Freighter House

Chelmsford City Council

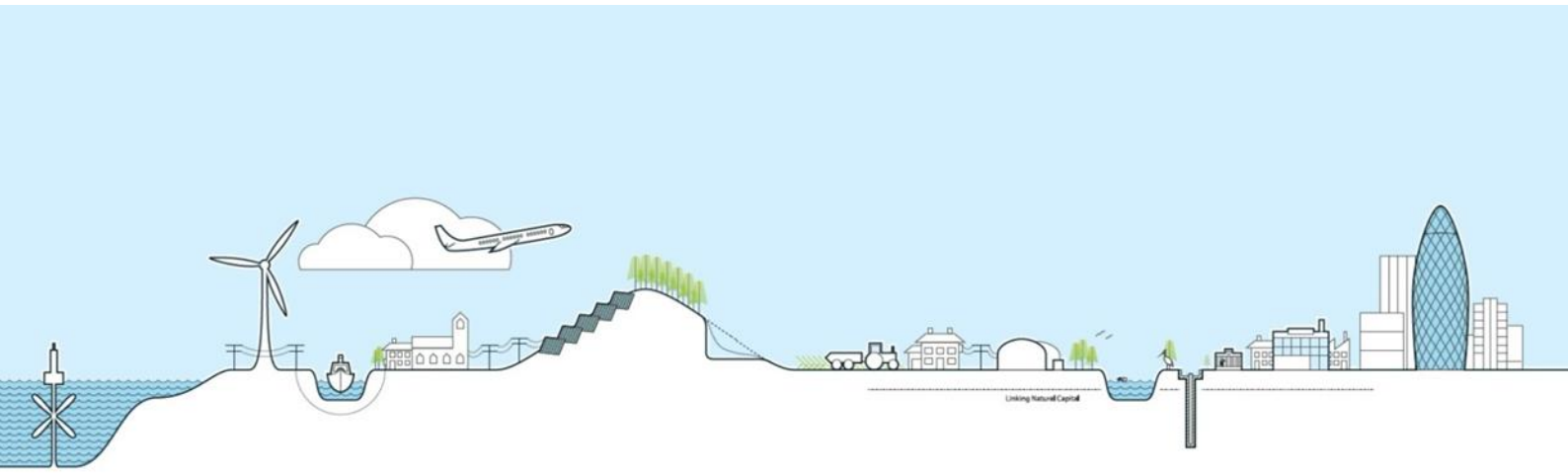
Environmental Permit Application

Environmental Risk Assessment

June 2025

Prepared By

aardvark
environment matters



Project Quality Control Sheet

ORIGINAL	Author	Checked by	Approved by
Signature			
Date	20/06/2025	27/06/2025	27/06/2025
Company	Aardvark EM Ltd	Aardvark EM Ltd	Aardvark EM Ltd

Location: Freighter House, Drovers Way, Chelmsford, CM2 5PH

Grid Reference: TL 73797 09224

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Contents

Figures

Tables

Appendices

1 Introduction

This risk assessment seeks to show where environmental risk will be. The operator should assess the risks considered relevant to the proposed operation, in-line with the Environment Agency (EA) online risk assessment guidance[1] (dated 1 February 2016).

This report forms part of the wider management system for the operation and a copy will be kept in the site office.

1.1 Objectives

The purpose of this environmental risk assessment is to:-

- Identify potential risk that the proposal may present to the environment;
- Screen out those that are insignificant and do not require detailed assessment;
- Where appropriate identify potential significant risks;
- Where appropriate choose suitable control measures;
- Report the findings of the assessment.

1.2 Risk Assessment Process

The risk assessment process has been conducted in accordance with the Environment Agency guidance published online (dated 1 February 2016). It details five steps key steps to the risk assessment process prior to its submission with a permit application.

1. Identify risks from the activity
2. Identify the relevant receptors
3. Identify pathways
4. Assess the risks
5. State methods of risk control
6. Present the Assessment

Further information on each of the stages of the risk assessment is below.

1.2.1 Step 1- Identify Risks

The following section of this document identifies those activities which present different types of risk to the environment associated with the proposed operation, including:

- Emissions to air,
- Emissions to water,
- Emissions to land,
- Accidental releases,

[1] Risk assessments for your environmental permit - GOV.UK

- Release of odour,
- Release of noise,
- Pests,
- Vandalism.

The categories for the risk assessment have been prepared in line with the risks identified in Table 1 of the guidance overview document.

1.2.2 Step 2 – Identify Receptors

These include all relevant environmental aspects, such as; people, vegetation, animals, properties, water bodies.

1.2.3 Step 3 - Identify Pathways

The document will demonstrate that Freighter house, Drovers Lane has considered the risks associated with the proposed operation of the site.

1.2.4 Step 4 – Assess Risks

The level of risk presented can be indicatively assessed using a scoring matrix. These allow us to identify which risk, if any, are significant, and will require additional consideration in a more detailed assessment.

1.2.5 Step 5 - Controlling risk

For any risks which are identified as part of the assessment process as being too high without additional management, this section of the report details how those risks can be controlled via management and mitigation to be within acceptable limits.

1.2.6 Step 6 – Present the assessment

The risk assessment is presented in tabulated format below. The risk assessment is organised by emission type.

2 Risks

The permitted activity on the site involves the transfer and treatment of waste. The relevant risks associated with this activity are shown in the matrix below.

2.1 Risk Register

Permitted Activity	Key Risks						
	Odour	**Noise and Vibration**	**Dust**	**Accidents**	**Pests and Vermin**	**Litter/Mud**	**Fire**
Operation of waste transfer and treatment facility	Waste is primarily solid, bar road sweepings which may be wetter. In general this should cause limited odour. See Odour Management Plan (2513-R005).	Vehicle and plant machinery noises from machinery used to transport and treat waste at the facility.	Road cleansing waste is handled on site, which may be dusty. Other wastes such as cardboard may disintegrate to form dust. See Fire Prevention Plan (2513-R006).	One-off accidents occurring on site. Spillages of oil and waste from vehicles working around site.	Waste types are largely non-biodegradable and so unlikely to attract pests and vermin.	Litter may escape holding areas, gates are utilised. Vehicles may transfer mud in and around site. Site is hardstanding and vehicles washed.	Flammable waste is stored on site. Harmful emissions to air and water could result from a fire and trying to extinguish it. See Fire Prevention Plan (2513-R004).

Table 1: Risk Register

3 Receptors

3.1 Human receptors

Local environmental and mapping data has been used to identify key receptors in the surrounding local environment to the site. This includes all relevant environmental aspects such as people, vegetation, animals, properties and water bodies. A summary of the findings are shown here:

	Receptor No.	Distance from site	Located in Receptor
Residential Area	1	121m west	Housing estate
	2	500m west	Housing estate
	3	700m north-east	Small cluster of houses
	4	900m north-east	Small cluster of houses
Industrial Estate	5	Bordering site to north-east	Boreham services; Premier Inn, BP Garage, McDonalds
	6	Bordering site to the south	Industrial estate: Aston Barclay and Council Recycling Centre
	7	100m south	Industrial estate: Royal Mail Centre, Aldi Distribution Warehouse,
	8	410m north-east	Premier Inn, Eatery etc.
	9	410m south	Industrial estate: Parcelforce, Edmundson electrical etc.
	10	450m south-west	Industrial estate: Toyota, Essex Highways etc.
	11	850m south	Industrial estate: B&Q, DPD etc.
Public Access	12	200m south-east	Boreham House and Car Boot
	13	920m north-west	School and nursey

Table 2. Human receptors within 1,000m of the proposed permit boundary

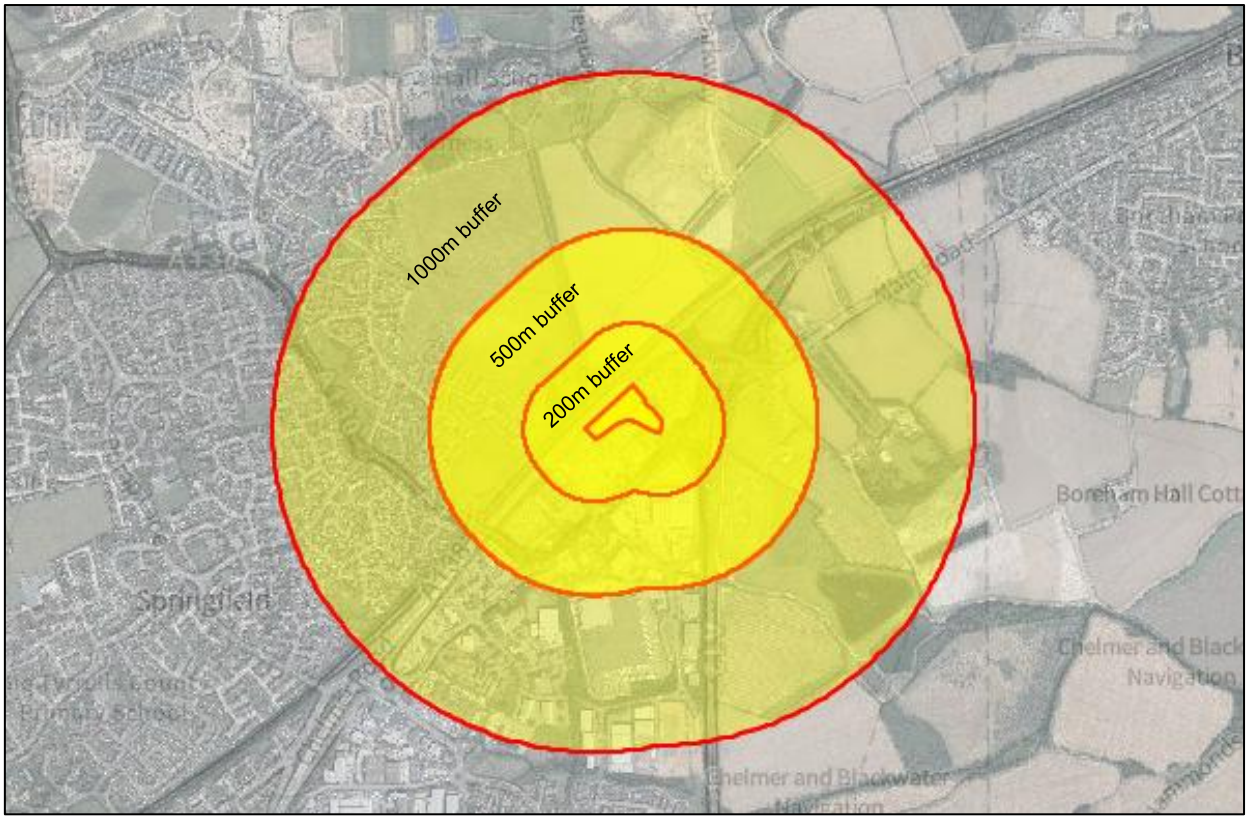

Figure 1. Freighter House Buffer Zones (200m, 500m, 1000m).

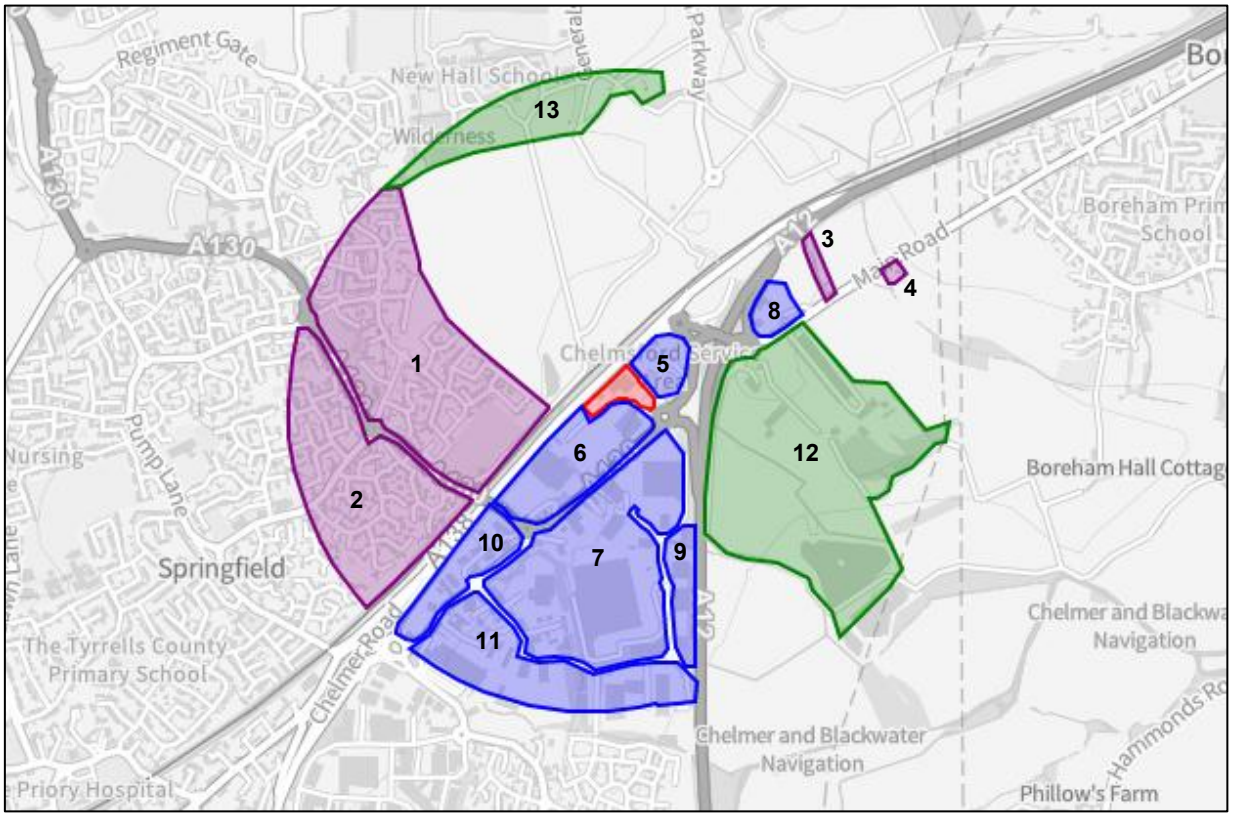

Figure 2. Environmental receptors

3.2 Emissions to water

There are no point source emissions to surface water courses or ground. All surface water is collected on an impermeable service and routed to a sealed drainage system. Uncontaminated surface water is discharged via existing surface water drainage network, which also collected water from the surrounding road network and discharges to the River Chelmer.

3.3 Emissions to sewer

The foul water generated on-site is discharge to the foul sewer operated by Essex and Suffolk water in accordance with the terms of a trade effluent consent.

3.4 Prevailing wind conditions

Prevailing wind conditions are from the south-west, west-south-west and south-south-west, as shown in figure 3. Wind conditions are monitored frequently by the site operators. If strong wind conditions are predicted mitigation can be put in place to reduce the environmental impact of factors such as noise and dust emissions. The below wind rose is taken from 'Windpro' and uses data from New European Wind Atlas, between the dates of 1 Jan 2009 - 31 Dec 2018.

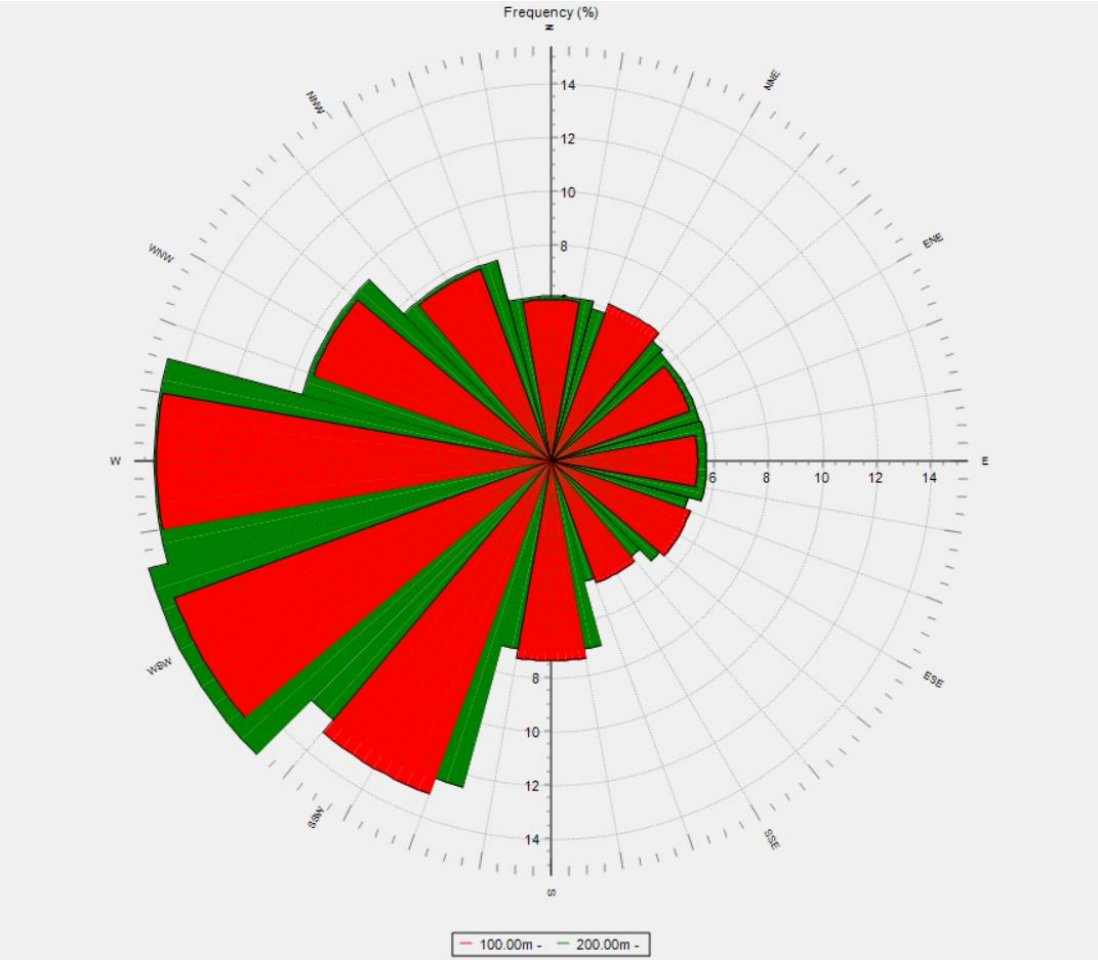

Figure 3: Windrose Diagram.

3.5 Surface and Groundwater Designations

Located within the Chelmer operational catchment, within the Chelmer (d/s confluence with Can) water body (Figure 4). There appear to be no aquifers in the vicinity (Figure 5). Groundwater vulnerability is medium-low (Figure 6), soilscape indicates soil type to be freely draining (Figure 7).

3.6 Biodiversity designations

Chelmer Valley Riverside, Local Nature Reserve is located approximately 2.7km to the west of the site. A Nature Heritage Report was produced for the site which located a code 2 protected species located within 1km of the site boundary. The report does identify the species, only providing the categorisation of non-fish. A 1km grid square has been provided, approximately 250m to the south east of the site.

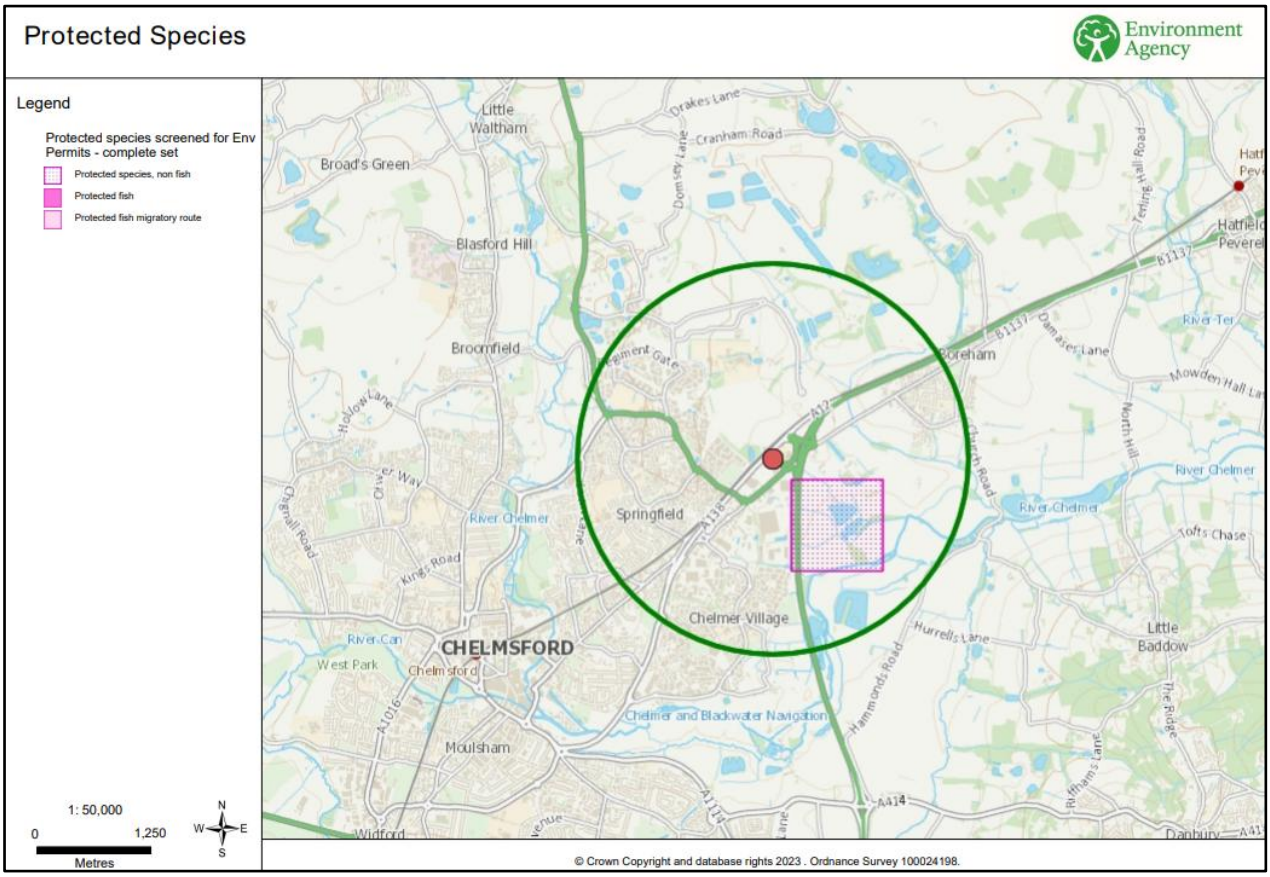

Figure 4: Protected Species

It appears there are a number of Great Crested Newt Class Survey License returns, located near to the site, including the following:

- 910m south of the site boundary,
- 920m south of the site boundary,
- 1,120m north west of the site boundary,
- 1,140m south west of the site boundary.

There are also a number of Granted European Protected Species Applications

- Amphibian, 510m south of the site boundary,
- Amphibian, 980m south west of the site boundary,
- Amphibian, 1,040m south of the site boundary,
- Bat, 1,040m north west of the site boundary, and
- Bat, 1,110m north west of the site boundary.

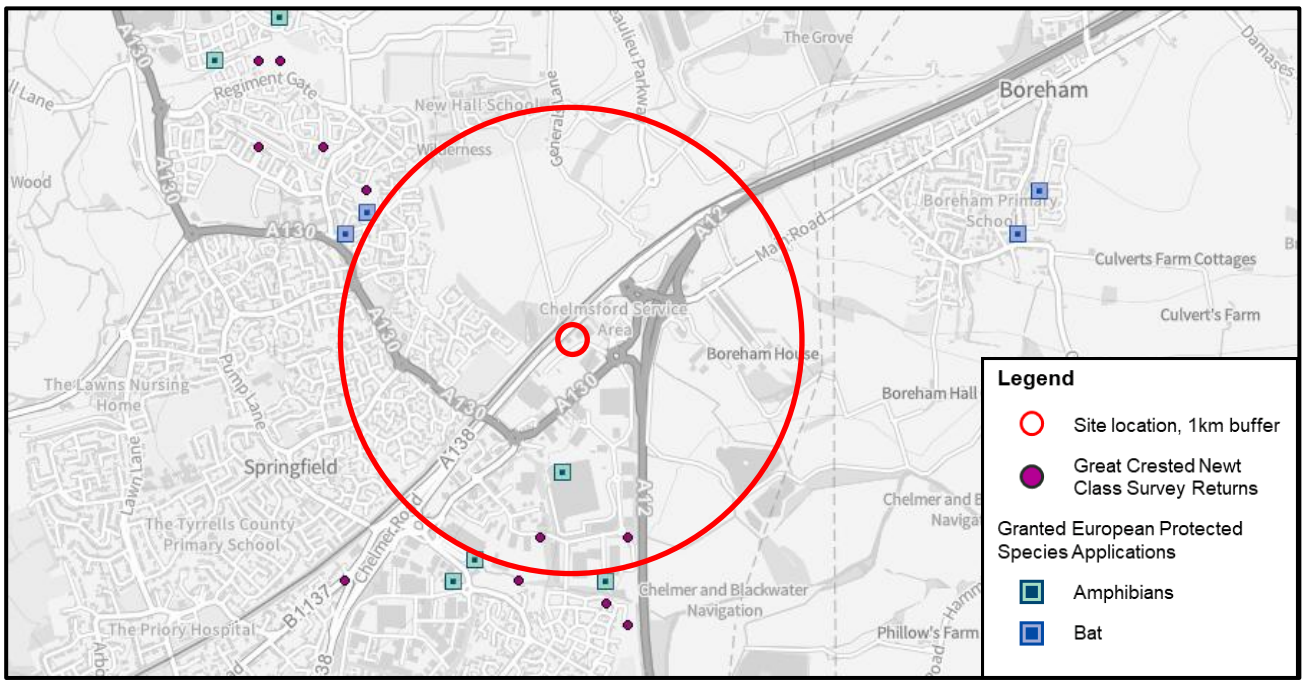

Figure 5: Nearby Species

4 Pathways

The following pathways are considered as part of this risk assessment:

- Dispersal to atmosphere;
- Discharge to a watercourse;
- Entry into surfaces water drainage system;
- Entry into ground through insufficient hard standing;
- Leaching into the ground (and potentially groundwater);
- Sub-surface flow;
- Overland flow;
- Migration via attachment to vehicles or animals.

The pathways are the means by which a potential polluting emission can reach an identified receptor. It is noted that a particular feature could be both a receptor and a pathway.

The key pathways between the risks identified in Section 3, and the receptors identified in Section 4 are detailed in the following sections of this risk assessment.

5 Assessment of Risks

This section draws form the Environment Agency's Risk Assessment Guidance. There are no planned point source emissions from the operation, therefore the focus of the risk assessment is on accidental and fugitive releases.

In accordance with the published guidance it is assumed that an operator error will occur at least once in every 100 times an operation is carried out.

The following risks are covered by this risk assessment:-

- Odour;
- Noise and Vibration;
- Fugitive emissions including surface water runoff, surface water leaching;
- Birds and Vermin.

6 Odour Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Odour from waste acceptance and processing at the site.	Local human population including the identified residential areas within 1km of the site boundary (receptor nos. 1-4). Public access areas such as Boreham House which acts as a wedding venue, and the Boreham car boot site.	Air transportation and inhalation	Permitted waste types largely have a low odour potential. Nevertheless, the following steps will be taken to ensure no odour risk: Waste acceptance procedures are in place to ensure waste streams are accepted in-line with agreed procedures. Operation inline with the sites odour management plan (2513-R005). Ongoing monitoring by site staff during operations. Completion of daily checklist. Waste is stored onsite for a limited timeframe. Waste is rotated regularly to reduce time it is spent sitting.	Low - Due to waste acceptance there is a very low change of odour becoming an issue at the site.	Minor nuisance	Not significant

Table 3: Odour Risk Assessment

7 Noise and Vibration Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Machinery noise From skip lorries, movement of skips, bailers, loading/unloading	Local human population including the identified residential areas within 1km of the site boundary (receptor nos. 1-4). Public access areas such as Boreham House which acts as a wedding venue, and the Boreham car boot site (receptor no. 12).	Air Transportation	Strict adherence to permitted hours of operation. Ongoing monitoring by site staff during operations. Completion of daily checklist. Freighter House operates Monday to Friday from 06:00 to 17:00. Reduce operations occur during the weekend with reduced hours. On weekdays, commercial waste collection vehicles depart the depot promptly at 06:00. Kerbside domestic collection crews begin leaving from 06:30 onwards. Operations within the Materials Recovery Facility (MRF) do not commence until after 07:00.	Low – Noise is likely to be audible intermittently throughout operational hours. However site is surrounded mainly by industrial estates and so noise will be comparable to these sites. The site is surrounded by other prominent noise sources such as the nearby railway and main road. These are considered to be the dominant noise sources.	Minor nuisance	Not significant

Table 4: Noise and Vibration Risk Assessment

8 Emissions to Air Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Dust created from the storage of: paper and cardboard. Road cleansing waste.	Local road networks (including but not limited to the A138 and A12).	Wind-blown dust	Continuous monitoring of the process, especially during prolonged dry spells. Regular inspection of all plant and control measures. Dust suppression procedures can be put in place when required (hosing down site etc.) Vehicles are checked for dust and washed in the onsite vehicle wash if necessary. Mesh and gates are used on necessary storage bays to reduce the possibility of dust travelling on site. Regular checks to remove litter during and at the end of each shift	Low – A variety of measures have been put in place to mitigate this risk. Most wastes accepted on site will not cause excessive dust.	Minor nuisance/road safety	Not significant

Table 5: Emissions to Air Risk Assessment

9 Emissions to Water Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Runoff as a result of spillage or flooding on site.	Groundwater	Flow into groundwater via areas which are not hardstanding near to the site.	All on-site water will flow into the local drainage network. Any issues with local drainage reported to site. Regular checks of drainage by site operatives. Fuel and oil interceptor is used on site. Poly-booms and clay mats are available in the event of a fire to prevent contaminated water from entering the surface water or foul water drains. These can also be used in the event of large spills (fuel and oil etc). Improvement works are being undertaken to the wider site drainage with the installation of a penstock valve proposed near the site entrance.	Very low - All water should flow into local drainage network unless uncharacteristic flood event or local drainage issue. There is considered to be a very low risk of contaminating watercourses, or groundwater.	Potential harm to any groundwater abstractions.	Not significant
	Local wildlife and habitats	Overland flow. Entry into surface water drainage.	All on-site water will flow into the local drainage network. Any issues with local drainage reported to site.	Very low - All water should flow into local drainage network unless	Potential ecological damage to aquatic, plant and animal life	Not significant

			Regular checks of drainage by site operatives.	uncharacteristic flood event or local drainage issue.	in the surrounding area.	

Table 6: Emissions to Water Risk Assessment

10 Pests and Vermin Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Birds and vermin attracted to waste. Associated nuisance and potential hygiene risks.	Local human population including the identified residential areas within 1km of the site boundary (receptor nos. 1-4).	Wastes promote increased presence of birds and vermin.	Ongoing monitoring by site staff during operations. Completion of daily checklist. Pest control measures will be employed if necessary. Waste is stored onsite for short periods of time before processing or removal.	Low – according to waste acceptance there should only be small traces of food amongst waste and so risk is limited.	Nuisance	Not significant

Table 7: Pests and Vermin Risk Assessment

11 Litter/Mud Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Escape of litter	Local human population including the identified residential areas within 1km of the site boundary (receptor nos. 1-4).	Windblown litter	Storage bays where litter escaping may present as an issue have gates which will prevent litter from escaping. Daily site checks during shifts and at the end of each shift to pick up on any escaped litter. Ongoing monitoring by site staff during operations.	Low – site litter levels are monitored and bays are designed to prevent litter escaping.	Nuisance	Not significant
Escape of Mud	Local road networks (including but not limited to the A138 and A12).	Vehicle tracked mud	Vehicles can be washed on entrance to site utilising the on-site vehicle wash. Operational site area is hardstanding and can be hosed down/cleaned to reduce the spread of mud.	Low – vehicles and site area can be hosed down if necessary.	Nuisance/road safety	Not significant

Table 8: Litter /Mud Risk Assessment

12 Fire Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Runoff of firewater	Surface water drainage network. Groundwater.	Overland flow. Entry into surface water drainage. Entry into groundwater.	Fire prevention plan put in place to reduce risk of accidental fires (document ref. 2513 - R004). Poly-booms and clay mats are available in the event of a fire to prevent contaminated water from entering the surface water or foul water drains. These can also be used in the event of large spills (fuel and oil etc). Improvement works are being undertaken to the wider site drainage with the installation of a penstock valve proposed near the site entrance.	Low – fire prevention plan put in place to reduce any risk of possible fires.	Pollution of surface water systems and groundwater	Not significant
Accidental fire causing the release of polluting materials	Local human population including the identified residential areas within 1km of the site boundary (receptor nos. 1-4).	Air transportation and inhalation.	Fire prevention plan put in place to reduce risk of accidental fires (document ref. 2248-R002). All relevant people/businesses will be made aware of any incidents.	Low – fire prevention plan put in place to reduce any risk of possible fires.	Nuisance/poor health	Not significant
Disruption to site operating conditions	Freighter House itself.		Fire prevention plan put in place to reduce risk of accidental fires (document ref. 2248-R002). All incoming waste will be redirected to an alternative waste station. Clearing and decontamination will be undertaken to restore site after a fire incident.	Low – fire prevention plan put in place to reduce any risk of possible fires.	Disruption of site operations	Not significant

			Full investigation into the cause and source of the fire to prevent future fires before site is made operational again. Any changes to site operations are to be made prior to site reopening.			

Table 9: Fire Risk Assessment

13 Assessment Summary

13.1 Odour

All operations and activities shall be monitored and controlled to limit the production of odour that is likely to cause pollution of the environment, harm to human health or serious detriment to the amenity of the locality outside the site boundary.

The monitoring and control of odours will be carried out in accordance with the following steps:

1. Daily monitoring of site odours will be carried out by site staff supervising waste handling operations.
    - By the site manager or supervisor, at least twice per day, at the site boundary situated downwind of the waste operations and will be recorded in the site diary;
    - By site staff supervising waste handling operations whilst carrying out of those operations.
2. In the event that significant odour that is likely to be transported beyond the site boundary is detected by staff, immediate action shall be taken to stop the waste handling operations giving rise to the odour and to suppress the emission from the waste and facility by:
    - Removing the waste from site;
3. The incident and the remedial action will be recorded in the site diary.

13.2 Noise and Vibration

The site is an existing established site that was previously permitted. To date there have been no substantiated noise complaints and no previous history of noise complaints from the site. When considering the site setting the site is screened by mature trees and is lower level when compared to the A138 which would be considered to be a dominate noise source in addition to the railway line beyond the A138. The closest sensitive receptors are the residential properties located at Wharton Drive which is located to the South West of the site. From the corner of the MSF building (which is considered to be the dominate noise source) to the properties is approximately 250m.

Furthermore the operational hours of the site means that most of the onsite operations are carried out between Monday and Friday between the hours of 06:00 and 17:00. Weekend operations are limited to the acceptance of litter bin waste which is tipped at the top of the depot collected from the there are no other waste movements carried out during the weekend.

On weekdays, commercial waste collection vehicles depart the depot promptly at 06:00. Kerbside domestic collection crews begin leaving from 06:30 onwards. Operations within the Materials Recovery Facility (MRF) do not commence until 07:00 and ceases by 17:00. The majority of the commercial and kerbside vehicles have returned to the site by 16:00.

All noise emissions taking place on site will be regularly monitored for any noises which may exceed acceptable levels. If any out of the ordinary levels of noise are being produced on site measures will be put in place, including identifying the source of the noise/vibration, stopping the activity which is creating the nuisance, putting in place revised operations and/or maintenance of plant and equipment to prevent further emissions.

The incident and remedial actions will be recorded within the site diary.

13.3 Emissions to Air

All emissions to air shall be monitored to be free from visible concentrations of dusts, fibres or particulates, as are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality outside the site boundary.

The monitoring and control of aerial emissions of dusts, fibres and particulates will be carried out in accordance with the following steps:

1. Visual monitoring of aerial emissions will be carried out by site staff supervising waste handling operations.
    - By the site manager or supervisor, at least twice per day, at the site boundary situated downwind of the waste operations and will be recorded in the site diary;
    - By site staff supervising waste handling operations whilst carrying out those operations;
    - In the event that visible aerial emissions that are, or are likely to be transported beyond the site boundary, are observed by staff, immediate action shall be taken to stop the waste handling or other operation giving rise to the emissions and to suppress the aerial emissions through activities such as damping down the yard;
2. The incident and the remedial action will be recorded in the site diary.

13.4 Emissions to Surface and Ground Water

All emissions of liquid will flow to the central drainage of the site. The central drainage system is monitored in the following ways:

- Weather conditions may increase the input of water into the drainage system, weather is therefore monitored to reduce unexpected flooding/spillage.
- Any maintenance and/or issues with the drainage system are reported to the site to ensure alternative measures are put in place, be that site closure or alternative effluent collection.
- Physical pollutants such as mud, litter and escaped waste are regularly monitored on site and precautions are taken to reduce its existence and stop it entering the drainage system.

13.5 Pests and Vermin

Any incidents of pests and vermin on or surrounding the site will be monitored, controlled and reported to the appropriate bodies.

Any pest control measures employed will be recorded in the site diary.

13.6 Litter/Mud

Mud on site will be limited due to all areas of the site being ‘built for purpose’ areas of hardstanding, there are also roads surrounding the site for ease of access and limiting the presence of mud.

Site shall undertake “good-housekeeping” procedures daily, and adhere to a weekly and monthly cleaning schedules. Any litter seen either escaping or at risk of escaping, is to be collected immediately by site staff and added to correct waste pile. Waste storage bays with increased risk of litter/mud escaping have metal gates which are closed when access to bay isn’t needed, this reduces the escape of litter.

13.7 Fire Risk

Further details of fire risk prevention and management for the site are detailed within the sites Fire Prevention Plan (2513-R004).

This includes detailed information about:

- the site;
- management techniques for common causes of fire;
- prevention of self-combustion;
- management of waste piles;
- prevention of fire spreading;
- site quarantine area;
- fires detection, suppression and water supplies;
- during and after the incident.

14 Conclusion

The results of the risk assessment has not identified any risks which cannot be adequately managed by good management practices on site.

Risks presented by the operation can largely be mitigated through implementation of waste acceptance procedures, following standard site procedure, daily site checks completed by site operatives and thorough and regular monitoring.

Appendix 1

Chelmer Operational Catchment

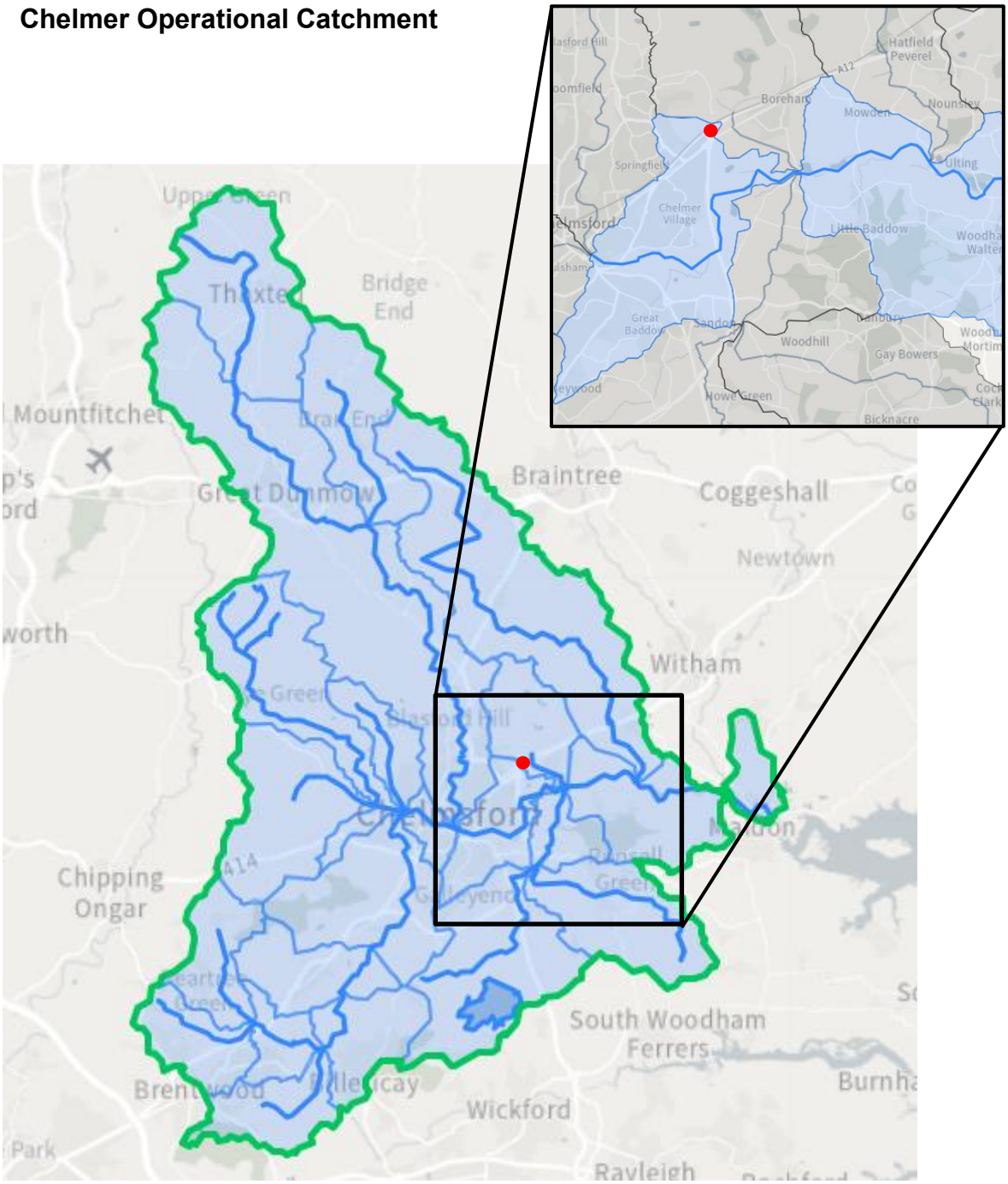

Figure 6: Chelmer Operational Catchment

Aquifer Designation map

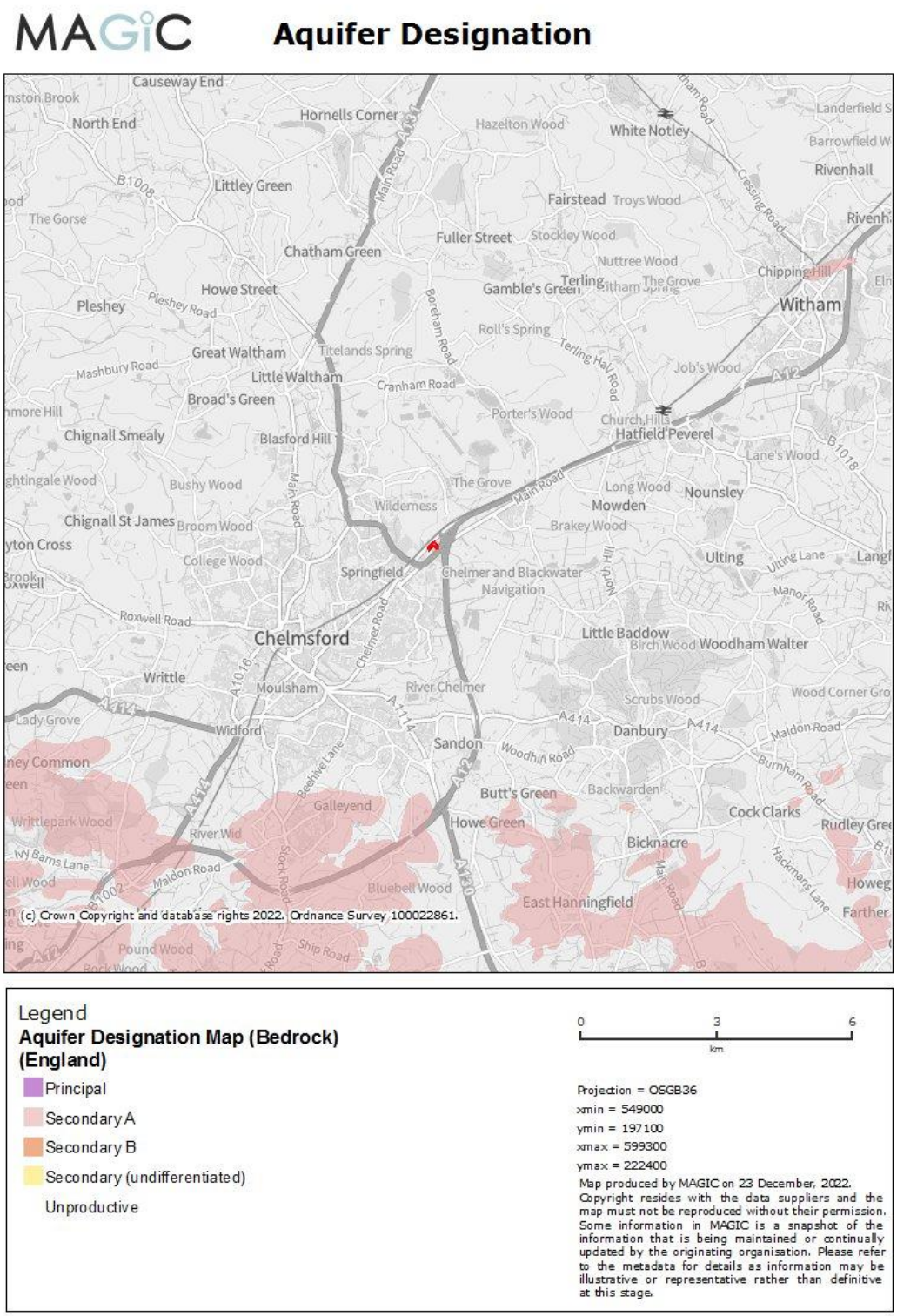

Figure 7: Aquifer Designation Map

Groundwater Vulnerability Map

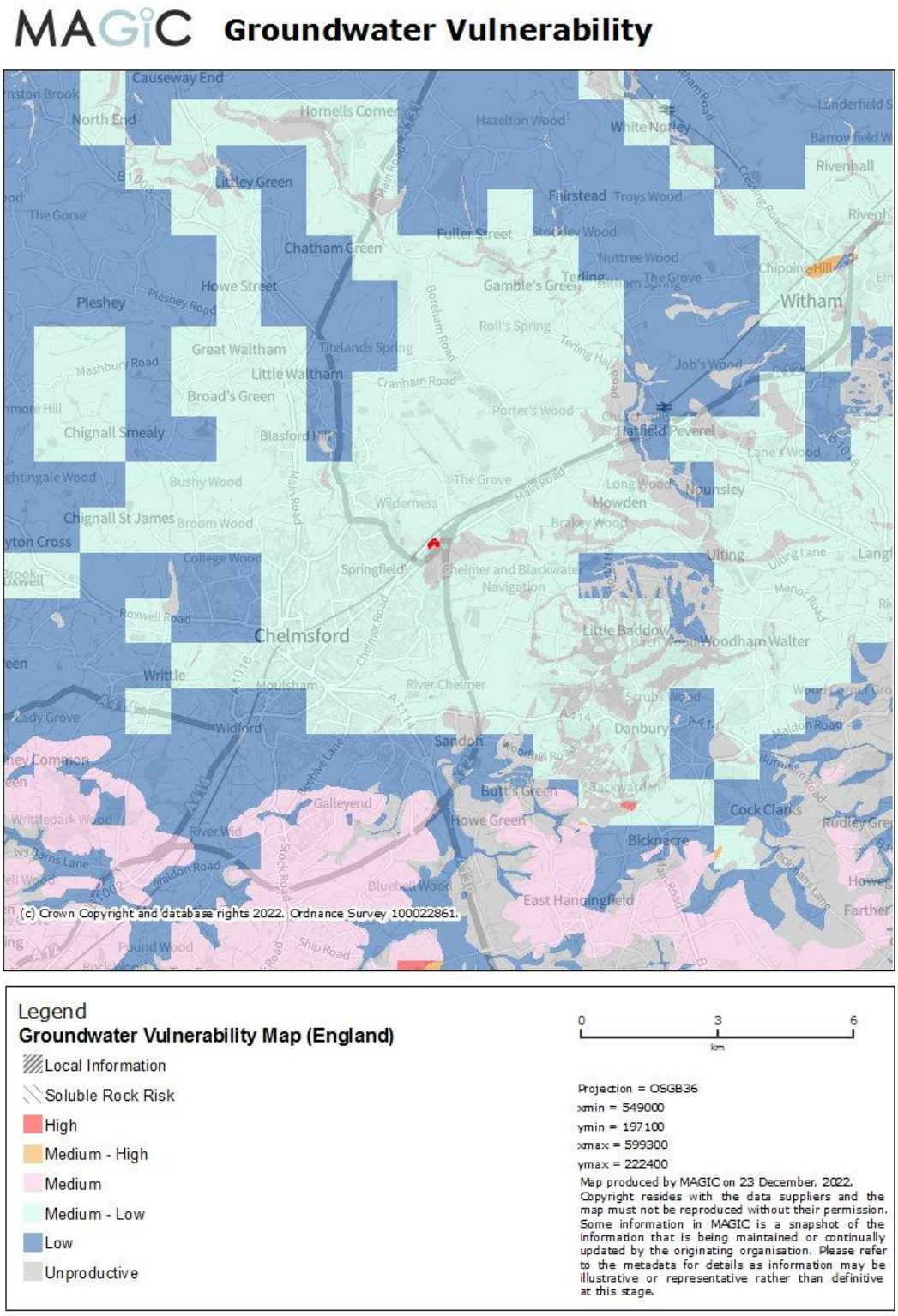

Figure 8: Groundwater Vulnerability Map

Soilscape Map

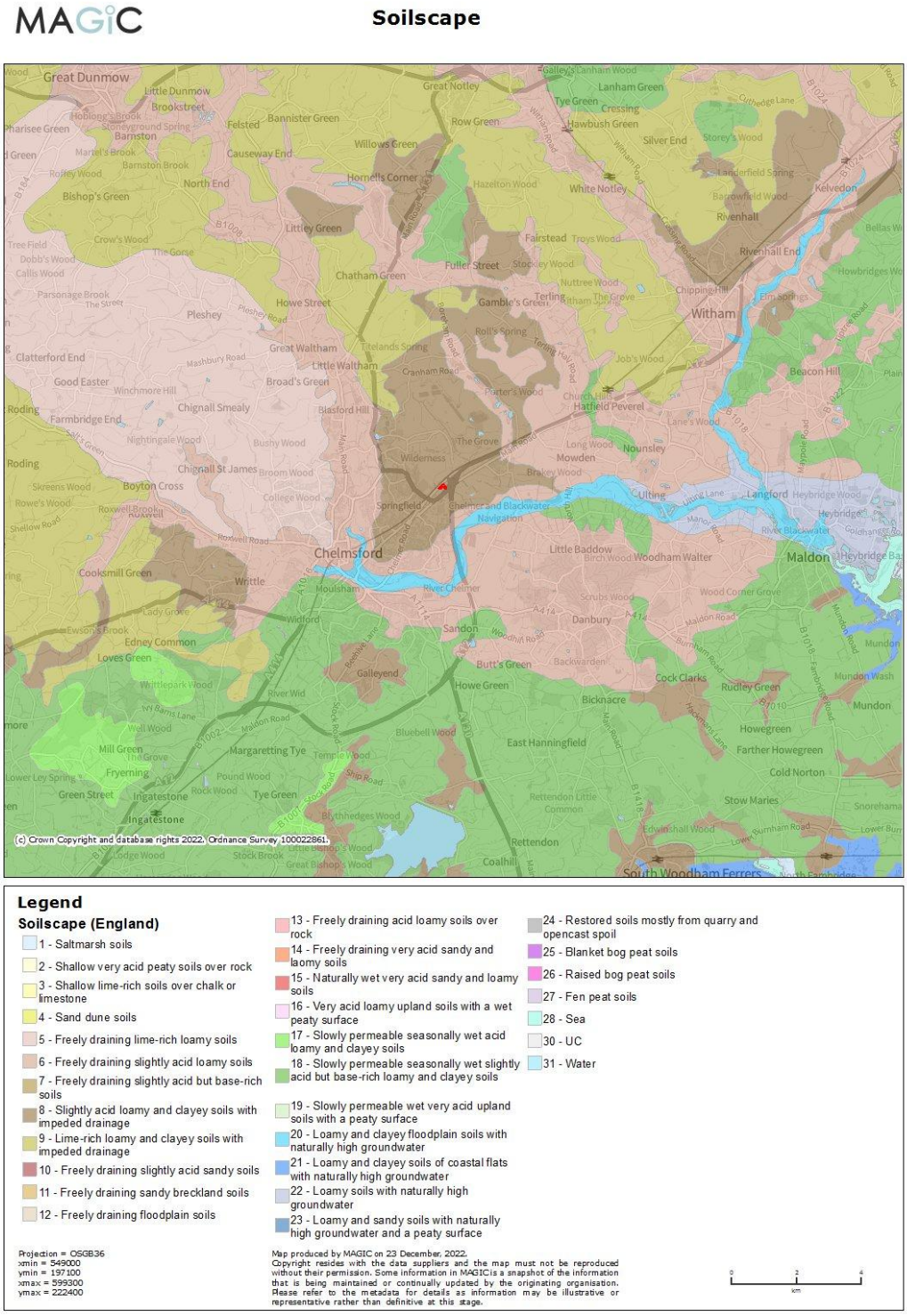

Figure 9: Soilscape Map