Environmental Management System (EMS)

Inert Storage Facility

Towens of Weston Ltd

Towens Kleen Kutt Yard
Land off Springway Lane,
Westonzoyland,
TA7 0JS

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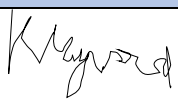
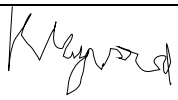
Quality Control

Revision No.	Date Revised	Amendments	Authored By	Sign Off	Approved By	Sign Off
1.0	25/01/23	Original Draft for permit application	Kasia Haywood		Luke Bridges	
2.0	16/06/23	Amendments based on duly making information request	Kasia Haywood		Luke Bridges	

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Reference Documents

1. Introduction

1.1 General

1.1.1 This document comprising an Environmental Management System (EMS) has been written for 'The Operator' who will undertake the physical treatment of non-hazardous waste in accordance with a bespoke environmental permit (permit reference: TBC).

1.1.2 This document has been prepared by MTS Environmental Ltd on behalf of the Operator: Towens of Weston Ltd, Plot 2 Warne Road, Weston Super Mare, North Somerset, BS23 3UU. The permit is referenced in Appendix A.

1.1.3 Condition 1.1.1 of the environmental permit requires that the Operator manages and operates the activity:

a) in accordance with a written Management System that identifies and minimises risks of pollution including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention as a result of complaints.
b) and using sufficient competent persons and resources.

1.1.4 Additionally, the Environment Agency (EA) has published Environmental Permitting Guidance to help Operators understand the conditions or rules of the Permit. It describes the standards and measures that must be used to control the most common risks of pollution from the activity. The EA stipulate that an Operator must read, understand and keep a copy of the following guidance notes with the Permit.

- Develop a management system and control and monitor emissions for your environmental permit.[1]

- WRAP Quality Protocol – Aggregates from inert waste (Appendix E)[2] (as the site processes soils, soil substitutes to be used for the production of aggregates)

1.2 Permits

1.2.1 The operator will work in accordance with its management systems and permit conditions where required and instructed. Under all other circumstances the Operator will work under the permits detailed in 1.3.

1.3 Environmental Permits

1.3.1 The environmental permit (permit number: TBC) authorises the Operator to operate, receive and process waste in accordance with the criteria outlined in the permit. The permit is a bespoke

[1] Develop a management system: environmental permits, https://www.gov.uk/guidance/develop-a-management-system-environmental-permits

[2] WRAP Quality Protocol – Aggregates from inert waste (October 2013)

permit for a non-hazardous waste site undertaking physical treatment of soils to produce products for re-use. This site is to be used as a CL:AIRE hub site on a temporary basis to store naturally occurring materials to be used in flood defence schemes managed by the EA. It is intended to be a temporary site whilst the CL:AIRE project is being completed.

1.4 Part B Mobile Plant Permit

1.4.1 The operator will carry out crushing and screening activities using mobile plant on a campaign basis, it is expected to be infrequently. Towens will use their Part B permit to manage crushing and screening, they will work in accordance with it and its own Part B mobile plant permit requirements. The Part B permit will control noise impacts from the plant.

2. Site Location

2.1 General

2.1.1 The site is located at Land off Springway Lane, Westonzoyland, TA7 0JS as shown on the Site Location Plan in Appendix B and Figure 1 below. The approximate national grid reference for the site is ST 36554 33904. The site layout can be found in Figure 2.

Figure 1 – Site Location Plan

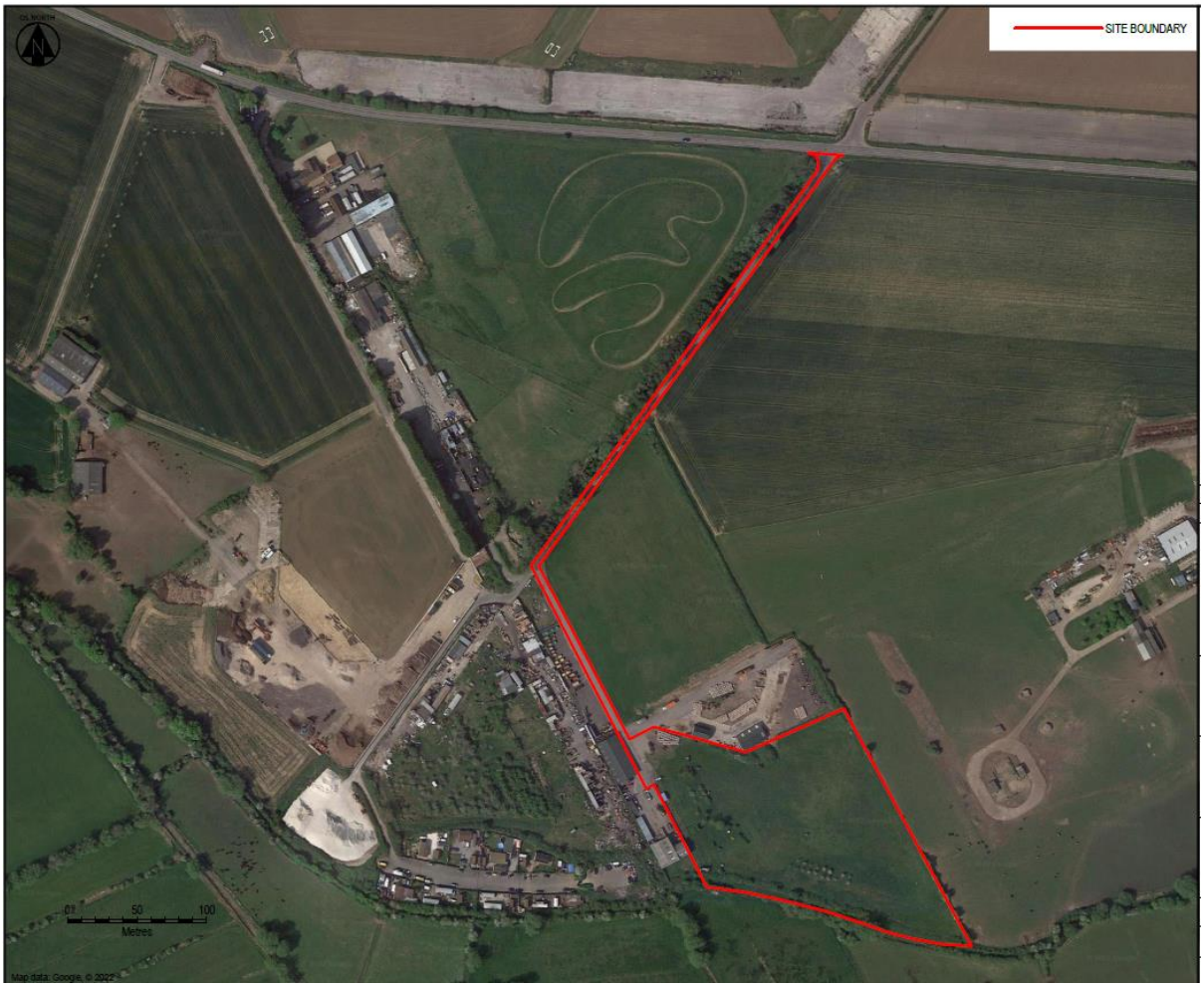
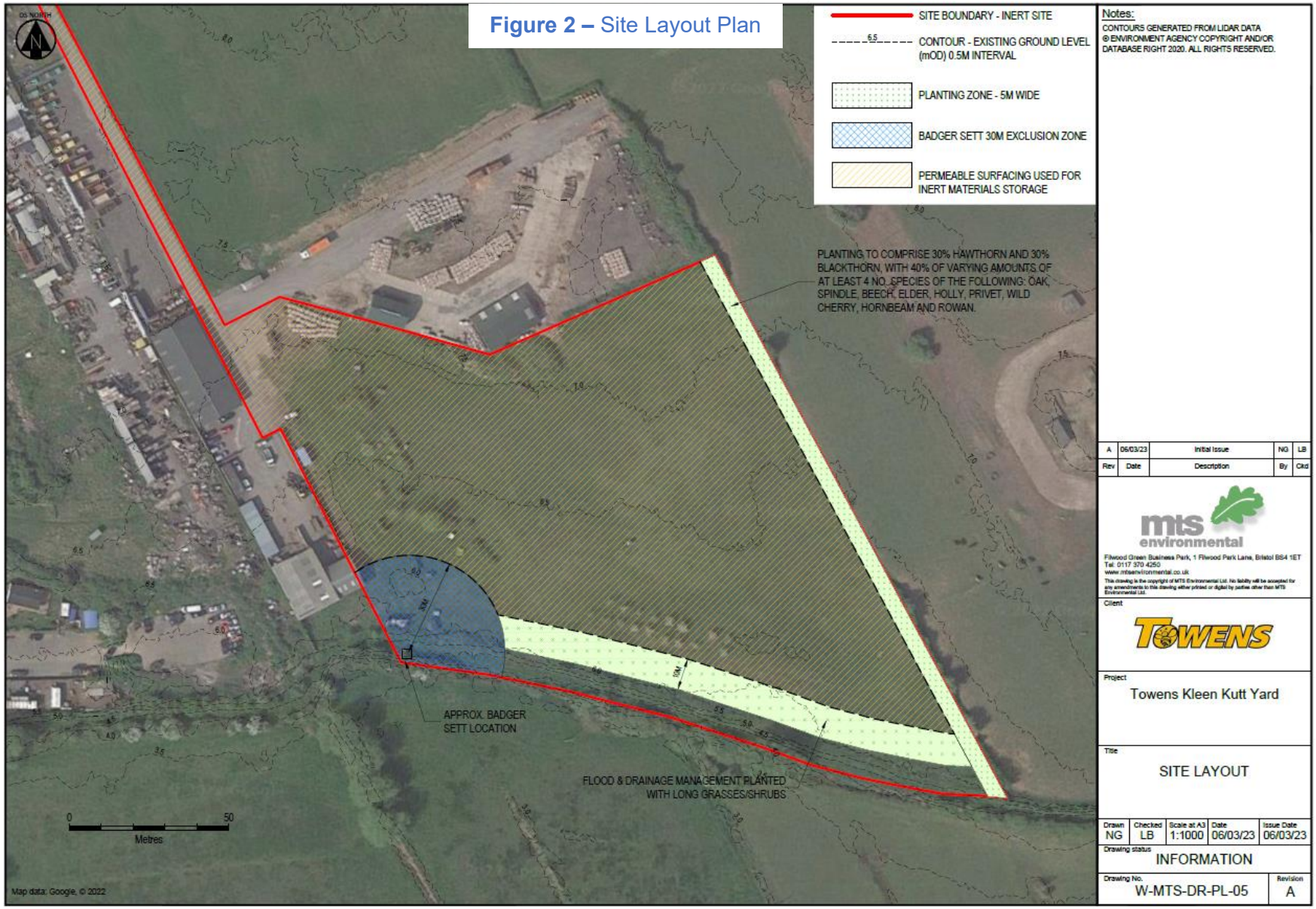


Figure 2 – Site Layout Plan



2.2 Site Infrastructure Plan

2.2.1 The site does not have gas or electricity availability.

2.2.2 The site does not have a mains or borehole water access point. A mobile water bowser will be made available on site when required for damping down or washing down the haul road.

3. Management

3.1 General Management

3.1.1 The Operator shall manage and operate the activities in accordance with this EMS and the Permit, using sufficient competent persons and resources.

3.1.2 Operating Techniques refer to the technical standards cited within EA guidance notes found on the gov.uk website. The site will operate in accordance with the EA appropriate measures for permitted facilities for non-hazardous and inert waste.[3] Annual reviews of the guidance will be undertaken to ensure this EMS is maintained in line with current legislation and guidance.

3.1.3 Records demonstrating compliance with the permit shall be maintained in accordance with Section 6 of this document.

3.1.4 Any person having duties that are or may be affected by the matters set out in this EMS shall have convenient access to a copy of this document and the permit. These documents will be available electronically via the electronic systems and issued as hard copy in the depot**.**

3.2 Contingency Planning

3.2.1 The Operator will ensure that there are contingency plans in place to manage storage and treatment operations in the event of:

- Machinery / Plant breakdown
- Accidents that may result in pollution to the environment
- Delivery problems
- Adverse weather conditions
- Staff shortages

3.2.2 The Operator will ensure that there are:

- Repair/servicing contracts in place for all plant and machinery

[3] Non-hazardous and inert waste: appropriate measures for permitted facilities, Environment Agency, Dec 2022, https://www.gov.uk/guidance/non-hazardous-and-inert-waste-appropriate-measures-for-permitted-facilities

- That repair /replacement can be achieved rapidly
- That there is sufficient storage provision in the case of interruptions to the operation
- Available staff to cover absence

3.2.3 In the event of an accident the Operator will follow the procedures in the Accident and Medical Incident Process.

3.2.4 In the event of an emergency, operations will be suspended where necessary to allow action to be taken safely. If necessary, all staff and others on site will be evacuated.

3.2.5 The Site Manager will be contacted in the event of any operational failure. The Operator will decide if operations are to be suspended before corrective action is taken. Any failures will be recorded in the site diary.

3.3 Sufficient Competent Persons

3.3.1 The Operator shall comply with the requirements of an approved competence scheme. The Technically Competent Manager/s (TCM) holds the Level 4 Certificate in Waste and Resource Management WAMITAB qualification. The TCM on site initially will be Matt Hollow and Paul Webber. Copies of the Certificates of Technical Competences (COTC) are included in Appendix C.

3.3.2 The site will be supervised by the TCM for at least 20% every week during the hours of operation. The TCM will make his presence known to the NCP, a Nominated Competent Person/s, when attending the site.

3.3.3 Where it is necessary to utilise NCP's, the Operator will ensure that the NCP's have a direct line and report to the TCM on a daily basis. The TCM will ensure that all NCP's are provided with copies of and be familiar with the following:

- The relevant permit rules
- The EMS
- The planning permission
- Site-specific management plans

3.3.4 During operational hours the site will be supervised by the NCP/s who will be suitably trained and conversant with the requirements of the EMS and the Permit to ensure that:

- All storage and treatment is carried out in accordance with the documents cited in point 3.3.3 above
- They have sufficient authority to give or withdraw approval for treatment to go ahead at a particular time using specific risk assessments (e.g. with reference to weather conditions)

- They can be at site within 24hrs when treatment is occurring and 4 hours at any other time
- The person/s operating the equipment delivering the waste to the site have been briefed on where and how the waste must be stored prior to treatment
- They raise any issues with the TCM to prevent permit breaches
- They are the first responder to any incidents including dust, noise or odour issues if the TCM is unavailable
- They record any incidents or non-conformances to the TCM

3.3.5 An NCP can be a direct employee of the company, a contractor or consultant or the TCM. The Operator will ensure that the roles and responsibilities of the NCP are clearly stated.

3.3.6 The Operator will ensure that the NCP is sufficiently trained to understand the following aspects:

- Waste management legislation and its requirements
- Environmental risk assessment
- Environmental protection measures
- The Operator's management procedures.

3.3.7 The Operator will maintain training records to demonstrate competence. These will be made available for inspection by the regulator.

3.3.8 The Operator will ensure that the management structure is regularly reviewed and kept updated to reflect any changes in management and staffing within the organisation, and/or as regards external contractors and consultants. Roles and responsibilities will be defined, and a written record will be maintained for inspection.

3.4 Staff Training

3.4.1 All new and existing staff will follow a specific training regime based on their role and responsibilities on site. This will improve the operation on site and reduce the likelihood of accidents and incidents which may harm the environment or site staff.

3.4.2 All staff will complete an orientation at the site and will maintain an up-to-date training record.

3.4.3 All staff are required to be aware of the controls outlined in this document and other relevant Management Plans.

3.4.4 All staff will receive appropriate health and safety and fire safety training relevant to their role.

3.4.5 Relevant staff will be trained in waste acceptance, identification of waste types and management of storage areas to ensure that operations comply with the requirements set out in the permit for the site.

3.4.6 Plant operators will have the necessary qualifications and will be trained to regularly check plant and machinery and identify any defects to prevent incidents that could have a negative impact on the environment or safety.

3.4.7 Contractors working on the site on a temporary basis will receive general site training.

3.5 Avoidance, Recovery and Disposal of Wastes Produced by the Activities

3.5.1 The operator shall take appropriate measures to ensure that:

(a) The waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and

(b) Any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) Where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

3.5.2 The Operator will ensure that each waste stream arising from the regulated facility will be characterised and quantified.

3.5.3 The Operator will use government guidance to decide how each waste stream is to be recovered or disposed of and be capable of justifying decisions that deviate from best practice.

3.5.4 Records will be maintained in order to explain why any waste may be subject to disposal. These will explain:

- Why recovery is technically and economically impossible; and
- Describe the measures planned to avoid or reduce any impact on the environment.

3.5.5 The Operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

4. Operations

4.1 Permitted Activities

4.1.1 The permit boundary is outlined in red on the Site Location Plan in Appendix B. Any references to ‘the site’ made in this or other site documents refer to this area and associated infrastructure.

4.1.2 The activities on site are 1.16.12 Physical treatment of non-hazardous waste.

4.1.3 The site allows inert and non-hazardous soils and aggregates treatment and recovery (mainly in the form of screening). Activities will include the storage, treatment and recovery of wastes. The material accepted consists of as-dug naturally occurring non-contaminated soils intended for re-use

within CL:AIRE projects for developing flood defence schemes. The site operates as a CL:AIRE Hub site. The waste will be removed off site for re-use.

4.1.4 The operating hours of the site are as follows. Outside of these hours, onsite maintenance work, emergency deliveries and general office use will be the only activities on site, no waste processing operations shall occur.

07:00 to 17:00 Monday to Friday

07:00 to 13:00 Saturday

Closed on Sundays and Bank/Public Holidays

4.1.5 The annual throughput tonnage will not exceed 75,000 tonnes.

4.1.6 The Operator shall not undertake any waste management treatment activity unless it specifically complies with Table 1.

Table 1 - Waste Operating Techniques

Waste Activities	Limits of Activities
R13: Storage of wastes pending the operations numbered R3 and R5. **R3:** Recycling/reclamation of organic substances which are not used as solvents. **R5:** Recycling/reclamation of other inorganic materials.	Treatment of wastes listed in Table 2 consisting only of sorting, separation, screening, crushing and blending of waste for recovery as a soil, soil substitute or aggregate. Secure storage of wastes listed in Table 2 pending treatment. Storage of wastes listed in Table 2 shall not exceed 85,000 tonnes in total at any one time. No more than 75,000 tonnes of waste shall be treated per year. Treatment for recovery shall not exceed 2,500 tonnes per day.

4.2 Permitted Wastes

4.2.1 No wastes other than those with the European Waste Codes (EWC) listed in Table 2 below shall be accepted onto site.

Table 2 – Waste codes and descriptions permitted on site.

Waste Code	Description	Processing Activity
01 01 02	wastes from mineral non-metalliferous excavation	Sorting, separation, screening, crushing and blending
01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 07	
01 04 09	Waste sand and clays	
17 01 01	Concrete	
17 01 02	Bricks	
17 01 03	Tiles and ceramics	
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	
17 03 02	Bituminous mixtures other than those mentioned in 17 03 01	
17 05 04	Soil and stones other than those mentioned in 17 05 03	
17 05 06	Dredging spoil other than those mentioned in 17 05 05	
17 05 08	Track ballast other than those mentioned in 17 05 07	
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02, 17 09 03	
19 02 06	Sludges from physico/chemical treatment other than those mentioned in 19 02 05	
19 03 05	Stabilised wastes other than those mentioned in 19 03 04	
19 03 07	Solidified wastes other than those mentioned in 19 03 06	
19 05 03	Off-specification compost	
19 12 09	Minerals (for example sand, stones)	
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	

19 12 12	Aggregates only
19 13 02	Solid wastes from soil remediation other than those mentioned in 19 13 01
19 13 04	Sludges from soil remediation other than those mentioned in 19 13 03
20 02 02	Soil and stones

4.3 Operating Techniques

4.3.1 The site is located outside a groundwater Source Protection Zone, so all permitted wastes shall be stored and treated on hardstanding, of which the whole site is surfaced with.

4.3.2 The site benefits from a fence around the southern and eastern perimeter which aids to protect the site and mitigate impacts from dust, noise and odour.

4.3.3 Run off from the site drains naturally into ground which is covered in permeable hardstanding, there is very low risk of contamination due to the nature of operations and waste accepted on site.

4.3.4 The site will operate following the techniques listed in Table 3 below.

Table 3 – Operating Techniques

Operating Techniques
1. The Operator will follow the Environmental Management System, Dust Management Plan and Noise Management Plans approved by the Environment Agency.
2. The site will be operated in accordance with all the relevant parts of the EA guidance – Non-hazardous and inert waste: appropriate measures for permitted facilities.
3. Treatment: a) All treatment shall be carried out on hardstanding.
4. Storage: a) All non-hazardous and inert wastes shall be stored on hardstanding with provision of spillage collection facilities and, where appropriate, decanters and cleanser degreasers.

4.3.5 Any non-conforming materials will be stored in quarantine and removed from site as soon as possible to be taken to an appropriately permitted site.

4.3.6 Materials will be treated following Best Available Techniques (BAT).

4.4 Site layout and general principles of operation

4.4.1 Details of the site layout are shown on the site layout plan in Appendix B and Figure 2. The site is separated into safe working areas with dedicated boundaries for specific activities.

4.4.2 Waste will be stored securely in segregated stockpiles. The Operator will take all precautions to prevent the waste from escaping and ensure that members of the public are unable to gain access to the waste.

4.4.3 Solid waste will be stored and managed in accordance with the appropriate measures specified. These include:

- External segregated stockpiles and storage bays (limited to 4m high)
- Locate temporary stockpiles in areas to prevent mixing of different waste streams
- Grade stockpiles to promote rainwater run off rather than infiltration through the stockpile
- Manage all run–off or leachate which may be produced by the waste appropriately
- Be aware of slumping
- Consider location of sensitive receptors such as residential properties /workplaces in relation to stockpiles that might be affected by loss of amenity, dust, noise or odour.

4.4.4 The Operator will follow Best Practice for the storage of materials as listed below:

- Not on land likely to become waterlogged, frozen or snow covered
- No dusty or odorous waste within 250m of residential or workplaces
- Not on land likely to flood
- Not on steeply sloping ground where there is risk of run off
- Not over land drains or land drained in the last 12 months
- Storage on hardstanding

4.4.5 The following plant and machinery will be operated in the Towens Westonzoyland Inert Facility:

- Grading and Screening Plant
- Mobile Water Bowser
- Crusher
- 360 Material Handlers
- Wheeled Loading Shovels
- Excavator

4.4.6 Waste will only be stored at the site of treatment for a maximum of 1 year prior to disposal and 3 years prior to recovery.

4.4.7 No hazardous wastes will be stored or treated on site.

4.4.8 The site is surrounded by a fence on the southern and eastern boundaries. The southern fence also provides a 30m buffer zone for a badger sett that has been identified in the southwest corner of the site. The fence ensures that no disturbing works are completed in this buffer area around the sett. The southern fence protects a 10m planting area which also acts as a protective barrier against water runoff and sedimentation. There is an additional 5m planting area along the eastern boundary to provide an ecological enhancement.

4.5 Control of Mud and Debris

4.5.1 To control the release of mud and debris onto the public highway the following methods will be employed:

- Road sweeping
- Dampening down
- Containment, storage and treatment of waste is in segregated areas within stockpiles
- Designated one-way haul road

4.5.2 In the event of any mud/debris found to be on the public highway resulting from lorry movements from the site, the affected public areas outside the site shall be cleaned. Measures will be taken to clear any such sources from the highway as soon as is practicable.

4.5.3 Additionally, all loaded vehicles will be sheeted to avoid the escape of any waste.

4.5.4 The site will operate in accordance with a site-specific Dust Management Plan outlining the mitigation measures in place on site.

4.6 Potentially Polluting Leaks and Spillages of Waste

4.6.1 Adherence to the monitoring regime set out in Table 4, in conjunction with the site engineering for pollution prevention and the acceptance of permitted wastes only, will ensure that the risk of potentially polluting leaks and spillages of waste from the site is minimised.

4.6.2 Any minor spillages of liquid waste or oil shall be cleaned up immediately, using sand or proprietary absorbent to clean up liquids. In the unlikely event of a major spillage, immediate action shall be taken to prevent contamination entering surface drains, watercourses and un-surfaced ground. Temporary bunds using sand, soil or similar, or absorbents will be placed around the area affected until the spill is cleared up.

4.6.3 Once the spillage has been contained any materials that may be subject to contamination shall be cleared immediately and placed in sealed, labelled containers. These will be taken to a suitably permitted site for disposal. The Environment Agency shall be informed immediately, and the details

of the event recorded in the site diary in accordance with the Towens of Weston Management System.

4.6.4 In the event that a spillage has contaminated the surface water drainage system, the operator will arrange for the drainage system to be cleaned and emptied and the contents disposed of to a suitably permitted site.

4.6.5 Fuel and oil is not intended to be stored on site. In the event that it must be stored there temporarily then it will be contained in compliance with oil storage regulations. The fuel tanks will be contained within a bund capable of containing 110% of the maximum volume of the tank. This bund will enclose all the pipework and infrastructure associated with the tank. The fuel store will be locked to prevent unauthorised access to prevent leaks and theft.

4.6.6 All potentially contaminating wastes/non-conforming wastes will be stored within a quarantine area and removed off site within 7 days.

4.6.7 All site surfaces will be inspected during daily checks for any litter or spillages. Any litter will be swept as necessary and contained for disposal to a suitably permitted site.

4.7 Surface Water Management

4.7.1 Surface water from the site will naturally drain into ground as the site is surfaced in permeable hardstanding and only accepts inert as-dug naturally occurring material for CL:AIRE projects there is a very low risk of contaminated surface water runoff.

4.7.2 The rhyne that borders the southern boundary of the site will be protected by the perimeter fence and 10m buffer zone of planting which prevents run-off from discharging directly into the water course. The water will slowly percolate into ground to reduce the chance of flooding and decrease the volume of runoff entering the watercourse.

4.7.3 Maintenance procedures will involve regular inspections, sediment removal and cleaning every six months in accordance with Environment Agency guidance.

4.7.4 In the event of a fuel spill or contaminating material escaping onto site, the contaminated run-off will be contained on site using booms and sand, the material will be emptied and sent to an appropriately permitted site with the relevant HWCN documentation.

4.8 Fires on Site

4.8.1 No combustible wastes are permitted on site.

4.8.2 No wastes shall be burnt on site. The use of welding/cutting tools (i.e., with naked flame) must be sanctioned first by the Depot Supervisor/competent person and a hot works permit issued. There is no intention of conducting such activities on site.

4.8.3 Special care will be taken with respect to potentially explosive/volatile material during handling, e.g., aerosol cans, oxidising agents, corrosive substances. These shall be removed from the waste load prior to further handling. These wastes are not permitted under the permit and, the quantities and occurrence of these waste types entering the site is predicted to be very small as long as the waste acceptance procedures are strictly adhered to. These will be separated and stored in sealed containers in the quarantine area before removal from site to an appropriately permitted site as soon as is practicably possible.

4.8.5 Appropriate fire extinguishers shall be made available and easily accessible.

4.8.6 Fuel is not intended to be stored on site.

4.8.7 Regular fire drills will be conducted on site to ensure that staff follow the proper procedures.

4.9 Site Security

4.9.1 The site boundary is surrounded by fencing, as shown on the site layout plan, and secure lockable 2.5m high gates at the main entrance. The fencing consists of new posts and wire fencing.

4.9.2 24-hour CCTV is in operation on site.

4.9.3 In the event of a bomb scare, the site will be immediately evacuated, operations suspended, and the police contacted. The police will then take control of the site until the threat is removed. The EA will be informed of the event.

4.10 Recording and Reporting Procedures

4.10.1 Records will be kept of all significant events (including fire, accidents, waste refusal) in the Site Diary. Information should include the nature and extent of the incident, and the actions and remediation measures taken. The site diary must be in a form where it can be audited.

4.10.2 Where site personnel have dealt with a fire successfully, it should be reported to the Fire Service as well as the Environment Agency.

4.11 Waste Acceptance and Control Procedures

4.11.1 Waste shall only be accepted if:

- It is of a type listed in Table 2 above
- It conforms to the description in the documentation supplied by the producer and holder

4.11.2 The Operator will ensure that all wastes accepted at the site for storage, treatment and recovery are fully characterised and acceptable by implementing the following procedures;

- Visual inspection of incoming materials in accordance with the appropriate documentation
- Waste transfer note
- Chemical analyses

4.11.3 The Operator will ensure that all Duty of Care Waste Transfer Notes (WTNs) include the following information and written legibly:

- Delivery date and time
- Origin of the waste
- Waste description including type, quantity and EWC code
- Container type
- Carriers' details
- Identity of the waste producer

4.11.4 The Operator will refer to the supporting information and WTN to identify and understand the beneficial and harmful properties of the waste to identify any potential problems that may arise from storage, transport and re-use.

4.11.5 The Operator will confirm the physical state; liquid, sludge or solid by reference to the definitions found within EA Guidance for waste acceptance at landfills [4]

4.11.6 Upon arrival on site, all vehicle drivers must report to the site office for inspection and weighing.

4.11.7 All waste received at the site shall be visually inspected to confirm that the description and composition conform to:

a) the written description and the European Waste Code on the relevant Duty of Care WTN, and
b) the description as detailed in the permit, and
c) any other accompanying documentation.

4.11.8 Once confirmed the load will be discharged to the appropriate storage area / stockpile. The waste shall be discharged and visually checked for a second time to ensure that there are no non-permitted wastes within the load.

4.11.9 All wastes received shall be kept separate from, and shall not be covered by or mixed with, other wastes until they have been confirmed and recorded for acceptance at the site.

4.11.10 Records will be maintained in accordance with Section 6 of this EMS.

[4] Guidance for waste acceptance at landfills, Environment Agency

4.12 Waste Refusal

4.12.1 In the event that a vehicle load, upon inspection, is non-compliant with the Environmental Permit the following steps will be implemented:

- Refusal of the container/load will result in refused entry
- Enter the event in the site diary, including the relevant information contained on a WTN
- Contact waste producer to advise

4.12.2 Any items of non-permitted waste which are detected after acceptance at the site shall be placed immediately in the designated quarantine storage area, comprising a skip or similar container and segregated from the other wastes. The details shall be entered into the site diary.

4.12.3 Quarantined waste shall be removed from site within 7 days. A record shall be kept of all rejected wastes in the Site Diary.

4.12.4 Waste will be refused if maximum storage capacity has been reached on site, no further waste will be accepted until other waste has been removed off site to an appropriately permitted or exempt site.

4.13 Waste Quantity Measurement Systems

4.13.1 Incoming waste shall be recorded in cubic metres based on the container volume. This shall be recorded by adding load information onto Towens electronic system.

4.13.2 A summary of waste outputs and inputs onto site will be submitted to the EA using the standard Generic Operator Returns electronic spreadsheet every quarter.

4.14 Site Inspections

4.14.1 The site inspections shall be undertaken by the TCM or NCP in their absence. Table 4 represents the issues that may need to be covered and gives the suggested time intervals.

4.14.2 The suggested inspection criteria are included in Table 4.

Table 4 - Site Inspection Checklist

Issue	Frequency	Action
General site and road cleanliness (presence of mud/debris)	Daily	Sweep road, impermeable surfacing if mud/ debris present. Record Inspections /actions in diary.

Issue	Frequency	Action
Inspect tanks, settlement tanks, interceptors, containers, drums, drip trays and secondary containment for leaks or accumulation of sediment.	Daily	Any leaks to be stopped and cleaned up, containers to be cleaned / replaced / repaired immediately. Record inspections/ defects, damage and repairs in diary.
Visual inspection of boundary fences and gates for breaks / damage where applicable.	Daily	Any defects shall be made secure by temporary repair before the start of operations/end of working day and shall be repaired within 24 hours of the damage being detected. Record Inspections/ defects, damage and repairs in site diary.
Check mobile bowser	Daily	Any defects shall be repaired before the start of operations / end of the day within 24 hours of the damage being detected. Record Inspections/ defects, damage and repairs in Diary.
Visual monitoring for aerial emissions-monitor dust at random times throughout the day and in accordance with the Dust Management Plan (DMP)	Daily	Check site boundaries for visual dust emissions at least twice daily. Record inspections / results / weather conditions / cause and actions in site diary.
General site cleanliness (presence of litter and dust deposits inside /outside site boundary)	Daily	Site walkover and inspection. Collection from inside and outside site (including boundary hedging) twice daily. Investigate the cause. Record inspections/ defects, damage and repairs in site diary.
Olfactory Monitoring for odour	Daily	Olfactory testing and record keeping in accordance with the OMP.
Olfactory Monitoring for noise in accordance with the Noise Management Plan (NMP)	Daily	Olfactory testing and record keeping in accordance with the NMP.
Site Signage.	Daily	Check that signs are in good condition and arrange to repair /replace if damaged. Record inspections/ defects, damage and repairs in site diary.
Pest infestation check. Check containers and stockpiles to monitor for vermin, scavengers and flies	Daily	Implement Pest Management Plan if presence of vermin, scavengers and /or flies are noted. Record daily inspections and results in site diary.
Ensure waste is stored in appropriate segregated containers	Daily	Check quantities are in accordance with EMS and Permit. Segregate as and when necessary. Record actions in site diary.

Issue	Frequency	Action
and areas in accordance with Good Practice Guidance		
Check condition of fixed storage facilities – drainage, lagoons/containers etc.	Weekly	Remove silt upon build up. Check and record levels within containers/lagoons. Take action to prevent spillage/ remove via vacuum tanker, etc. Record actions in site diary.
Inspection of plant	Weekly	Maintenance/repair/regular servicing. Record actions in diary and plant maintenance log sheets.
Surfacing	Monthly	Any defects affecting the integrity shall be repaired within one week.

4.14.3 Any necessary repairs will be made within 5 working days of discovery, unless agreed otherwise with the EA.

4.14.4 Any major defects which have the potential to cause a breach in permit if not repaired will be repaired by the end of the same working day. If this is not possible then contact with the EA will be made to agree alternative options.

4.15 Site Closure Plan

4.15.1 In the event that the Operator wishes to cease the permitted waste operations on the site, the Operator will contact the EA to inform them of the closure.

4.15.2 Any waste remaining on site will be inspected by the TCM, who will produce plans for its quick and safe removal off site.

4.15.3 All waste, plant and machinery will be removed from site.

4.15.4 A site investigation will be conducted to determine the quality of the ground condition on site following all operations.

4.15.5 The Operator will submit a surrender of the permit application to the EA for duly making.

5. Pollution Control, Monitoring and Reporting

5.1 Pollution Risk Management

5.1.1 The operator will ensure that a site-specific risk assessment and management plans are used throughout all treatment activities.

5.1.2 See Section 4.7 for surface water management.

5.2 Contact Information for the public

5.2.1 The site will have a publicly visible sign at the entrance with contact details for the Operator so neighbouring businesses or local residents can contact Towens if they have any complaints/issues at any time.

5.2.2 The site sign will have a contact telephone number for the site manager who is available 24 hours.

6. Emissions and Monitoring

6.1 Introduction – Emissions to air, land and water

6.1.1 Emissions from waste to land during operations can lead to pollution of surface and groundwater, and the air. Waste storage and treatment operations can lead to the production of emissions of dust, aerosols, odour and noise.

6.1.2 The EA requires that the Operator take appropriate measures to control potential emissions to or from the waste operation. The following sections therefore set out the measures that will be taken to prevent or minimise the risk to potentially sensitive receptors.

6.1.3 All sensitive receptors to the site and their respective locations are shown on the sensitive receptor plan in Appendix C. This EMS has been produced in consideration of these receptors and their protection.

6.2 Monitoring and Control of Dust Emissions

6.2.1 The key sources for the generation of dust on site are:

- Dust raising from public, haul roads and operational surfaces through vehicle movements
- Dust raising from the mechanical loading/unloading of wastes
- Dust raising from the treatment operation
- Dust raising from stockpiles

6.2.2 The Operator shall take all appropriate measures to reduce and prevent dust emissions generated by the site. Table 5 below sets out the measures that shall be undertaken to control and monitor the release of dust, fibres and particulates.

Table 5 - Measures to Control and Monitor Emissions of Dust

Appropriate Measures for Reducing Emissions of Dust	
▪ Undertake operations within suitable weather windows wherever possible ▪ All incoming loads to be tipped in such a way as to minimise dust generation. ▪ All loading /unloading activities to be undertaken carefully to prevent waste materials being dropped from a height. ▪ Manage loading operations from stockpiles to mixing plant as above. ▪ Keep stockpiles with the potential to give dust as small as possible ▪ Locate potentially dusty material in sheltered areas if possible and consider covering with a suitable material or cover ▪ No storage of waste outside designated containers or stockpile areas. ▪ Limit vehicle speeds during treatment to reduce dust raising ▪ Maintain records of all actions	
Monitoring of aerial emissions	
▪ Daily visual monitoring of aerial emissions at site boundaries shall be carried out by staff supervising all waste handling operations.	▪ TCM /NCP to monitor operations throughout day at and outside the site boundary that is downwind of operations. ▪ Observations and weather conditions including wind direction will be recorded on the dust monitoring sheet. ▪ Complaints to be recorded in the Site Diary

6.2.3 The Operator will take account of the weather conditions and ensure that all waste operations are undertaken in accordance with this information.

6.2.4 The TCM will nominate a person, or persons to be responsible in the absence of the TCM to undertake and record daily random visual monitoring events. Additionally, all operational staff will be made aware of the importance of preventing dust emissions from leaving the boundary of the site which would breach the permit.

6.2.5 In the event of a complaint, the Operator will immediately investigate the source of the dust and whether it is originating from the site. Action will be taken to prevent any further emissions leaving the site. A Corrective Action Report will be completed describing the incident and should include details as specified above. A record will be made in the site diary.

6.2.6 A site-specific Dust Management Plan has been produced, outlining the mitigation measures in place at the site.

6.3 Monitoring and Control of Noise

6.3.1 Noise and vibration will be maintained at levels associated with normal civil engineering activities. Where the site-specific Environmental Risk Assessment identifies sensitive receptors in close proximity to the operation, the Operator will take all measures to minimise noise impacts to those receptors.

6.3.2 The Operator will ensure that all plant is maintained in accordance with the manufacturer's guidelines. Maintenance records will be maintained.

6.3.3 The proposed activities on site are unlikely to greatly increase the noise level in the surrounding industrial area.

6.4 Monitoring and Control of Litter

6.4.1 The risk of litter becoming a nuisance is considered to be very low because wastes will have been segregated and should not contain litter. However, the potential for litter nuisance will be further minimised with the implementation of the following provisions:

- Sheeting of all incoming loads
- All incoming loads to remain sheeted until ready to be tipped
- Daily inspection of the site boundaries at least once per day, corrective action to be recorded in the site diary
- Litter picking when required

6.4.2 On the detection of litter, the operator shall take action to review the waste management processes at the site and modify or cease handling the waste if necessary, in order to minimise the production of litter.

6.4.3 The incident, actions and results shall be recorded in the site diary.

6.5 Monitoring and Control of Pests (including Scavengers and Gulls)

6.5.1 The Operator will take appropriate measures to prevent and reduce nuisance from scavengers, vermin and files. These are listed below in Table 6.

6.5.2 An inspection of stored wastes for pest infestations shall be carried out at least at weekly intervals and more often, if necessary, by the site supervisor and shall be recorded in the site diary.

6.5.3 On detection or notification of pest infestations, immediate action shall be taken to secure the attendance of a professional pest control contractor, to eliminate the pest infestation. The incident and remedial action shall be recorded in the site diary.

Table 6 - Measures to reduce nuisance from scavengers, vermin and flies

Appropriate Measures for Reducing Nuisance from Scavengers, Vermin and Flies	
▪ Reduce the potential for scavenging, attracting vermin and fly breeding in stockpiles by identifying waste likely to attract flies. ▪ Locate loading/ unloading areas, stockpiles as far from human receptors as is possible ▪ Keep machinery clean ▪ Conclude operations as quickly as possible	
Monitoring of aerial emissions	
▪ Daily visual monitoring of stockpiles by staff supervising waste handling operations.	▪ TCM /NCP to monitor waste types for infestations ▪ Observations and weather conditions including wind direction will be recorded on the site diary

6.6 Monitoring and Control of Mud and Debris

6.6.1 Vehicles will be inspected, both the vehicles and bodies, upon entry and exit of the site for exterior mud and debris. Any excess mud and debris will be removed, and vehicles will be washed down to ensure that no mud is carried out onto access roads or public highways.

6.6.2 Any mud or debris detected on the site roads will be reported to the site manager.

6.6.3 Any mud or debris detected on the local public highways due to operations on site will be cleared immediately by the Operator, manually using a brush or using s road sweeper if necessary.

6.7 Monitoring and Control of Odour

6.7.1 The waste accepted on site is not putrescible so odour should not cause any complications or breach of the permit on site.

6.7.2 On the detection of litter, the operator shall take action to review the waste management processes at the site and modify or cease handling the waste, if necessary, in order to minimise the production of litter.

6.7.3 The incident, actions and results shall be recorded in the site diary.

6.7.4 Any putrescible waste will be contained in quarantine and sent to a suitably permitted site for disposal.

6.8 Climate Change

6.8.1 Planning for the changing climate at the Towens Kleen Kutt yard is organised into six stages: preparation, potential impacts, risk assessment, control measures, adaptation plan and monitor, record and review plan.

6.8.2 Climate change is considered in Table A5 in the environmental risk assessment included in Appendix F to minimise impacts on the environment and adapt to a changing climate appropriately.

7. Site Records

7.1 Security and Availability of Records

7.1.1 All Duty of Care Transfer Notes will be kept for a minimum of 2 years.

7.1.2 Records of any hazardous wastes accepted by the site, wastes rejected by the site and/or despatched from the site shall be kept in the site office for a minimum of 6 years. These will be available for inspection by an authorised person by accessing the electronic records management system.

7.2 Records of Waste Movements (Waste Returns)

7.2.1 Records of all waste movements shall be kept in accordance with the relevant condition in the permit. Additionally, a summary record of the waste types accepted and removed from the site shall be made on the Environment Agency form every quarter. This information will be submitted to the Agency within 1 month following the end of the quarter.

7.3 Records of off-site Environmental effects

7.3.1 Records of any off-site environmental effects including pollution incidents that caused or were alleged to have caused, harm or health effects will be retained.

7.4 Records of on-site Environmental effects

7.4.1 Records that relate to the condition of the land and groundwater will be retained. The initial state of the site is described within the Application Site Condition Report. This is a live document and will be maintained throughout the life of the site. Records will include details on:

- Design, construction, inspection, monitoring & maintenance
- Failure of pollution prevention control measures
- Spills and incidents

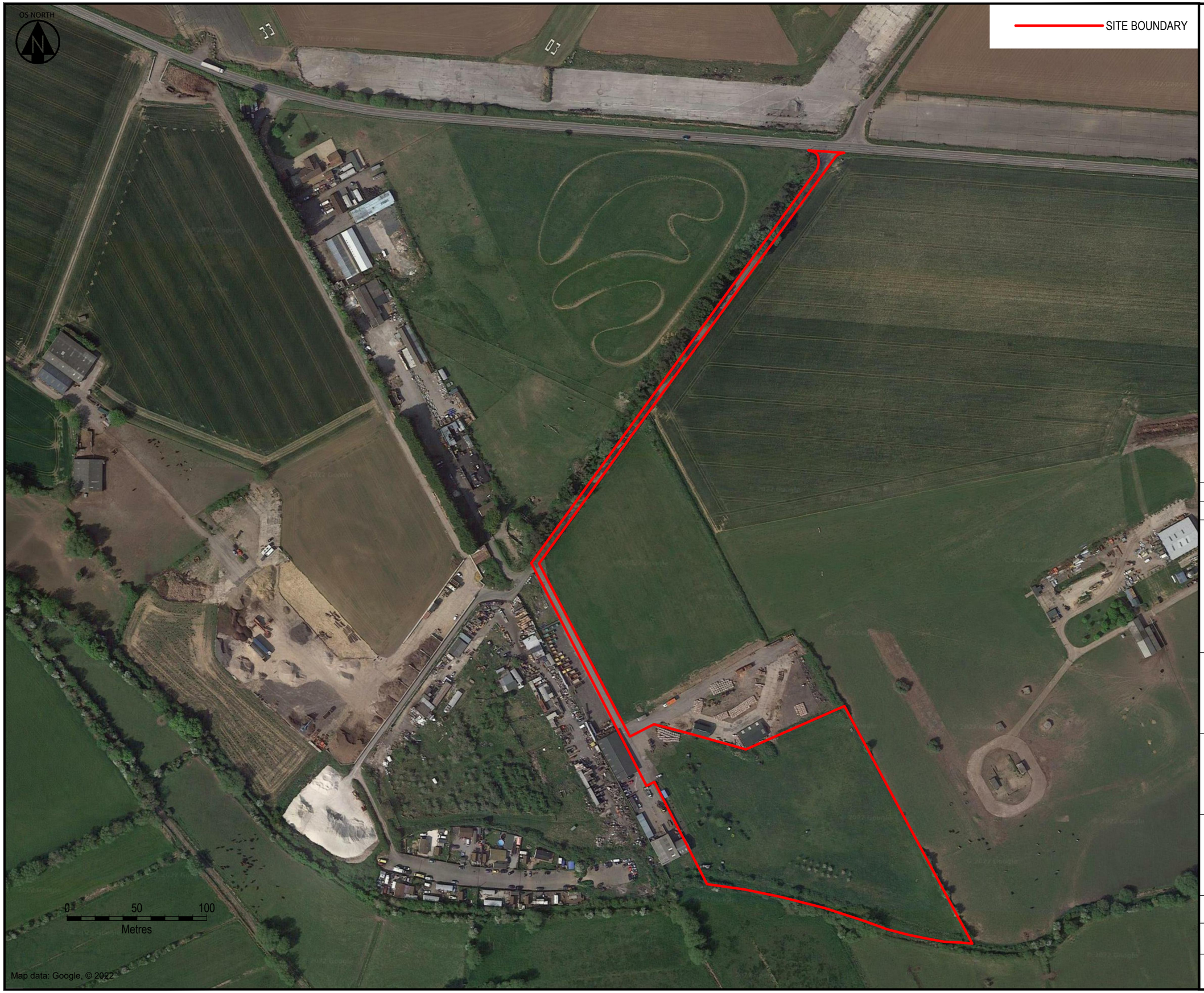
- Records of investigations and remedial actions
- Records of remedial action in response to non-conformances as noted by an EA Officer

7.5 Site Diaries

7.5.1 A site diary will be kept secure within the site office and made available for inspection by the Environment Agency as and when required. The diary will contain the following information and be maintained in a form in which it can be audited:

- Start and finish of any construction works
- Maintenance
- Plant and machinery breakdowns
- Emergencies
- Problems with waste received and action taken
- Site inspections and consequent actions carried out by the operator
- TCM attendance - the date and the time on site and the time left site
- Dispatch of any records to the Environment Agency
- Severe weather conditions
- Any environmental problems and remedial actions taken
- Any complaints related to operational activities
- Records of site monitoring – odour / dust / litter / pests / surface water
- Records of inspection of the silt trap/interceptor

7.5.2 All records shall be completed within 24 hours of the event.



Notes:

Rev	Date	Description	By	Ckd
A	10/03/23	Initial issue	NG	LB

mts environmental
Filwood Green Business Park, 1 Filwood Park Lane, Bristol BS4 1ET
Tel: 0117 370 4250
www.mtsenvironmental.co.uk

Client

TOWENS

Project

Towens Kleen Kutt Yard

Title

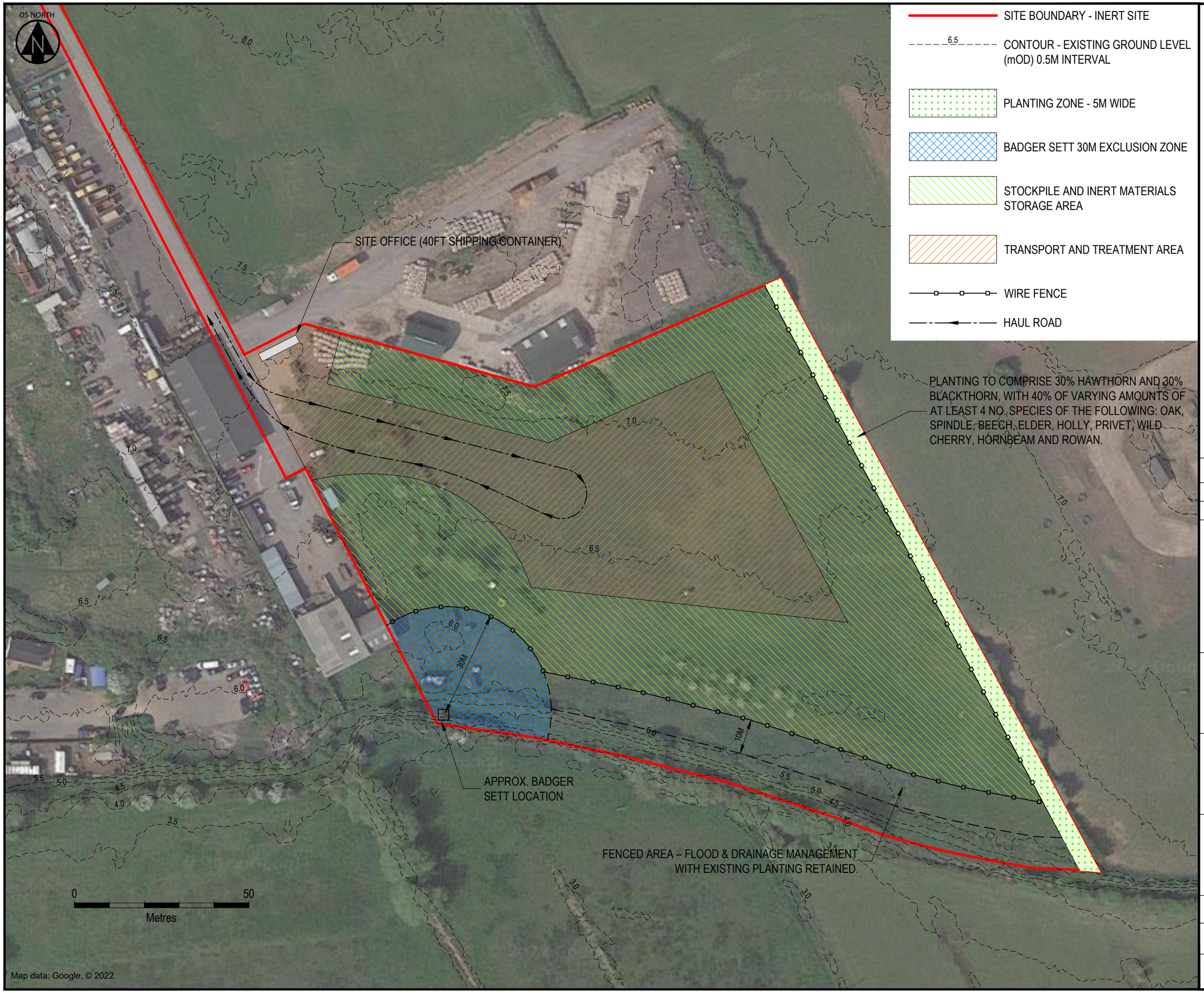
SITE LOCATION PLAN

Drawn	Checked	Scale at A3	Date	Issue Date
NG	LB	1:2500	10/03/23	10/03/23

Drawing status

INFORMATION

Drawing No.	Revision
W-MTS-DR-PL-03	A



Notes:

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TREATMENT CONSISTS OF BLENDING, CRUSHING, SORTING, SEPARATING AND SCREENING IN THE TREATMENT AREA.

ALL ACTIVITIES ON SITE WILL OCCUR OUTSIDE.

ALL SITE HAS A PERMEABLE SURFACE.

Rev	Date	Description	By	Ckd
B	23/06/23	Updates to site layout. Issued for information.	NG	LB
A	10/03/23	Initial issue	NG	LB

mts environmental
Filwood Green Business Park, 1 Filwood Park Lane, Bristol BS4 1ET
Tel: 0117 370 4250
www.mtsenvironmental.co.uk

Client: TOWENS

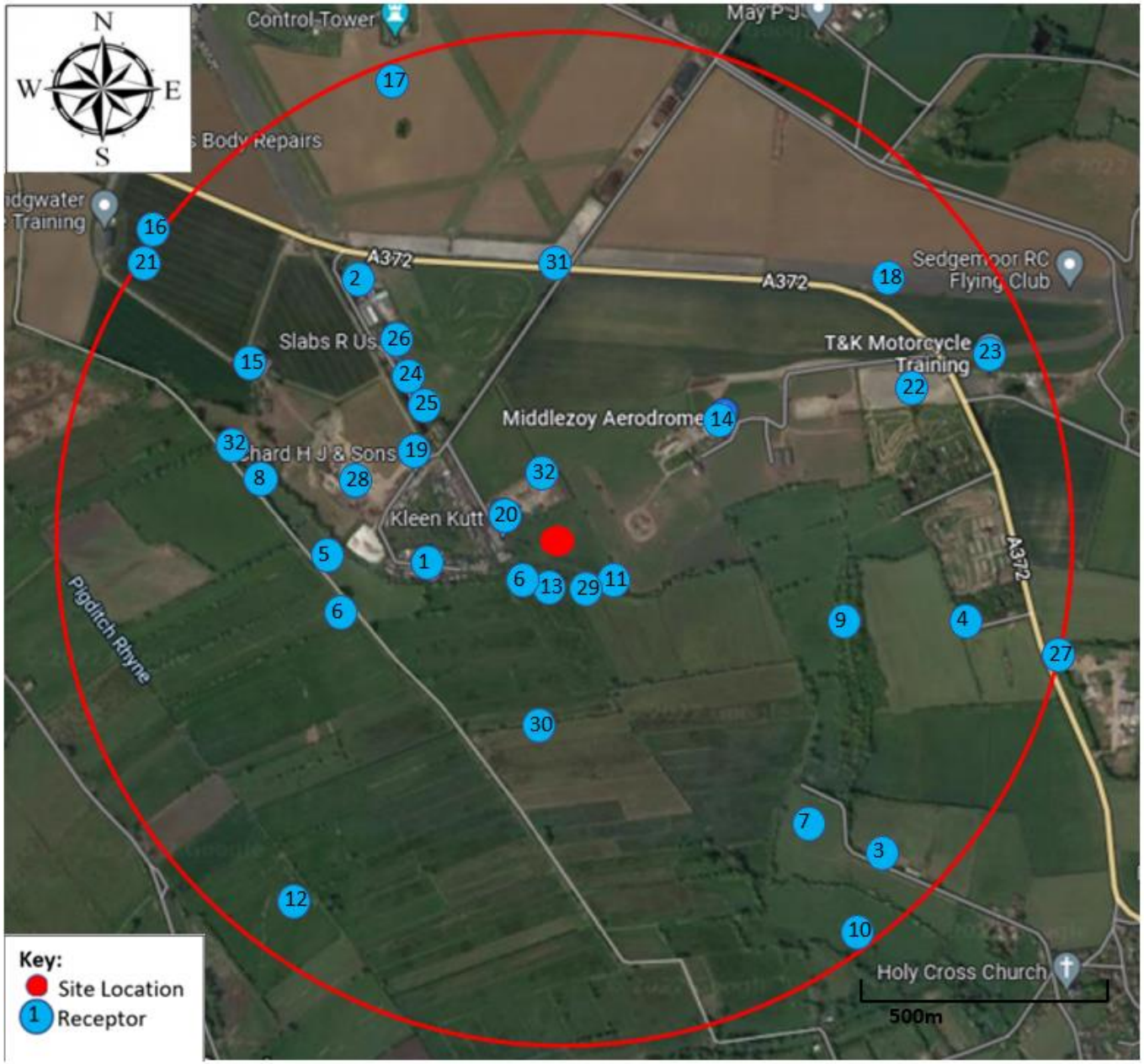
Project: Towens Kleen Kutt Yard

Title: SITE LAYOUT

Drawn	Checked	Scale at A3	Date	Issue Date
NG	LB	1:1000	10/03/23	10/03/23

Drawing status: INFORMATION

Drawing No.	Revision
W-MTS-DR-PL-05	B



ID	Receptor
Residential	
1	Caravan Park
2	Springway Farm
3	Property on Knowleyards Road
4	The Old Ambulance House
Designated Land and Waterways	
5	Site of Special Scientific Interest (SSSI) – Langmead and Weston Level
6	Priority Habitat Inventory (PHI) – Lowland Meadows
7	PHI–Lowland Dry Acid Grassland
8	PHI – Coastal and Floodplain Grazing Marsh
9	PHI – Deciduous Woodland
10	PHI – Traditional Orchards
11	Important Plant Areas Plantlife
12	Somerset Level and Moor
13	Pigditch Rhyne Network
Sensitive Land Uses	
14	Middlezoy Aerodrome
15	Farm
16	Westonzoyland Allotments
17	Westonzoyland Airfield
18	Sedgemoor RC Flying Club
Industrial/Commercial	
19	JWF Engineering
20	Kleen Kutt
21	Bridgwater Motorcycle Training
22	Grandfields Motor Track
23	T&K Motorcycle Training
24	Burnham Coal Supplies
25	Regency
26	Slabs R Us
27	Seven Acres Industrial Estate
28	Towens Westonzoyland Depot
Public Rights of Way	
29	Restricted Byway
30	Public Footpath
Infrastructure/utilities	
31	A372
Priority species	
32	Priority Species – Curlew/Lapwing/Redshank/Water Vole

Name	Email	Date of Birth	Qualifications	TCM on other sites
Paul Webber	paul@towens.co.uk	31/07/70	MROC1	EPR/DB3605UJ – Midlezoy Waste Transfer Station, TA7 0PJ
Matthew Hollow	matthew@towens.co.uk	16/09/87	MROC1	None
Luke Bridges	luke.bridges@mtsenvironmental.co.uk	17/12/91	HROC6	None

CIWM

Qualification Title:

CIWM (WAMITAB) Level 4 Medium Risk Operator Competence for Non-Hazardous Waste Treatment and Transfer

Qualification Accreditation Number:

601/8528/4

This Certificate is awarded to

Matthew Hollow

Verification date: 26/04/2022

Authorised:

Katie Cockburn
Professional Services Director

Learner ID: 119706

Certificate No.: 5197985

Date of Issue: 05/05/2022

3742F5A3-B6DF-4281
98A2-437417F97D69
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Cymwysterau Cymru Qualifications Wales
Recognised awarding body

cea Regulation

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CIWM

Units achieved by

Matthew Hollow

Units gained:

		Level
A/508/0756	Maintain health and safety in the waste resource management industry	L4
F/508/0757	Manage the environmental impact of work activities	L4
F/508/0760	Manage the movement, sorting and storage of waste	L4
J/508/0887	Manage the reception of non-hazardous waste	L3
K/508/0980	Manage transfer and disposal from non-hazardous waste treatment and recovery operations	L4
M/508/0995	Manage site operations for the treatment of non-hazardous waste	L4

Verification date: 26/04/2022

Authorised:

Learner ID: 119706

Certificate No.: 5197985

Date of Issue: 05/05/2022

Katie Cockburn
Professional Services Director

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CIWM

Operator Competence Certificate

Title:

Non-Hazardous Waste Treatment and Transfer

This Certificate is awarded to

Matthew Hollow

Verification date: 26/04/2022

Authorised:

Professional Services Director

Learner ID: 119706

Certificate No.: 5197985

Date of Issue: 05/05/2022

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

This certificate is awarded by the Chartered Institution of Wastes Management (CIWM) and provides evidence to meet the Operator Competence requirements of the Environmental Permitting (EP) Regulations, which came into force on 6 April 2008.

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CIWM

Qualification Title:

CIWM (WAMITAB) Level 4 Medium Risk Operator Competence for Non-Hazardous Waste Treatment and Transfer

Qualification Accreditation Number:

601/8528/4

This Certificate is awarded to

Paul Webber

Verification date: 04/10/2022

Authorised:

Katie Cockburn
Professional Services Director

Learner ID: 106840

Certificate No.: 5208700

Date of Issue: 10/10/2022

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Cymwysterau Cymru Qualifications Wales
Recognised awarding body

Regulation

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wamitab

Certificate No: **5149563**

CERTIFICATE OF TECHNICAL COMPETENCE

This Certificate confirms that

Luke Bridges

Has demonstrated the standard of technical competence required for the management of a facility of the type set out below

Facility Type

Level 4 in Waste Management Operations -

Managing Treatment Hazardous Waste (4TMH)

Authorising Signatures:

Chief Executive Officer

Director:

Date of issue: 04/09/2019

00021966

wamitab

Qualification Title:

WAMITAB Level 4 High Risk Operator Competence for Managing Physical and Chemical Treatment of Hazardous Waste

Qualification Accreditation Number:

601/8502/8

This Certificate is awarded to

Luke Bridges

Verification date: 04/09/2019

Authorised:

Learner ID: 19051

Certificate No.: 5149563

Date of Issue: 04/09/2019

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B4AF-060D882D1A98
AuthentiQual.com

Chris James
WAMITAB Chief Executive Officer

Regulated by Ofqual
For more information see http://register.ofqual.gov.uk

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Cymwysterau Cymru Qualifications Wales
Recognised awarding body

Regulation

The qualifications regulators logos on this certificate indicate that the qualification is accredited only for England, Wales and Northern Ireland. Qualifications Wales regulates this qualification where it is awarded to learners assessed wholly or mainly in Wales.

00132860

Operator Competence Certificate

Title:

Physical and Chemical Treatment of Hazardous Waste

This Certificate is awarded to

Luke Bridges

Verification date: 04/09/2019

Authorised:

Learner ID: 19051

Certificate No.: 5149563

Date of Issue: 04/09/2019

WAMITAB Chief Executive Officer

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

This certificate is jointly awarded by WAMITAB and the Chartered Institution of Wastes Management (CIWM) and provides evidence to meet the Operator Competence requirements of the Environmental Permitting (EP) Regulations, which came into force on 6 April 2008.

00132862

Credit certificate
This certificate determines credit awarded to:

Luke Bridges

Units gained:

		Credit Value	Credit Level
A/508/0756	Maintain health and safety in the waste resource management industry	4	L4
F/508/0757	Manage the environmental impact of work activities	3	L4
F/508/0760	Manage the movement, sorting and storage of waste	5	L4
R/508/0861	Control work activities on a waste management facility	6	L4
K/508/0882	Identify and implement improvements to waste management operations	3	L4
M/508/0883	Control maintenance and other engineering operations	5	L4
T/508/0884	Procedural Compliance	4	L4
A/508/0885	Manage and maintain systems for responding to emergencies	3	L4
F/508/0886	Manage the reception of hazardous waste	7	L4
M/508/0978	Manage transfer and disposal from hazardous waste treatment and recovery operations	9	L4
H/508/0993	Manage site operations for the treatment of hazardous waste	9	L4
Y/508/0974	Manage an inspection visit at your site from regulatory bodies	6	L4

Verification date: 04/09/2019

Authorised:

Learner ID: 19051

Certificate No.: 5149563

Date of Issue: 04/09/2019

Chris James
WAMITAB Chief Executive Officer

Regulated by Ofqual
For more information see http://register.ofqual.gov.uk

Corff dyfarnu cydnabyddedig
Cymwysterau Cymru Qualifications Wales
Recognised awarding body

The qualifications regulators logos on this certificate indicate that the qualification is accredited only for England, Wales and Northern Ireland. Qualifications Wales regulates this qualification where it is awarded to learners assessed wholly or mainly in Wales.

00132861

Continuing Competence Certificate

This certificate confirms that

Luke Bridges

Has met the relevant requirements of the Continuing Competence scheme for the following award(s) which will remain current for two years from 07/09/2021

TSH Transfer - Hazardous Waste

Expiry Date: 07/09/2023

Verification date: 04/09/2021

Authorised:

Learner ID: 19051

Certificate No.: 5184183

Date of Issue: 07/09/2021

Director of Qualifications and Standards

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

00162869

Continuing Competence Certificate

This certificate confirms that

Luke Bridges

Has met the relevant requirements of the Continuing Competence scheme for the following award(s) which will remain current for two years from 11/10/2021

TMH Treatment - Hazardous Waste

Expiry Date: 11/10/2023

Verification date: 06/10/2021

Authorised:

Learner ID: 19051

Certificate No.: 5185942

Date of Issue: 11/10/2021

Director of Qualifications and Standards

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

00156457

Quality Protocol

Aggregates from inert waste

End of waste criteria for the production of aggregates from inert waste

Northern Ireland Environment Agency
www.doeni.gov.uk/niea

Cyfoeth Naturiol Cymru
Natural Resources Wales

This Quality Protocol was funded by Defra, the Welsh Government and the Northern Ireland Environment Agency (NIEA) as a business resource efficiency activity. It was developed by the Environment Agency and WRAP (Waste & Resources Action Programme) in consultation with Defra, the Welsh Government, industry and other regulatory stakeholders. The Quality Protocol is applicable in England, Wales and Northern Ireland. It sets out the end of waste criteria for the production and use of aggregates from inert waste.

Contents

Foreword

Background

Uncertainty over the point at which waste has been fully recovered and ceases to be waste within the meaning of Article 3(1) of the EU Waste Framework Directive (2008/98/EC) has inhibited the development and marketing of materials produced from waste which could otherwise be used beneficially without damaging human health and the environment. In some cases, this uncertainty has also inhibited the recovery and recycling of waste and its diversion from landfill.

Interpretation of EU legislation is ultimately a matter for the Courts and there is now a substantial body of case law on the interpretation of the definition of waste. Drawing on the principles established in this case law, it is possible to identify the point at which certain wastes can be regarded as having ceased to be waste and thus when the Directive's waste management controls should no longer apply. This identification is the purpose of the Waste Protocols Project.

What is a Quality Protocol?

A Quality Protocol sets out end of waste criteria for the production and use of a product from a specific waste type. Compliance with these criteria is considered sufficient to ensure that the fully recovered product may be used without undermining the effectiveness of the Waste Framework Directive and therefore without the need for waste management controls.

A Quality Protocol indicates how compliance should be demonstrated and points to good practice for the storage, transportation and handling of the fully recovered product. The Quality Protocol further aims to provide increased market confidence in the quality of products made from waste and so encourage greater recovery and recycling.

1. Introduction

Definitions of terms that appear in italics when they are first used in this Quality Protocol are given in Appendix A.

1.1. What is this Quality Protocol?

1.1.1 This Quality Protocol has been developed by the *Environment Agency*, the *Northern Ireland Environment Agency (NIEA)* and *WRAP (Waste & Resources Action Programme)* in consultation with industry and other regulatory stakeholders. It is applicable in England, Wales and Northern Ireland.

1.1.2 The Quality Protocol sets out end of waste criteria for the production and use of *aggregates* from *inert* waste. It supersedes 'Quality Protocol for the production of aggregates from inert waste', revised edition (ISBN 1-84405-217-6). If the criteria set out are met, the resulting outputs will normally be regarded as having been fully recovered and to have ceased to be waste.

1.1.3 Producers and users are not obliged to comply with the Quality Protocol. If they do not, the aggregate will normally be considered to be waste[1] and *waste management controls* will apply to its handling, transport and use.

1.1.4 This Quality Protocol does not affect the obligation of producers to hold an *environmental permit* (including an exemption) and to comply with its conditions when storing and processing waste.

1.1.5 This Quality Protocol does not affect permitting or any other legal requirements that do not depend on the status of the material as a waste.

1.2 The purpose of the Quality Protocol

1.2.1 The Quality Protocol has four main purposes:

i. clarifying the point at which waste management controls are no longer required;
ii. providing users with confidence that the aggregate they purchase conforms to an approved industry specification defined in accordance with an appropriate European aggregate standard;
iii. providing users with confidence that the aggregate is suitable for a use within a *designated market sector(s)* including by conforming with the industry standard; and
iv. protecting human health and the environment (including soil).

1.2.2 In addition, the Quality Protocol describes acceptable good practice for the transportation, storage and handling of aggregate (see Appendix D).

1.3 Complying with the Quality Protocol

1.3.1 Aggregate will normally be regarded as having ceased to be waste, and therefore no longer subject to waste management controls, provided:

- it conforms to the requirements of the European standard appropriate to the use it is destined for as set out in Section 2;
- the aggregate is produced under *Factory Production Control* as required by the European standard and as set out in Section 2;
- within Factory Production Control, inputs are limited and controlled as set out in Section 2;
- it requires no further processing, including size reduction, for the use it is destined for as set out in Section 2;

[1] Unless on a case-by-case basis it can be demonstrated that the material is non-waste.

- it is destined for a use within the designated market sectors set out in Section 4; and
- it conforms with CE conformity marking requirements contained in the Construction Products Regulations, which will apply to all aggregates placed on the market to harmonised European Aggregates Standards from July 2013.

1.3.2 Producers must demonstrate that these criteria have been met. They should do this in the ways set out in Section 3.

1.3.3 This Quality Protocol will be adopted as a technical regulation under *Technical Standards and Regulations Directive (98/34/EC)* as amended. We recognise that there may be codes of practice which apply in the *European Economic Area (EEA)* States other than the UK setting out requirements for the use of aggregate. We accept that aggregate may cease to be waste provided it has been produced in compliance with:

- a relevant code of practice of a national standards body or equivalent body of any EEA State; or
- any relevant international standard recognised for use in any EEA State; or
- any relevant technical regulation with mandatory or de facto mandatory application for marketing or use in any EEA State.

These must give levels of product performance and protection of human health and the environment which are equivalent to those required by this Quality Protocol.

1.3.4 An outline of the main stages and control mechanisms of the Quality Protocol is presented in Figure 1. These are described further in Sections 2 and 3.

1.4 When Quality Protocol compliant material may become waste

1.4.1 Producers and users of aggregate should note that, even if the Quality Protocol is complied with, the material will become waste again and subject to waste management controls at any stage it is discarded or there is an intention or requirement to discard, for example if it is:

- disposed of; or
- stored indefinitely with little prospect of being used.

1.4.2 In addition, if Quality Protocol compliant material is mixed with waste materials, the resulting mix will be considered to be a waste and subject to waste management controls. If Quality Protocol compliant material is mixed with non-waste materials, the resulting mix will not, as a result, be waste.

1.5 Failure to comply with the Quality Protocol

1.5.1 Where this Quality Protocol is not complied with, for example the aggregate does not conform to the requirements of the European standard or the producer cannot demonstrate evidence of compliance, the aggregate produced will normally be considered to be waste. In such circumstances, the producer or user must comply with the appropriate waste management controls[2] for the transportation, storage and use of the aggregate and may be committing an offence if they do not do so.

1.5.2 Detailed guidance on waste management controls can be obtained from the Environment Agency's National Customer Contact Centre on 08708 506 506, from its website (www.environment-agency.gov.uk/subjects/waste/), from Natural Resources Wales website (enquiries@naturalresourceswales.gov.uk) or from NIEA's website (www.ni-environment.gov.uk/waste-home/authorisation.htm).

[2] For example, in compliance with Article 23 of the Waste Framework Directive, the user might need to obtain a permit from the Environment Agency or Natural Resources Wales (or in Northern Ireland a waste management licence or PPC permit from the NIEA).

1.6 Updating the Quality Protocol

1.6.1 We will review and update this document as we consider appropriate.

1.6.2 Triggers for a review could include:

- pollution incidents;
- development in scientific understanding;
- a change in the market;
- a change in legislation or case law; or
- a change to the agreed European standard.

1.6.3 This Quality Protocol may be withdrawn if it becomes apparent that it is generally being misapplied and/or misused.

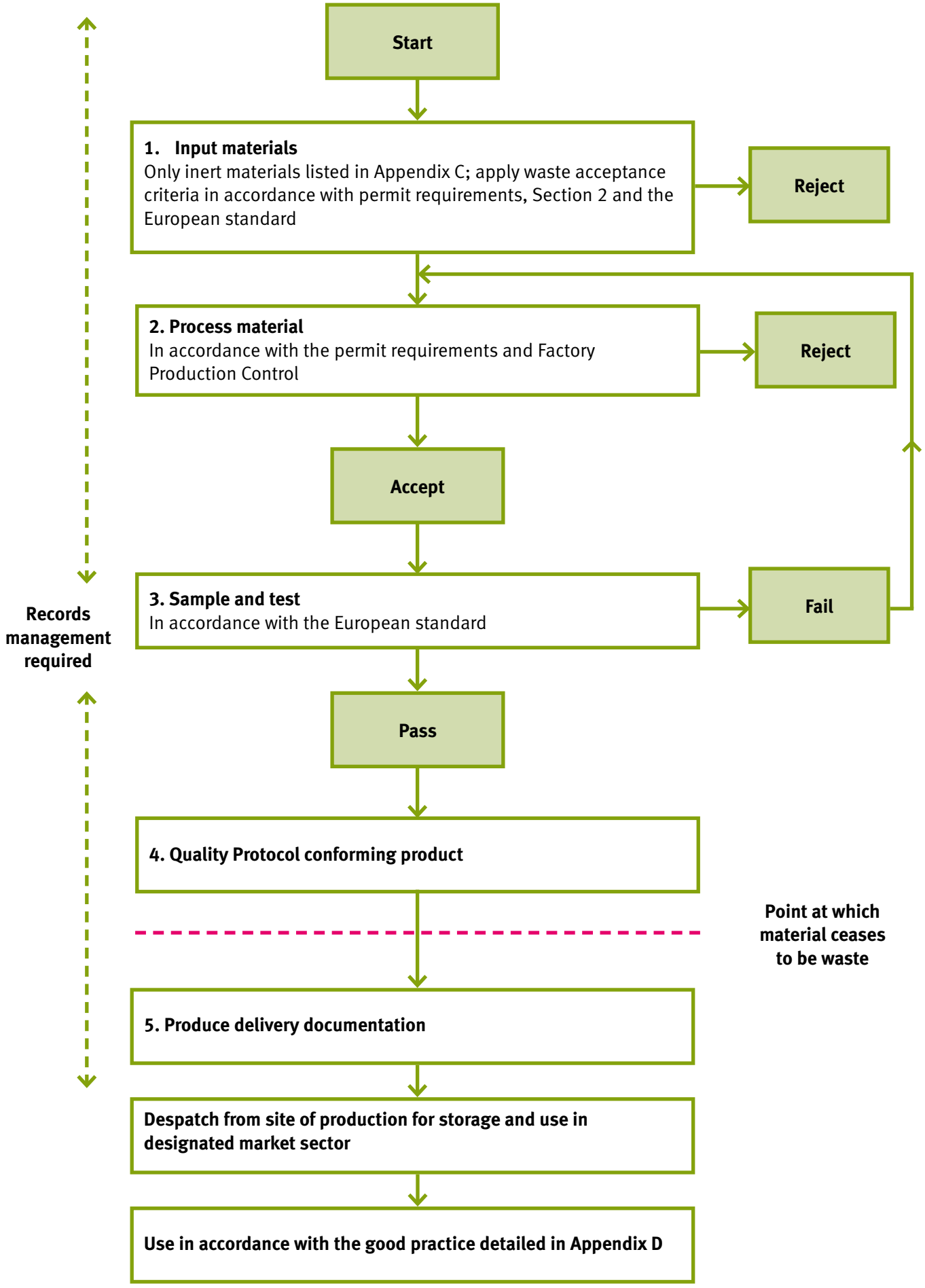
1.7 Importing and exporting Quality Protocol compliant material

1.7.1 Producers intending to export material that has been produced in compliance with this Quality Protocol should be aware that, although the material may cease to be waste in England, Wales and Northern Ireland, the country of destination may take a different view. If the competent authority in the country of destination considers the material to be waste, the shipment will be subject to the controls set out in the Waste Shipment Regulation (EC No. 1013/2006).

1.7.2 Those intending to import Quality Protocol compliant material into England, Wales or Northern Ireland should be aware that, if the country of despatch regards the material as waste, the controls set out in the Waste Shipment Regulation will apply to the shipment. This is the case even though the material may be regarded as having ceased to be waste in England, Wales and Northern Ireland.

1.7.3 Before importing or exporting such material it is prudent to check with the competent authority for the country of despatch or destination. A list of the competent authorities can be found at: http://ec.europa.eu/environment/waste/shipments/pdf/list_competent_authorities.pdf

Figure 1: Main stages and control mechanisms of the Quality Protocol



2. Producing aggregates from inert waste

2.1 Regulating the production process

2.1.1 The process of turning inert waste material into a product is classified as a waste recovery operation and is subject to the waste management controls set out in the Waste Framework Directive and domestic legislation. This Quality Protocol does not affect the obligation on producers to hold an environmental permit (including exemptions) (in Northern Ireland a waste management licence or exemption or a PPC permit is required) that authorises the storage and processing of inert waste and to comply with its conditions.

2.2 Criteria for producing aggregate that has ceased to be waste

2.2.1 To comply with this Quality Protocol, aggregate must be produced in compliance with the criteria outlined in Sections 2.3 to 2.5. In addition, the material should be destined for use in the designated market sector described in Section 4.

2.3 Input materials

2.3.1 The only acceptable input materials are the inert waste materials specified in Appendix C.

2.3.2 To ensure that only inert waste is accepted, producers must have acceptance criteria which meet, as a minimum, the requirements set out in Appendix C.

2.4 Processed in accordance with the approved standard including a Factory Production Control system

2.4.1 The producer must comply with all the requirements of a BS EN aggregates standard (for example, BS EN 13242), appropriate for the use for which the aggregate is destined, at the time it is produced, to comply with this Quality Protocol. Appendix B details the main standards and specifications relating to aggregates at the time of publishing this Quality Protocol.

2.4.2 The specifications (for example, the Highways Agency's Specification for Highway Works (SHW)) summarised in Appendix B have properties selected from the BS EN aggregates standards. The requirements for evaluation of conformity from the relevant BS EN apply in all cases.

2.4.3 The standards and specifications summarised in Appendix B are subject to review and producers should ensure they work to the latest version. Any changes to the agreed standards and specifications may trigger a review of the Quality Protocol (see Section 1.6.2).

2.4.4 Producers must set up and produce the aggregate under a system for Factory Production Control as set out in the relevant BS EN aggregates standard listed in Appendix B.

2.5 Requires no further processing

2.5.1 The aggregate must require no further processing, including size reduction, for the use for which it is destined at the time it is produced to comply with this Quality Protocol.

3 Providing evidence of compliance with the Quality Protocol

3.1 Producers must be able to demonstrate compliance with all the requirements of this Quality Protocol.

3.2 Some of the records specified below may already be required as part of the producer's environmental permit conditions (waste management licence or PPC permit conditions if in Northern Ireland). This Quality Protocol does not affect the obligations on producers to comply with environmental permit conditions (waste management licence or PPC permit conditions if in Northern Ireland).

3.3 Records management

3.3.1 To be able to demonstrate compliance with the Quality Protocol, producers must maintain *delivery documentation* for every load of *recycled aggregate* despatched.

3.3.2 This delivery documentation must include:

- date of supply;
- customer's name and contact details;
- product description to aggregates standard and customer specification;
- the name and contact details of the producer, including the address of the site of production;
- quantity supplied by weight/volume; and
- a statement that the product was produced in compliance with this Quality Protocol.

Where requested by the purchaser further documentation should also include:

- test results and procedures in accordance with the standard or specification in Appendix B and for any further tests required to assess suitability for a particular end use;
- outline details of the Factory Production Control manual; and
- information on good practice relating to the storage, transportation and handling of aggregate (as set out in Appendix D).

3.3.3 These requirements are additional to any statutory record-keeping obligations. However, some records may be used to fulfil both a regulatory obligation and evidence of compliance with this Quality Protocol.

3.3.4 For the purposes of this Quality Protocol the producer, must:

- keep and retain specified records for a minimum of two years; and
- make them available for inspection by the regulator (if requested).

4. Storage and use of recycled aggregates

4.1 As for all aggregate, users of recycled aggregate that complies with this Quality Protocol should take full account of any environmental impact resulting from its use.

4.2 Storage of recycled aggregate

4.2.1 Aggregate produced in compliance with the requirements of this Quality Protocol, which is therefore regarded as having ceased to be waste, may need to be stored temporarily either before delivery to the customer or at the customer's premises. The materials will not be waste at that point, so waste management controls will not apply.

4.2.2 If it appears that the material is being stored indefinitely with no certainty of use, the material will revert to being a waste and waste management controls will apply as specified in Section 1.4.

4.2.3 Producers, distributors and users should follow good practice for the transportation, storage and handling of aggregate, details of which are included in Appendix D.

4.3 Use of recycled aggregate – designated market sectors

4.3.1 To comply with this Quality Protocol, aggregate must be destined for use in unbound or bound applications in civil engineering and construction (as set out below) and appropriate product descriptions must be used on delivery documentation.

- Unbound – including sub-base, capping, general fill, pipe bedding and drainage;
- Bound – including hydraulically bound applications, concrete and asphalt.

Appendix A Definitions

In this Quality Protocol, the words and phrases below have the following meanings.

Agent: An agent acts like a broker, putting buyer and seller together. The agent does not take possession of the aggregate but is paid commission while the buyer is invoiced directly.

Aggregate: A granular material used in construction. For the avoidance of doubt, clays and soils are not considered to be aggregates for the purposes of this Quality Protocol.

Defra: Defra is the UK government department responsible for policy and regulations on the environment, food and rural affairs.

Delivery documentation: Record of who the aggregate is supplied to, including the documentation accompanying each load of aggregate. It details the standard to which the product complies and states that the product was produced in compliance with this Quality Protocol.

Designated market sector(s): The sector(s) listed in Section 4 to which this Quality Protocol applies.

Environment Agency: The Environment Agency is the leading public body for protecting and improving the environment in England. Its job is to make sure that air, land and water are looked after by everyone in today's society, so that tomorrow's generations inherit a cleaner, healthier world.

Environmental permit: Environmental permits issued or exemptions registered under the Environmental Permitting (England and Wales) Regulations 2010.

European Economic Area (EEA): The EEA States consist of the members of the EU (Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK) together with Iceland, Liechtenstein, Norway. Switzerland is not part of the EEA, but linked through a series of bilateral agreements. Although the Channel Islands and the Isle of Man are UK Crown dependencies, they are not part of the EU and businesses registered there are subject to different licensing legislation.

European Waste Catalogue (EWC): European Waste Catalogue (EWC 2002 and amendments) – a comprehensive list of waste codes and descriptions based on waste source and type (Commission Decision 2000/532/EC amended by Commission Decisions 2001/118/EC and 2001/119/EC and Council Decision 2001/573/EC).

Factory Production Control: A management system focusing mainly on the production process which aims to ensure that product quality is consistently maintained to the required specifications. Factory Production Control (FPC) for the production of aggregates is specified in BS EN 16236 Evaluation of conformity of aggregates — Initial Type Testing and Factory Production Control.

Inert: Waste is inert if:

(a) it does not undergo any significant physical, chemical or biological transformations;
(b) it does not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health; and
(c) its total leachability and pollutant content and the ecotoxicity of its leachate are insignificant and, in particular, do not endanger the quality of any surface water or groundwater.

Northern Ireland Environment Agency (NIEA): NIEA is the leading public body in Northern Ireland responsible for protecting, conserving and promoting the natural environment and built heritage.

Natural Resources Wales (NRW): NRW is the public body in Wales and its purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future.

PPC permit (Northern Ireland): A permit issued under the Pollution Prevention and Control Regulations (Northern Ireland) S.R. 2003/46. Establishes a pollution control regime for certain installations or mobile plants and includes combustion activities.

Producers: The operator(s) undertaking aggregate processing.

Quality Protocol: A Quality Protocol sets out criteria for the production of a product from a specific waste type. Compliance with these criteria is considered sufficient to ensure that the recovered product can be regarded as having ceased to be waste and that therefore no longer subject to waste management controls. In addition, the Quality Protocol indicates how compliance may be demonstrated and points to good practice for transportation, storage and handling of the recovered product.

Recycled aggregate: Aggregate produced in compliance with the Quality Protocol for the production of aggregate from inert waste (version applicable at the time of production).

Technical Standards and Regulations Directive 98/34/EC: Seeks to ensure the transparency of technical regulations and is intended to help avoid the creation of new technical barriers to trade within the European Community.

User(s): User means construction companies, manufacturers, contractors and all those organisations or individuals responsible for the end use of aggregate.

Waste management controls: Controls under legislation that govern the treatment, handling, containment, transportation storage use and disposal of waste.

Waste management licence or exemption (Northern Ireland): An authorisation issued in Northern Ireland under the Waste Management Licensing Regulations (Northern Ireland) 2003 (as amended), or registered exemption. The Regulations provide for applications in Northern Ireland for waste management licenses authorising the deposit, disposal and treatment of controlled waste. This includes exemptions from waste management licensing.

WRAP (Waste & Resources Action Programme): WRAP's vision is a world without waste, where resources are used sustainably. It works with businesses and individuals to help them reap the benefits of reducing waste, develop sustainable products and use resources in an efficient way.

Appendix B Approved industry standards and Factory Production Control

B1 Approved industry standards

B1.0 The producer must comply with all the requirements of a BS EN aggregates standard appropriate to the use for which the aggregate is destined for at the time it is produced to comply with this Quality Protocol. Table B1 details the standards and main specifications relating to aggregates at the time of publishing this Quality Protocol.

Table B1: Standards, specifications and quality controls for the use of aggregates

Product and Use	Standard	Specification	Quality controls
1 Unbound recycled aggregate: Pipe bedding Drainage	BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction	Highways Agency Specification for Highway Works (SHW): Series 500 Highway Authorities and Utilities Committee (HAUC): Specification for the reinstatement of openings in highways (SROH)	BS EN 13242: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW
2 Unbound recycled aggregate: Granular fill General fill Capping	BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction	Highways Agency Specification for Highway Works: Series 600 HAUC: Specification for the reinstatement of openings in highways BS EN 13285: Unbound mixtures: Specifications	BS EN 13242: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW
3 Unbound recycled aggregate: sub base	BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction	Highways Agency Specification for Highway Works: Series 800 HAUC: Specification for the reinstatement of openings in highways BS EN 13285: Unbound mixtures: Specifications	BS EN 13242: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW

4 Recycled aggregate for concrete	BS EN 12620: Aggregates for concrete	Highways Agency Specification for Highway Works: Series 1000 BS 8500-2: Concrete	BS EN 12620: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste
5 Recycled aggregate for asphalt	BS EN 13043: Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas	Highways Agency Specification for Highway Works: Series 900 HAUC: Specification for the reinstatement of openings in highways	BS EN 13043: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW
6 Recycled aggregate for hydraulically bound mixtures	BS EN 13242: Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction	Highways Agency Specification for Highway Works: Series 800 HAUC: Specification for the reinstatement of openings in highways BS EN 14227-1 to 5 Hydraulically Bound Mixtures: Specifications	BS EN 13242: Level 4 Attestation Evaluation of Conformity to BS EN 16236* SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW
7 Reclaimed asphalt for use in bituminous mixtures	BS EN 13108-8 Bituminous mixtures – Material specifications – Part 8: Reclaimed asphalt.	Highways Agency Specification for Highway Works: Series 900 BS EN 13108-1 to 5 Bituminous mixtures – Material specifications	BS EN 13108-8 NHSS Sector Scheme 14 SHW: Quality Control procedures in accordance with the Quality Protocol for the production of aggregates from inert waste SROH: Compliance with SHW

*BS EN 16236 Evaluation of conformity of aggregates – Initial Type Testing and Factory Production Control.

The British Standards Institute (BSI) publishes guidance documents that explain how the European Aggregate Standards are applied within the UK, the ones relevant to table B1 are:

- PD 6682-1 Aggregates for concrete. Guidance on the use of BS EN 12620
- PD 6682-2 Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas. Guidance on the use of BS EN 13043
- PD 6682-6 Aggregates for unbound and hydraulically bound materials for use in civil engineering works and road construction. Guidance on the use of BS EN 13242

All aggregates PDs and BS ENs can be purchased from BSI: http://shop.bsigroup.com

B2 Factory Production Control

B2.0 Production and standards/specification requirements

- Factory Production Control (FPC) must be set up. This is mandatory when producing to BS EN aggregate standards and to this Quality Protocol.
- The requirements set out in B2.1 to B2.9 are complementary to the evaluation of conformity requirements of BS EN 16236, which must be implemented in full.
- The FPC is required to include the following quality management requirements set out below. These, which must be implemented.

B2.1 General points about the procedures

- A FPC manual must be produced which documents how the FPC is implemented and sets out procedures for establishing the approval, issue, distribution and administration of documentation and data for internal and external use.
- A management representative must be nominated as responsible for ensuring the FPC is implemented.
- The FPC must be reviewed periodically by management to ensure its continuing suitability and effectiveness. Records of such reviews must be kept.
- Controls on sub-contractors must be defined.

B2.2 Waste acceptance criteria

- To ensure only inert waste is accepted, the producer must develop ‘acceptance criteria’ specific to each site/location. These criteria must be followed at all times.
- The acceptance criteria must incorporate all statutory requirements relating to the receipt of incoming waste shall be observed and included in the Acceptance Criteria. These requirements include those arising from an environmental permit, waste management licence or a waste exemption, and the duty of care.
- The acceptance criteria must also include:
  - a list of the types of waste that are accepted (including waste codes);
  - source/place of origin of the waste;
  - supplier and transporting agent; and
  - method of acceptance.
- Every load must be inspected visually, both on initial receipt and after tipping, to ensure compliance with the acceptance criteria.
- A procedure for dealing with non-conforming incoming waste must be set up, for example, rejection of loads, quarantine or disposal. Records must be kept of how the procedure has been implemented.

B2.3 Production and testing

- The manner is which processing equipment is maintained and adjusted during production must be defined.
- Input materials must be stocked in a controlled manner in clearly identified locations.
- Material taken from stock for processing must be checked for deterioration.
- The finished product must be identifiable up to the point of sale.
- Procedures must be in place and implemented to maintain the quality of the product during handling, storage, transport and delivery.
- Procedures for the use, control, calibration and maintenance of inspection, measuring and test equipment must be setup and followed. Equipment must be uniquely identified.

B2.4 Training

- All personnel must be trained on the FPC including:
  - acceptance criteria;
  - procedures for non-compliant input wastes and output products;
  - sampling;
  - testing; and
  - inspection.

B2.5 Records

- Records of relevant controls and inspections, calibrations, changes and training must be maintained for a suitable period of time. This period must be defined.

- A Method Statement of Production (MSP) must be produced and maintained. The MSP represents the recovery process for the incoming waste and it is part of the FPC. It must contain a description or representation of the production process for each product type including:
  - input materials;
  - equipment used; and
  - actions undertaken at each stage from acceptance of waste to allocation to product stockpiles.
- The aggregates must be produced to a recognised standard and/or specification. This specification will define the properties and characteristics of the product, as suitable for its application.

B2.6 Documentation

- Delivery documentation must:
  - record the type of aggregate product despatched;
  - state the site at which the product was produced;
  - state that the aggregate was produced under a quality management scheme conforming to the aggregates Quality Protocol.
- If requested, purchasers must be provided with the results from the testing regime undertaken on each product.
- Historical records of test results must be kept and/or made available as summary results (for example, a graph of test results over time).

B2.7 Testing

- Procedures for the use, control, calibration and maintenance of inspection, measuring and test equipment must be set up and followed. Equipment must be uniquely identified.
- A test plan for production must be defined that includes:
  - the type of testing for each product; and
  - sampling and testing frequency (see B2.8 below for information about minimum test frequencies).
- Table B2 provides a summary of the frequencies required for the minimum testing requirements set out in the main standards.
- The test procedures must be appropriate to the end use of the recycled aggregates and testing frequencies must comply with the standards/specifications for the aggregate produced.
- Producers must have in place testing procedures to meet the testing requirements for each product. A summary of the frequencies required for the minimum testing requirements within the mainstream standards is provided in Table B2 (below).
- More detailed testing requirements are defined within the aggregate standards and specifications.

B2.8 Minimum testing requirements – frequencies

- Tables B2 and B4 collate the minimum test frequencies required by common standards and specifications, including the minimum requirements of the FPC for a range of routine tests.
- Frequencies are defined in terms of 'production week' or similar and/or 'production day'. These periods should be defined by the producer depending on the throughput of the plant/equipment.
- Production week can be defined as the period of seven consecutive days comprising at least five production days or the period taken to complete five production days, whichever is longer.

B2.9 Departure from minimum test frequencies

- Where materials are known to be marginal or if initial test results show them as such, the frequency of testing should be increased.
- The producer must prepare a schedule of test frequencies taking into account the minimum requirements of the relevant FPC.
- Under special conditions the test frequencies may be reduced below those given in the FPC annex of the standards. Possible reasons include:
  - highly automated production equipment;
  - long-term experience with consistency of special properties;
  - sources of high conformity; and
  - running a Quality Management System with exceptional measures for surveillance and monitoring of the production process.
- Reasons for reducing test frequencies must be stated in the FPC manual.

Table B2: Summary of testing requirements associated with particular end uses and standards (Note: Testing frequencies should be increased where variability is identified through Factory Production Control and where the measured value is close to the specified limit.)

End use	Standard and Specifications	Test	BS test reference	Minimum test frequency (see B2.8)
All end uses	BS EN 13242 BS EN 12620	Particle size Distribution	EN 933-1	1 per week
		Particle density	EN 1097-6	1 per month
		Resistance to fragmentation (LA)	EN 1097-2	2 per year
		Classification of constituents(see table B3)	EN 933-11	1 per month
		Water soluble sulfate	EN 1744-1	1 per month
Aggregates for concrete	BS EN 12620	Particle density and water absorption	EN 1097-6	1 per month
		Sulfur containing compounds	EN 1744-1	2 per year
		Chlorides	EN 1744-5	2 per year
		Influence on setting time of cement	EN 1744-6	2 per year

Tests listed are not exhaustive and reference should be made to relevant standards and specifications for additional requirements. Tests for BS EN 13043 and additional minimum test frequencies for other aggregate standards are tabled in EN 16236.

Table B3: Classification of constituents: testing to BS EN 933-11, classification groups

Code	Constituents
Rc	Concrete, concrete products, mortar, concrete masonry units
Ru	Unbound aggregate, natural stone, hydraulically bound aggregate
Rb	Clay masonry units (i.e. bricks and tiles), calcium silicate masonry units, aerated non-floating concrete
Ra	Bituminous materials
Rg	Glass
FL	Floating material in volume
X	Cohesive (e.g. clay and soil), metals, wood, plastic, rubber, gypsum plaster

Notes: Maximum permitted for constituent **X**: 1% by mass

Maximum permitted for constituent **FL:** ≤10 cm^3/kg unbound, ≤5 cm^3/kg aggregates for concrete

Table B4: Example of supplementary testing to meet Specification requirements

End Use	Standard and Specifications	Test	BS Test Reference	Minimum test frequency (see section B2.7)
Unbound: Fills Capping Sub-base	SHW Series 600, & 800 SROH	California Bearing Ratio Plasticity of fines Frost Heave	 1377: part 4 1377: part 2 812: part 124	 1 per month 1 per week 1 per year

Tests listed are not exhaustive and reference should be made to relevant standards and specifications for additional requirements.

Appendix C: Wastes considered to be inert waste for the purpose of this Quality Protocol and to be acceptable for the production of recycled aggregates

General restrictions

This QP only applies to aggregates i.e. a granular material used in construction, which is processed from inert waste. For the avoidance of doubt, clays and soils are not considered to be aggregates for the purposes of this Quality Protocol.

C1 Table C1 lists all the input materials and their relevant 'waste code'[3] or European Waste Catalogue (EWC) code considered inert and acceptable for the production of recycled aggregate under this Quality Protocol. The table includes notes to clarify any limits and restrictions relating to specific waste types. Waste inputs must not contain or be contaminated with dangerous substances as described in the List of Wastes (England) Regulations 2005, List of Wastes (Wales) Regulations 2005 and List of Wastes (Northern Ireland) 2005, as amended. Incidental quantities of inert physical contaminants (such as soils, peat, clays, silts, wood, plastics, rubber, metal) may be present with the input material but must be removed during the processing of the waste to comply with the constituent requirements of aggregates standards and table B3 of this Quality Protocol.

Table C1: Acceptable inert waste input materials

Wastes from physical and chemical processing of non-metalliferous minerals

Type and exclusions	Waste code
Waste gravel and crushed rocks other than those mentioned in 01 04 07 May include excavation from mineral workings.	**01 04 08**
Waste sand and clays Waste sand only. Must not include contaminated sand.	**01 04 09**

Wastes from manufacture of glass and glass products

Type and restrictions	Waste code
Waste glass-based fibrous materials Allowed only if: Wastes without organic binders	**10 11 03**

3 'Waste code' refers to the six digit code for a type of waste in accordance with the List of Wastes (England) Regulations 2005, List of Wastes (Wales) Regulations 2005 and List of Wastes (Northern Ireland) Regulations 2005, as amended. Where it refers to hazardous waste, the code includes an asterisk.

Packaging (including separately collected municipal packaging waste)

Type and restrictions	Waste code
Glass packaging	**15 01 07**

Construction and demolition waste – concrete, bricks, tiles and ceramics

Type and restrictions	Waste code
Concrete Must not include concrete slurry.	**17 01 01**
Bricks	**17 01 02**
Tiles and ceramics	**17 01 03**
Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	**17 01 07**

Construction and demolition waste – wood, glass and plastic

Type and restrictions	Waste code
Glass Must not include fibreglass or glass fibre.	**17 02 02**

Construction and demolition waste – bituminous mixtures, coal tar and tarred products

Type and restrictions	Waste code
Bituminous mixtures other than those mentioned in 17 03 01	**17 03 02**
Allowed only if: Bituminous mixtures from the repair and refurbishment of the asphalt layers of roads and other paved areas (excluding bituminous mixtures containing coal tar and classified as waste code 17 03 01). Must not include coal tar or tarred products. Must not include freshly mixed bituminous mixtures.	

Construction and demolition waste – soil (including excavated soil from contaminated sites), stones and dredging spoil

Type and restrictions	Waste code
Soil and stones other than those mentioned in 17 05 03 Must not contain any contaminated soil or stone from contaminated sites.	**17 05 04**
Dredging spoil other than those mentioned in 17 05 05 Allowed only if: Inert aggregate from dredgings. Must not contain contaminated dredgings. Must not contain fines.	**17 05 06**
Track ballast other than those mentioned in 17 05 07	**17 05 08**
Allowed only if: Does not contain soil and stones from contaminated sites.	

Construction and demolition waste – other construction and demolition wastes

Type and restrictions	Waste code
Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	**17 09 04**
Allowed only if: The waste is generated from utilities trenchings. The waste consists of sub base aggregates i.e. granular material. The waste contains only materials that would be described by entries 17 01 01, 17 03 02 and 17 05 04 in this appendix if the waste was not mixed.	

Wastes from the mechanical treatment of waste not otherwise specified (for example sorting, crushing, compacting, pelletising)

Type and restrictions	Waste code
Glass Does not include glass from cathode ray tubes.	**19 12 05**
Minerals (for example sand, stones) Must not contain contaminated concrete, bricks, tiles, sand, stone or gypsum from recovered plasterboard.	**19 12 09**

Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions

Type and restrictions	Waste code
Glass Must not include fibreglass.	**20 01 02**
Garden and park wastes (including cemetery waste) – soil and stones Must not contain contaminated stones from garden and parks waste.	**20 02 02**

Appendix D Good practice for the transportation, storage and use of recycled aggregates

D1 Pollution prevention and environmental good practice

- Follow the pollution prevention guidance developed in partnership with the industry to help those working on construction and demolition sites to prevent pollution.

Pollution Prevention Guidelines PPG6: Working at construction and demolition sites (April 2011), http://publications.environment-agency.gov.uk/pdf/PMHO0410BSGN-e-e.pdf

- Follow the guidance produced by CIRIA which provides practical advice for minimising environmental impacts on construction sites.

CIRIA, Environmental good practice on site (C692)

D2 Health and safety

- All applications of aggregates should comply with recommendations from the Health and Safety Executive (HSE) such as using appropriate personal protective equipment (PPE) and dust suppression measures.

D3 Transportation, storage and handling

- Aggregates should be handled and stored to minimise the creation of airborne dust.
- Engineering control measures such as containment, enclosed silos/bins/hoppers, local exhaust ventilation, sprays suppression systems, etc. should be used where there is a risk of airborne dust creation.
- Open conveyor handling systems should be provided with wind boards or other protection to prevent wind-whipping.
- Manual handling of the aggregates should be minimised through the use of mechanical aids wherever possible. Account should be taken of the Manual Handling Regulations and care should be taken when lifting by hand.
- Aggregates are inert, but dust and fine particles should be prevented from entering watercourses and drains. Deposition of dust on vegetation and surrounding property should be avoided by controlling the release of dust at source.

Waste & Resources Action Programme

October 2013

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recycle

Environmental Risk Assessment

Inert Storage Facility

Towens of Weston Ltd

Towens Kleen Kutt Yard
Land off Springway Lane,
Westonzoyland,
TA7 0JS

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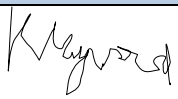
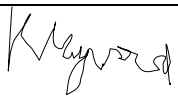
1.0	31/01/23	Original Draft for permit application	Kasia Haywood		Luke Bridges	
2.0	19/06/23	Amendments based on duly making information request	Kasia Haywood		Luke Bridges	

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1. Introduction

Towens of Weston Ltd is applying for a new bespoke environmental permit (permit number: TBC) for its Westonzoyland inert storage depot site at Land off Springway Lane, Westonzoyland, TA7 0JS. The permit is for a physical treatment of non-hazardous waste site (Activity 1.16.12). The main activities on site will consist of soils and aggregate storage and treatment through screening to be used in recovery CL:AIRE projects. The site will be used as a CL:AIRE Hub site.

This Environmental Risk Assessment (ERA) is limited to a qualitative assessment of the potential risks to the environment and human health specifically related to the activities, including the proposed activities, undertaken at the Towens of Weston Ltd Westonzoyland site. This report will identify any significant risks and detail the measures that Towens of Weston Ltd will adopt to appropriately manage any risk of pollution.

2. Environmental Risk Assessment

2.1. Methodology

This report has been prepared following the Environment Agency's Risk Assessment guidance. It specifically relates to the potential risks associated with odour; noise and vibration; fugitive emissions and accidents and incidents.

This risk assessment addresses the above risks and is based on the following methodology:

- Identification of potential risks
- Identification of all potential receptors to these risks
- An assessment of each risk type.

The environmental risk assessment (Appendix A) assesses the risks to the environment and human health from activities carried out at the Towens of Weston Ltd Westonzoyland depot and identifies the pollutant linkage i.e. source – pathway – receptor for each risk type.

2.2. Potential Hazards

The potential hazards resulting from the activities carried out at the Towens of Weston Ltd Westonzoyland depot have been considered, as provided in Appendix A, and are summarised below:

- Odour:
  - Waste materials
- Noise and vibration:
  - Engine noise from vehicles
  - Use of reverse vehicle warnings
  - Use of plant and machinery
- Fugitive emissions:
  - Particulate matter i.e. dust
  - Scavenging birds, pests, and vermin
  - Mud and litter
- Accidents:
  - Fire

- Leaks and spillages
- Flooding
- Unauthorised access

2.3. Pathways

The pathways identified for each risk type are shown in Table 1:

Table 1: Potential Pathways

Risk Type	Pathway
Odour	Air
Noise and vibration	Air
Fugitive emissions	Air
Accidents	Air
	Surface water run-off
	Infiltration
	Percolation

2.4. Receptors

Receptors within 1000m of the application site have been identified and are shown in Table 2 below, with high sensitivity receptors highlighted in bold, and in the Sensitive Receptor Plan (Appendix B). The main pathway for the identified sources is the air and as such, atmospheric conditions can affect dispersion rates and the potential risk. Therefore, the location of each receptor in relation to the site may influence the potential impact of the risk, as summarised in Table 2.

Table 2: Location of potential receptors in relation to waste operations

Receptor	Distance from site (m)	Direction
Residential		
Caravan Park	160m	West
Springway Farm	550m	North West
Property on Knowleyards Road	860m	South East
The Old Ambulance House	755m	East
Designated Land and Waterways		
Site of Special Scientific Interest (SSSI) – Langmead and Weston Level	60m and 350m	South and West
Priority Habitat Inventory (PHI) – Lowland Meadows	155m	South
PHI – Lowland Dry Acid Grassland	635m	South East
PHI – Coastal and Floodplain Grazing Marsh	60m	South and West
PHI – Deciduous Woodland	535m	East
PHI – Traditional Orchards	1000m	South East
Important Plant Areas Plantlife (GB)	60m	South and West
Somerset Levels and Moors	0m	All directions
Pigditch Rhyne Network	60m	South and West
Sensitive Land Uses		
Middlezoy Aerodrome	230m	East
Farm	545m	North West
Westonzoyland Allotments	1000m	North West
Westonzoyland Airfield	700m	North West

Sedgemoor RC Flying Club	950m	North East
Industrial/Commercial		
JWF Engineering	250m	East
Kleen Kutt	70m	East
Bridgwater Motorcycle Training	930m	North West
Grandfields Westonzoyland Motor Track and Learner Driver Area	600m	East
T&K Motorcycle Training	800m	East
Burnham Coal Supplies	345m	North West
Regency	320m	North West
Slabs R Us	400m	North West
Seven Acres Industrial Estate	970m	East
Towens Westonzoyland Depot	280m	West
Public Rights of Way		
Restricted Byway	60m	South
Public Footpath	430m	South
Infrastructure/utilities		
A372	470m	North
Protected species		
Priority Species - Curlew	620m	West
Priority Species - Lapwing	0m	All directions
Priority Species - Redshank	135m	North and West
Protected Species-European Water Vole	Up to 500m	All directions
Badger Sett	60m	South West
Groundwater		
The site is not within a source protection zone or drinking water safeguard zone		

2.4. Risk Assessment

The Environmental Risk Assessment (Appendix A) looks at each specific hazard identified and assesses the likelihood of those hazards impacting on nearby receptors. This is achieved by fulfilling the following objectives:

- Identify the location and nature of each hazard
- Identify the specific receptors potentially at risk and assess the sensitivity of each receptor
- Provide an assessment of the risk posed to each sensitive receptor
- Identify management and monitoring techniques to remove or mitigate the risk
- Provide recommendations for more detailed assessments where necessary.

3. Summary

The Environmental Risk Assessment indicates that if the appropriate outlined management techniques are implemented at the site to protect nearby sensitive receptors, the proposed activities as part of the permit variation will have no significant impacts in terms of odour, noise and fugitive emissions, and the likelihood of accidents is minimal.

Appendix A – Environmental Risk Assessment

Table A1: Odour Risk Assessment and Management Plan

What is the risk?			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
Odorous Waste Types	Local population in residential dwellings and businesses listed in Table 2 SSSI Priority and Protected Species Site Staff	Air transport then inhalation	Permitted waste types stored onsite are not putrescible and so have a low odour potential. No hazardous wastes are accepted on site. There will be strict waste acceptance procedures in place to minimise the risk of non-compliant wastes being accepted. Details of the waste acceptance procedures are provided in the Environmental Management System (EMS). All loads will be inspected upon arrival and refused if offensively odourous. Any odourous wastes will be transferred to the quarantine area and removed from site within 7 days. All site operatives will be vigilant regarding identifying non-compliant wastes and any non-conformances or odour issues will be reported to the Site Manager.	Very unlikely as the waste types accepted on site do not give off odour unless heated and the material will be stored at ambient temperature	Odour annoyance and complaints	Low

Table A2: Noise and Vibration Risk Assessment and Management Plan

What is the risk?			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
Noise and vibrations from loading and unloading of waste	Local population in residential dwellings, and businesses listed in Table 2 SSSI and priority habitats Priority and protected species Site Staff	Air and vibration	All noise generating activities will be undertaken between the hours of 07:00 to 17:00 Monday to Friday and 07:00 to 13:00 on Saturday, except for emergency repairs. All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the risk of mechanical failure which could result in increased noise emissions. The loading/unloading of wastes will be undertaken in a controlled manner to keep noise/vibration to a minimum. Vehicles will be directed by site operatives to minimise the drop height when depositing loads at the site. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. The site boundary has a fence and planting to reduce potential noise levels and contain noise within the site boundary.	Intermittent noise disturbance The site is surrounded by other industrial noise generating sites so it is unlikely the site operations will create excess noise above the existing	Noise annoyance and complaints	Low
Vehicle movements on site	Local population in residential dwellings, and businesses listed in Table 2 SSSI and	Air	Loads will only be delivered to the site during working hours (07:00 to 17:00 Monday to Friday and 07:00 to 13:00 on Saturday). The delivery of waste will take place in a controlled manner by limiting drop heights to keep noise to a minimum. Designated one-way haul road for vehicles on site to avoid contact with materials.	Intermittent during operating hours The site is surrounded by other industrial noise generating sites so it is unlikely the site operations	Intermittent noise and vibration disturbance	Low

	priority habitats Priority and protected species Site Staff		Speed limit of 5 mph on site. The site boundary has a southern and eastern fence to reduce potential noise levels and contain noise within the site boundary. All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the risk of mechanical failure which could result in increased noise emissions. An anti-idling policy ensures that all equipment and vehicles when not in regular use shall be switched off. The Site Manager will be responsible for ensuring the above measures are implemented. Anti-beeping policy in place on site to prevent unnecessary vehicle noise. All noise generated by vehicle movements will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager.	will create excess noise above the existing		
Use of plant and machinery.	Local population in residential dwellings, and businesses listed in Table 2 SSSI and priority habitats Priority and protected species Site Staff	Air	All noise generating activities will take place during working hours (07:00 to 17:00 Monday to Friday and 07:00 to 13:00 on Saturday), except for emergency repairs. All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements. Only screeners are intended to be used on site which do not ordinarily create significant adverse noise impacts. All equipment and vehicles, when not in regular use, shall be switched off. The Site Manager will be responsible for ensuring the above measures are implemented. Processing activities will be done on a campaign basis to avoid continuous on/off use and noise nuisance. The site is a temporary site for CL:AIRE projects so will not cause continued noise impacts.	Intermittent during operating hours The site is surrounded by other industrial noise generating sites so it is unlikely the site operations will create excess noise above the existing	Intermittent noise and vibration disturbance.	Low

			Minimal plant and machinery is on site, consisting only of a screener, telehandler, crusher (on a campaign basis), grab and mobile water bowser. Locations have been considered to minimise noise production: all processing is done within the fenced site area. The site boundary has planted and vegetated areas to reduce potential noise levels and contain noise within the site boundary. All noise generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Noise to be managed in accordance with the Part B permits of the crusher and screener.			
Noise from reversing vehicle warnings.	Local population in residential dwellings, and businesses listed in Table 2 SSSI and priority habitats Priority and protected species Site Staff	Air	All noise generating activities will take place during working hours (07:00 to 17:00 Monday to Friday and 07:00 to 13:00 on Saturday) except for emergency repairs. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Designated one-way haul road for vehicles on site to minimise the need for reversing except when tipping into the tipping area or collecting materials. The site boundary has planting and a fence to reduce potential noise levels and contain noise within the site boundary.	Intermittent during operating hours.	Intermitten t noise disturbance	Low
Noise from processing of waste materials (crushing and	Local population in residential dwellings, and businesses listed in Table 2 SSSI and	Air	All noise generating activities will take place during working hours (07:00 to 17:00 Monday to Friday and 07:00 to 13:00 on Saturday) except for emergency repairs. Processing activities will not generate levels of noise above that originating from the surrounding roads and industrial sites.	Intermittent during operating hours	Intermitten t noise disturbance	Low

screening)	priority habitats Priority and protected species Site Staff		All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the generation of noise. All plant and equipment will be switched off when not in regular use. Processing activities will be done on a campaign basis to avoid continuous on/off use and noise nuisance. The site is a temporary site for CL:AIRE projects so will not cause continued noise impacts. Minimal plant and machinery is on site, consisting only of a wash plant, telehandler, excavator, crusher (on a campaign basis), grab and mobile water bowser. Locations have been considered to minimise noise production: all activities are contained within the perimeter fence and planting. All noise and vibration generating activity will be monitored closely and site operatives will be vigilant and report any excessive noise or vibration issues to the Site Manager. Noise to be managed in accordance with the Part B permits of the crusher and screener.			

Table A3: Fugitive emissions risk assessment and management plan

What is the risk?			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
To Air						
Dust emissions from vehicle movements	Local population in residential dwellings, sensitive land uses, and businesses listed in Table 2 Site Staff Users of roads - A372 SSSI and priority habitats Priority and protected species	Air transport then deposition	Wastes being delivered to the site will be covered or sheeted to prevent the generation of dust while the waste is in transit. Vehicle speeds will be limited onsite and the access road to 5mph to prevent re-suspension and movement of dust. All equipment and vehicles when not in regular use shall be switched off to minimise the risk of dust emissions that may arise from idling. Designated one-way haul road for vehicles on site to avoid contact with materials. The implementation of dust suppression systems including the use of spray on crushing plant, mobile water bowser for damping down, and regular maintenance of haul roads and site surface with water bowser and road sweeper. The site perimeter is surrounded by a planting and a fence which will act as a screen for dust so no dust escapes from the site boundary. Dust will be managed in accordance with the Dust Management Plan prepared for the site. The Site Manager undertakes a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager.	Unlikely due to measures in place and the nature of materials accepted on site	Local nuisance i.e. dust on cars, clothing, and vegetation. Nutrient enrichment.	Low

Dust emissions generated during unloading of waste from HGVs.	Local population in residential dwellings, sensitive land uses, and businesses listed in Table 2 Site staff Users of roads - A372 SSSI and priority habitats Priority and protected species	Air transport then deposition	A water bowser will be used to dampen site haul roads, site surface and stockpiles if necessary. The loading/unloading of wastes will be undertaken in a controlled manner by limiting drop heights to keep dust emissions to a minimum. Wastes will be stored in height limited stockpiles to prevent wind whipping. Designated one-way haul roads and paths for HGVs to avoid contact with waste. Drop heights will be minimised to reduce the generation of dust whilst the waste is being handled. The site is enclosed within planting and a fence surrounding the site perimeter will act as a screen for dust so no dust escapes from the site boundary. Dust will be managed in accordance with the Dust Management Plan prepared for the site. The Site Manager will undertake a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager. Operations will temporarily cease when winds are likely to generate dust emissions from wastes and materials.	Dust could potentially reach nearby properties when a strong wind blows in their direction. Management actions should prevent this happening. Minimal processing activities undertaken on site	Local nuisance i.e. dust on cars, clothing, and vegetation. Nutrient enrichment.	Low
Dust from haul road	Local population in residential dwellings, sensitive land uses, and businesses listed in Table 2	Air transport then deposition	The use of modern plant and regular maintenance shall be practiced to reduce emissions. The implementation of dust suppression systems including the use of spray on crushing plant, mobile water bowser for damping down, and regular maintenance of haul roads and site surface with water bowser and road sweeper.	Unlikely due to measures in place	Local nuisance i.e. dust on cars, clothing, and vegetation.	Low

	Site staff Users of roads - A372 SSSI and priority habitats Priority and protected species		The haul road on the site will be wetted down daily. Designated one-way haul roads and paths for HGVs to avoid contact with waste. Dust will be managed in accordance with the Dust Management Plan prepared for the site. The Site Manager undertakes a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager.			
Dust emissions from the processing of waste materials (crushing and screening)	Local population in residential dwellings, sensitive land uses, and businesses listed in Table 2 Site staff Users of roads - A372 SSSI and priority habitats Priority and protected species	Air transport than deposition	All plant is regularly maintained to reduce emissions. The implementation of dust suppression systems including the use of spray on crushing plant, mobile water bowser for damping down, and regular maintenance of haul roads and site surface with water bowser and road sweeper. The site benefits from its own plant so operations can be done on smaller volumes more frequently to ensure that stockpiles are kept to a smaller size. This reduces dust/litter from stockpiles and protects the surrounding receptors. Minimal crushing will take place and no crushing takes place in very dry or windy conditions. The site is mainly used for storage of materials for CL:AIRE projects so minimal processing activities are undertaken on site therefore minimising dust production. All plant and equipment will be switched off when not in regular use. All processing activities conducted within the fenced site to prevent dust escaping and increase the number of dust barriers between receptors.	Unlikely due to measures in place	Local nuisance i.e. dust on cars, clothing, and vegetation. Nutrient enrichment.	Low

			Processing activities will be done on a campaign basis to avoid continuous on/off use and dust nuisance. Minimal processing will take place on site so it is highly unlikely that dust will be produced. Minimal plant and machinery is on site, consisting only of a screener, telehandler, excavator, crusher, grab and mobile water bowser. The site is enclosed within a fence to prevent dust escaping from the site. Dust will be managed in accordance with the Dust Management Plan prepared for the site. The Site Manager undertakes a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager			
Release of particulate matter (dusts), vapours and polluting gases	Local population in residential dwellings, sensitive land uses, and businesses listed in Table 2 Site staff Users of roads - A372 SSSI and priority habitats Priority and protected species	Air transport then inhalation	Permitted waste types do not include dusts, powders or loose fibres and waste is not typically dusty unless it is stored during prolonged dry periods when damping down is carried out where required. Asbestos containing waste is not accepted on site, so the release of asbestos fibres is extremely low. Hazardous waste is not accepted on site. Any non-conforming quarantine material is removed from site within 7 days. The potential sources of fugitive emissions to air have been identified and a Dust Management Plan has been prepared to prevent any potential dust emissions from reaching any nearby	Unlikely due to measures in place and the nature of waste accepted on site	Respiratory illness including. lung cancer and mesothelioma.	Low

			receptors. The Site Manager undertakes a daily visual assessment of dust levels and all site operatives will be vigilant and report any problems to the Site Manager			

To Water						
Contaminated rainwater run-off.	Surface water and groundwater SSSI and priority habitats Rhyne network Somerset Levels and Moors	Water	Only non-hazardous and inert wastes are accepted on site consisting of as-dug naturally occurring non-contaminated material to be used for CL:AIRE projects. Therefore, run-off from site will not be contaminated. The site surface is permeable hardstanding with run off naturally draining into ground. Run off directly into local rhynes will be slowed or prevented by the perimeter planting. In the event of a spill, emergency procedures as outlined in the EMS will be followed. The southern planting acts as a protective barrier to run off escaping the site and draining into the ditch to the south. Booms and sand will be used to contain any surface run-off water following a leak, spill or fire event. Fuel and oil is not intended to be stored on site. In the event that it is then it will be stored in a fully bunded bowser. The site is secure through secure lockable gates and fences so theft or damage which may cause spills is minimal. Also, no fuel is intended to be stored on site. There are strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS. Any non-conforming material will be stored in the quarantine area and removed from site within 7 days.	Very unlikely due to the nature of wastes accepted on site	Contamination of groundwater surface water bodies	Low
Pest/Scavenging Birds						

Birds and pests	Local population in residential dwellings, sensitive land uses, and businesses listed in Table 2 SSSI and priority habitats Priority and protected species	Air transport and over ground	Permitted wastes stored onsite are not putrescible (as dug naturally occurring non-contaminated soils) and will therefore not be attractive to pests or scavenging birds. Green waste is not accepted on site so there will be no useable nesting sites available. No hazardous wastes are accepted on site. There are strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS. The site is enclosed within secure animal proof fencing and gates to deny the access of pests. The potential badger sett in the southwest corner of the site is protected by a 30m exclusion zone segregated by an animal proof fence. Materials are stored in segregated stockpiles to prevent cross-contamination and encouraging odour that may attract birds and pests. The Site Manager will undertake regular reviews of pests and scavenging birds at the site. All site operatives will be vigilant and report any problems to the Site Manager.	Very unlikely due to the nature of the waste material	Nuisance to local receptors within 1km of the environmental permit boundary.	Low

Mud						
Mud from vehicle movements	Users of roads - A372	Tracked on vehicle wheels.	The implementation of dust suppression systems including the use of spray on crushing plant, damping down and regular maintenance of haul roads and site surface with a water bowser and road sweeper. If mud is deposited on the access road and/or highway then a road sweeper will be employed if necessary. All vehicles exiting the site would be checked for exterior mud or debris before leaving the site. The site benefits from a wheel wash station consisting of a jet wash hose and brush. Designated one-way haul road for HGVs on site to minimise contact with materials and tracking of mud. The amount of mud on local roads will be monitored daily by site operatives.	Unlikely due to measures in place.	Local nuisance. Mud on roads is unsightly and can increase the likelihood of road traffic accidents.	Low
Litter						
Litter	All receptors listed in Table 2.	Air transport then deposition	Waste types received by the site generally do not contain litter that could become windblown. Operatives will be vigilant, and any litter reported will be removed immediately. All incoming loads will be sheeted and remain sheeted until they are ready to be tipped. The site perimeter is enclosed by planting and a fence to prevent any litter being blown from the site. Designated one-way haul road for HGVs to avoid contact with waste.	Unlikely due to measures in place.	Local nuisance	Low

			There are strict waste acceptance procedures in place to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS. Working areas will be regularly cleared and inspected to minimise litter. Housekeeping measures are in place during operating hours.			

Table A4: Accident and Incident Risk Assessment and Management Plan

What is the risk?			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
Fire or failure to contain firewater	Groundwater and surface water. Local residents listed in Table 2 SSSI and priority habitats Rhyne network	Infiltration and contamination of surface water	No combustible or hazardous waste is accepted on site. If any incidental combustible waste is brought to site, then it will be transferred and stored in the quarantine area in containers made of fire-resistant materials to prevent fires spreading. All waste stored on permeable hardstanding. No waste shall be burnt on site and the use of welding/cutting tools (tools with a naked flame) are sanctioned first by the site manager/competent person. The southern planting acts as a protective barrier to run off escaping the site and draining into the ditch to the south. All site operatives are required to recognise signs of smouldering waste at the point of reception. Such wastes shall remain in the container and removed to the quarantine area. The site manager shall be informed. There will be strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the EMS. The operator will undertake routine maintenance of equipment in accordance with manufacturer's guidance. This will minimise the risk of mechanical failure which may result in an increased risk of combustion.	Unlikely	Contamination of local groundwater and/or surface water.	Low

			Site notices and training will be undertaken regarding fire hazards. Site Manager will be responsible for actions in the event of a fire. Fire booms, spill kits, fire blankets and extinguishers, sand and buckets available on site and will be used to contain any firewater.			
Leaks and spillages of oil or fuel.	Groundwater and surface water. SSSI and priority habitats Rhyne network	Infiltration	The operator will undertake regular maintenance of plant equipment in accordance with manufacturer's guidance. This will minimise the risk of mechanical failure which may result in leaks. Fuel is not intended to be stored on site. In the event that it is then all fuel, oil and lubricants stored on site will be double-bunded and stored in a secure container. The storage will be maintained and inspected in accordance with the manufacturer's recommendations. Daily vehicle / plant checks to ensure any fuel/oil leaks etc. are repaired as soon as possible. No hazardous or combustible wastes accepted on site. Booms and sand will be used to contain any spills and prevent it from entering the local watercourse. The southern planting acts as a protective barrier to run off escaping the site and draining into the ditch to the south. Spill kits are also readily available on site in case of a spill, these use absorbent mats which soak up any contaminating hydrocarbons.	Unlikely due to measures in place and intention not to store fuel on site	Contamination of land and watercourses.	Low

			The emergency response outlined in the EMS will be followed. The Site Manager will be responsible for ensuring effective remediation and documenting any incident.			
Flooding	Groundwater SSSI and priority habitats Rhyne network	Infiltration and Percolation	The site is in an area at a low risk of flooding from rivers or seas, and at a very low risk of flooding from surface water. The whole site is surfaced in permeable hardstanding to allow natural percolation on site and not increase runoff rates which encourages flooding. No hazardous wastes accepted on site. Waste types stored in open stockpiles are inert or non-hazardous as-dug naturally occurring material so in the event that surface water comes into contact with these wastes, significant pollution or contamination of groundwater or surface water is considered highly unlikely. Booms and sand will be used to contain any spills and prevent it from entering the local watercourse.	Unlikely due to measures in place in the nature of the proposed development.	Disruption to works operations Contamination of local groundwater and/or surface water	Low
Vandalism	Local population in residential dwellings, sensitive land uses, and businesses listed in Table 2 Site staff	Unauthorised entry to the site	The site is gated and surrounded by fencing and vegetation. Access to the waste area will be restricted to trained depot staff. No hazardous wastes are accepted on site. No fuel or oil is intended to be stored on site.	Unlikely due to measures in place.	Release of polluting materials to air, water or land.	Low

			Any identified damage to the site security will be recorded and temporarily repaired as necessary before the end of the working day. Permanent repair or replacement will be undertaken as soon as practicable. Procedures are in place which require all visitors to the site to sign in on arrival and sign out on departure.			
All on-site hazards from wastes; machinery and vehicles	Local human population gaining unauthorised entry to the site, site staff and contractors	Direct physical contact	Activities will be managed and operated in accordance with an EMS which will include measures to prevent unauthorised access. No hazardous wastes or fuel stored on site.	There is always a risk of accidents, but measures have been put in place to reduce the risk associated with site activities.	Injury or health effects	Low

Table A5: Climate change risk assessment and management plan

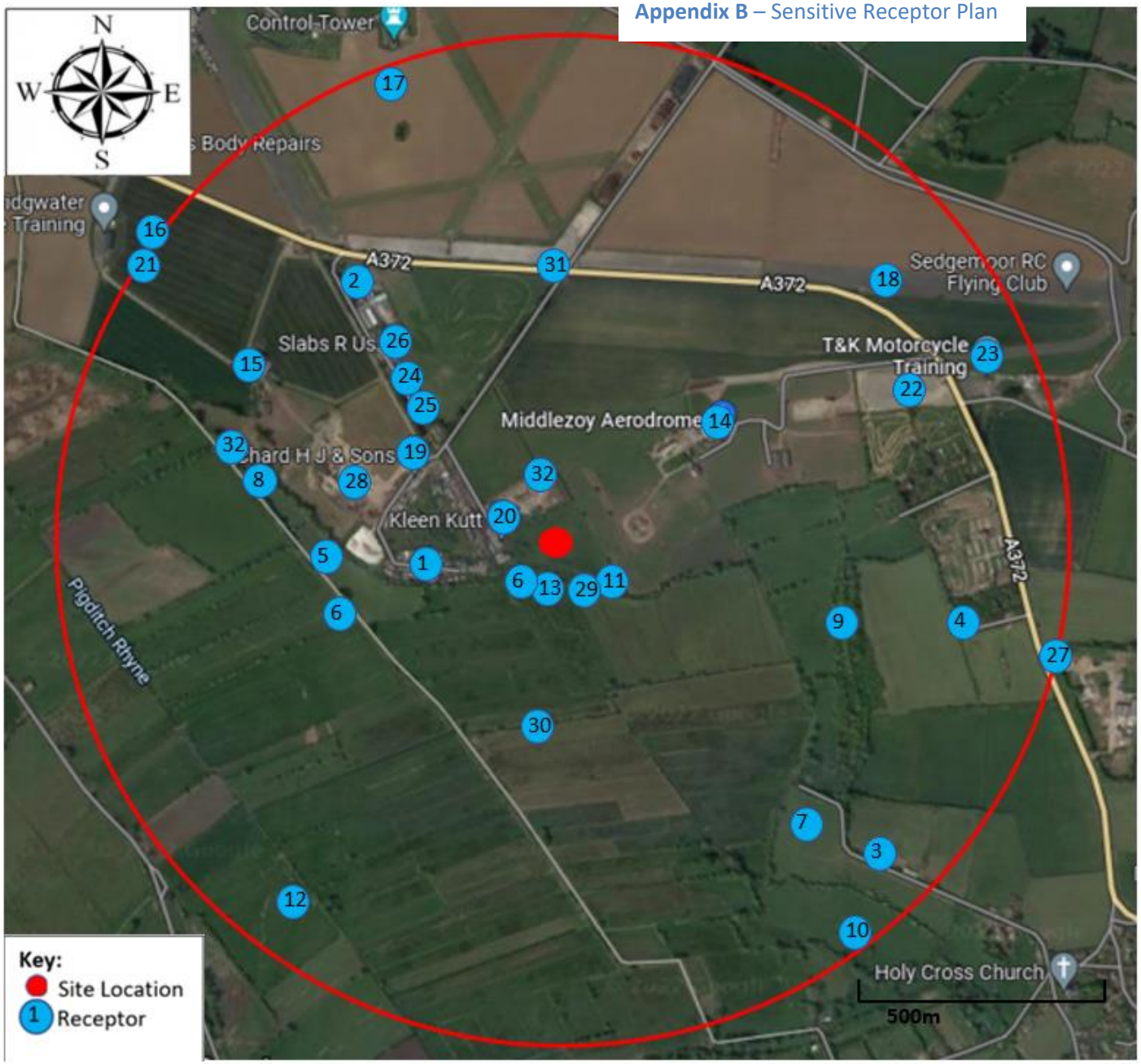
What is the risk?			Managing the risk	Assessing the risk		
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall risk?**
Access issues due to flooding or sea level rise	Groundwater and surface water Local residents listed in Table 2 SSSI and priority habitats Rhyne network Site staff	Surface water	The ground level on site and the access road is higher than the level of the nearest watercourse. The site has a permeable surface so water can naturally percolate into ground to prevent flooding. The southern site boundary by the watercourse is protected by a planted barrier to slow flooding. The site is located in Flood Zone 3 but assessed as low risk of flooding from rivers or seas and at a very low risk of flooding from surface water. Towens of Weston are signed up to the EA's flood warning service and have specific actions to take in the event of a flood alert and/or flood warning.	Unlikely	Inability to access site	Low
Wildfires	Site staff Site infrastructure Local residents listed in Table 2 SSSI and priority habitats Rhyne network	Spread of fire	No large areas of woodland for fires to start within 1km of the site. The site is surrounded by moors where wildfires are very unlikely. The rhyne network surrounding the site acts as a barrier for wildfires to prevent spread of wildfires. The site benefits from access to a borehole extraction point at the neighbouring site to provide firewater to fight fires and prevent spread. Fuel is not intended to be stored on site. In the event that it is then all fuel, oil and lubricants stored on site will be	Unlikely due to site location	Site infrastructure damage and risk to staff	Low

			double-bunded and stored in a secure container. The storage will be maintained and inspected in accordance with the manufacturer's recommendations. No combustible wastes accepted on site. The boundary planting on site will be regularly maintained and cleared of weeds. It will be monitored during hot and dry weather. The emergency response outlined in the EMS will be followed. The Site Manager will be responsible for ensuring effective remediation and documenting any incident.			
Failure of essential site services	Site staff Local residents listed in Table 2 SSSI and priority habitats Rhyne network	Water Electricity supply Drainage systems	No constructed drainage system on site, the drainage follows natural processes to allow water to naturally percolate into ground. The site benefits from access to a borehole extraction point at the neighbouring site to provide firewater to fight fires and prevent spread. No electricity supply or requirement on site. A mobile water bowser is accessible to the site 24 hours a day to provide water.	Unlikely due to minimal site service requirements	Disruption to works operations	Low

Changing weather patterns	Groundwater and surface water Site staff Local residents listed in Table 2 SSSI and priority habitats Rhyne network	High temperatures (7° higher compared to average summer temperatures) and reduced rainfall Intense rainfall	No hazardous wastes are accepted on site. No fuel or oil is intended to be stored on site. The site benefits from a site office consisting of a 40ft shipping container for site staff to take breaks sheltered from any weather conditions. No constructed drainage system on site, the drainage follows natural processes to allow water to naturally percolate into ground. The site benefits from access to a borehole extraction point at the neighbouring site and a mobile water bowser to provide water for the site for dust suppression during high temperatures/reduced rainfall. Water use will be monitored and baseline requirements calculated. All site staff are trained to identify smouldering waste and waste stockpiles are regularly monitored. Shading electrical equipment if it is subject to direct sunlight for prolonged periods of time. Regular inspection and preventative maintenance of site, plant and equipment. The Site Manager will be responsible for ensuring effective remediation and documenting any incident. The site operations will cease in extreme or adverse weather conditions. No treatment will take place during dry or windy conditions.	Unlikely due to site location and requirements on site.	Site infrastructure damage. Release of polluting materials to air, water or land. Flooding	Low

			The site follows a flood risk assessment and drainage strategy which will be annually reviewed.			
Changes in flow in rhyne network	Rhyne network Groundwater and surface water	Changes in maximum and minimum flow	No constructed drainage system on site, the drainage follows natural processes to allow water to naturally percolate into ground. No hazardous wastes or fuel stored on site. The site follows a flood risk assessment and drainage strategy which will be annually reviewed. The southern site boundary by the watercourse is protected by a planted barrier to slow flooding.	Unlikely	Flooding Damage to site infrastructure	Low

Appendix B – Sensitive Receptor Plan



ID	Receptor
Residential	
1	Caravan Park
2	Springway Farm
3	Property on Knowleyards Road
4	The Old Ambulance House
Designated Land and Waterways	
5	Site of Special Scientific Interest (SSSI) – Langmead and Weston Level
6	Priority Habitat Inventory (PHI) – Lowland Meadows
7	PHI–Lowland Dry Acid Grassland
8	PHI – Coastal and Floodplain Grazing Marsh
9	PHI – Deciduous Woodland
10	PHI – Traditional Orchards
11	Important Plant Areas Plantlife
12	Somerset Level and Moor
13	Pigditch Rhyne Network
Sensitive Land Uses	
14	Middlezoy Aerodrome
15	Farm
16	Westonzoyland Allotments
17	Westonzoyland Airfield
18	Sedgemoor RC Flying Club
Industrial/Commercial	
19	JWF Engineering
20	Kleen Kutt
21	Bridgwater Motorcycle Training
22	Grandfields Motor Track
23	T&K Motorcycle Training
24	Burnham Coal Supplies
25	Regency
26	Slabs R Us
27	Seven Acres Industrial Estate
28	Towens Westonzoyland Depot
Public Rights of Way	
29	Restricted Byway
30	Public Footpath
Infrastructure/utilities	
31	A372
Priority species	
32	Priority Species – Curlew/Lapwing/Redshank/Water Vole

Towens of Weston Ltd, Westonzoyland

Flood Risk Assessment and Drainage Strategy

16th March 2023

CALM ENGINEERING

www.calmengineering.co.uk

Document Control

Document:	FRA & Drainage Strategy	**Job Number:**	CALM053
Project:	Towens of Weston Ltd	**Revision:**	1.0
Client:	Towens of Weston Ltd	**Date:**	16th March 2023
Prepared by:		**Checked by:**	**Approved by:**
Claire Wasiak		Caroline Murray Stuart Austin	Caroline Murray
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Minor Text Changes, Updated Figures and Tables, added site photo			
Revision:	1.1		
Date:	21st March 2023		
Prepared by:		**Checked by:**	**Approved by:**
Caroline Murray		Towens of Weston Ltd	Caroline Murray

CALM Engineering has followed accepted procedure in providing the services, but given the residual risk associated with any prediction and the variability which can be experienced in flood conditions, we take no liability for and give no warranty against actual flooding of any property (client's or third party) or the consequences of flooding in relation to the performance of the services.

Contents

1. Introduction

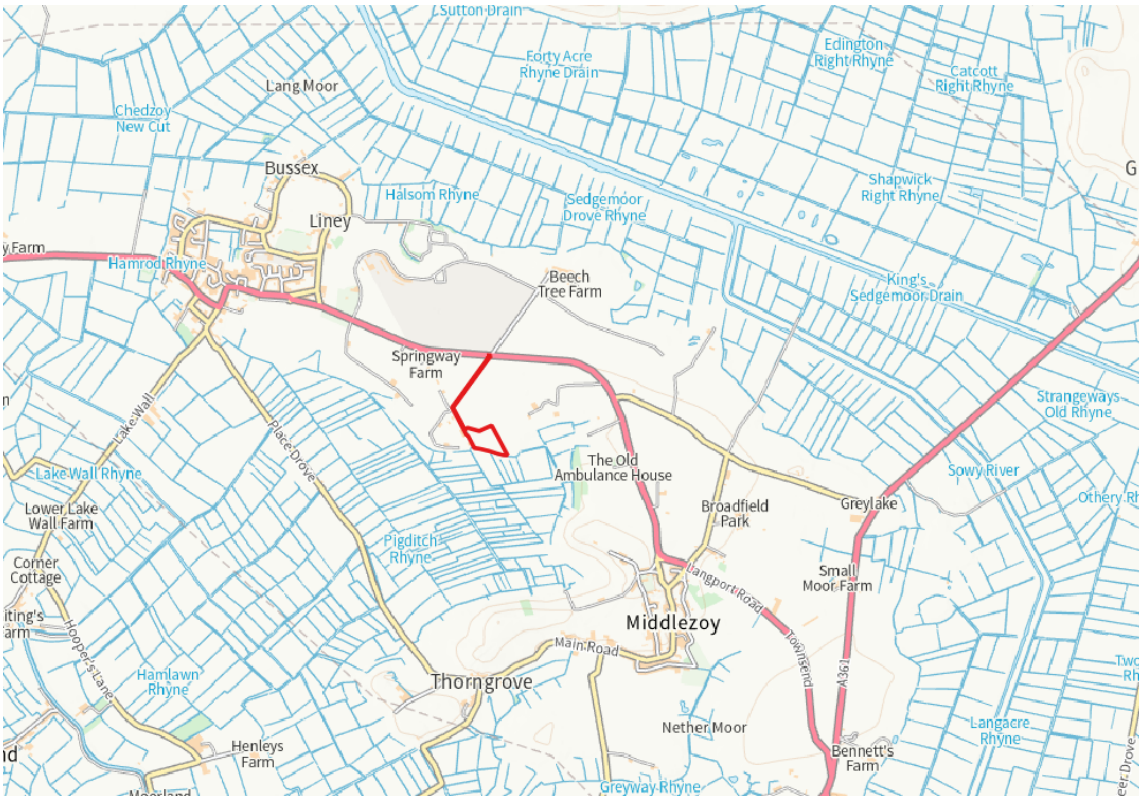
CALM Engineering have been appointed by **Towens of Weston Ltd** to prepare a Flood Risk Assessment (FRA) and Surface Water Drainage Strategy (SWDS) to support a full planning application and Environmental Permitting for the temporary change of use of land for the storage of inert materials (principally clean inert waste soils) at Westonzoyland.

This FRA has been prepared based on the guidelines within the National Planning Policy Framework (NPPF) and associated guidance documents. It seeks to demonstrate how the site will be developed to remain safe over the lifetime of the development, considering the constraints relating to flood risk at the site.

2. Location

The site is located at land off Springway Lane, to the south of the A372, south-east of Westonzoyland, as referenced in **Table 1** and the Site Location Plan in **Figure 1**.

Table 1: Site Referencing Information	
Site Address	Land at 336529, 133892 Westonzoyland, TA7 0JS
Grid Ref	ST365338



**Contains OS data © Crown copyright and database right (2022)*

Figure 1: Location Plan

The site is currently greenfield and is predominantly surrounded by industrial and commercial infrastructure. Current vehicular access to the site is from A372 the north, as shown in ***Figure 2***. The southern edge of the site borders a Rhyne which forms part of the Pigditch Rhyne Network and is under the jurisdiction of the Internal Drainage Board. The site is gently sloping, varying in level from 7.2mAOD to 5.5mAOD, LiDAR contours are shown in ***Figure 3***.

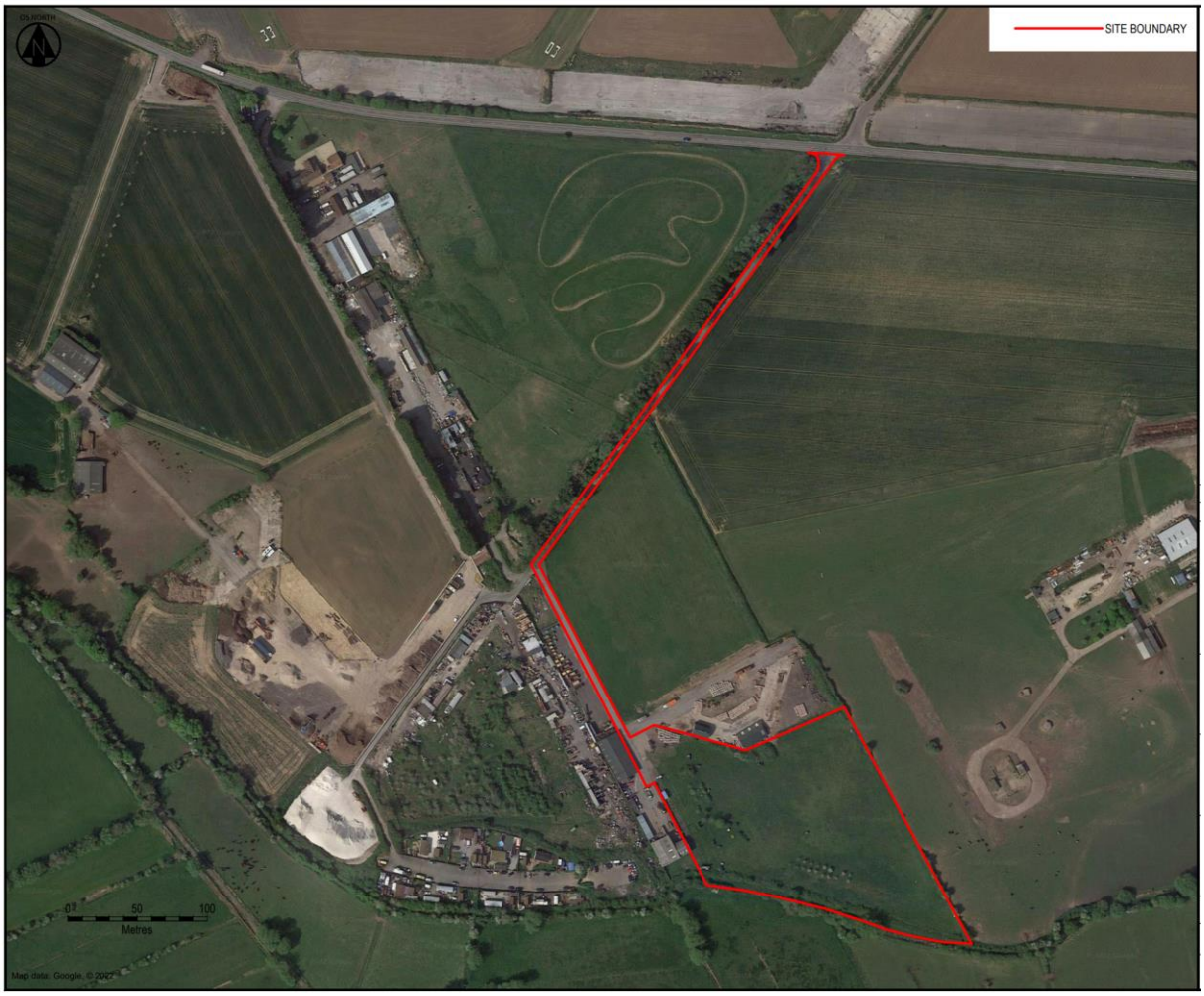


Figure 2: Existing Site Plan

The cross section in ***Figure 3*** also indicates some embanked material at the top of the bank of the Rhyne.

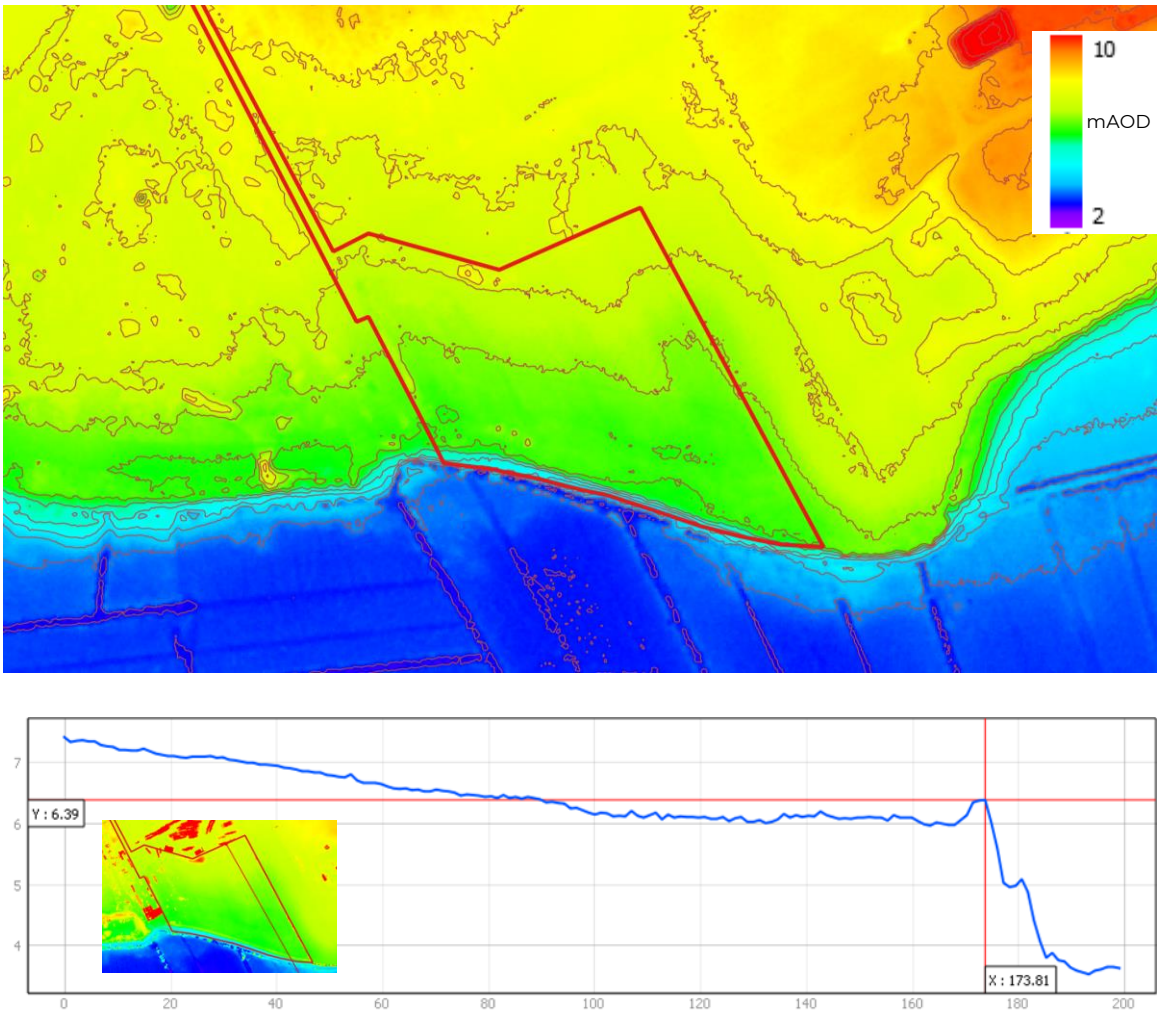


Figure 3: Site Contours (with cross section)

3. Proposed Development

The proposed development principally comprises the creation of **Inert Material Storage Facility** on land at Springway Lane Business Park, Westonzoyland. The application is for a temporary facility for a 3-year period to store soils and other inert material required service planned flood defence works. The proposed operation would require the creation of a storage area using a permeable recycled aggregate surfacing, along with the occasional use of plant and machinery to aid the loading and unloading of soils and stockpile management. The proposed facility has also been designed to deliver biodiversity net gain and ecological enhancements which includes new and strengthened hedgerow planting, and effectively managing surface water run-off (refer to **Figure 4** below and **Section 6**).

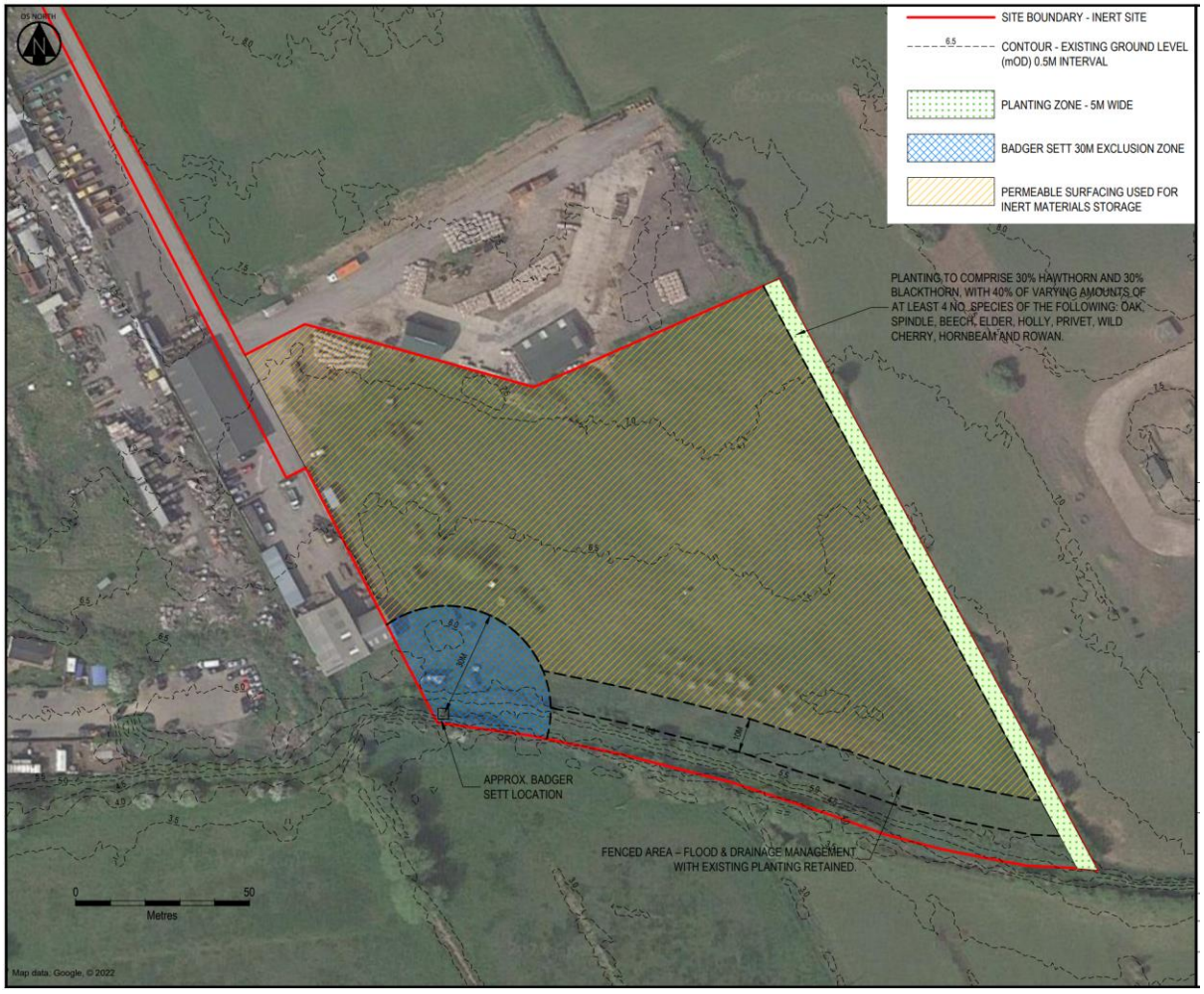


Figure 4: Proposed Site Layout

The flood defence works require the use of clean inert soils that meet a required specification. The intention is that these soils would be sourced from other consented greenfield developments (i.e. new house building) and transferred to the storage facility at the application site from where they can then be transported on an on-demand basis to the flood defence works. This movement of soils would be undertaken in accordance with

the Definition of Waste: Code of Practice (CL:AIRE protocol). The application site would act as 'hub' between the donor sites (the greenfield developments) and the receiver site (the flood defence works). The need for the hub arises because the soils cannot be stored indefinitely at the greenfield development sites and there is not capacity to store the required volume of soils at the site of the flood defence works. It is anticipated that the maximum volume of material stored at the application site would be 85,000 tonnes with material being imported (from the donor sites) and exported (to the flood defence works) in a series of campaigns.

The exported materials will be serving the flood defence works at nearby Southlake, Currylake and Westmoor.

4. Flood Risk Assessment Process

4.1 Overview

The NPPF sets out Government policy on development and flood risk. It aims to ensure that flood risk is taken into account at all stages of the planning process, to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas of highest risk. Where new development is considered necessary in areas of flood risk, NPPF aims to make it safe, without increasing flood risk elsewhere, and, where possible, reduce flood risk overall.

Local Planning Authorities have the overall responsibility for ensuring that development proposals are informed by an appropriate flood risk assessment and that development is appropriately flood resistant and resilient.

As detailed in Paragraph 20 of the supporting guidance to the NPPF, an FRA will be required to identify the risk of flooding to the development and to others from all sources of flooding and demonstrate how flood risk will be managed now and over the development's lifetime, taking climate change into account, and with regard to the vulnerability of its user.

CIRIA publication *C624 Development and Flood Risk – Guidance for the Construction Industry* defines three levels for an FRA:

a) **Screening Study (Level 1)** – to identify whether there are any flooding or surface water management issues related to a development site that may warrant further consideration.

b) **Scoping Study (Level 2)** – to be undertaken if the Level 1 FRA indicates that the site may lie within an area that is at risk of flooding or that the site may increase flood risk due to increased run-off and;

c) **Detailed Study (Level 3)** – to be undertaken if the Level 2 FRA concludes that further quantitative analysis is required to assess flood risk issues related to the development of the site.

Each of these levels should be explored concurrently until flood risk to the proposed development has been mitigated. This report constitutes a **Level 3 FRA - Detailed Study**.

4.2 Planning Policy

4.2.1 Sequential Approach

NPPF promotes a sequential risk-based approach to determine the suitability of land for development in flood risk areas. The sequential risk-based approach aims to steer new developments to areas at the lowest risk of flooding and to avoid inappropriate development in areas at risk of flooding.

4.2.2 Flood Risk Classification

The Flood Zones are defined within Table 1 of the Flood Risk and Coastal Change guidance that supports the NPPF. This table is repeated below in **Table 2** of this report.

Subject	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in **light blue** on the Flood Map for Planning)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in **dark blue** on the Flood Map for Planning)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map for Planning)

Table 2: NPPF Flood Zones

4.2.3 Vulnerability Classification

NPPF defines the different vulnerability classifications within Table 2 of the Flood Risk and Coastal Change guidance that supports the NPPF. **Table 3** of the guidance compares the Flood Zoning and Vulnerability to consider whether the proposed development can be considered 'compatible' with its level of risk. These details are repeated in the **Table 3** of this report below.

	Flood Risk Vulnerability Classification				
Flood Zones	**Essential infrastructure**	**Highly vulnerable**	**More vulnerable**	**Less vulnerable**	**Water compatible**
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	✗	Exception Test required	✓	✓
Zone 3b	Exception Test required	✗	✗	✗	✓

Table 3: Flood Risk Vulnerability Classification

Classification	Definition
Essential Infrastructure	• Essential transport infrastructure which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood. • Wind turbines. • Solar farms.
Highly Vulnerable	• Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes & park homes intended for permanent residential use. • Installations requiring hazardous substances consent.
More Vulnerable	• Hospitals • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non–residential uses for health services, nurseries & educational establishments. • Landfill* and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable	• Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill* and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational flood. • Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place. • Car parks.
Water Compatible	• Flood control infrastructure. • Water transmission infrastructure and pumping stations. • Sewage transmission infrastructure and pumping stations. • Sand and gravel working. • Navigation facilities. • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation). • Lifeguard and coastguard stations. • Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. • Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

Table 4: Flood Risk Vulnerability Definition

4.2.4 Flood Risk Management Authorities / Stakeholders

The Environment Agency (EA) used to have primary statutory responsibility for flood management and defence in England. They have now delegated some of these powers to Lead Local Flood Authorities (usually at County Council Level). The EA will be consulted by Local Planning Authorities (LPAs) on all applications for development in flood risk areas in Flood Zone 3 and those in areas with critical drainage problems. The LLFA's are consulted on all other applications over 1ha in Flood Zones 1 and 2. The final decision to grant consent lies with the LPA, however these statutory bodies are consulted during the review process.

The following Flood Risk Management Authorities are considered integral to flood risk management in this area and will usually be consulted as part of any planning application.

- Sedgemoor District Council as the Local Planning Authority
- Somerset County Council as the Lead Local Flood Authority
- Water Authorities – Wessex Water
- Highway Authorities – Somerset County Council, Highways England

It should be noted that from April 2023 Sedgemoor District Council and Somerset County Council will become a Unitary Authority under One Somerset. It has been assumed that the policies and guidance outlined within this report will still apply in relation to this application.

4.3 Local Planning Policies and Guidance

The NPPF states that local planning authorities should adopt strategies to mitigate and adapt to climate change taking full account of flood risk. Local plans should be supported by a strategic flood risk assessment and develop policies to manage flood risk from all sources.

There are a number of policy documents that have been published under this framework for the area of Somerset within which the site is located:

- Somerset County Council Preliminary Flood Risk Assessment (2011)
- Somerset County Council Local Flood and Water Management Strategy (2014)
- Somerset Levels & Moors Flood Action Plan (2014).
- Somerset Waste Core Strategy (2013)
- Sedgemoor District Council, Local Plan 2011-2032 (2019)
- Sedgemoor District Council, Core Strategy (2013).
- Sedgemoor District Council Strategic Flood Risk Assessment Level 1 (2015)
- Sedgemoor District Council Strategic Flood Risk Assessment Level 2 (2009) and Level 2 Addendum Report (2019)

These documents have been reviewed as part of this assessment and incorporated within this report where appropriate. The site is not within the area covered by the Level 2 SFRA. The key Local Plan Policies relating to flood risk and drainage are as follows:

4.3.1 Policy D1 Flood Risk and Surface Water Management

Sequential and Exception Test: In applying the Sequential Test, Exception Test and in undertaking site-specific Flood Risk Assessments regard should be had to the sources of flooding detailed in Sedgemoor's Strategic Flood Risk Assessment and any more recent mapping made available by the Environment Agency and other flood risk management bodies. Where the Sequential and Exception Test is required it is the responsibility of the applicant to provide the necessary evidence to allow the local authority to undertake the tests. For the Sequential Test this includes demonstrating that there are no reasonably available alternative sites at lower flood risk within a defined area of search where the proposed development could be located.

Allocated sites included in the Local Plan, subsequent Development Plan Documents and Neighbourhood Plan will have already been assessed in detail and therefore will be considered to have passed both the Sequential Test and the Exceptions Test. A detailed Flood Risk Assessment will still be required.

To create the most sustainable pattern of development the Spatial Strategy seeks to maximise development within sustainable settlements (Policy S2). Therefore the Sequential Test will be considered to be passed for proposals located within identified settlement boundaries, as defined on the Policies Map. Outside of the settlement boundaries, for the purposes of the Sequential Test, the area of search will be the Sedgemoor District area unless it can be demonstrated that the development has a specific locational requirement based on functional requirements or to meet a demonstrable specific local need, in which case the area of search should reflect this. For sites adjacent or well related to settlement boundaries where an identified need for that specific settlement is to be met, the search area should be limited to that settlement only. At Brean and Berrow proposals for the improvement and remodelling of caravan and camping sites should have regard to Policy D17: Tourism, and the Brean and Berrow Tourism Boundary as defined on the Policies Map. This sets out the Sequential Test search area for such proposals.

For the purposes of the Sequential Test, reasonably available alternative sites are those that are within the relevant area of search, can accommodate the requirements of the proposed development and are deliverable. For residential proposals, alternative sites considered should be identified in the Council's 5 year Housing Land Supply Report.

Where the Sequential Test is considered to be passed the vulnerability of the development must still be compatible with the Flood Zone, including application of the Exception Test (as required). A Flood Risk Assessment must also demonstrate that the development will be safe over its lifetime and not increase flood risk elsewhere, including addressing any residual flood risk and access/egress issues.

Surface Water Drainage: Proposals should seek to reduce flood risk overall through creation of multi-functional green infrastructure and sustainable drainage systems. Betterment will be sought particularly where there are known flooding issues. Where development will result in an increase in the rate of surface water drainage the implications on the wider area should be considered. Sustainable drainage systems should be prioritised for proposals in areas at flood risk and are expected for all major developments (including

those in Flood Zone 1). Alternatives will only be permitted where sustainable drainage is impractical or would compromise the viability of the scheme. In instances where conventional drainage systems are used it must still be demonstrated that the development will be safe and flood risk is not increased elsewhere. In all instances proposals should include clear arrangements for ongoing operation and maintenance.

Watercourse / Flood Defence Maintenance: Development proposals will only be supported where they are designed and located to enable suitable access for maintenance of watercourses and other flood risk management infrastructure.

5. Defining Flood Risk

5.1 Flood Map for Planning

The site is within the Somerset Levels and Moors, specifically within the King's Sedgemoor Drain (Henley Sluice to mouth) catchment which is part of the wider River Parrett catchment. **Figure 5** shows the Fluvial/Tidal Flood Map for Planning published by the EA. Flood Zone 1 (low risk) is identified on the map by no shading whilst Flood Zone 2 (medium risk) is identified by light blue shading and Flood Zone 3 (high risk) by dark blue shading. The flood map is derived by assuming no formal protection from flood defences, the standard EA procedure for defining flood zones. This indicates the site (shown by the red boundary) is within Flood Zone 3.

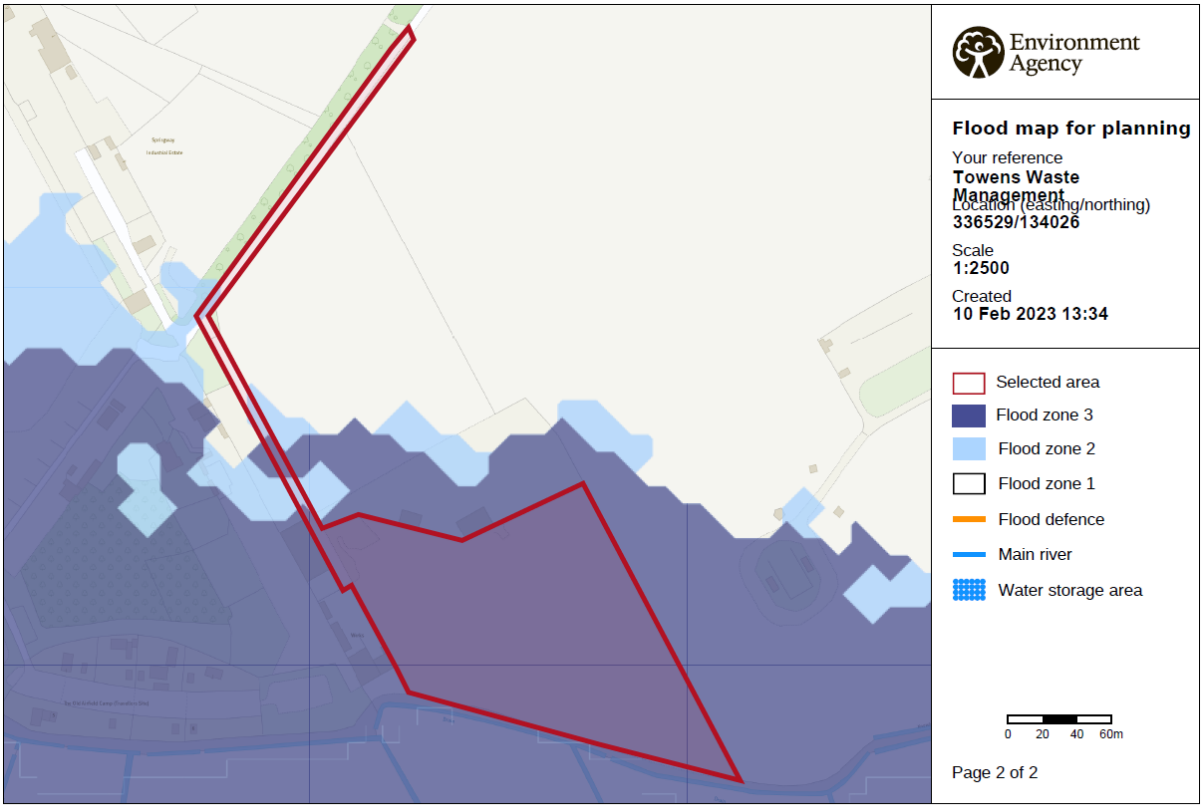


Figure 5: Flood Map for Planning

The Flood Map for Planning indicates that "*This location may have a reduced flood risk because of flood defences on a particular river or sea. The flood defences do not remove the risk completely because they can fail.*"

The EA Standing Advice for Sedgemoor District identifies that the site is located with tidally dominated Flood Zone 3a as shown in **Figure 6**.

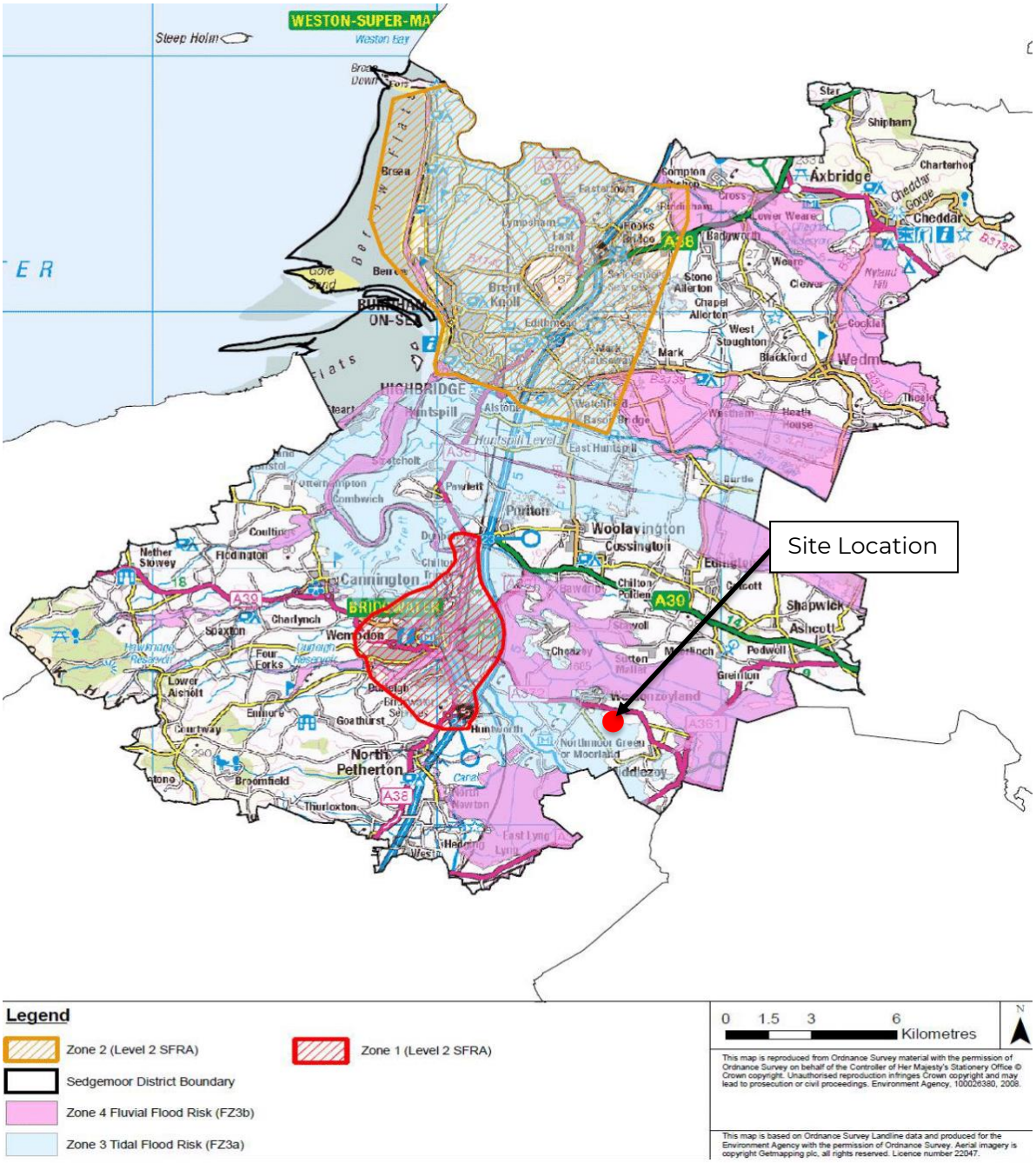


Figure 6: Sedgemoor Flood Risk Dominance

5.2 Historic Flood Events

The mapping of EA data recorded flood outlines is shown in **Figure 7**. This mapping of the flood outlines shows that although flooding has occurred along the southern boundary of the site from the 2012 and 2013/14 events as detailed in **Table 5**. Although the outline shows an incursion into the site, this is likely due to the derivation from aerial photography. The ground levels across this area of the site mean this portion of the site could not be flooded in isolation. None of the other events listed in **Table 5** (which is taken from the SFRA) are known to have affected the site.

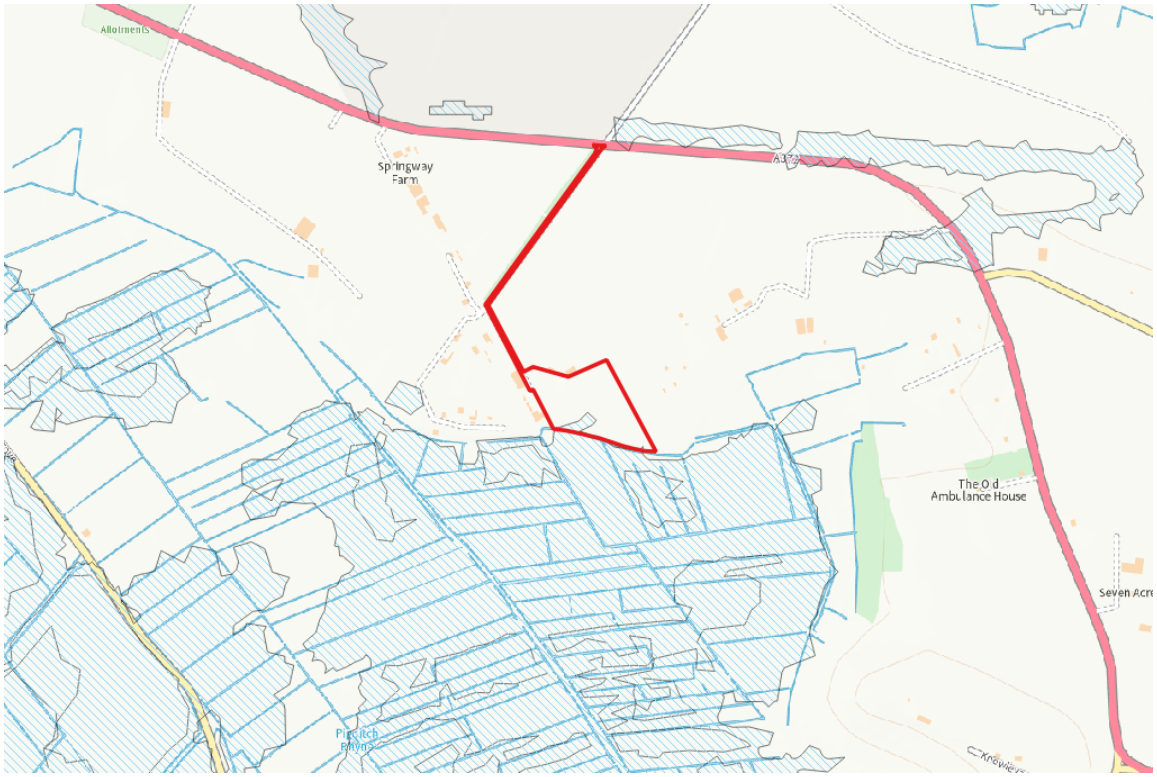


Figure 7: EA Recorded Flood Outlines

Table 5: Significant Historic Flood Events

Location	Year of Flood	Details of affected area
Levels and Moors	December 2013 to February 2014	Heavy prolonged rainfall led to extensive flooding across the Levels and Moors affecting property and agricultural land. During January Southern England experienced the highest rainfall since records began in 1910. The extent of the flooding led to a major incident being declared by Somerset County Council and Sedgemoor District Council. Key settlements affected included Moorland, Fordgate and Westonzoyland. The flooding had a significant affect on transport routes with many communities cut off due to road flooding and disruption to railway services on the Bristol to Exeter line between Bridgwater and Taunton. Extensive areas of low lying agricultural land were inundated throughout the event including North Moor, Curry and Hay Moors, and Greylake.
Levels and Moors and surrounding villages	November 2012	Wet weather throughout April to October had led to saturated ground and exceptionally high groundwater levels. Up to 150mm fell across some areas through late November leading to extensive flooding across the Levels and Moors with associated road closures. Significant property flooding also occurred in Cannington in the area to the south of the brook. Flooding was also reported in other settlements including Otterhampton and Combwich.
Bridgwater	April 1998	Tidal and fluvial flooding affected properties and land. Number and location of properties affected unknown.
Levels and Moors	August 1997	Dramatic summer flooding not seen in Somerset since July 1968. Curry Moor, West Moor and Hay Moor suffered damage to grassland. Trapped floodwater caused vegetation to rot causing serious pollution.

Location	Year of Flood	Details of affected area
Levels and Moors	December 1981	Very high tidal levels resulted in overtopping of sea defences at Pawlett, Combwich, Burnham-on-Sea. Approximately 3570 hectares were inundated with 1072 dwellings and commercial properties flooded (in the then 'Somerset Land Drainage District'). Most severe tidal event in this location in the 20th Century.
Levels and Moors	October/ November 1960	Prolonged rainfall caused widespread flooding across the Levels and Moors. Floodwater remained for approximately 86 days.

5.3 Flood Risk Mechanisms

In accordance with the NPPF and the NPPF technical guidance, all forms of flooding including fluvial, tidal, groundwater, surface water and flooding from artificial sources have been addressed in the following sections.

5.3.1 Fluvial Flood Risk

The Parrett catchment drains the Quantocks, Blackdown and Polden Hills, with the main tributaries located outside the Sedgemoor area, including the Rivers Tone, Isle, Yeo and Cary. In seeking to alleviate flooding, the Parrett catchment has historically been heavily modified in places (for example, the re-routing of floodwaters along the River Sowy and King Sedgemoor Drain). A number of the rivers in the flat lowlands are embanked and perched above the surrounding floodplain. A combination of the steep upland catchments and underlying impermeable geology can generate quick runoff and flooding on the Somerset Levels and Moors, where the gradient reduces and the water slows. This results in the capacity of the embanked channels being exceeded with flood waters overflowing onto the surrounding moors before reaching the estuary. The capacity of the Parrett in the lower reaches can also be significantly reduced through high tide conditions. The Parrett is influenced by the tide for up to 19 miles inland, beyond the district boundary.

The site is covered by the Somerset Levels and Moors hydraulic model, **Figure 8** identifies that the site is represented with the Weston Level 1 reservoir node. The modelled flood levels are included in **Table 6**. All of the modelled levels are below the lowest site elevation of 5.0mAOD, therefore the fluvial flood risk to the site is considered to be low.

Table 6: Fluvial Flood Levels

Annual Exceedance Probability	WestonLevel1 Estimated Fluvial Flood Levels (mAOD)	
	Defended	**Undefended**
0.1	4.60	4.83
0.5	3.60	3.60
1	3.58	3.59
3.33	3.57	3.57

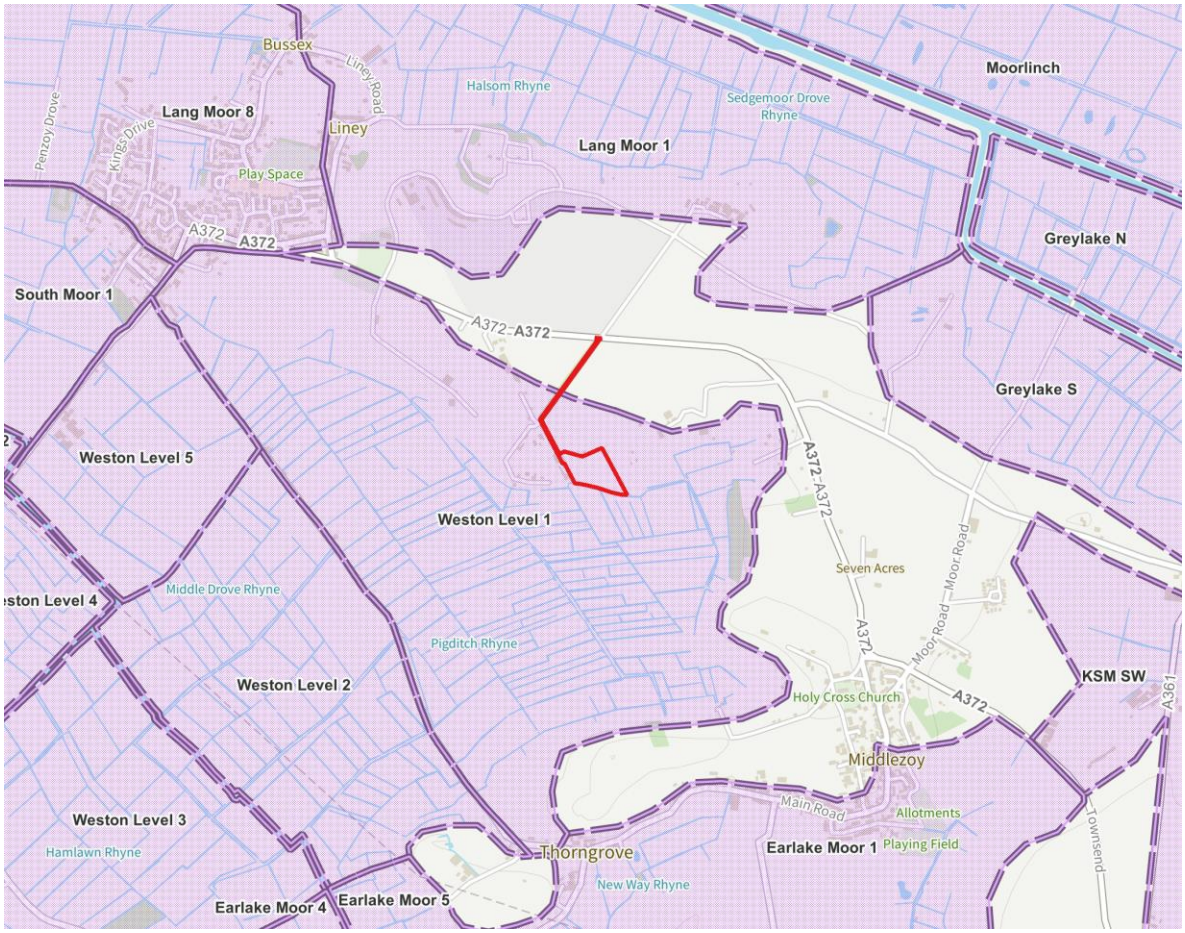


Figure 8: Hydraulic Model Reservoir Node

5.3.2 Tidal Flood Risk

The tidal floodplain of the River Parrett is predominantly rural moorland. An extensive network of rhynes in the Somerset Levels and Moors help to drain the land and EA pumping stations help to manage water levels in the Moors. These areas of tidal floodplain are classified as benefiting from defences. There is a residual risk of flooding in these areas should the defences fail or from prolonged periods of tide locking.

The EA, in their 2012 Wessex Coastal Model, have provided the flood outlines for tidal events and the levels in **Table 7** have been estimated by extrapolating to the LiDAR levels for the site.

Table 7: Tidal Flood Levels

Annual Exceedance Probability	Estimated Tidal Flood Levels (mAOD)	
	Defended	**Undefended**
0.1	-	7.45
0.5	-	7.60

In the defended scenario the site does not experience tidal flooding. In the undefended scenario tidal flooding to the site has estimated depths of between 0.4 and 2.1m. However, the likelihood of occurrence of this scenario is deemed to be extremely low. The site is

outside the area considered within the Sedgemoor Level 2 SFRA which focused on tidal flood risk breach scenarios and so the defences in this area are considered at low risk of breach. The tidal flood risk to the site is considered to be low, particularly given the temporary duration of the proposed use for the site.

Towens of Weston Ltd are already signed up to the EA's flood warning service and have specific actions to take in the event of a flood alert and/or flood warning, which will be followed.

5.3.3 Surface Water Flood Risk

Surface water flooding occurs when soils are saturated so their natural capacity to absorb rainfall is prevented leading to overland flow, or when rain falls upon paved surfaces with low absorption causing water to run-off. During periods of intense rainfall this inevitably overwhelms drainage systems. Unlike flooding from rivers, surface water flooding can happen many miles from a river, often in places that people wouldn't expect because it's a long way from a river or stream – it happens simply because there is nowhere else for the rainwater to go.

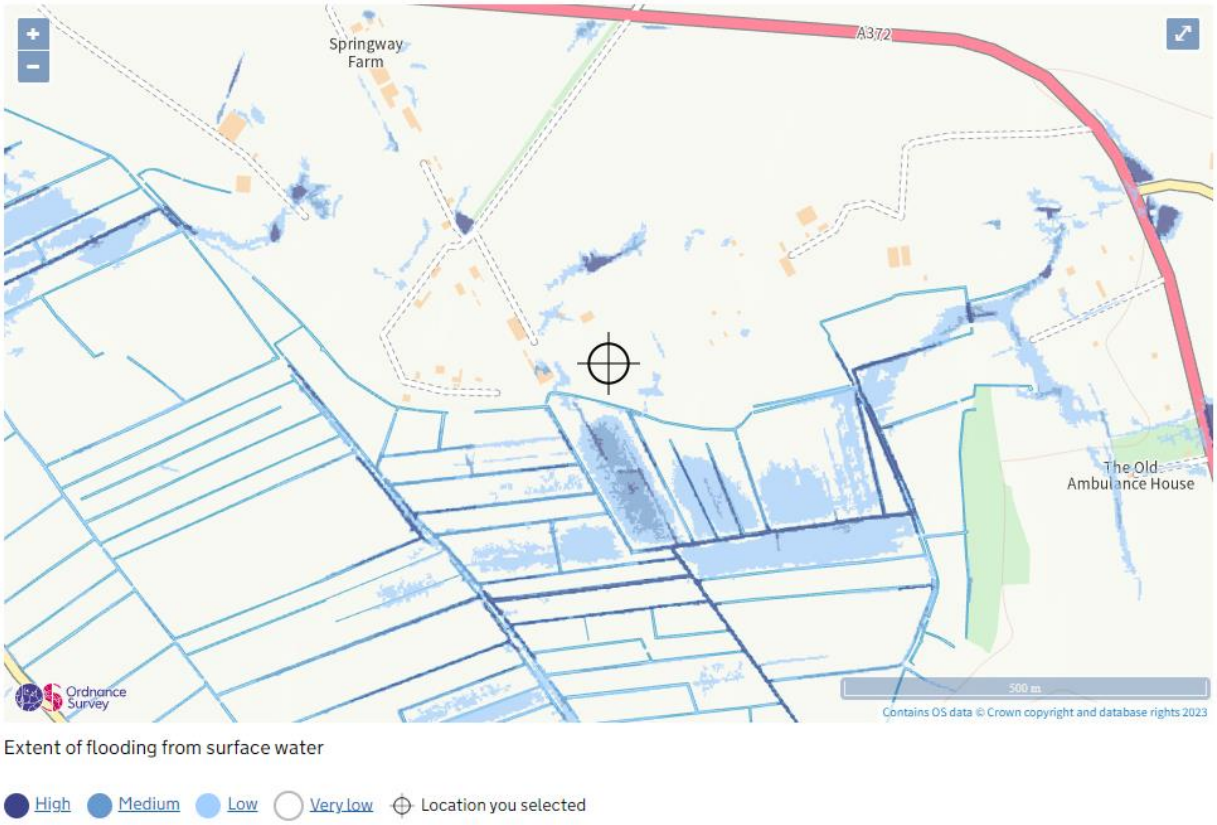


Figure 9: Flood Map for Surface Water

In 2013 a national map showing the risk of flooding from surface water was published online. **Figure 9** shows the risk of flooding from surface water map produced by the Environment Agency on behalf of the government, using information and input from Lead Local Flood Authorities. This shows that there is very low risk of surface water flooding to

most of the site. There are a few small areas of low-risk surface water ponding associated with slight depressions in the site topography, but no significant surface water flow routes pass through the site. Surface water flood risk to the site is considered low.

5.3.4 Groundwater Flood Risk

Groundwater flooding occurs because of water rising from the underlying aquifer or from water flowing from springs. This tends to occur after long periods of sustained high rainfall, and the areas at most risk are often low-lying where the water table is more likely to be at shallow depth. Groundwater flooding usually occurs in areas underlain by major aquifers but can be associated with more localised floodplain sands and gravels.

The areas susceptible to Ground Water Flooding Mapping contained within the SFRA places the site in a 1km square where the risk of groundwater emergence is less than 25%. The SFRA concludes that overall, the risk from groundwater flooding is relatively low in Sedgemoor when considered in proportion to other risks such as fluvial and tidal flooding.

5.3.5 Other Sources of Flood Risk

There are no mains sewers within the vicinity of the site therefore the potential risk from flooding from the sewer system in this area is low. There are no recorded incidents of sewer flooding within 2km of the site.

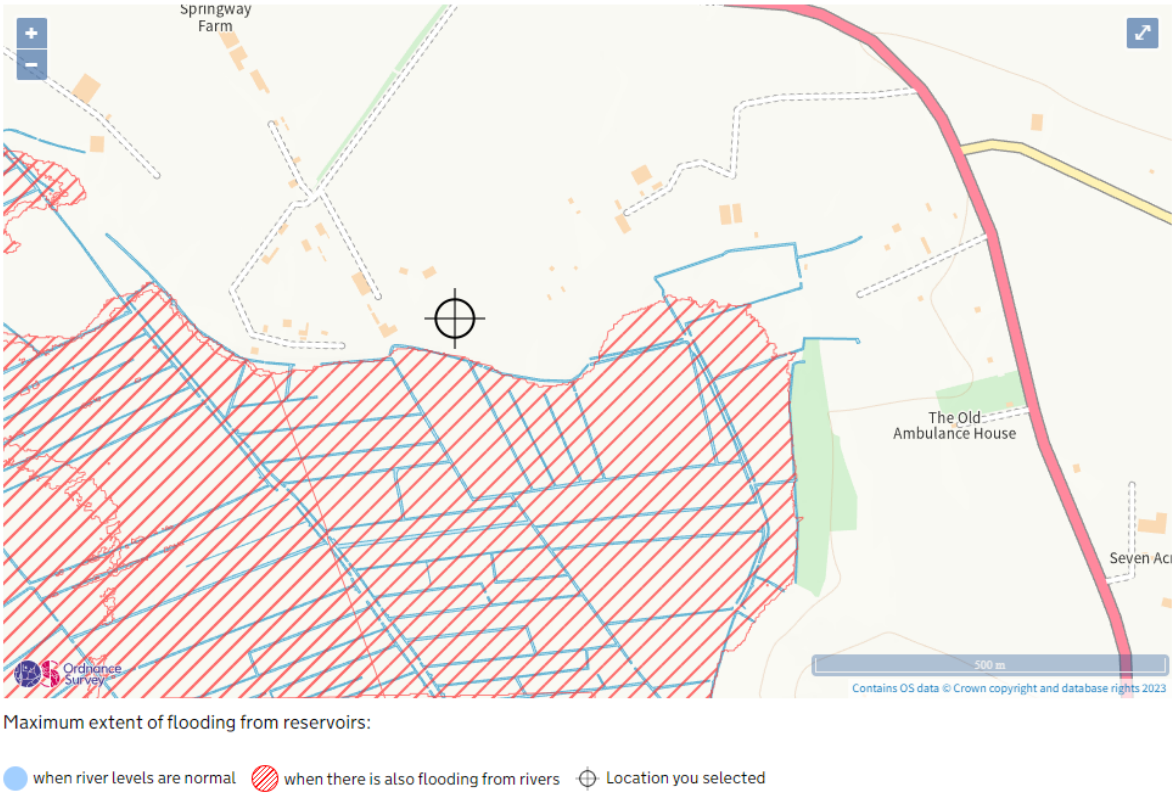


Figure 10: Risk of Flooding from Reservoirs

There are a number of flood storage areas within the Somerset Levels, ***Figure 10*** shows that the site falls outside the maximum extent of flooding from reservoirs in the wet day scenario. The flood risk from artificial sources is therefore considered low.

5.3.6 Flood Risk Summary

The site is classified as within **Flood Zone 3a** due to the tidal flood risk in the 'undefended' scenario. The flood risk to the site is considered low from all other sources. The proposed use for the site is temporary (3 years) and therefore the risk of the tidal flood defences breaching is considered low. Considering the temporary use of the site and the 'defended' scenario for tidal flood risk, the risk of flooding is considered low.

The siting of this storage facility at this location is to serve the flood defence works at nearby Southlake, Currylake and Westmoor. There are very few sites in the locality that are not within Flood Zone 3a or 3b. The proposed change of use to store inert waste materials, classified as **'less vulnerable'**, is considered compatible with Flood Zone 3a (refer **Section 4**).

6. Proposed Drainage Approach

The proposals for the site are to temporarily utilise the site as a storage facility for inert materials for a period of 3 years. The site will remain permeable with no hardstanding proposed.

The current site has no formal drainage as it is currently a greenfield site. Surface water runoff drains naturally from north to south across the site reaching the Rhyne network located in the lower lying land along the southern boundary. This boundary has dense vegetation along the steeper sections of slope down to the Rhyne and this should be maintained as additional protection from any mobilised sediments reaching the watercourse. The photo below shows the edge of bank down to the watercourse on the left land side of the picture with the grassed buffer strip retained.

There is no change proposed to the current site drainage as the site will remain greenfield. In addition, there are no surface water flow pathways traversing the site to consider as part of the layout and drainage. The gentle topography also ensures that flow velocities for sheet runoff across the site will be low, allowing for settling out of material as it flows across the vegetated areas. There is therefore no requirement to attenuate surface water runoff from the site or provide any redirection of flow.

However, we would propose some mitigation measures be put in place as part of the site layout to ensure that any mobilised sediments from stockpiled material are retained on site

as much as possible and not washed into the Rhyne network during rainfall events. These mitigation measures are as follows:

1. Retain existing vegetation along the steeper banks down to the Rhyne;
2. Provide a minimum 10m buffer strip of long grass/ scrub from the top of 'bank' along the edge of the Rhyne (this also retains a defined maintenance corridor for the watercourse);
3. Stockpile material towards the northern half of the site as much as possible to allow greater distances for rainfall runoff to travel across vegetated areas prior to discharge to the Rhyne system.

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