be from the water utilities building, located east of the noise monitoring position, occasional wind noise rustling vegetation and noise from the Autism Together Building and from residents. Industrial noise was also audible from a site located north of the noise monitoring location. Aviation noise from aircraft arriving and departing from John Lennon Airport was also audible on occasion.

#### 4.3.1.3 ST1

Noise at ST1, representative of Port Sunlight River Park, was dominated by industrial noise from Capital Reinforcement, located south east of the monitoring location. Other noise sources included wind rustling vegetation,

### 4.3.2 Noise Monitoring Results

The long-term noise monitoring locations are considered representative of multiple sensitive receptors surrounding the proposed site. Noise measurements taken at LT1 are considered representative to establish background sound levels at the following receptors:

- NSR3 – Pool Lane.

- NSR4 – York Street.
- NSR5 – The Green.
- NSR6 – Unnamed future residential development.

Noise measurements taken at LT2 are considered representative to establish background sound levels at the following receptors:

- NSR1 – Sparks Croft.
- NSR2 – Marine Drive.

The location of the identified receptors and noise survey measurements are shown in Figure 4.1. The results from the long-term and attended short term noise survey can be seen in Table 4.3. Appendix 2 provides time history charts and statistical analysis for the derived background sound levels during daytime and night-time periods. BS 4142 typically quantifies daytime period as between 07:00 and 23:00 and for night-time between 23:00 and 07:00. As the proposed development is expected to be operational between 06:00 and 22:00, a separate time interval between 06:00 and 07:00 was evaluated to account for the higher noise levels experienced from early morning traffic. This ensures the operational noise assessment is assessed with the appropriate background sound level time periods.

**Table 4.3: Noise survey results**

Time Period	L <sub>Aeq,T</sub>	L <sub>A90 Mean</sub>	L <sub>A90 Mode</sub>
<b>LT1</b>			
Morning (06:00 – 07:00)	49	43	43
Daytime (07:00 – 23:00)	50	42	43
Night-time (23:00 – 06:00)	43	40	43
<b>LT2</b>			
Morning (06:00 – 07:00)	44	37	35
Daytime (07:00 – 23:00)	51	38	40
Night-time (23:00 – 06:00)	38	30	32
<b>ST1</b>			
Monitoring period (10:35 - 10:50)	47	42	42

The representative background sound level during operational hours for NSR 3, NSR 4, NSR 5 and NSR 6 was determined to be 43 dB L<sub>A90</sub>. This was the most recurring value for LT1 noise survey results during morning and daytime weekday periods.

The representative background sound level during operational hours for NSR 1 and NSR 2 was determined to be 40 dB L<sub>A90</sub>. This was the most recurring value for LT2 noise survey results during daytime weekday periods. Although the morning period (06:00 – 07:00) has a lower L<sub>A90,mode</sub> value, the measurement sample size is relatively small (4 samples a day over 4 weekdays) and L<sub>A90,mode</sub> results could be skewed. The differences between L<sub>A90,mean</sub> values for the morning and daytime weekday periods suggests that the noise levels would be similar. Hence the background sound level was determined to be the same as daytime weekday noise levels of 40 dB L<sub>A90</sub> for the operational house of the site.

The time period selected was considered robust and representative of the typical background sound level during site operational hours.

**Figure 4.1: Summary of noise sensitive receptor and noise monitoring locations in relation to the site boundary**



Map source: © OpenStreetMap contributors

## 5 Noise Impact Assessment

### 5.1 Operational Noise

The operational hours are anticipated to be from 06:00 to 22:00, Monday to Friday, with additional 06:00 to 14:00 shifts on Saturday for emergencies. In order to achieve viable efficiency, operating hours of 16 hours per day for processing is required, for 50 weeks in a year.

The operational noise sources are expected to originate from the following activities for the proposed development. The associated plant noise levels used is summarised in Table 3.1.

#### 5.1.1 IBA industrial recycle process

The IBA recycle process will take place in a processing hall that is semi-enclosed but covered for natural ventilation. The noise intensive equipment identified are:

- 1no. mobile screening unit
- 1no. portable generator unit
- 1no. mobile crusher unit
- 3no. mobile metal separator unit

The processing hall will be connected to the storage hall where IBA will be stockpiled for initial processing.

#### 5.1.2 Stockpiling of materials

An IBA storage hall, IBAA storage area and an additional storage area was proposed within the site boundary. Two tracked loading shovels will be used to distribute IBAA and aggregates at the storage areas. Dumpers will be used for dockside deliveries to the IBA storage hall while an additional loading shovel will be used to transport IBA between the IBA storage hall and the processing hall.

It is expected that the storage and processing hall will be connected, and all the associated equipment will be enclosed within the same overarching structure.

#### 5.1.3 Material haulage

Import and export of materials will be delivered to site via ship or road. These materials will be hauled around site via 27t articulated trailers and A60H Volvo dumpers. The maximum speed of HGVs on site is set as 10km/h for safety reasons. The HGV movements in/out of site were predicted based on expected import and export tonnages of the site over an operational year.

#### 5.1.4 Operational noise assessment

Table 5.1 provides the initial estimate of impact due to the predicted rating levels during typical operations at the identified NSRs. The rating level consists of the specific sound level generated by site noise and character corrections, which in this case a penalty of 2 dB has been included for tonality from moving plant.

**Table 5.1: Operational noise assessment at the identified NSRs**

NSR ID	Background sound level, dB $L_{A90}$	Predicted rating sound level, $L_{Ar,Tr}$ dB	Level difference, dB
NSR 1	40	33	-8
NSR 2	40	37	-3
NSR 3	43	39	-4
NSR 4	43	38	-5
NSR 5	43	37	-6
NSR 6	43	40	-3

The results presented in Table 5.1 indicate that, during typical operations of the proposed development, rating levels are below the existing background sound level at all NSRs. This is an indication of a low impact, depending on the context.

In accordance with the BS 4142:2014+A1:2019, the initial estimate of the impact should be modified to consider the context. Consideration of the context has determined that the impact can still be considered to be low. This is based on the comparison of the character and level of both the residual and specific sound. Without the development, the closest NSRs would still experience noise from an industrial nature. As the rating sound level from the proposed development does not exceed the background sound levels, it can be considered that the specific sound level does not change the character or level of the residual sound at the NSRs.

The results in Table 5.1 are found to exceed the Wirral Council assessment criterion of 5 dB below the existing background sound level at NSR 2, 3 and 6. However, as these exceedances are a maximum of 2 dB, it is considered that the additional mitigation measures outlined in Section 6 should be implemented in the noise and vibration management plan to ensure all practical measures are taken to reduce noise from the proposed development. Based on the implementation of the measures set out in Section 6, it is likely that the Wirral Council assessment criterion would be achieved in practice.

## 5.2 Operational Traffic Noise

It is anticipated that the proposed development will have the capacity to recycle up to 240,000 tonnes of IBA per annum (tpa). The IBA deliveries will be split equally between Dublin (120,000 tpa) and Protos (120,000 tpa). It is estimated that an equal amount of final aggregate would be exported. The site will also receive up to 50,000 tpa of primary aggregate to blend into the IBAA: up to 25,000 tpa of primary aggregate will be imported by road, and up to 25,000 tpa of primary aggregate by ship.

HGV are expected to access the site for a 10-hour working day, from Monday to Friday. It is anticipated that road vehicle movements would be significantly reduced with a large proportion of materials arriving via ship from Dublin. By road, the total vehicle movements (excluding staff travel) per day (Monday to Friday) over 50 weeks would equate to 152.5 movements (76 in and 76 out), at a rate of approximately 15.3 per hour. Averaged over 365 days this would be less than 100 vehicle movements per day.

The HGV will access site via Dock Road South. The baseline ambient noise level at Dock Road South was determined from the measured  $L_{Aeq}$  at LT 1 by adjusting the noise levels to a location 10m from the road. The cylindrical sound propagation model was used with the assumption that road traffic noise is a linear line source. The road traffic noise at 10 meters was then compared to the predicted  $L_{Aeq}$  derived from Eq. 15 of the NAC 1978. The results of the operational traffic noise assessment were summarised in Table 5.2.

**Table 5.2: Operational traffic noise assessment for the proposed development**

Access Route	Adjusted road traffic noise dB L <sub>Aeq</sub> at 10 meters	Predicted road traffic noise from project alone, dB L <sub>Aeq</sub> at 10 meters	Total road traffic noise level with proposed development dB L <sub>Aeq</sub> at 10 meters
Dock Road South	66	53	66

The results indicate that the predicted road traffic noise is below the adjusted ambient noise level by more than 10 dB. Thus, it is anticipated that the road traffic noise arising from HGV export and deliveries will not result in an adverse noise impact at receptors along Dock Road South Road.

### 5.3 Construction Noise and Vibration

At this stage in the design process, full details of construction methodologies and programme are not available. Quantitative predictions of construction noise impacts have not therefore been carried out as part of this assessment. The following is a qualitative discussion of mitigation for the potential noise and vibration impacts which may arise during the construction period for the proposed development.

Noise and vibration from construction activities will usually be tolerated by the occupiers of sensitive receptors provided that prior notice is given, the impacts are restricted to reasonable times and they are kept to a minimum. Limits for normal working hours (Monday 07:00 – 19:00 and Saturday 07:00 – 13:00) and levels of noise at nearby properties will be agreed in advance with Wirral Council, and incorporated into the specification for the proposed development.

BPM will be applied at all times based on the guidance provided within BS 5228-1:2009+A1:2014 and should include the selection of the most appropriate method and plant for the job, the adequate maintenance of plant, optimum siting of stationary plant, local screening and the education of the workforce. Restrictions may also be placed on early/late delivery times. Potentially affected residents will be kept informed in advance of the noisy works and contacts details be provided to request further information or to report disturbance.

Incorporated mitigation related to construction noise and vibration will be set out within the Construction Environmental Management Plan (CEMP). This will identify the series of measures to reduce the environmental effects during the construction period and covers environmental and safety aspects affecting the interests of residents, businesses, road users and the general public in the vicinity of the works.

The approach described above will satisfy the aims set out in Paragraph 185 of the NPPF and the three aims of NPSE.

## 6 Mitigation

The BS 4142:2014+A1:2019 assessment finds that the initial estimate of impact indicates that low impacts would occur at all receptors and consideration of the context also concludes that the impact would be low. However, at NSRs 2, 3 and 6, Wirral Council's assessment criterion of 5 dB below background is predicted to be exceeded. As the exceedance of the criterion was predicted to be a maximum of 2 dB, the assessment considers that with the application of the mitigation measures listed below, the criterion should be met in practice:

- Utilisation of well-maintained mobile plant items by trained staff
- Installation of white noise reversing indicators on trailers and loading shovels
- Efficient scheduling of HGVs to prevent vehicle congestion at site
- Slowly ramp up recycling process to maximum capacity at the beginning of day to prevent startling of nearby receptors
- Imposition of suitable speed limit on site to minimise noise from vehicle movements and improve site safety
- Clear indicators showing vehicle routes should be supplied to drivers to ensure smooth vehicle flow and minimise the need for reversing alarms

## 7 Conclusion

A noise impact assessment has been undertaken to assess the impact of the proposed development on identified receptors located closest to the site.

Operational noise predictions were undertaken during a typical working day and have been based on plant requirements using measurement data and noise levels from BS 5228-1:2009+A1:2014 and manufacturer's specifications. The BS 4142:2014+A1:2019 estimate of the impact, including the consideration of the context has determined that operational noise will have a low impact.

As assessment was also undertaken considering Wirral Council's assessment criterion of 5 dB below the existing background sound level. Noise levels at NSRs 2, 3 and 6 were predicted to exceed this criterion by a maximum of 2 dB. Section 6 describes mitigation measures which are anticipated to reduce the rating levels to below the Council's criterion in practice.

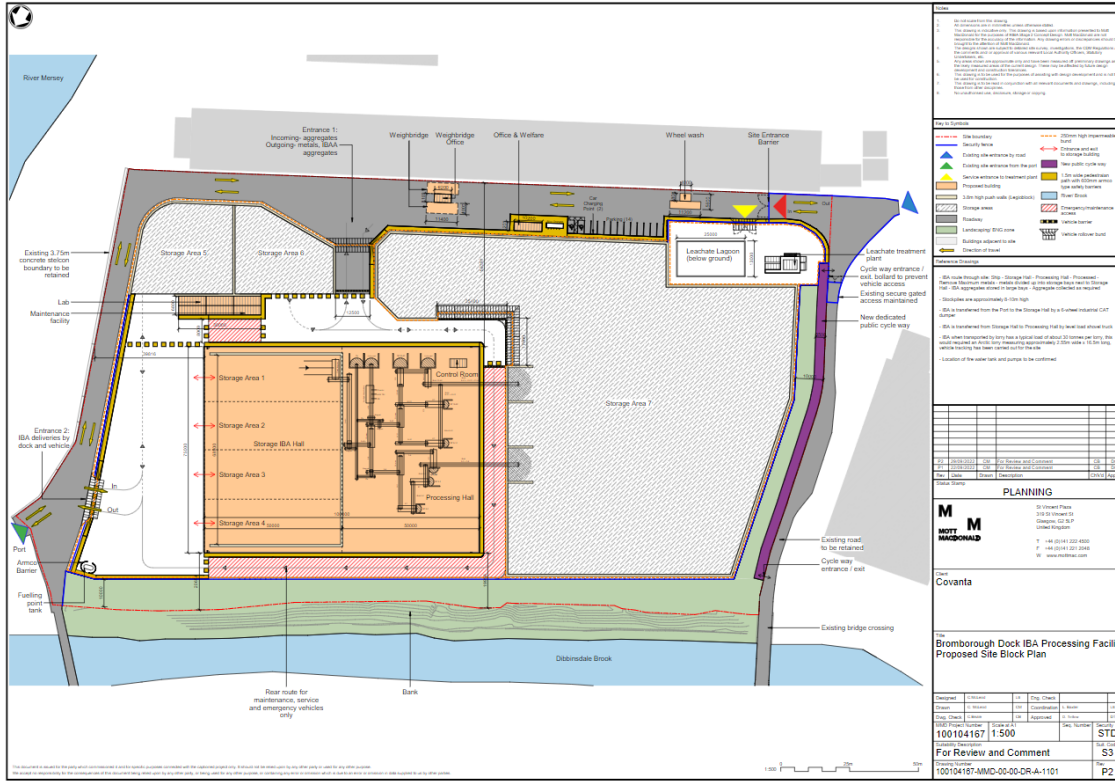
For operational traffic noise, the assessment indicates that there will be no adverse noise impact arising at receptors along the access road to site (Dock Road South).

A qualitative approach was conducted for the construction noise assessment due to limited information at the time of writing. Best practicable means were discussed for the proposed development and a CEMP was recommended in line with aims set out in NPPF and NPSE.

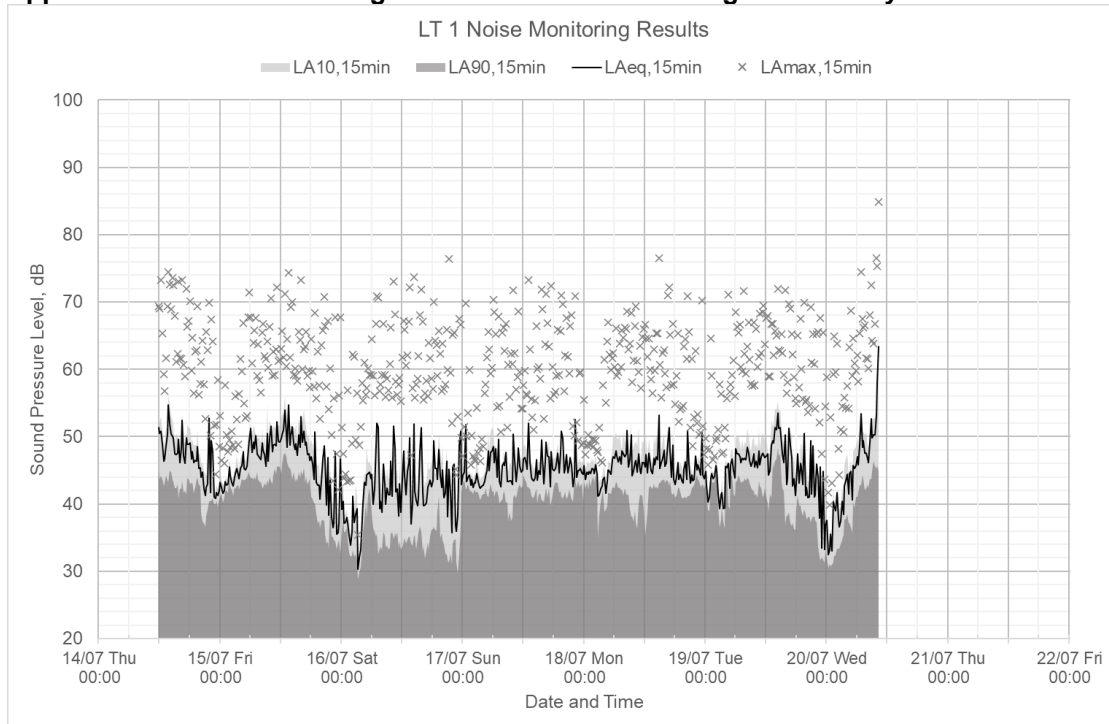


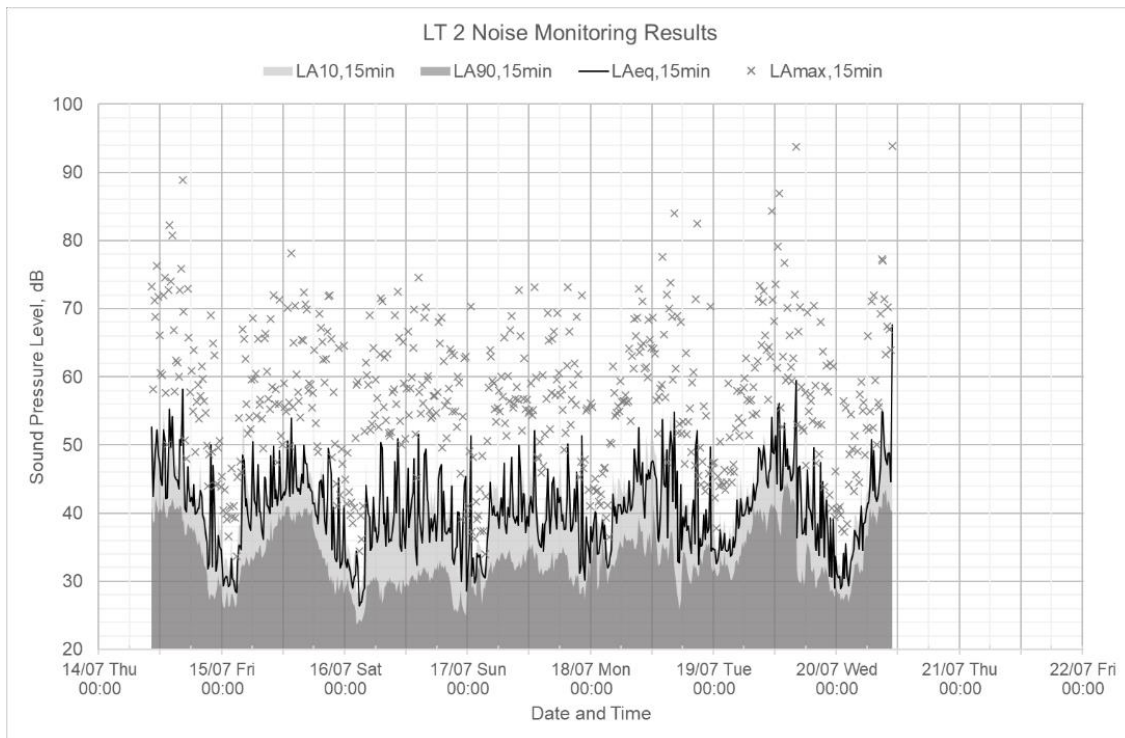
# Appendix

## Appendix 1: Proposed site plan and building layout



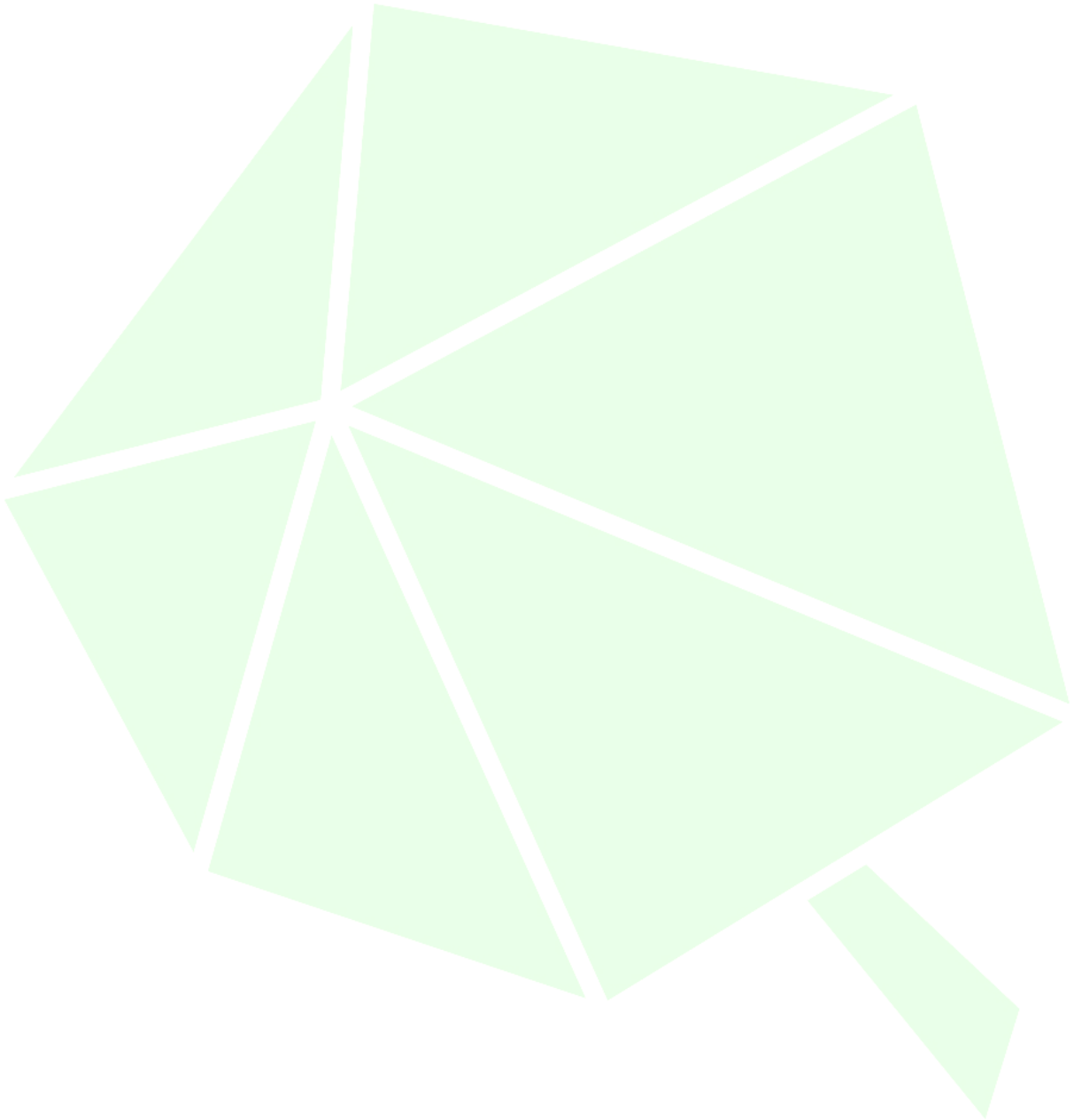
## Appendix 2: Noise monitoring results for unattended long-term surveys







# App B



**EMISSION COMPLAINT FORM**

Complaint Details	
Complainant Name	
Address	
Postcode	
Complainant Contact Details	
Tel	
Email	
Date	
Complaint Details	
Investigation Details	
Investigation carried out by -	
Name	
Position	
Date & time investigation carried out	
Weather conditions	
Wind direction and speed	
Investigation findings	
Feedback given to Environment Agency and/or local authority	
Date feedback given	
Feedback given to public	
Date feedback given	
Review and Improve	
Improvements needed to prevent a reoccurrence -	
Proposed date for completion of the improvements	
Actual date for completion	
If different insert reason for delay	
Does the noise and Vibration management plan/Emissions Management Plan need to be updated	
Date that the noise and Vibration management plan was updated	

**EMISSION COMPLAINT FORM**

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Closure	
Site manager review date	
Site manager signature to confirm no further action required	