

All Waste Matters Limited

Application For a Bespoke Waste
Operation

1. Non-Technical Summary

The company was founded in 2006 and originally focussed on print and developer waste but in 2021 All Waste Matters (AWM) had a change in ownership and management. AWM has since employed experienced waste industry Chemists and switched its focus to laboratory smalls and complicated wastes requiring the technical expertise of waste industry Chemists.

AWM are seeking via this application to operate a waste facility dedicated to handling laboratory smalls and complicated waste streams. This site will be known as the All Waste Matters - Whitstable

This proposed facility is located at Unit 2, Joseph Wilson Industrial Estate, Milstrood road, Whitstable, Kent, CT5 3PS The site is a small industrial unit and yard area occupying approximately 255 square meters. The site is comprised of two levels the ground floor and a first-floor mezzanine which will be used for processing and storing laboratory smalls.

Site Infrastructure

The site infrastructure has not yet been converted to the standard required for the permit, but this will include:

- Concrete surfaces across the whole site
- Sealed drainage across the entire site
- No discharges to water or land – all drainage water will be collected in sealed drainage for treatment off site via a licensed waste company
- Bunded storage bays and storage cabinets to ensure waste is segregated and stored according to HSG71
- A dedicated flammable storage bay with integral secondary containment, fire detection and suppression.

The waste operations AWM are seeking to undertake are listed below and detailed in section 4.2.

Hazardous Waste Transfer Station

- This activity is intended to covers the sorting, repackaging, bulking, mixing and blending of the incoming wastes
- This is the primary activity of the facility
- Most waste will be sorted and repackaged for onward disposal typically High Temperature Incineration
- Where possible waste will be sorted, bulked, blended to facilitate alternative treatment and recovery

Physical and Chemical Treatment of Waste

AWM are seeking to carry out chemical treatment of a variety of chemical smalls and as such have identified that this requires a physical/chemical treatment activity.

The chemical treatment proposed by AWM in an innovation utilising the skill sets of the in-house experience waste Chemists to enable better waste management options for chemical smalls. These wastes are small size containerised chemicals of varying hazards typically from laboratories, schools,

medical and research facilities. Due to the small size and varying complex chemical composition the waste industry typically just incinerates them as it is far more cost efficient to do so compared to investigating and implementing alternative treatment operations. For many wastes this is the only treatment option but for some wastes there are alternatives that could be applied. By incinerating these chemicals, they are also incinerating large quantities of packaging and filler/packing materials.

All Waste Matters see this problem differently and believes there is an opportunity to approach the assessment and treatment of these waste streams using known chemical principles and reactions.

Bench scale small chemical reactions are carried out all over the UK every day in industry and academia. These are managed and controlled by qualified Chemists using known chemical reactions which are controlled using appropriate chemicals and equipment.

AWM are seeking to utilise the same bench reaction methods to treat chemical smalls and facilitate alternative treatments to enable the reuse and recycling of the large volumes of packaging and filling materials used.

Given the vast number of chemicals and possible treatment reactions, AWM are proposing to carry out detailed assessments and develop a Treatment Assessment and Reaction Scheme (TARS) for each reaction. Reactions will be limited to 500g increments which will be easy to control at a bench scale under the direct supervision of a qualified Chemist.

To facilitate the permitting of these waste treatment operations and the other activities a series of process flow diagrams have been developed. The Treatment Assessment Flow Chart (TAF) details the types of chemical reactions that AWM propose to carry out and then details a range of screening checks to confirm treatment is suitable.

If a waste passes the screening in the TAF, then a TARS form will be completed for the reactions which will be available for review by the Environment Agency.

By limiting the reactions to certain types/categories such as substitution, ligand exchange etc this should enable the permitting of these activities. This method is analogous to the management and permitting of chemical treatment activities.

For example:

- Companies may have a permit for neutralisation reactions and subsequent filtering
- The permit does not limit the input chemical composition, only the EWC codes
- The treated waste outputs will need to be suitable for discharge etc
- The waste management company manages this via desktop screening and bench scale mock ups of the treatment reaction to check suitability and ensure outputs are acceptable

AWM are seeking to essentially carry out the same process for a wider range of chemical reactions but will stop at the bench scale reaction.

Please see section 5.2 for more details and links to the relevant appendices

Clinical Waste Transfer

- AWM have identified that some of the waste they are accepting such as medicines fall under the category of clinical/healthcare wastes and as such a clinical waste transfer activity applies
- This is a very small part of the planned activities
- AWM will only transfer these materials with limited repackaging/overpacking (taking small packages and placing into bigger drums or pallets).

Waste Quantities

Due to the small size of the facility and the nature of the waste AWM intends to handle, the company intends to limit the volumes of waste to those detailed in sections 4.

This minimises the risk of the site as the inventory of hazardous waste will always be below 10 tonnes.

Application Notes

AWM have employed the use of “swimlane” process mapping in the production of the permit application to demonstrate how the facility will be operated and controlled.

The use of these process maps makes for clear communication of the activities by reducing the volumes of words and showing the key steps and interactions.

List of Appendices

In support of this application and in addition to this document and the application form the following appendices are included:

Appendix A - Site Location

Appendix B - Layout and Drainage

Appendix C - EWC process split

Appendix D - AWM Process Map and Operating Techniques

Appendix E - AWM-TAF Treatment Assessment Flow Chart

Appendix F - AWM-4.4.1 TARS template

Appendix G - AWM-4.4.2 Aluminium Powder TARS

Appendix H - AWM 1.1.1 - Environmental Management System

Appendix I - Environmental Risk Assessment

Appendix J - Fire prevention plan

Appendix K - AWM Odour Management Plan

Appendix L - AWM site condition report

Appendix L-A - Groundsure - Report

Appendix M - Continuing Competence Certificate

Appendix N - Procedures

- contains 10 procedures doc refs:
- 2.2.1, 2.2.2, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.2.6, 2.3.1,3.4.1, 3.5.1 3.6.2

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2. Site Location

2.1. Site Address

All Waste Matters – Turnditch
Unit 2, Joseph Wilson Industrial Estate
Milstrood road
Whitstable
Kent
CT5 3PS

National Grid Reference: TR1217365165

2.2. Site location

The site is located within the Joseph Wilson Industrial Estate on the outskirts of Whitstable Kent. AWM will utilise an existing industrial unit (unit 2) and further details of the site history and local geology can be found in Appendix L-A

2.2.1. Site Location Drawing



The site location drawing is also included as **Appendix A**

2.3. Sensitive receptors

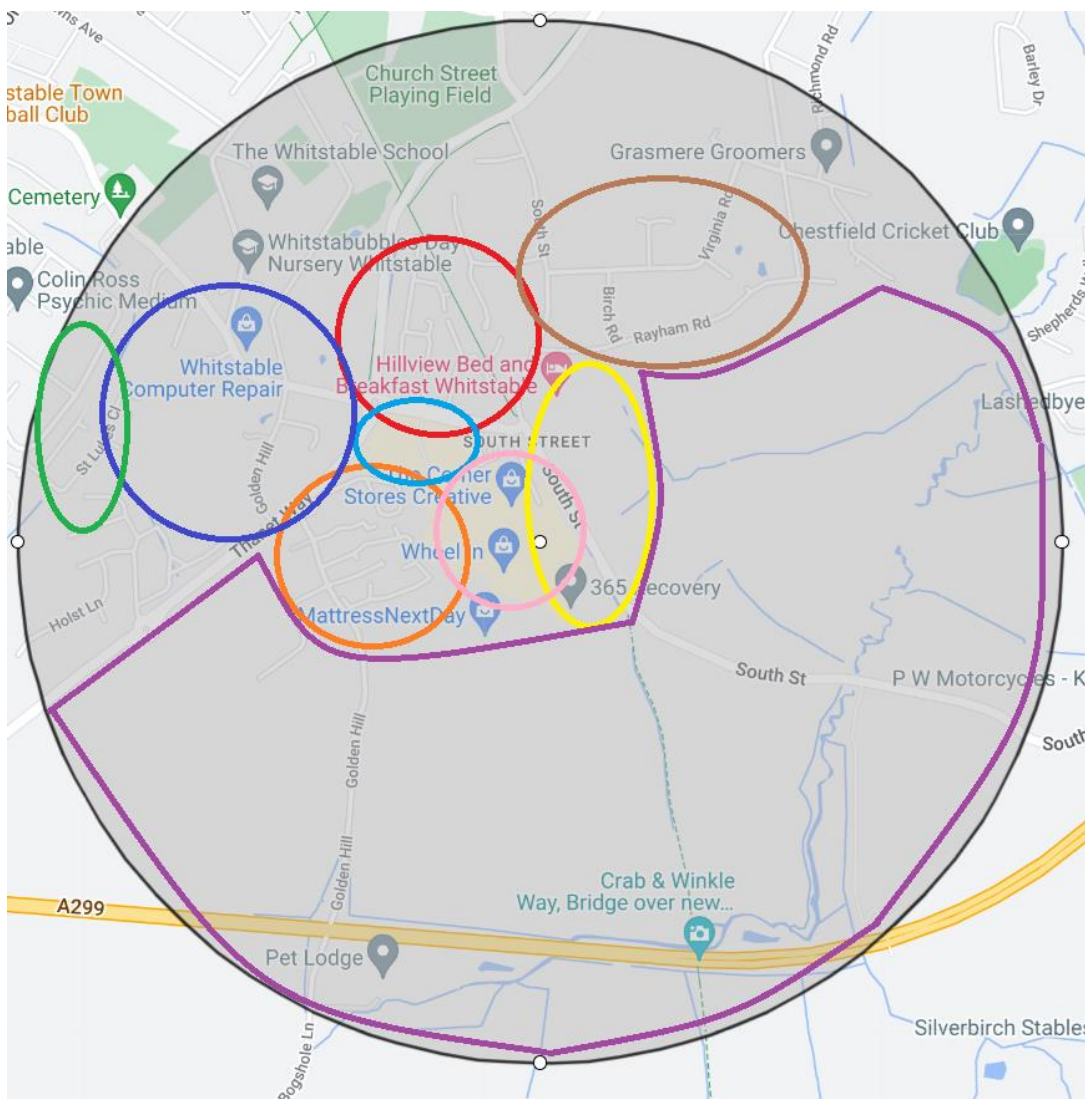
Receptor	Land use e.g. house, school, hospital, commercial	Direction from site (North, South, East, West)	Approximate distance to site boundary (m), up to 1km
Outside Joseph Wilson Industrial Estate			
Whitstabubbles Day Nursery	Nursery	North West	760m
The Whitstable School	School	North West	820m
South Street	Residential area	East	55m (to nearest boundary)
Golden Hill	Residential area	West	100m (to nearest boundary)
Thanet Way	Residential area	North	242m (to nearest boundary)
Virginia Road	Residential area	North East	335m (to nearest boundary)
Milstrood Road	Residential area	North West	475m (to nearest boundary)
St. Luke's Close	Residential area	West	800m (to nearest boundary)
Farm land	Agriculture	East through to South	105m (to nearest Boundary)
Pet Lodge	Commercial	South	890m
Grassmere Groomers	Commercial	North East	895m
Whitstable Computer Repair	Commercial	North West	670m
Hillview Bed & Breakfast	Residential/commercial	North	280m
AJ Colley Plumbing & Heating	Residential/commercial	North West	526m
SPJ Heating & Plumbing	Residential/commercial	North West	540m
Whitstable Woofers	Residential/commercial	West	457m
Primrose Cottage Caravan Park	Residential/commercial	West	255m to boundary
Whitstable Sports Centre	Commercial	North West	755m to boundary
Ellore Jewelry	Residential/commercial	North	535m
JBM Electrical Wholesale	Residential/commercial	North	525m
Inside Joseph Wilson Industrial Estate			
Tesco	Commercial	North	113m
Unit 1 All Waste Matters	Commercial	Current permitted premises	Within 280m
Unit 2 Empty		Proposed permitted premises	Within 280m
Unit 3/ 2A New Perspective	Commercial	Surrounding	Within 280m
Unit 4/5/6 Mewett Polyurethane Ltd	Commercial	Surrounding	Within 280m
Unit 7 Cat Automotive Ltd	Commercial	Surrounding	Within 280m
Unit 8 S2 Martial Arts/ Limelight Stage School	Commercial	Surrounding	Within 280m

Unit 9/10/11/12 Swegon Air Man Ltd	Commercial	Surrounding	Within 280m
Unit 13 Carol Foster Ceramics	Commercial	Surrounding	Within 280m
Unit 14/15 BSK Engineering	Commercial	Surrounding	Within 280m
Berry House			
Unit 1/2/3 BSK Engineering	Commercial	Surrounding	Within 280m
The Old Wood Yard			
Unit 1 Auto Smart	Commercial	Surrounding	Within 280m
Unit 2 The Stanley Hound	Commercial	Surrounding	Within 280m
Unit 3 Star Enterprises	Commercial	Surrounding	Within 280m
Unit 4 Unknown	Commercial	Surrounding	Within 280m
Unit 5 Unknown	Commercial	Surrounding	Within 280m
Unit 6 Fensa	Commercial	Surrounding	Within 280m
Unit 7 Empty		Surrounding	Within 280m
Unit 8 BSK Engineering	Commercial	Surrounding	Within 280m
Unit 1C E Revell & Son Ltd	Commercial	Surrounding	Within 280m
Unit 1B Contemporary Fencing	Commercial	Surrounding	Within 280m
Unit F&G Denmark Engineering	Commercial	Surrounding	Within 280m
Unit E Europa Home Improvements	Commercial	Surrounding	Within 280m
Unit D John Taylor & Green Ltd	Commercial	Surrounding	Within 280m
Unit C NES Work Wear Ltd	Commercial	Surrounding	Within 280m
Jagow House			
1. Dan Brown & Gwyn Fadlpe Osteopathic Clinic	Commercial	Surrounding	Within 280m
2. Advanced Site Solutions	Commercial	Surrounding	Within 280m
3. Cruse Bereavement Care	Commercial	Surrounding	Within 280m
4. Chestfield Parish Council	Local Government	Surrounding	Within 280m
5. Mortgages & More	Commercial	Surrounding	Within 280m
6. Reputation Builder	Commercial	Surrounding	Within 280m
7. Acorn Insurance	Commercial	Surrounding	Within 280m
8. Kite Homes	Commercial	Surrounding	Within 280m
9. Davies Financial Planning Ltd	Commercial	Surrounding	Within 280m
13 B Canterbury Business Equipment	Commercial	Surrounding	Within 280m
Unit 16 W.M.Foad Removals	Commercial	Surrounding	Within 280m
Unit 17 Invicta Couriers	Commercial	Surrounding	Within 280m
Unit 18 Invicta Couriers	Commercial	Surrounding	Within 280m

Unit 19 Vehicle Colour Tech	Commercial	Surrounding	Within 280m
Unit 20 Whitstable Metal	Commercial	Surrounding	Within 280m
Unit 21 Whitstable Metal	Commercial	Surrounding	Within 280m
Unit 22 365 Recovery	Commercial	Surrounding	Within 280m
Unit 23 J&K Sheet Metal	Commercial	Surrounding	Within 280m
Unit 24 J&K Sheet Metal	Commercial	Surrounding	Within 280m
Unit 25 County Moves Ltd	Commercial	Surrounding	Within 280m
Unit 26 Riverdale Interiors	Commercial	Surrounding	Within 280m
Unit 27 Duplex Cleaning Machines Ltd	Commercial	Surrounding	Within 280m
Unit 28 Interactive Manufacturing Ltd	Commercial	Surrounding	Within 280m
Unit 29 Canterbury Food Bank	Commercial	Surrounding	Within 280m
Unit 30 Medway Cutters	Commercial	Surrounding	Within 280m
Unit 31 A+J Services Ltd	Commercial	Surrounding	Within 280m
Unit 31A Thanet Wholesale Fruit & Veg	Commercial	Surrounding	Within 280m
Unit 32 Grease Tech	Commercial	Surrounding	Within 280m
Unit 33 Unknown	Commercial	Surrounding	Within 280m
Unit 34 Albion House	Commercial	Surrounding	Within 280m
Unit 35 Albion House	Commercial	Surrounding	Within 280m
Unit 36 Albion House	Commercial	Surrounding	Within 280m
Unit 37 Bed4Us	Commercial	Surrounding	Within 280m
Unit 38 JSKM	Commercial	Surrounding	Within 280m
Unit 39 JSKM	Commercial	Surrounding	Within 280m
Unit 40 JSKM	Commercial	Surrounding	Within 280m
Unit 41 ENSTAND	Commercial	Surrounding	Within 280m
Unit 42 ENSTAND	Commercial	Surrounding	Within 280m
Unit 43 Wheel In	Commercial	Surrounding	Within 280m
Unit 45A Battel Sector	Commercial	Surrounding	Within 280m
Unit 45B Unknown	Commercial	Surrounding	Within 280m
Unit 45C Victoria Garage	Commercial	Surrounding	Within 280m
Unit 46 Woods Laminates Carpets	Commercial	Surrounding	Within 280m
Unit 47A Unknown	Commercial	Surrounding	Within 280m
Unit 47 North Quay Trading	Commercial	Surrounding	Within 280m
New Units			
Hills Home+Garden	Commercial	Surrounding	Within 280m
Unit 101 Empty		Surrounding	Within 280m
Unit 102 My Estate Holdings	Commercial	Surrounding	Within 280m
Unit 103 Empty		Surrounding	Within 280m
Unit 104 Empty		Surrounding	Within 280m
Unit 105 Empty		Surrounding	Within 280m
Unit 106 Chapter 4 Ltd	Commercial	Surrounding	Within 280m
Unit 107 Amazing Glazing	Commercial	Surrounding	Within 280m

Unit 108 Amazing Glazing	Commercial	Surrounding	Within 280m
Unit 109 Energy Savings Solutions	Commercial	Surrounding	Within 280m
Unit 110 Empty		Surrounding	Within 280m
Unit 111 Solis Green Solutions	Commercial	Surrounding	Within 280m
Unit 112 LS Scientific Ltd	Commercial	Surrounding	Within 280m
Unit 113 Empty		Surrounding	Within 280m
Unit 114 Margo Selby	Commercial	Surrounding	Within 280m
Unit 115 Margo Selby	Commercial	Surrounding	Within 280m
Mattresses Next Day	Commercial	Surrounding	Within 280m
Unit 125 Empty		Surrounding	Within 280m
Unit 124 PressOn Automotive	Commercial	Surrounding	Within 280m
Unit 123 PressOn Automotive	Commercial	Surrounding	Within 280m
Unit 122 Empty		Surrounding	Within 280m
Unit 121 Empty		Surrounding	Within 280m
Unit 120 Hytorc	Commercial	Surrounding	Within 280m
Unit 119 Unknown		Surrounding	Within 280m
Unit 118 Empty		Surrounding	Within 280m
Unit 117 Empty		Surrounding	Within 280m
Unit 126 PressOn Automotive	Commercial	Surrounding	Within 280m
Unit 127 PressOn Automotive	Commercial	Surrounding	Within 280m
Unit 128 Island Marine International Ltd	Commercial	Surrounding	Within 280m
Unit 129 Island Marine International Ltd	Commercial	Surrounding	Within 280m
Unit 130 Wilsons Plumbing Heating	Commercial	Surrounding	Within 280m
Unit 131 Empty		Surrounding	Within 280m
Unit 132 Empty		Surrounding	Within 280m
Unit 133 Empty		Surrounding	Within 280m
Unit 134 Empty		Surrounding	Within 280m
Whitstable Enterprise Centre			
Unit 74 Empty		Surrounding	Within 280m
Unit 72 Pro Fit blinds	Commercial	Surrounding	Within 280m
Unit 70 Aquagas	Commercial	Surrounding	Within 280m
Unit 68 Empty		Surrounding	Within 280m
Unit 66 DG Glazing	Commercial	Surrounding	Within 280m
Unit 64 Unknown	Commercial	Surrounding	Within 280m
Unit 75 Empty		Surrounding	Within 280m
Unit 73 Empty		Surrounding	Within 280m
Unit 71 Empty		Surrounding	Within 280m
Unit 69 Empty		Surrounding	Within 280m
Unit 67 Empty		Surrounding	Within 280m
Unit 65 Empty		Surrounding	Within 280m
Unit 63 Whitstable Taxis	Commercial	Surrounding	Within 280m
Unit 61 Unknown		Surrounding	Within 280m

Whitstable Enterprise Centre			
Unit 59 Empty		Surrounding	Within 280m
Unit 57 Empty		Surrounding	Within 280m
Unit 55 Empty		Surrounding	Within 280m
Unit 53 Empty		Surrounding	Within 280m
Unit 51 Unknown	Commercial	Surrounding	Within 280m
Unit 49 Empty		Surrounding	Within 280m
Unit 62 Solar Shield Blinds	Commercial	Surrounding	Within 280m
Unit 60 Empty		Surrounding	Within 280m
Unit 58 Unknown	Commercial	Surrounding	Within 280m
Unit 56 Practise Rooms	Commercial	Surrounding	Within 280m
Unit 54 Empty		Surrounding	Within 280m
Unit 52 Empty		Surrounding	Within 280m
Unit 50 Eternal Energy	Commercial	Surrounding	Within 280m
Unit 48 Empty		Surrounding	Within 280m



(map provided by google maps - Map data ©2024 Google)

3. Site Infrastructure

The All Waste Matters Whitstable site has not yet been built. The facility is currently an empty warehouse unit and external yard area.

AWM have designed the facility infrastructure to be compliant with the requirements, appropriate measures, and industry best practise.

Construction of the additional site infrastructure will commence to coincide with the issue of the permit to account for any alterations required and will be fully completed prior to operation of the waste facility.

The site is comprised of two levels the ground floor and a first-floor mezzanine which will be used for processing and storing laboratory smalls.

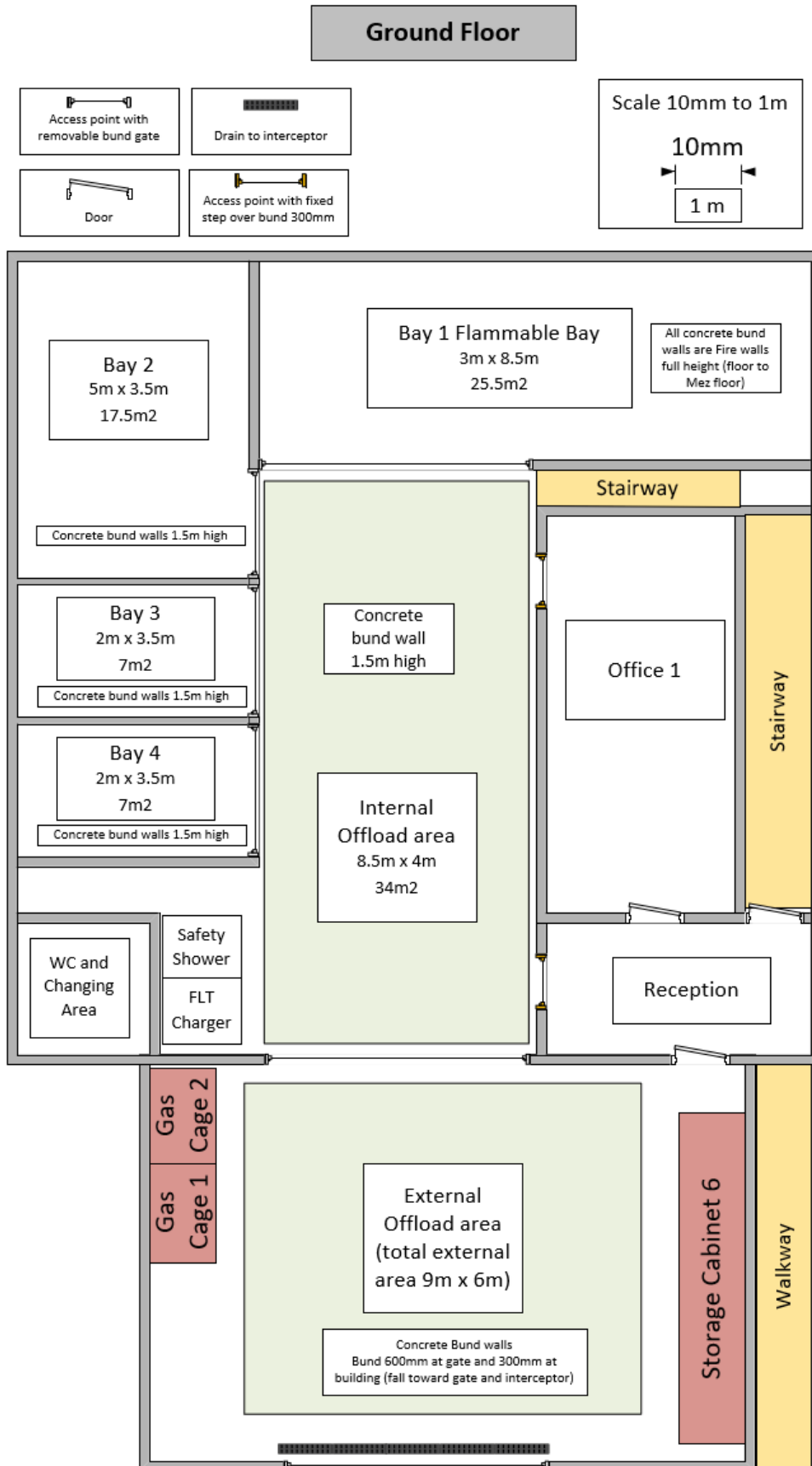
The site design includes the following features

- Concrete surfaces across the whole facility
- Sealed drainage
 - The site is fully bunded with no discharges from operational areas to ground or water
 - All runoff/storm water from operational areas will pass through an interceptor and be sent for treatment off site via road tanker
- Flammable liquids will be stored in a dedicated flammable storage bay
 - Complete with built in fire detection and suppression
 - Complete with fire resistant surrounding bay walls
- There are 4 individually bunded storage bays and 6 bunded storage cabinets and 2 mesh gas cages.
- 1 of these storage cabinets is located outside the building and will be installed as a fully bunded enclosed storage locker with fire suppression and detection.
 - As a contingency storage area for flammable materials

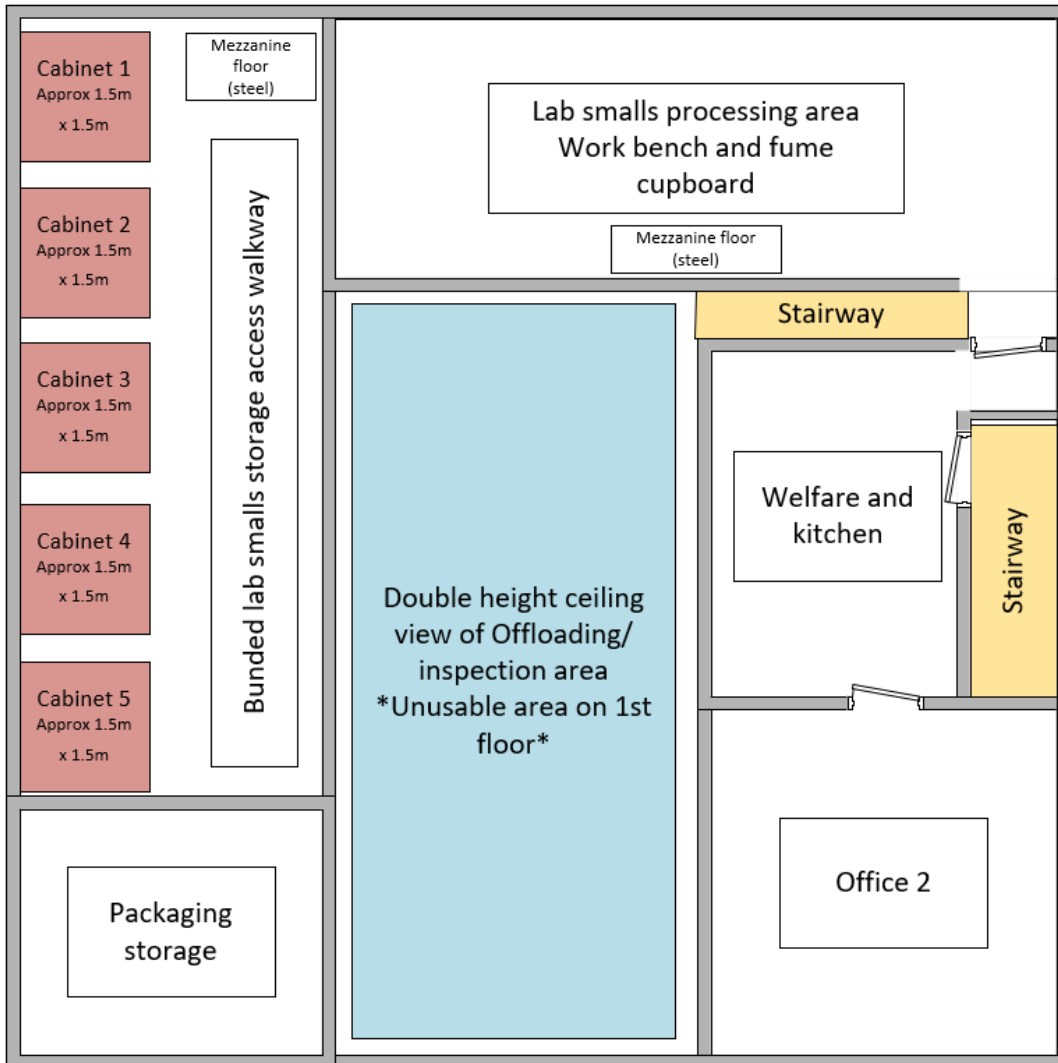
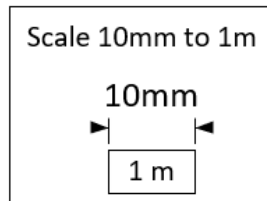
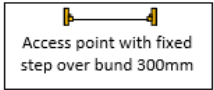
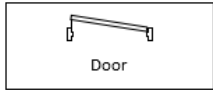
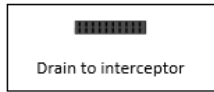
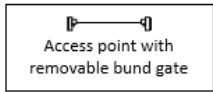
The site layout, Storage plan and infrastructure can be found in Section 3.1 below

Both drawings are also included in **Appendix B**

3.1. Site layout, storage and infrastructure



First Floor



4. Waste Management Activities

All Waste Matters waste management activities are related to the management of laboratory smalls and related waste streams incidental to these types of waste collection i.e. small collections of predominantly hazardous chemicals in small containers.

AWM offer a service where they list, package, and consign these wastes for disposal.

Due to the small size of the waste and their varied chemical composition these waste streams are typically sent for high temperature incineration.

AWM seeks through this permit application a waste operation permit which will allow them to sort, repackage, bulk/blend and chemically treat these waste streams to allow for better treatment, recovery or disposal options for the wastes.

These waste management activities are further detailed in sections 5 and the related process maps.

See section 5.2 for more details on the proposed chemical treatment.

4.1. Operating Hours

The sites planned operating hours are:

- 0830 to 1630 (including weekends)
- 0600 to 2200 (in exception circumstances)

AWM do not intend to work weekends but recognise that in busy periods this may be required to manage workloads.

AWM would also like to have the capacity operate between 0600 and 2200 in exceptional circumstances such as late deliveries of wastes that may require immediate inspection and repackaging.

4.2. Permitted Activities

Waste Operation	R&D Codes	Hazardous Wastes Capacity per Day*	Non-hazardous Wastes Capacity per Day**
Hazardous Waste Transfer Station	D15, D14, D13, R13, R12, R4, R3	9.5	15
Physical and chemical treatment of waste	D9, R4, R3	9.5	15
Clinical waste transfer	D15, D14	9.5	15

* - Hazardous tonnage per day will be a maximum of 9.5 tonnes. AWM will always ensure that the maximum quantity of hazardous waste on site at any one time is <10 tonnes. AWM will ensure that they remain below a combined figure capacity figure of 10 tonnes per day for all hazardous waste

activities. The daily limits are to allow for operational flexibility in accepting waste (for example a large clearance job where the site was fully destocked of waste to accommodate it) but it should be noted that daily deliveries and transfers off site are expected to be in the order of 2-3 tonnes per day

** - non-hazardous waste capacity has been set at 15 tonnes as this would cover a potential delivery of 12 IBCs of paint/polymer and some additional capacity. This was determined to be highest possible amount of non-hazardous waste AWM are realistically able to accept. Note it would be exceptional for this to occur with normal operations within the 2-3 tonnes range

- Maximum volume of hazardous waste on site at any one time will be <10 tonnes.
- Maximum volume of non-hazardous waste on site at any one time will be <15 tonnes.
- The site will operate to a strict booking and stock control system to ensure they remain under these limits at all times.
- Due to the small size of the facility and the nature of the wastes being predominantly small, packaged wastes the site will normally operate to a maximum of 24.5 tonne on site at anyone time.
- All waste treatment, repackaging, mixing, sorting, and blending will always be managed at <10 tonnes per day
 - Note - due to the type of waste operation (Lab Smalls) likely volume of repackaging etc will be 1-2 tonnes per day and chemical treatment would be in the order of 10s of kgs

4.3. Annual Throughput

Waste Type	Annual Throughput
Hazardous Waste	880 tonnes
Non-hazardous Waste	880 tonnes

Due the main target wastes of the facility being laboratory smalls the volumes of non-hazardous waste accepted at site is likely to be much less than that of the hazardous wastes. The same capacity limit has been proposed for both types of waste consistency and simplification of waste input managements

The annual through put has been calculated based on the below:

- Average maximal waste inputs per day ~ 3 tonnes
 - Based on 2-3 small van collections
- 5 working days per week
- 52 working days per year
- $3 \text{ tonnes} \times 5 \times 52 = 780 \text{ tonnes of waste}$
- The site has identified that there may be the occasional weekend work or a larger volume job (large lab clearance or a small tanker delivery for deposit into IBCs)
- An additional 100 tonnes of contingency tonnage has been added on to cover any work over the typical day to day activities
- $(3 \text{ tonnes} \times 5 \times 52) + 100 \text{ tonnes} = 880 \text{ tonnes}$

4.4. EWC Codes

Appendix C is the list of EWC codes which are marked with the type of waste operation that will be carried out against them as shown in the extract below.

EWC code	Bulking, repacking, mixing, Blending	Physio-chemical treatment	Transfer
06 WASTES FROM INORGANIC CHEMICAL PROCESSES			
06 01 wastes from the manufacture, formulation, supply and use (MFSU) of acids			
06 01 01*sulphuric acid and sulphurous acid	✓	✓	✓
06 01 02*hydrochloric acid	✓	✓	✓
06 01 03*hydrofluoric acid	✓	✓	✓
06 01 04*phosphoric and phosphorous acid	✓	✓	✓
06 01 05*nitric acid and nitrous acid	✓	✓	✓
06 01 06*other acids	✓	✓	✓

Appendix C includes a master list of all EWC code 141 individual entries in total. These are also split into hazardous (103 entries) and non-hazardous (38 entries). The majority of the non-hazardous EWC codes are the mirror non-hazardous entries to those on the hazardous list.

The non-hazardous waste are incidental to the main hazardous waste operation as they are mirror entries or waste types that are for commercial reasons necessary to collect alongside laboratory smalls for example packaging, batteries etc in order to provide a complete clearance service to customers.

5. Operating Techniques and Appropriate Measures

All Waste Matters have assessed the Appropriate Measures as detailed below:

1. Chemical waste: appropriate measures for permitted facilities
2. Healthcare waste: appropriate measures for permitted facilities
3. Non-hazardous and inert waste: appropriate measures for permitted facilities

Following review and assessment of the above appropriate measures All Waste Matters Ltd confirm that they will comply with them in full.

Chemical waste appropriate measures form the basis of the sites operating techniques and systems with the relevant additions from Non-hazardous/Inert and healthcare waste where they deviate from the chemical waste measures.

The site management system and procedures are specifically designed to directly address and implement the requirement of appropriate measures.

To ensure clear understanding and effective communication of the sites processes and operating techniques, process mapping (flow diagrams) has been used as discussed below in section 5.1

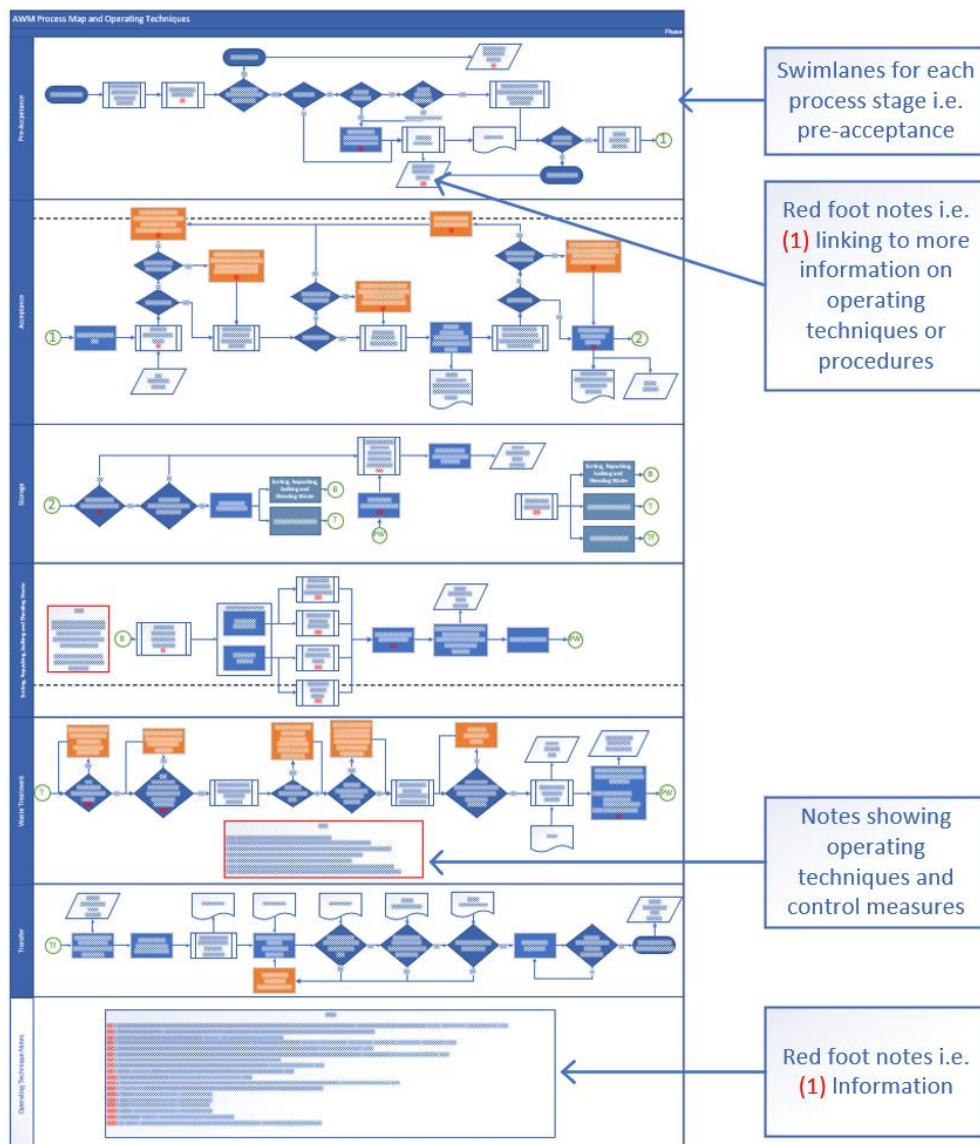
5.1. Process Map and Operating Techniques

A process map of the key activities on site has been developed as **Appendix D** this is used as the master map to understand and communicate the processes on site and the appropriate measures, systems and procedures that are required to operate the facility.

The process map covers the key steps and decisions that are part of running the waste facility. The process map links the different activities together and also links to the relevant procedures and control measures.

The use of process maps is a best practise tool to communicate complicated processes in a clear and concise manner. Below is a screen print of the process map with notes on how to read them.

The process map and the linked content represents the AWM Operating Techniques for the new facility.



5.2. Chemical Treatment

This section provides more details and information related to the planned chemical treatment.

AWM seeks through this permit application the permission to chemically treat waste streams to allow for better treatment, recovery or disposal options for the wastes.

For example

- many metal solids such as aluminium powder are incinerated along with the packaging, vermiculite packaging materials.
- This requires considerable energy and destroys packaging and raw materials which could be reused or recycled.
- AWM would like a permit that allows them to perform chemical treatment which allows the chemicals to be converted to a different form which facilitates its onward treatment, recovery or disposal via alternative means.
- In the Aluminium powder example this could be reacted with waste hydrochloric acid to form Aluminium Chloride
 - Note - AWM plan to utilise waste chemicals to treat other waste chemicals thereby reducing the need for chemical raw materials
- Aluminium Chloride can then be bulked/blended with other waste being sent for aqueous treatment
- This uses considerably less energy than incineration and allows for reuse or recovery of packaging material

Due to the small sizes and varying nature of “smalls” the waste industry typically just incinerates these wastes as it is not time or cost effective for them to look at treatment options.

AWM recognises this practice could be improved and are looking through this application to be permitted to carry out bespoke small-scale reactions which facilitate the improved treatment and recovery of “smalls” and the related packaging materials.

Due to the vast number of chemicals which make up “smalls”, it would be impossible to provide a list of all the reactions that AWM could feasibly carry out. Instead, AWM propose an alternative method based on the reaction type and a rigorous set of assessments and controls all carried out by qualified chemists.

Chemical treatment will be managed in accordance with the steps below:

- All treatment reactions must be subject to a Treatment Assessment
- This assessment is detailed in the **Appendix E** Treatment Assessment Flowchart (TAF)
- Only reactions of the types listed will be allowed
- This assessment must be carried out by a qualified Chemist.
 - Using chemical literature and known reaction chemistry
- The assessment must be recorded on a Treatment Assessment and Reaction Scheme (TARS) template - see **Appendix F**
 - **Appendix G** is a completed example for Aluminium Powder
- The TARS must demonstrate the reaction can be safely controlled
 - Including mitigation of any gases produced
- All process steps and control measures must be detailed on the TARS

- Reactions will be limited to 500g increments
 - This means the treatment is carried out at a laboratory bench scale
 - This is analogous to the treatment and compatibility testing which is done as standard in all chemical waste treatment facilities
- Treatment will be carried out as detailed in the treatment swimlane of the AWM Process Map and Operating Techniques - **Appendix D**
- Limiting these reactions to bench scale using known reaction chemistry whilst being carried out by qualified chemists ensures the treatment reactions are carried out in a controlled manner minimising any safety and environmental risks

6. Environmental Management System

Due to the proposed site being small in size and handling waste below Installation activity levels AWM do not wish to implement an ISO accredited EMS at this stage.

AWM operate an in-house Environmental Management System which has been designed to ensure full compliance with the Environmental Permit and Appropriate Measures. The EMS covers the company structure, policies, roles and responsibilities as well as directly covering the key activities relevant to running a waste operation such as pre-acceptance, acceptance, Storage and Handling etc.

The EMS is provided in **Appendix H** and copies of the relevant procedures which have been developed in support of this application are also included.

7. Environmental Risk Assessment

The Environmental Risk Assessment is Provided in **Appendix I**

7.1. Summary

In summary the overall risk of the site is low due to the following reasons

- The small size of the site
- Limited storage of waste
- Limited treatment amounts
- Waste being predominantly “smalls” of limited individual size
- Design of the site infrastructure
- Operation and control by competent persons

7.2. Key design, mitigation and control measures

The sites key design, mitigation and control measures are summarised below

- Waste is stored in bunded storage bays, cabinets and lockers providing primary bunding
- The site is fully bunded with sealed drainage – providing secondary bunding
- There are no point source emissions to ground or water – all water/waste from the sealed drainage is tankered of site for suitable treatment by a licensed waste contractor
- Waste is stored in compliance with HSG71 under the supervision of qualified chemists
- All treatment activities will take place inside the warehouse building with appropriate secondary containment/spillage bunds
- Chemical treatment is limited to 500g increments and is subject to rigorous assessment and supervision by qualified chemists
- Fugitive emissions and emissions from treatment activities are extremely small and will be abated with a mobile carbon abatement system or with laboratory equipment and a suitable scrubbing medium.

8. Fire Prevention Plan

The Fire Prevention Plan can be found in **Appendix J**

As the site has not yet been built some aspects of the fire prevention plan have yet to be finalised as built but the design specification as been included. The Fire Prevention Plan will be updated to include the as built details.

9. Odour Management Plan

The Odour Management Plan can be found in **Appendix K**

10. Emissions to Air, Water and Land

10.1. Emission to Air

There will be no point source emissions to air.

- Emissions from any chemical treatment will be abated using an appropriate abatement media (carbon or a scrubber liquid – such a Sodium Hydroxide solution to abate acidic gases)
- Fugitive emissions will be limited due to the very small volume of waste handled
- Where appropriate fugitive emissions will be abated using a mobile extraction system containing a suitable absorbent media
- Due to the small size of the facility the limited volumes and the sporadic bulking/treatment operations a fixed abatement system is not required as abatement can be achieved with a small mobile system or using laboratory equipment.

10.2. Emissions to Water/Land

There will be no emissions to water or land.

- All operational areas of the site will be concreted with sealed drainage
- All wastes will be stored in fully bunded storage bay or storage cabinets
- All rainwater falling on operation areas will be collected in the sites sealed drainage and transferred off site via Tanker for treatment at a licensed waste facility
- Only clean rainwater from the warehouse roof will be discharged to the existing site stormwater drainage/soakaway
 - Due to the types of waste and activities there will be no risk of contamination of water falling on the roof.

11. Site condition report

The site condition report has been completed using the Environment Agency template and can be found in **Appendix L**

Groundsure Enviro reports have also been commissioned and can be found in **Appendix L-A**