Phase 1
Land Contamination Assessment

Flambeau, Manston Road,
Ramsgate, Kent CT12 6HW

Report

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experts on the ground

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Flambeau, Manston Road, Ramsgate,
Kent CT12 6HW

Prepared for: **Hume Planning Consultancy Ltd.**

Reference: EES 23.182.1

Date: 8th February 2024

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Title: **Phase 1**
Land Contamination Assessment
Flambeau, Manston Road, Ramsgate, CT12 6HW

Ecologia Reference: EES 23.182.1

Client:	Hume Planning Consultancy Ltd.	**Client Reference:**	Flambeau

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EXECUTIVE SUMMARY

Site Location	Flambeau Europlast Ltd., Manston Road, Ramsgate, Kent CT12 6HW.
Site Description	The Site covers an area of approximately 3.83 hectares and is situated in a mixed residential and commercial area of Ramsgate. The Site is currently occupied by a plastics manufacturing factory 'Flambeau Europlast Ltd., which has operated at the Site since the late 1980s. Ramsgate Train Station is located approximately 600m east of the Site; the railway lines entering the train station traverse along the southern boundary of the Site, with a larger residential estate bordering immediately south of the railway lines. Tesco Superstore, Chandlers Building Supplies and RNLI Ramsgate are located immediately west of the Site with multiple adjoining carparks. Further east of the Tesco Superstore lies approximately 1.5km of open fields which adjoin the former Manston Airport runways. The B2050 is immediately to the north of the Site, with Newington Community Primary School beyond, comprising of school buildings, a playing field to the rear and a larger playing field positioned northeast of the Site.
Objective	This Phase 1 Land Contamination Assessment is required in support of a Planning application for the redevelopment of the Site in accordance with the National Planning Policy Framework. From information provided by the Client, it is understood that the current proposed Site redevelopment comprises the construction of 118No. residential units with associated soft and hard landscaping. If this changes then the conclusions drawn in this report will need to be reconsidered.
Environmental Setting	The geology underlying the Site comprises Superficial Head Deposits (Unproductive Aquifer), with bedrock geology comprising of the Margate Chalk Member (Principal Aquifer of high vulnerability). The Site is located within a groundwater SPZ 1 and 2 – Inner and Outer Catchment. The Site is not located in a Drinking Water Protected Area (DrWPA) for groundwater or surface water, and no surface water features are present within 250m of the Site boundary.
Historical Setting	Historically, most of the Site remained undeveloped, with only a single railway track running across the southern boundary, until 1905 when a building was developed on the eastern portion of the Site. However, early maps dating 1872 and 1905 report two Antiquities sites within the Site boundary, including a Saxon Cemetery to the west and 'Upper Court' to the east. The entire Site was then developed in 1962 with a factory being built on the eastern half and a car depot being built on the western half. The factory has remained till the current day however the car depot was abandoned in 1977. The local area (<250m) was predominantly comprised of open and agricultural fields until the late 1930's, with residential developments to the northeast. Regionally (250-1km) the area was open fields with small residential settlements to the southeast. These started expanding round to the north and south of the Site with significant expansion occurring to the north in 1962 and to the south in 1979.
Initial Conceptual Site Model	An initial Conceptual Site Model (CSM) has been developed based on the relevant findings in this Phase 1 Assessment. **<u>Onsite Sources</u>** Future End Users: • **Moderate Risk** associated with ingestion, dermal contact, inhalation of indoor and outdoor dust and vapours from made ground and the existing industrial property. Groundwater: • **Moderate Risk** of vertical soil leaching to Principal Aquifer Surface Water: • **Low Risk** of surface run-off to nearby receptors (nearest receptor is Sandwich coast, 0.85km southwest). Buildings and Structures: • **Moderate Risk** associated with ground gas accumulation within the buildings due to impacted shallow soils from previous and current uses. • **Moderate / Low Risk** associated with aggressive ground conditions (pH and sulphate on concrete) • **Moderate / Low Risk** associated with hydrocarbons / VOCs permeation of plastic utilities pipes. **<u>Off-Site Sources</u>** • **Moderate / Low Risk** associated with lateral migration of contaminants from surrounding historical and current land uses, historic tanks, electrical substations, road and rail network and residential developments to future end users and buildings and structures.
Recommendations	Based on the risks assessed by Ecologia, further site investigation works are considered necessary to characterise the shallow soil conditions and assess the risks from ground gas generation (post demolition works). Additionally, as a minimum, it is recommended that the following is considered during the development and construction works:

	• A detailed UXO risk assessment to be conducted prior to any ground penetrative works, given the Site's location in an area at High risk from UXO. • An archaeological assessment prior to any ground penetrative works to confirm the protection status of the reported Antiquities sites: 'Upper Court' and Saxon cemetery. • A discovery strategy (procedures to be followed should unexpected contamination be identified) during redevelopment works in the event that unforeseen and suspected contamination is encountered, the client should stop works and further assessment undertaken by experienced Environmental Consultant. The discovery strategy may be a requirement / condition of the LPA as the planning application progresses. • Appropriate PPE for ground workers, to mitigate potential risks from dermal contact, ingestion, and inhalation of contamination materials / soils. • Good housekeeping rules should also be observed on site i.e. washing of hands before eating etc. in accordance with health and safety regulations. **The above recommendations should be presented to the Local Authority for comment and agreement. Typically, we would expect the recommendations to be conditioned as part of a planning application (i.e. Construction Management Plan).**
The initial Conceptual Site Model (CSM), Qualitative Risk Assessment (QRA) and recommendations are made based on the Site being redeveloped for a residential end use with private gardens and soft landscaping. If the proposed end use of the Site is changed, potential risks would need to be reassessed and the GQRA and CSM herein refined accordingly.	

CONTENTS

TABLES

PLANS

APPENDICES

1. INTRODUCTION

1.1. Background

Ecologia has been instructed by Hume Planning Consultancy Ltd. (the 'Client') to complete a Phase 1 Land Contamination Assessment (Desk Study and Site Walkover) for the proposed residential development at Flambeau Europlast Ltd. (the 'Site') located on Manston Road, Ramsgate, Kent CT12 6HW.

1.2. Objectives

This Phase 1 Contaminated Land Assessment is submitted in support of a Planning application for the redevelopment of the Site in accordance with the National Planning Policy Framework (MHCLG, July 2021).

1.3. Proposed Redevelopment

From information provided by the Client, it is understood that the current Site redevelopment comprises the construction of 118No. residential units with associated soft and hard landscaping areas.

The redevelopment plan is included in Appendix I for reference.

1.4. Report Structure

This Phase 1 Land Contamination Assessment has been undertaken in accordance with the Land Contamination Risk Management guidance (EA, 2023) which has been developed to provide the technical framework for applying a risk management process when dealing with land affected by contamination.

This report includes:

- A description of the Site setting and findings of a Site walkover survey.
- A review of readily available information and an environmental data search addressing:
  - the environmental setting of the Site (geology, hydrogeology, hydrology and sensitive environmental land designations); and,
  - historical mapping and existing and former industrial sites to determine former potentially contaminative land uses.
- Summary of previous site assessments.
- An initial Conceptual Site Model (CSM) establishing potential pollutant linkages and a qualitative assessment of whether these are likely to form an unacceptable risk.
- Recommendations for further works (if required).

1.5. Information Sources

A Groundsure environmental data search has been obtained in the preparation of this report which has been included in Appendix II.

A full set of references are detailed in Section 8.

2. SITE DESCRIPTION

2.1. Site Location

The Site address is: Flambeau Europlast Ltd.
Manston Road
Ramsgate
Kent
CT12 6HW

The Site covers an area of approximately 3.83 hectares and is situated in a mixed residential and commercial area of Ramsgate, with the town centre approximately 1.75km to the southeast.

Ramsgate Train Station is located approximately 600m east of the Site; the railway lines entering the train station traverse along the southern boundary, with a larger residential estate bordering immediately south of the railway lines. Tesco superstore, Chandlers Building Supplies and RNLI Ramsgate are located immediately west of the Site with multiple adjoining carparks. Further east of the Tesco Superstore lies approximately 1.5km of open fields which adjoin the former Manston Airport runways. The B2050 is immediately to the north of the Site, with Newington Community Primary School beyond, comprising of school buildings, a playing field to the rear and a larger playing field positioned northeast of the Site.

The location of the Site and the approximate outline of the Site development area (outlined in red) are shown in Plan 1 and 2, below and overleaf.

Plan 1. Approximate Site Location (*Source: Google Maps, 2023*).

Plan 2. Approximate Proposed Redevelopment Area (*Source: Google Maps, 2023*).

2.2. Site Walkover Survey

The general Site setting is summarised in Table 2.1 below.

Table 2.1. General Site Setting

National Grid Reference	Approx. 636327 165528	
Site Area	3.83 hectares	
Approximate Elevation	42.0m AOD (south) to 49.0m AOD (north)	
Site Geometry	Irregular Polygon	
Site Boundary	North	Manston Road 'B2050', Newington Community Primary School and residential apartment block 'Staner Court'.
	East	Residential estates and open recreational fields associated with the Primary School.
	South	Railway line and residential developments.
	West	Industrial estate comprising Tesco Superstore, RNLI Ramsgate and Chandlers Building Supplies.

A Site walkover survey was completed by Ecologia on Tuesday, 22 August 2023. The photographic report, included in Appendix III, should be referred to in conjunction with the Site description below.

The Site is accessed via Manston Road, to the north of the Site (Plate 1). The Site is currently occupied by Flambeau Europlast Ltd. and comprises of a factory with adjacent parking (Plate 2) and a boundary track covered in hard standing (Plate 3), reported by Ecologia to be in a deteriorating condition. The derelict carpark area in the western section of the Site is covered mainly in tall grass, shrubs, and trees, with an open space of dirt and gravel surrounded by lampposts (Plate 4). The general topography of the Site slightly slopes downwards towards the west, with the derelict car park area being on a lower level than the rest of the Site. An access path is present between the car park and the factory.

A manhole cover is situated on the northern boundary of the Site and is anecdotally connected to all drains, including sewage onsite, and is assumed to be an inspection chamber (Plate 5). There is a gas installation cage located on the northern perimeter of the Site consisting of multiple aboveground pipes and regulation points (Plate 6). There are two (2No.) gas tank container cages, one situated on the northeast perimeter (Plate 7) and one on the western perimeter of the Site (Plate 8). There is a cooling shed (Plate 9) on the western perimeter containing two (2No.) small coolant tanks (Plate 10) and one (1No.) large coolant tank (Plate 11), all on hard standing which appears to be in a deteriorating condition.

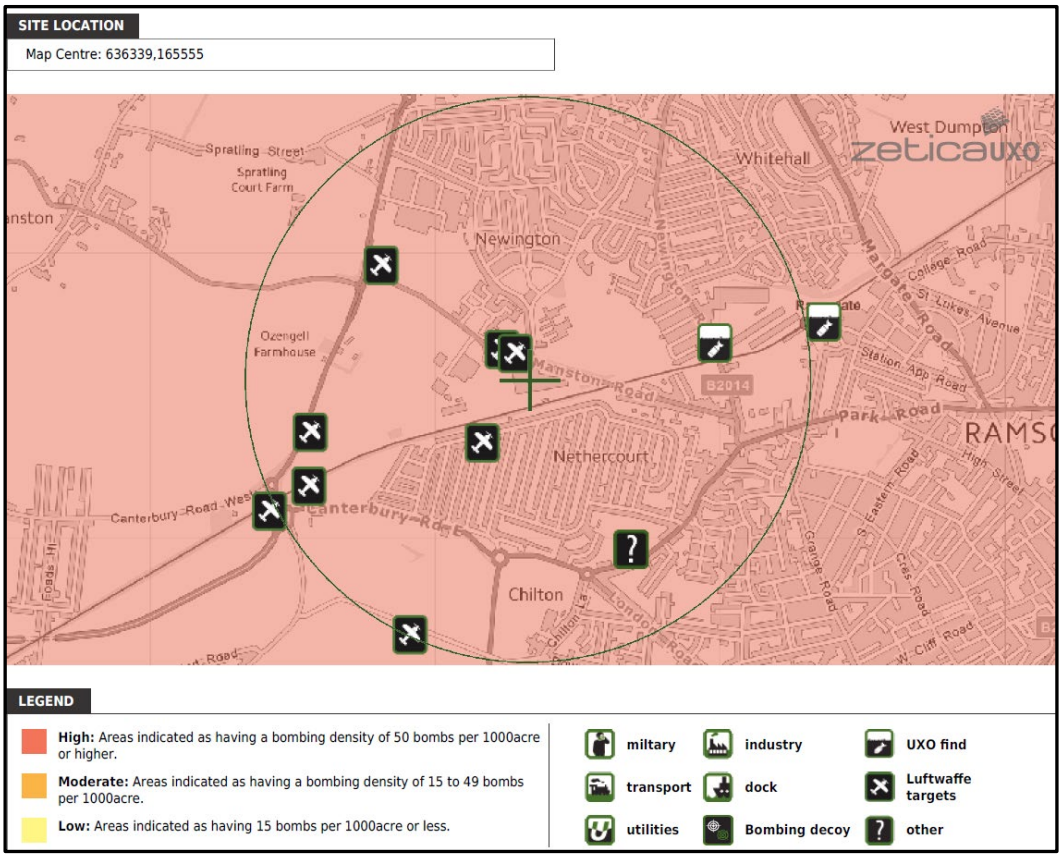
The internal factory floor is covered in thick stone slabs (Plate 12) and consists of three sections: the main shop (Plate 13), the warehouse (Plate 14), and the loading bay (Plate 15) – in order from west to east. The main shop contains a high density of plastic producing machinery with an electrical substation (Plate 16) situated in the centre, and multiple large-scale silos (Plate 17) in the southeastern end. A waste area (Plate 18) is situated in the southwestern corner of the main shop, including solid and liquid waste; the majority of which are in drums, sealed and labelled (Plate 19). A large quantity of oil and "grease-like" substances were identified to be in open top containers and stacked IBCs (Plate 20) with stained areas of stone slabs and hard standing observed in close proximity (Plate 21).

No tanks, or potentially asbestos containing materials (ACMs) were observed onsite during the Site walkover.

No contaminative or waste containers were identified immediately offsite.

2.3. Unexploded Ordnance

Information obtained from Zetica UXO Risk Map website indicates a 'High Bomb Risk' at the Site. The UXO risk map search results are presented in Plan 3 below.



Plan 3. Zetica UXO Risk Map *(Source: Zetica UXO 2023)*.

3. ENVIRONMENTAL SETTING

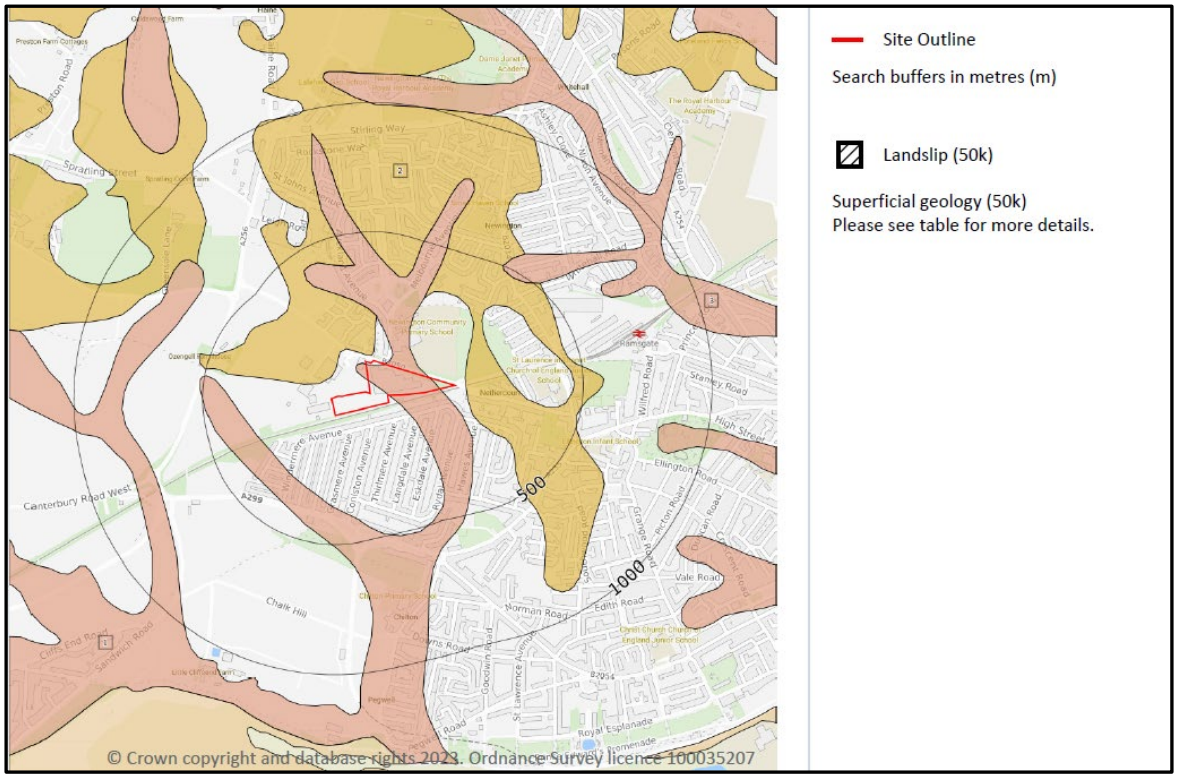
Information with regards to the environmental setting of the Site has been obtained from readily available public sources including the British Geological Survey (BGS); MAGIC (Natural England et al); and, GOV.UK websites alongside a report commissioned by Groundsure (Appendix II).

3.1. Geology

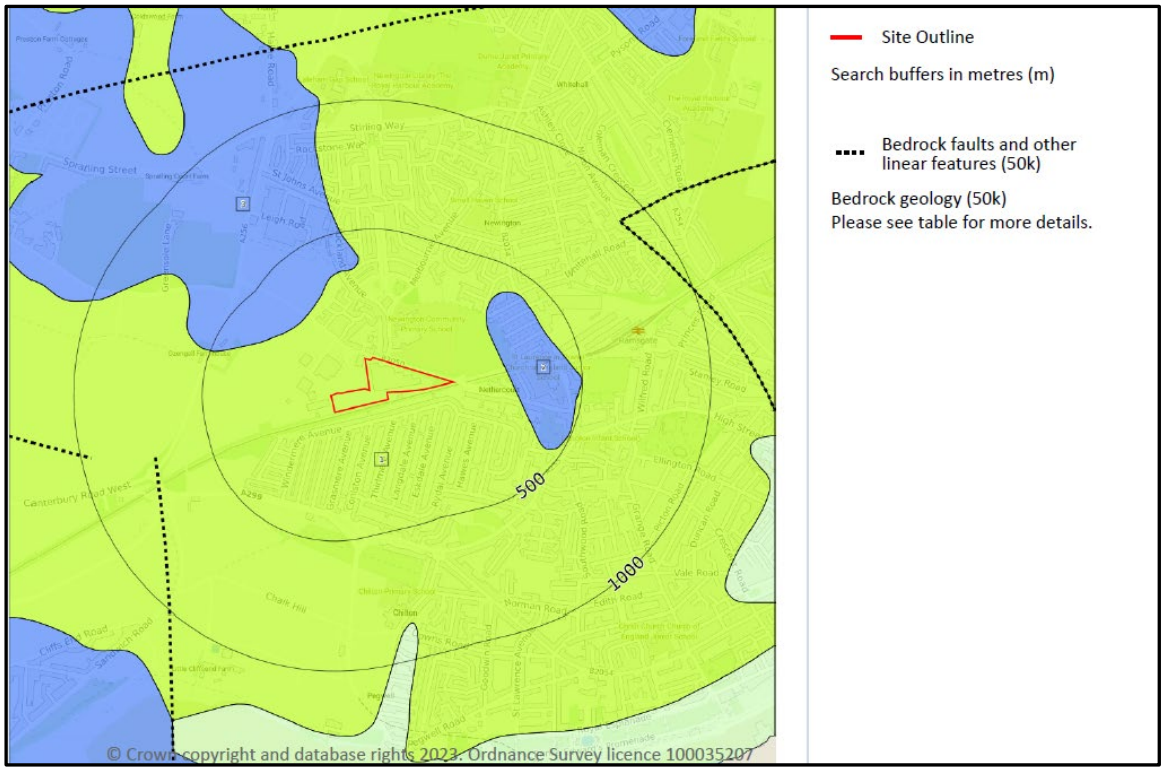
Published geological information (British Geological Survey 1:50 000) and the BGS website (Geology of Britain Viewer) indicate that the Site is directly underlain by the geological sequences summarised in Table 3.1 below, and shown on Plans 4 and 5.

Table 3.1. Geological Information

Group / Formation		Lithology	Approximate Thickness (m)
Superficial	Head Deposits – Clay and Silt	Sand and gravel, locally with lenses of silt, clay or peat and organic material.	N/A
Bedrock	Margate Chalk Member	Marl-free smooth white chalk with little flint, weakly developed indurated iron-stained sponge beds.	24m



Plan 4. Superficial Geology (50k), 1:50 000 scale *(Source: Groundsure, 2023).*



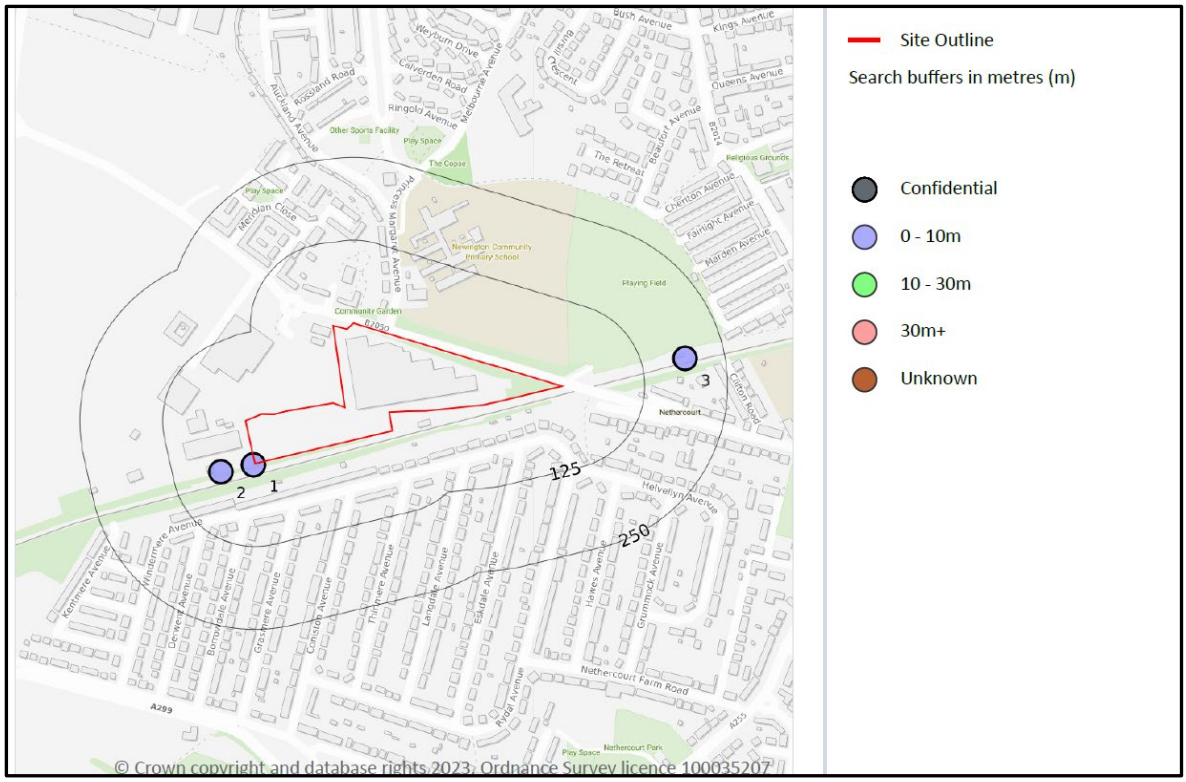
Plan 5. Bedrock Geology (50k), 1:50 000 scale *(Source: Groundsure, 2023).*

3.1.1. Borehole Records

Information with regards to local borehole records was obtained from the BGS website and the Groundsure report. There are three (3No.) boreholes within 250m of the Site, with geological information summarised in Table 3.2 below and shown on Plan 6 overleaf.

Table 3.2. Local Borehole Records

ID	Grid Reference	Name	Location	Depth (m)	Description
1	636130 165420	Ramsgate proposed S-STN2	3m SW	0.00 – 0.38	Topsoil with some chalk
				0.38 – 1.09	Chalk with some flint (probably fill from cutting)
				1.09 – 1.83	Hard brown silty clay
				1.83 – 2.44	Compact fine brown sand with chalk pebbles
				2.44 – 4.57	Hard chalk with flints *No groundwater encountered*
2	636080 165410	Ramsgate proposed S-STN1	53m SW	0.00 – 0.08	Topsoil
				0.08 – 1.35	Chalk with some flint (probably fill from cutting)
				1.35 – 1.85	Hard brown silty clay
				1.85 – 2.67	Compact fine brown sand with chalk pebbles
				2.67 – 4.57	Hard chalk with flints *No groundwater encountered*
3	636780 165580	B.T.C Ramsgate	191m E	0.00 – 1.37	Soft clayey grey brown Silt
				1.37 – 7.77	Hard white fissured Chalk



Plan 6. Borehole Locations *(Source: Groundsure, 2023).*

3.1.2. Mineral Safeguarding Areas

The Kent Minerals and Waste Local Plan for Thanet has been consulted, which confirms that the Site does not fall within a Mineral Safeguarding Area.

3.1.3. Mining, Extraction and Cavities

There is one (1No.) record of a British Pit (BritPit) within 500m of the Site, which is defined as a surface mineral working:

- Newington Chalk Pit located 265m N for chalk. Status: Ceased.

There are thirty-two (32No.) records of surface ground workings within 250m of the Site boundary, which are defined as ground excavations at the surface level including:

- 2No. Unspecified Ground Workings, onsite, mapped in 1971-1977;
- 1No. Unspecified Heap, onsite, mapped in 1872;
- 1No. Unspecified Pit, onsite, mapped in 1962;
- 7No. Cuttings, onsite, mapped in 1872-1948;
- 5No. Cuttings, 1-5m SW, mapped in 1938-1994;
- 1No. Site of Cemetery, 9m W, mapped in 1897;
- 4No. Cuttings, 79m-111m E, mapped in 1872-1905;
- 2No. Unspecified Ground Workings, 100-106m SW, mapped in 1962-1994;
- 3No. Unspecified Ground Workings, 114-217m W, mapped in 1938-1994;
- 1No. Unspecified Quarry, 235m N, mapped in 1938;

- 4No. Unspecified Pits, 239-245m N, mapped in 1872-1948; and,
- 1No. Old Chalk Pit, 239m N, mapped in 1897.

There are no records of underground workings within 1,000m of the Site boundary.

There are no records of underground mining extents within 500m of the Site boundary.

There are two (2No.) records of historical mineral planning areas within 500m of the Site:

- Onsite, Manston Road, Chalk mining, Surface mineral working, Planning status: valid – date not available; and,
- 288m W, Haine Road, Chalk mining, Surface mineral working, Planning status: refused – 22/04/76.

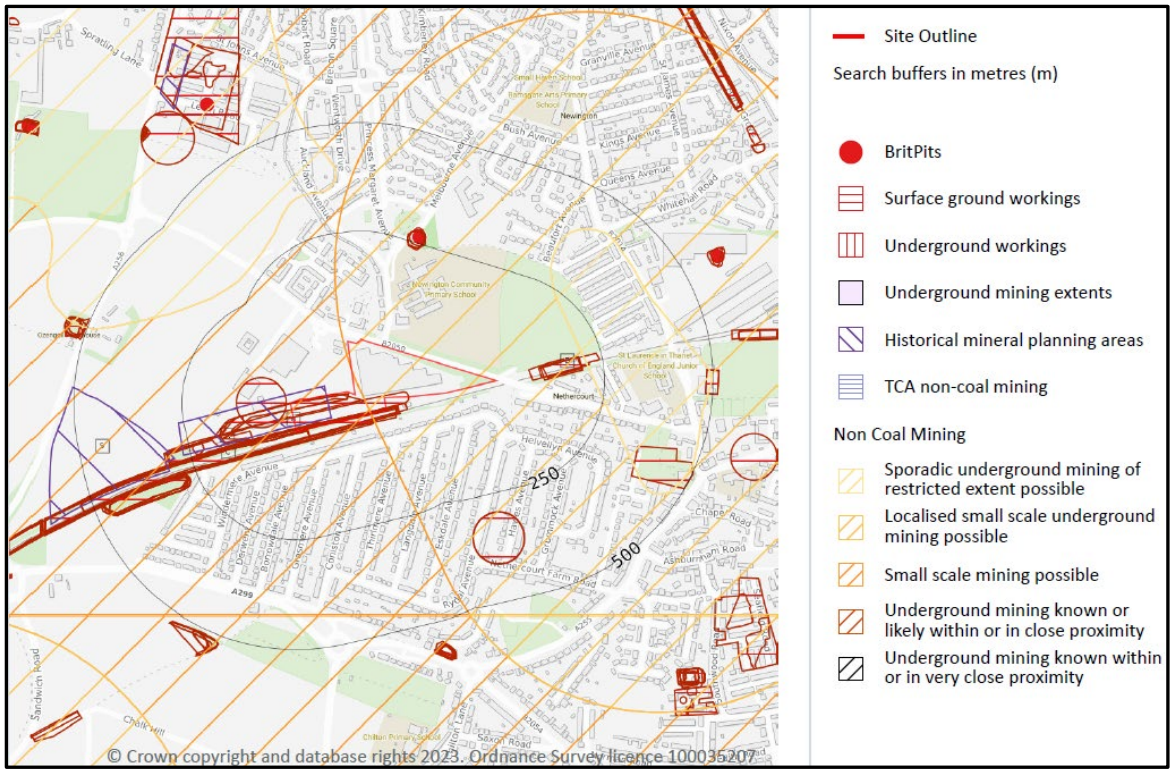
There are no records of Coal mining areas; however, there are thirteen (13No.) records of a non-coal mining areas within 1,000m of the Site, including 2No. records onsite. The nearest records within 500m are included below:

- Onsite, Unnamed Chalk mining, Class: B, Likelihood: Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
- Onsite, Unnamed Chalk mining, Class C, Likelihood: Underground mine workings may have occurred in the past, or current mines may be operating to modern engineering standards. Potential for difficult ground conditions should be considered.
- 205m E, Unnamed Chalk mining, Class A, Likelihood: Underground mine working are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
- 281m NW, Unnamed Chalk mining, Class A, Likelihood: Underground mine working are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
- 422m S, Unnamed Chalk mining, Class C, Likelihood: Underground mine workings may have occurred in the past, or current mines may be operating to modern engineering standards. Potential for difficult ground conditions should be considered.

There are two (2No.) records for Researched mining within 500m of the Site boundary:

- 301m W, Stone; and,
- 402m SW, Stone.

The mining locations are depicted on Plan 7 overleaf.



Plan 7. Mining and Ground Workings *(Source: Groundsure, 2023).*

There are no records of natural cavities within 500m of the Site.

There are five (5No.) records of mining cavities within 1,000m of the Site boundary:

- 651m E, Mine address: Ramsgate, Mineral: Chalk;
- 654m E, Mine address: Ramsgate, Mineral: Chalk;
- 807m E, Mine address: (North Eastern Wing) Ramsgate, Mineral: Man made i.e. secret tunnels, air raid shelters;
- 841m E, Mine address: Ramsgate, Mineral: Chalk; and,
- 968m E, Mine address: (Western Wing) Ramsgate, Mineral: Man made i.e. secret tunnels, air raid shelters.

There are no records of historic incidents related to ground cavities or sinkholes within 500m of the Site boundary.

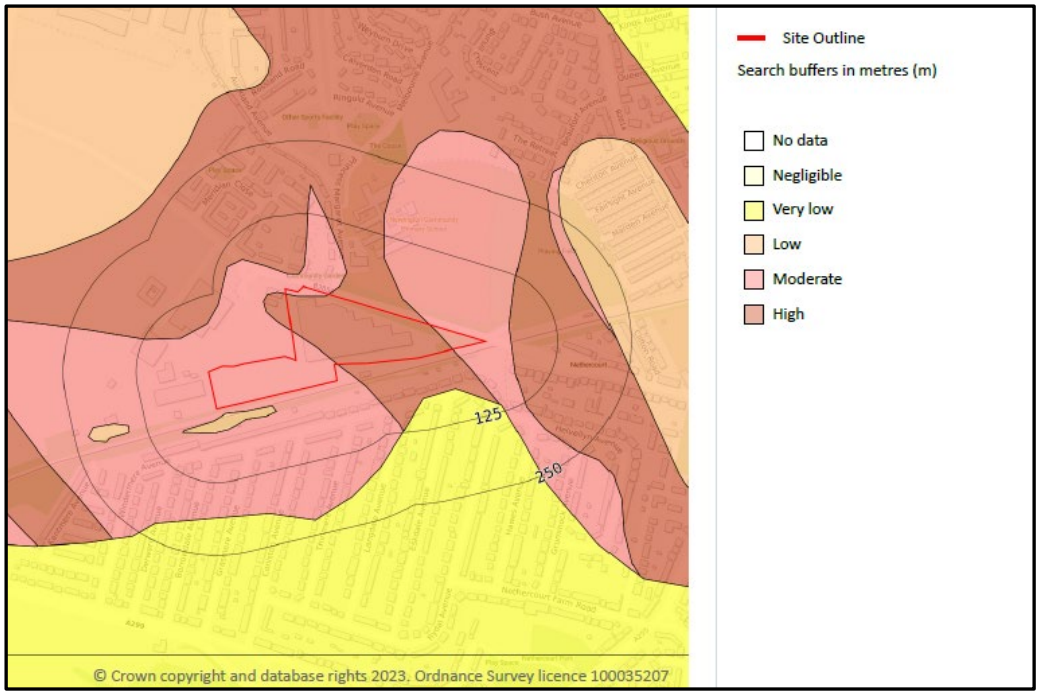
3.1.4. Ground Hazards

The Groundsure report indicates the following ground hazards in Table 3.3 below within a 50m buffer of the Site.

Table 3.3. Ground Hazards

Hazard	Risk
Shrink Swell Clays	**Low – eastern half** (Ground conditions predominantly medium plasticity). **Negligible – western half** (Ground conditions predominantly non-plastic).

Hazard	Risk
Landslides	**Very Low – eastern half** (Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered). **Negligible – western half** (Slope instability problems are not though to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered).
Ground Dissolution of Soluble Rocks *(see Plan 8)*	**High – eastern half** (Soluble rocks are present within the ground. Numerous dissolution features may be present. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered.) **Moderate – western half** (Soluble rocks are present within the ground. Many dissolution features may be present. Potential for difficult ground conditions are at a level where they should be considered. Potential for subsidence is at a level where it may need to be considered)
Compressible Deposits	**Negligible** (Compressible strata are not thought to occur).
Collapsible Deposits	**Moderate – eastern half** (Deposits with potential to collapse when loaded and saturated are unlikely to be present). **Very Low – western half** (Deposits with potential to collapse when loaded and saturated are unlikely to be present).
Running Sands	**Negligible** (Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on land use due to running conditions).



Plan 8. Ground Dissolution of Soluble Rocks *(Source: Groundsure, 2023).*

3.1.5. Radon Affected Areas and Protection Measures

The Groundsure report and reference to the UK radon website (Public Health England, n.d.) indicates that the Site is located in an area where less than 1% of properties are affected. However, no radon protective measures are considered necessary.

3.1.6. Soil Chemistry

The Groundsure report has identified seven (7No.) records onsite which indicate the following estimated concentrations of potentially harmful elements in the topsoil; however, concentrations are below current general assessment criteria for a Human Health residential end use.

- Onsite:
  - Arsenic – 15mg/kg.
  - Bio-accessible Arsenic – No data
  - Lead – 100mg/kg.
  - Bio-accessible Lead – 60mg/kg.
  - Cadmium – 1.8mg/kg.
  - Chromium – 60-90mg/kg.
  - Nickel – 15-30mg/kg.

3.2. Hydrogeology

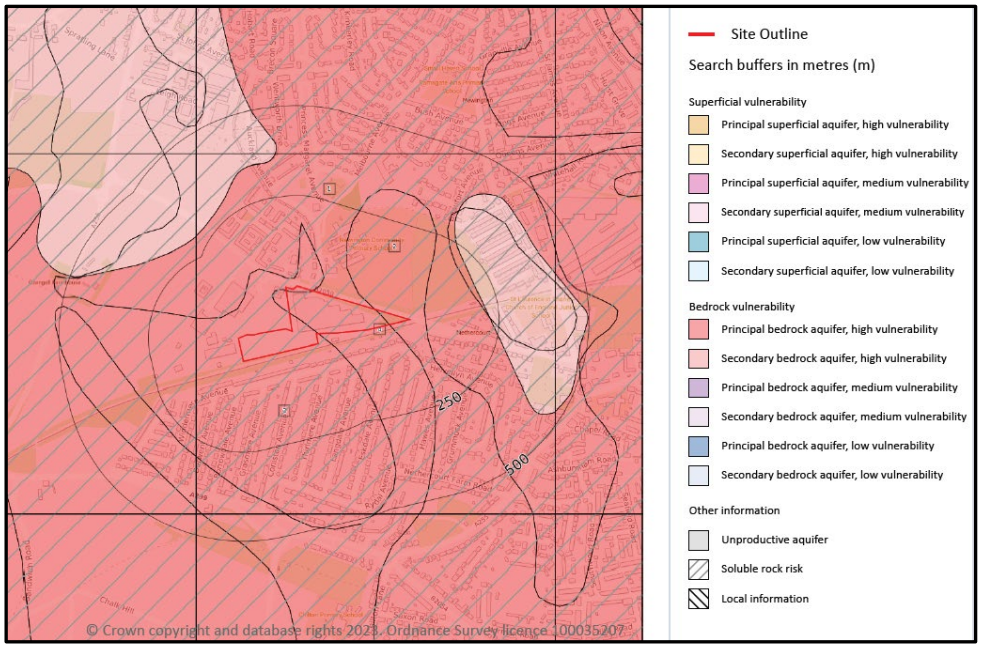
The Groundsure report and MAGIC website indicates the Site is located over the following:

- Principal Aquifer associated with the bedrock geology (Margate Chalk Member); and,
- Unproductive Aquifer associated with the superficial geology (Head Deposits).

Principal Aquifers are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

Unproductive Aquifers are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

The Site is shown in an area where the bedrock Aquifer is classified as having high groundwater vulnerability, as shown in Plan 9, below.



Plan 9. Groundwater Vulnerability Location Plan *(Source: Groundsure, 2023).*

3.2.1. Groundwater Abstraction

The Groundsure report has identified eight (8No.) groundwater abstractions within 2km of the Site; 3No. of which are active supplies as detailed in Table 3.4 below.

Table 3.4. Groundwater Abstractions

Location	Name	Details
845m SW	Southern Water Services Ltd	Status: Active (& historical record) Licence No: 9/40/04/0049/GR Details: Potable Water Supply - Direct
982m NE	Southern Water Services Ltd	Status: Active (& historical record) Licence No: 9/40/04/0049/GR Details: Potable Water Supply - Direct
1,612m N	J P Ash and Sons	Status: Historical Licence No: SO/040/0013/008 Details: Spray Irrigation - Direct
1,612m N	Richard Ash	Status: Historical Licence No: SO/040/0013/008/R01 Details: Spray Irrigation - Direct
1,651m NE	K Laundry Well	Status: Active Licence No: 9/40/04/0015/GR Details: General use relating to secondary category (Medium Loss)
1,659m NE	K Laundry Well	Status: Historical Licence No: 9/40/04/0015/GR Details: General use relating to secondary category (Medium Loss)

The Site is not situated in a Drinking Water Protected Area (DrWPA) for groundwater.

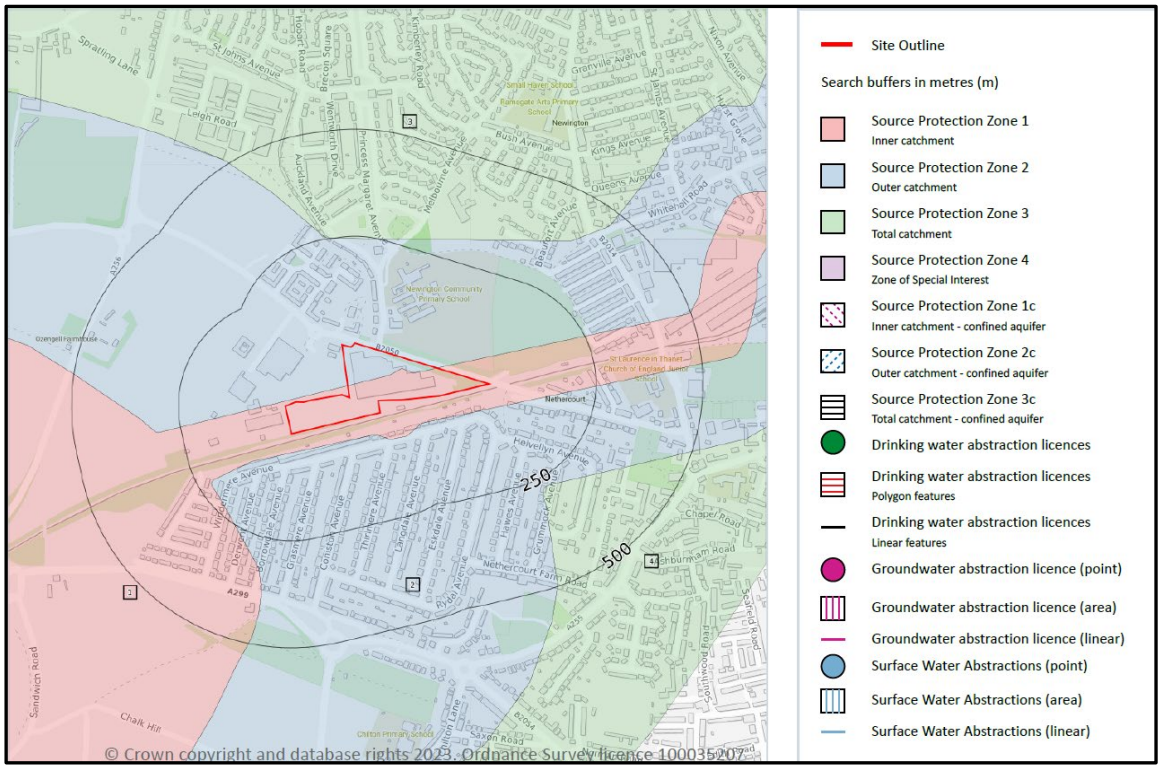
The Site is located within one (1No.) groundwater water body:

- Kent Isle of Thanet. Overall rating: Poor. (ID: GB40701G500100).

Information obtained from the MAGIC website and Groundsure report indicates that the Site is located in two (2No.) groundwater Source Protection Zones (SPZ):

- SPZ 1 – Inner Catchment (southern half); and,
  - Defined as a 50 day travel time of pollutant to source with a 50m minimum radius.
- SPZ 2 – Outer Catchment (northern half).
  - Defined as a 400 day travel time of pollutant to source. This has a 250 or 500m minimum radius around the source depending on the amount of water taken.

The SPZ boundaries are shown in Plan 10, overleaf.



Plan 10. Source Protection Zone Plan *(Source: Groundsure, 2023)*.

3.3. Hydrology

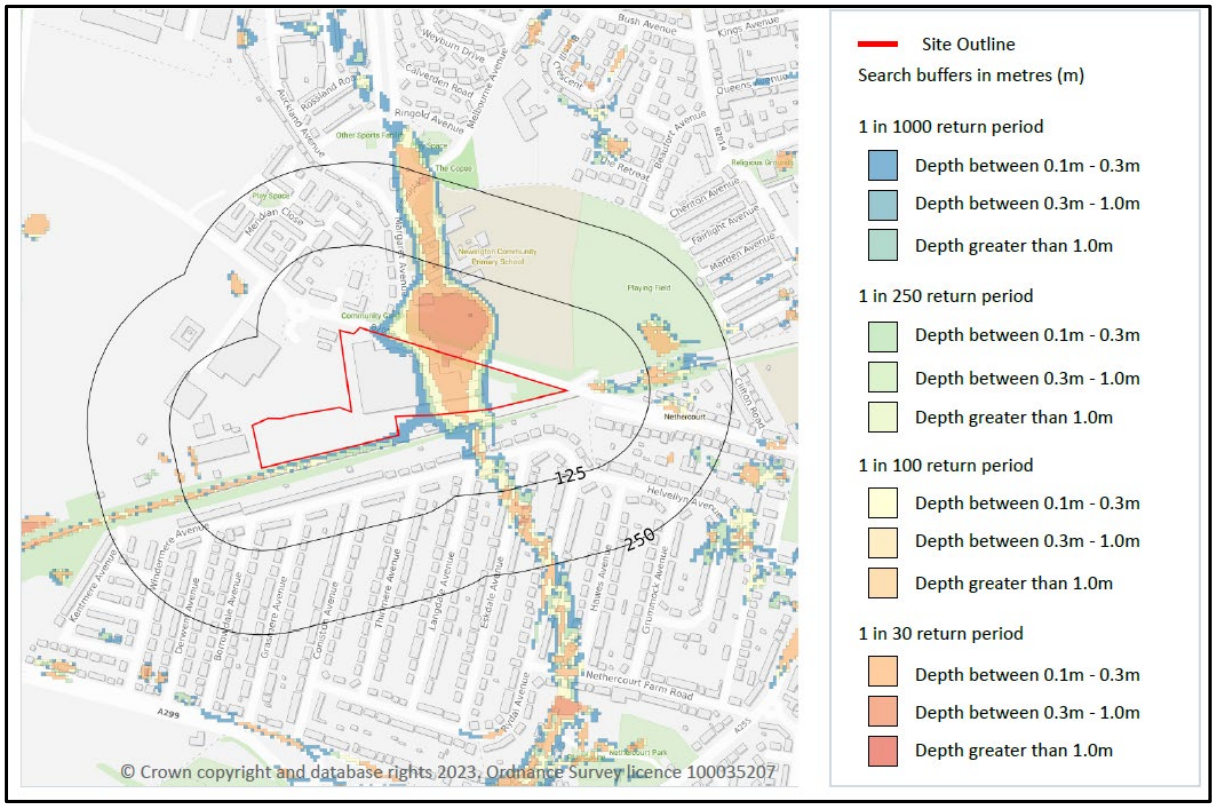
The are no surface water features within 250m of the Site. The nearest water feature to the Site is Sandwich coast, approximately 850m to the southwest, which opens out to the North Sea.

Information on the GOV.UK website and Groundsure report indicates the flood risk onsite as:

- Rivers and Sea – Negligible;
- Surface Water – 1 in 30 years, 0.3-1.0m (Moderate); and,
- Groundwater – Low / Negligible.

The Site is not located within a Flood Zone and there are no records of historic flood events within 250m of the Site.

The exact location of surface water flooding risk onsite is depicted in Plan 11, overleaf.



Plan 11. Surface Water Flooding *(Source: Groundsure, 2023).*

3.3.1. Surface Water Abstraction

The Groundsure report has identified no surface water abstractions within 2km of the Site.

The Site is located within two (2No.) surface water body catchments:

- River Catchment. Monkton and Minster Marshes Catchment. Stour Management Catchment (ID: GB107040019621); and,
- Coastal Catchment. Not part of a river WB catchment. Stour Management Catchment (ID: 392).

The Site is not situated in a Drinking Water Protected Area (DrWPA) for surface water.

3.4. Environmentally Sensitive Areas

The Groundsure report and MAGIC website has recorded no statutory environmental designation areas within 1,000m of the Site boundary.

3.4.1. Nitrate Vulnerable Zone

Two Nitrate Vulnerable Zones (NVZ) have been identified within 1,000m of the Site boundary:

- Onsite, Type: groundwater, Status: existing; and,
- 348m N, Type: groundwater, Status: existing.

In accordance with the Natural England guidance on nutrient neutrality published in November 2020 an assessment and evidence may be required as part of the planning process to demonstrate that the proposed development is nutrient neutral (Natural England, 2020).

3.4.2. Habitat Designation

The Groundsure report has identified two (2No.) open mosaic habitat designations within 250m of the Site. These are described as brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates. The open mosaic habitat is as follows:

- Onsite, ref: 226000027; and,
- 144m NW, ref: 226000027.

There are no priority habitats identified within 250m of the Site boundary.

3.4.3. Tree Felling Licences

The Groundsure reported no tree felling licences within 250m of the Site boundary.

3.4.4. Site of Special Scientific Interest (SSSI) Impact Risk Zone

SSSI Impact Risk Zones (IRZs) allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. Local planning authorities (LPAs) have a duty to consult Natural England before granting planning permission on any development that is in or likely to affect a SSSI. Defined zones around each SSSI indicate the types of development proposals which could potentially have adverse effects. The following types of development would require consultation if proposed onsite.

- Infrastructure - Pipelines, and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.
- Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.
- Rural residential – Any residential development of 100 or more houses outside existing settlements/urban areas.
- Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (including industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m² & manure stores > 250t).
- Combustion - General combustion processes >20MW energy input. Including energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.
- Waste - Landfill. Including inert landfill, non-hazardous landfill, hazardous landfill.
- Composting - Any composting proposal with more than 7500 tonnes maximum annual operational throughput. Including open windrow composting, in-vessel composting, anaerobic digestion, other waste management.
- Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).
- Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.

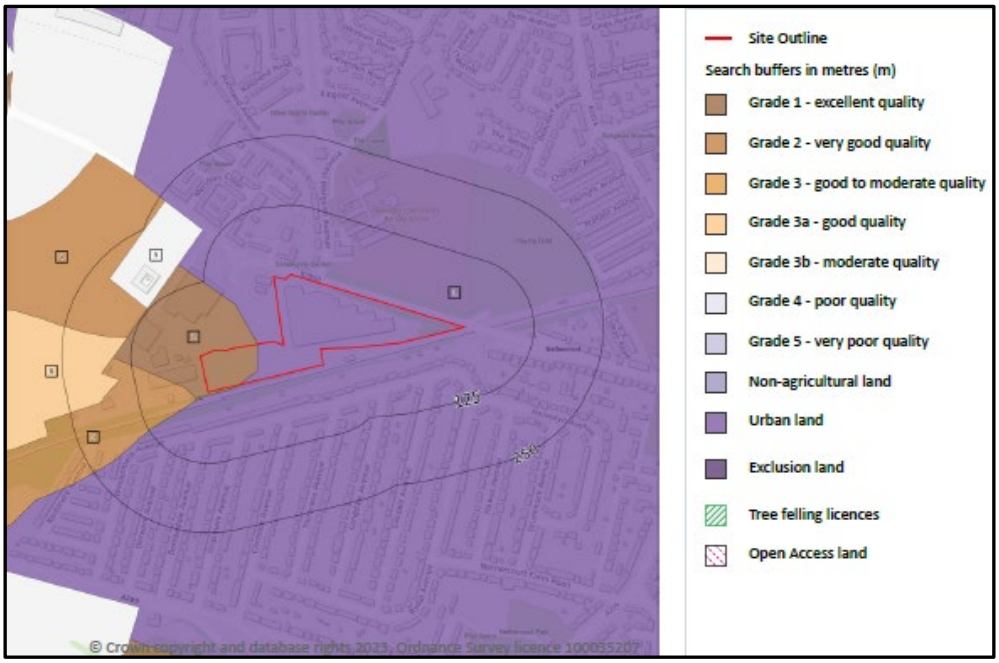
Although the Site is not reported to be in a SSSI, it is within an SSSI IRZ, however, the proposed development does not fall into the above categories.

3.5. Agricultural Designations

The Groundsure report and MAGIC website designates the following:

- Urban land – majority of the Site; and,
- Grade 1 – western extent of the Site.

Agricultural Grade 1 is defined as excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.



Plan 12. Agricultural Designations *(Source: Groundsure, 2023).*

3.5.1. Open Access Land

The Groundsure report describes Open Access Land as areas the Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to without having to use paths. There are no areas of Open Access Land within 250m of the Site boundary.

3.6. Visual and Cultural Designations

The Groundsure report indicates that the Site is within a conservation area; however, the local authority has not supplied conservation area data.

There are no records of listed buildings within 250m of the Site boundary.

4. HISTORICAL AND INDUSTRIAL SITE SETTING

4.1. Site and Surrounding Area Historical Development

Historical Maps (1:1,250, 1:2,500, 1:10,000 and 1:10,560) have been provided by Groundsure dating from 1872 to 2023.

Most of the Site has remained undeveloped, with only a single railway track running across the southern boundary, until 1905 when a building was developed in the eastern portion of the Site. The entire Site was developed in 1962 with a factory being built on the eastern half and a car depot being built on the western half. The factory has remained until the present day, however, the car depot was abandoned in 1977. The local area (<250m) was predominantly comprised of open and agricultural fields until the late 1930's, with residential developments to the northeast. Regionally (250-1km) the area was open fields with small residential settlements to the southeast. These started expanding round to the north and south of the Site with significant expansion occurring to the north in 1962 and to the south in 1979.

Table 4.1 summarises the historical activities onsite, significant land use changes within 250m of the Site boundary and historical regional setting (between 250m and 1km from the Site boundary).

Table 4.1. Historical Summary

Dates	Onsite	Locally (<250m)	Regionally (250m – 1km)
1872-1904	The Site currently has a railway siding track running through the southern boundary. An Antiquity site is present in the western extent of the Site, denoted as 'Jutish Burial Ground'. The rest of the Site is undeveloped and part of a larger field.	Canterbury, Ashford and Ramsgate railway line runs immediately parallel to the southern boundary of the Site. Manston road runs immediately along the northern boundary of the Site. An old chalk pit is shown approximately 200m north of the Site. Surrounding area made up of open and agricultural fields.	The area surrounding the Site is predominantly open fields and residential settlements. The residential settlement of St Lawrence is situated approximately 500m south of the Site and includes Nether Court Lodge, which is 500m south of the Site, and Southwood House, which is 750m southeast of Site. Ramsgate Station approximately 600m east of Site. Newington estate including Newington House is approximately 500m east of Site. There is a school and St Lawrences church located approximately 500m east of the Site. The residential settlement of Chilton is situated approximately 800m south of the Site. A brick field site and water works are present approximately 800m to the southeast.
1905 - 1930	The Site has been divided into two parts with a boundary line separating the eastern portion from the remainder of the land.	Immediate surrounding area divided into fields.	Settlement of Whitehall expanded north with residential developments.

Dates	Onsite	Locally (<250m)	Regionally (250m – 1km)
	A small building is located on the eastern portion. An Antiquity site is present in the east of the larger portion, denoted as 'Upper Court'.		
1931 – 1937	Building in east corner of Site removed.	Residential buildings and adjacent roads built approximately 300m northeast of Site. Residential buildings and adjoining garden plots developed immediately south of Manston Road approximately 300m west of Site.	Allotment plots developed approximately 550m south of Site. Settlement of Whitehall expanded with multiple residential properties and gardens approximately 900m northeast of Site. Settlement of Chilton expanded east and connected with the settlement of St Lawrence. Ramsgate Station expanded with multiple railway lines and adjoining platforms.
1938 – 1961	No significant change recorded.	Line of residential buildings approximately 300m east of Site expanded in the direction of the Site.	Brick works developed approximately 600m northwest. Multiple residential properties with adjoining gardens developed approximately 600m-1km south-southeast of Site.
1962 – 1976	Volkswagen plant (anecdotally reported) was developed including a factory on the eastern half of the Site and a car depot on the western half of the Site.	School and adjoining playing fields built approximately 100m northeast from Site. Motor vehicle depot developed immediately northwest of Site including three (3No.) tanks immediately north of the Site boundary. The old chalk pit is no longer shown.	Newington expanded with large housing estate approximately 400-850m from Site.
1977 - 1993	Factory changed from VW plant to Stelrad radiator factory in 1980s and then to Flambeau Europlast factory in 1987 (anecdotally reported). Car depot no longer mapped in 1982.	Residential properties with adjoining gardens developed immediately south of the railway line bordering the southern Site boundary. A timber yard is mapped 50m to the northwest in 1982.	Nethercourt residential development expanded significantly to the west approximately 50m – 500m south of the Site.
1994 - 2000	No significant change recorded.	Depot and factory developed west of the Timber yard approximately 250m west of Site.	Nethercourt expanded further west approximately 50m - 500m south of the Site.
2001 - 2023	No significant change recorded.	Motor vehicle depot developed into Tesco Superstore with fuel station and carpark.	No significant change recorded.

Dates	Onsite	Locally (<250m)	Regionally (250m – 1km)
		Old Timber Yard Industrial Estate is located directly west of the Site.	

4.2. Industrial Setting

4.2.1. Trade Directory Entries

The Groundsure report presents the following records of potentially contaminative industrial sites within 250m of the Site boundary, as per Table 4.2 and Table 4.3, below.

Table 4.2. Trade Directory Entries – Current

Location	Company	Details
Onsite	Flambeau	Rubber, Silicones and Plastics - Industrial Products
9m NW	Tesco Petrol Station	Petrol and Fuel Stations - Road and Rail
13m SE, 27m E, 56m E, 96m N, 114m SW, 120m W, 150m W, 172m SW, 233m N	Electricity Sub Station	Electrical Features - Infrastructure and Facilities
110m W	Industrial estate	Business Parks and Industrial Estates - Industrial features
111m NW	Waves hand car wash, Ramsgate, Manston	Vehicle Cleaning Services - Personal, Consumer and Other Services

Table 4.3. Trade Directory Entries – Historic

Location	Details	Date
Onsite	Unspecified Factory	1994
Onsite	Ground workings	1905-1931
Onsite, 239m N, 245m N	Unspecified Pit	1872-1962
Onsite	Unspecified Heap	1872
Onsite, 1m SW, 5m SW, 79m E, 102m E, 106m E, 111m E	Cuttings	1872-1994
Onsite, 100m SW, 106m SW, 114m W, 217m W	Unspecified ground workings	1938-1994
Onsite, 3m E, 26m E, 30m E	Railway sidings	1931-1994
Onsite, 121m W	Unspecified Depot	1971-1994
0m W, 1m W, 2m W, 56m W	Unspecified Tank	1966-1999
1m SW, 5m SE, 9m SE	Railway building	1938-1994
4m W, 5m W	Tank	1966-1969
9m W	Site of cemetery	1897
235m N	Unspecified Quarry	1938
239m N	Old Chalk Pit	1897

Location	Details	Date
244m N	Quarry	1931

4.3. Landfill and Waste Facilities

The Groundsure report details no records of landfill or waste facilities (active or recently closed) within 500m (EA, July 2003) of the Site.

4.4. Waste Exemptions

The Groundsure report presents the following seven (7No.) waste exemptions recorded within 500m of the Site boundary, as detailed in Table 4.4, below.

Table 4.4. Waste Exemptions

Location	Site	Reference	Category	Description
74m W	Unit 4, Old Timber Yard Industrial estate, Manston Road, Ramsgate, CT12 6HJ	WEX274485	Storing waste exemption	Storage of waste in secure containers
152m N	55 Princess Margaret Ave, Ramsgate, CT12 6HX	EPR/EF0434JN/A001	Storing waste exemption	Storage of waste in a secure place
			Using waste exemption	Use of waste in construction
478m NE	47-49, Newington Road, Ramsgate	WEX144742	Treating waste exemption	Sorting and de-naturing of controlled drugs for disposal
		WEX144742	Storing waste exemption	Storage of waste in secure containers
		WEX284558	Treating waste exemption	Sorting and de-naturing of controlled drugs for disposal
		WEX284558	Storing waste exemption	Storage of waste in secure containers

4.5. Licensed Pollutant Release

The Groundsure report details the following records of the licensed pollutant releases within 500m of the Site:

Table 4.5. Licensed Pollutant Release

Location	Address	Details
Onsite	Kent Timber Rafters, Manston Rd, Ramsgate, CT12 6HP	Process: Combustion & Incineration Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified
25m NW	Tesco Manston, Manston Road, Ramsgate, Kent, CT12 6NT	Process: Unloading of Petrol into Storage at Service station Status: Current Permit Permit Type: Part B Enforcement: No Enforcement Notified

Location	Address	Details
322m W	Kerrs Garage, Northdown Rd, Cliftonville, CT9 2RN	Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified
423m SW	Shell Royal Oak, Canterbury Road East Ramsgate, Kent, CT11 0LB	Process: Unloading of Petrol into storage at service station Status: Current Permit Permit Type: Part B Enforcement: No Enforcement Notified

4.6. Licensed Discharges to Controlled Waters

The Groundsure report details the no records of the licensed discharges to controlled waters within 500m of the Site.

4.7. Pollution Incidents

The Groundsure report has records of the following pollution incident within 500m of the Site:

Table 4.6. Pollution Incidents

Location	Details	Impact
390m E	Incident Date: 16/01/2003 Incident Identification: 131400 Pollutant: General Biodegradable materials and wastes Pollutant Description: Other general biodegradable material or waste	Water Impact: Category 4 (No impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No impact)

4.8. Pollution Inventory Substances

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. The Groundsure report has no records of any pollution inventory substances within 500m of the Site.

4.9. Sites Determined as Contaminated Land

The Groundsure report has no records of sites determined as Contaminated Land under Part 2a of the Environmental Protection Act 1990 within 500m of the Site.

4.10. Control of Major Accident Hazard (COMAH) Sites

The Groundsure report has no records of COMAH or Notification of Installations Handling Hazardous Substances (NIHHS) sites within 500m of the Site.

4.11. Hazardous Substance Storage/Usage Sites

The Groundsure report has no records of sites granted consent to hold certain quantities of hazardous substances within 500m of the Site.

5. PREVIOUS ASSESSMENTS

5.1. Phase I and II Environmental Ground Investigation, July 2014

Ecologia was instructed by Flambeau Europlast Ltd to undertake a Phase 1 Desk Study and limited intrusive site investigation (Phase 2) in June 2014 to assess the potential contaminated land liabilities associated with the site in order to inform potential future divestment or development.

In summary the works comprised:

- Seven (7No.) boreholes to a maximum depth of 5.00 metres below ground level (mbgl) – 5No. external and 2No. internal; and,
- Analysis of ten (10No.) soil samples to assess concentrations of potential contaminants.

Findings from the intrusive investigation revealed:

- Borehole arisings consisted of Made Ground (concrete brick fragments, coal fragments), Head (silt and clay in two locations), followed by Chalk (putty white chalk overlain by stiff white chalk).
- No groundwater was encountered during the investigation.
- No obvious olfactory or visual indications of contamination were identified throughout works, including asbestos containing materials.
- No soil exceedances above Generic Assessment Criteria (GAC) when compared against a residential end-use with landscaped communal areas.

The following conclusions were made:

- A low risk was assigned to soil contamination; however, only limited investigation works were undertaken given the access restrictions inside the building.
- A moderate / low risk was assigned to ground gas / vapour migration and inhalation into buildings, mainly associated with the potential for Made Ground soils to generate ground gasses and for the Chalk to generate CO_2.
- A moderate risk was assigned in relation to potential offsite sources of contamination.

The following recommendations were made:

- Should the Site be redeveloped in the future, then further intrusive works should be undertaken with the scope subject to the development proposals. This should include further shallow soils testing and deeper boreholes for gas and groundwater monitoring purposes.

6. INITIAL CONCEPTUAL SITE MODEL (CSM)

6.1. Introduction

The current best practice risk assessment methodology is outlined in the guidance for LCRM, EA, 2020, updated 2023. The risk assessment process is underpinned by the concept of establishing whether a contaminant linkage exists between a source and a sensitive receptor. For a potential risk to be realised all three components must be identified and a contaminant linkage established.

The risk assessment process aims to establish whether unacceptable risks exist and, if so, what further action needs to be taken in relation to the Site. It is an iterative tiered approach which consists of three progressively detailed stages of risk assessment; preliminary risk assessment (PRA), generic quantitative risk assessment (GQRA) and detailed quantitative risk assessment (DQRA). Depending on the nature of the Site and contamination present, not all stages of risk assessment may be required.

6.2. Sources of Contamination

A source is defined as a substance which is located in, on or under the land and has the potential to cause harm to human health, water resources or the wider environment.

6.2.1 Potential Onsite Sources

Reference has been made at this stage to any potential sources identified during the site walkover, potentially contaminative land uses identified from the historical review and from any previous works undertaken (Table 6.1 below).

Table 6.1. Potential Onsite Sources and Typical Contaminants

Potential Onsite Sources	Typical Contaminants
Historical activities – Made Ground from historic and current factories / depots onsite, electrical substation onsite, construction waste from the demolished building.	Potential for a range of contaminants including metals, asbestos, total petroleum hydrocarbons (TPHs), BTEX compounds (benzene, toluene, ethylbenzene, and xylenes), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), solvents, polychlorinated biphenyls (PCBs) and general inorganics.
Accumulation of ground gas – Made Ground associated historical factories onsite and underlying Chalk.	Potential for ground gas (methane and carbon dioxide, carbon monoxide, hydrogen sulphide)

6.2.2 Potential Offsite Sources

Potential sources of contamination identified within 250m of the Site are summarised on Table 6.2, below.

Table 6.2. Potential Offsite Sources and Typical Contaminants

Potential Offsite Sources	Typical Contaminants
Surrounding industry and construction works (Petrol Filling Station, car wash, electrical substations, unspecified tanks, railway, cemetery, school and housing). Run-off from surrounding roads and railway.	Potential for a range of contaminants including asbestos, TPH, BTEX compounds, PAHs, VOCs, PCBs, general inorganics and heavy metals.

The remaining surrounding industry in the wider area is not considered further due to the distance from the Site.

6.3. Receptors

A receptor is something which could come to harm, including human health, water resources, surface water courses or the wider environment. The following potential receptors to any site-based impaction have been identified:

- Human Health.
- Controlled Waters.
- Ecosystems.
- Property (buildings).

6.3.1 Human Health

The following potential human health receptors have been identified:

- Future Site Users comprising:
  - Residents
- Maintenance / construction groundworkers.

6.3.2 Controlled Waters

The following Controlled Waters have been identified as potential receptors:

- Groundwater.
  - Principal Aquifer underlying the Site, associated with the Margate Chalk Member bedrock deposits, in a groundwater high vulnerability area and a SPZ 1 and SPZ 2.

6.3.3 Ecosystems

The following Ecosystems have been identified as potential receptors:

- Nitrite Vulnerable Zone (onsite); and,
- Open Mosaic Habitat (onsite).

6.3.4 Property

The following property has been identified as potential receptors:

- Buildings.
  - Future proposed residential buildings to be constructed on the Site, and;
  - Water supply pipes.

6.4 Pathways

A pathway is the means or route by which a source of contamination can migrate, an identified receptor can be exposed to, or be affected by an identified source.

6.4.1 Human Health

Future Site Users

The identification of potential pathways has been undertaken cognisant of the Contaminated Land Exposure Assessment (CLEA) model (EA, January 2009) and CIRIA guidance on ground gas risks (CIRIA, 2007).

Table 6.3. Human Health Exposure Pathways (Future Site Users)

Exposure Pathway			Residential
			With Homegrown Produce
Ingestion	Soil		✓
	Homegrown produce		✓
	Soil attached to homegrown produce		✓
	Consumption of potable water via utilities pipes		✓
Inhalation	Indoor dust	Tracking back from garden	✓
	Outdoor dust	Wind-blown	✓
	Indoor vapour	Soil and groundwater migration via permeable strata and ingress into confined spaces	✓
	Outdoor vapour	Soils and groundwater	✓
Dermal Contact	Outdoor soil		✓
	Indoor dust tracked from garden / wind-blown		✓

Maintenance / Construction Groundworkers

Short term human health risks during ground works as part of any development have been excluded from further consideration on the basis that risks of acute exposure can be addressed through the use of appropriate control measures, including Personal Protective Equipment (PPE) and good standards of health and safety practice.

6.4.2 Controlled Waters

The Environment Agency Groundwater Protection Guides (EA, 2017) and Remedial Targets Methodology 'Hydrogeological Risk Assessment for Land Contamination' (EA, 2006) discusses potential pathways as:

- The geological and hydrogeological characteristic of the ground.
- The depth and distribution of groundwater and its direction and rates of flow.
- The attenuating properties of the soil and aquifer materials:
  - potential leaching through soils into underlying strata and aquifers from induced infiltration; and,
  - potential vertical/lateral migration of contaminants through groundwater bodies.
- Influences of preferential flow via fissures, drainage systems, soakaways, man-made structures foundations, old mines, boreholes etc.
- Surface water run-off in areas of low permeability surfacing and/or susceptible to flooding.

6.4.3 Plant Uptake

Phytotoxic contaminants e.g. some heavy metals such as copper and zinc can be taken up by vegetation / planting an cause poor growth or vegetation dieback. Soils used in gardens or landscaping must provide a healthy growth medium.

6.4.4 Ecosystems

Environment Agency guidance (EA, October 2008) defines potential ecological pathways. These are primarily considered to comprise those listed in Section 6.4.2.

6.4.5 Property

Buildings and Structures

The migration via granular and/or fissured strata of ground and/or groundwater gas / vapours and their accumulation of in confined spaces to explosive limits.

Aggressive ground conditions that may influence sub surface concrete foundations.

Utility Infrastructure

Hydrocarbon and VOCs permeation of water supply pipework by direct permeation or ingress through connection points.

Migration via pipes, bedding materials and drainage runs, ducts etc of groundwater and / or gas / vapours and accumulation of in confined spaces to toxic, asphyxiant or explosive limits could occur.

6.5 Conceptual Model Summary

The initial CSM for the Site has been summarised in Table 6.4, overleaf. The qualitative risk assessment methodology has been included within Appendix IV.

Table 6.4. Initial Conceptual Site Model & Preliminary Risk Assessment

Potential Onsite Sources	Potential Receptor	Possible Pathway	Probability		Consequence		Risk
Current and historical use of land – factories / depots, construction works. *(Potential contaminants include heavy metals, asbestos, TPHs, BTEX compounds, PAHs, PCBs, solvents, VOCs and a range of inorganic contaminants)*	Future Site Users	Ingestion soil	Likely	Future development to include soft landscaping and private gardens. The Site is currently (and historically) used for industrial purposes and so has the potential for shallow impacted soils. Despite a previous intrusive investigation carried out, access was limited across the building footprint and so contamination cannot be ruled out. Construction workers are not considered further due to mitigation through PPE. Should the development proposals change, the CSM will require review.	Medium	Potential for chronic damage to Human Health until proven otherwise.	Moderate
		Ingestion home-grown produce					
		Ingestion soil attached to home-grown produce					
		Inhalation indoor dust					
		Inhalation outdoor dust					
		Dermal soil contact					
		Dermal indoor dust contact					
		Inhalation indoor vapour					
		Inhalation outdoor vapour					
	Groundwater (Principal Aquifer)	Vertical soil leaching	Low Likelihood	Site is underlain by an Unproductive Aquifer (Superficial Deposits – Head) and a Principal Aquifer (Bedrock – Margate Chalk Member) of high groundwater vulnerability and within a Groundwater SPZ – Zone 1 and 2. The Site is at moderate risk of surface water flooding and low risk of groundwater flooding (groundwater anticipated to be at depth within the Chalk). The Site has a high risk associated with ground dissolution of soluble rocks. Vertical soil leaching is anticipated to be limited as the majority of the Site is covered with hard standing; however, some staining was observed on the concrete, which is of deteriorating condition.	Severe	Pollution of sensitive water resources (classified Aquifer).	Moderate

	Surface Water	Surface water run-off, soil leaching and lateral migration	Low Likelihood	No surface water features within 250m of the Site. The Site is currently at moderate risk from surface water flooding; however, it is assumed that drainage will be properly managed for the final development.	Mild	Pollution of non-sensitive water resources.	Low
	Buildings and structures	Gas accumulation in confined spaces	Low Likelihood	Impacted shallow soils from previous and current uses is expected to be limited; however, can be generated from underlying bedrock geology (Chalk). The Site is not in a radon affected area and therefore protection measures are not necessary.	Severe	Potential for catastrophic damage to proposed buildings. Potential for chronic damage to Human Health	Moderate
		Aggressive ground conditions in relation to subsurface concrete foundations	Low Likelihood	pH and sulphate could be present at levels / concentrations that can impact concrete.	Medium	Potential for significant damage to proposed buildings.	Moderate / Low
		Hydrocarbons / VOCs permeation of plastic utilities pipes	Low Likelihood	Impacted shallow soils from previous and current uses is expected to be limited.	Medium	Potential for chronic damage to Human Health	Moderate / Low
Potential Offsite Sources	**Potential Receptor**	**Possible Pathway**	**Probability**		**Consequence**		**Risk**
Surrounding current industry. Railway to the south and run-off from surrounding roads to the north and east. Electrical Substations 13m SE, 27m E, 56m E, 96m N. Historic Tank 1m W, 2m w, 4m W, 5m W, 56m W	Future Site Users Buildings and structures	Lateral migration of contaminants.	Low Likelihood	Future development to include areas of soft landscaping. Underlying permeable superficial deposits (Head) and bedrock deposits (Margate Chalk Member) lie between the Site and the sources; however, significantly impacted soils are considered unlikely. Should the development proposals change, the CSM will require review.	Medium	Exposure to human health unlikely to lead to “significant harm”. Pollution of sensitive water resources (classified aquifers). Minor damage to buildings or property.	Moderate / Low

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. Conclusions

Ecologia has been instructed by Hume Planning Consultancy Ltd. (the 'Client') to complete a Phase 1 Land Contamination Assessment (Desk Study and Site Walkover) for Flambeau Europlast Ltd. (the 'Site') located on Manston Road, Ramsgate, Kent CT12 6HW.

This Phase 1 Land Contamination Assessment is required in support of a Planning application for the redevelopment of the Site in accordance with the National Planning Policy Framework. From information provided by the Client, it is understood that the current Site redevelopment comprises the construction of 118No. residential units with associated soft and hard landscaping areas.

The Site covers an area of approximately 3.83 hectares currently comprises a plastics manufacturing company 'Flambeau Europlast Ltd'. The Site is situated in a mixed residential and commercial area of Ramsgate, with the town centre approximately 1.75km to the southeast. Ramsgate Train Station is located approximately 600m east of the Site; the railway lines entering the train station traverse along the southern boundary of the Site, with a larger residential estate bordering immediately south of the railway lines. Tesco Superstore, Chandlers Building Supplies and RNLI Ramsgate are located immediately west of the Site with multiple adjoining carparks. Further east of the Tesco superstore is approximately 1.5km of open fields which adjoin the former Manston Airport runways. The B2050 is immediately to the north with Newington Community Primary School beyond, comprising of school buildings, a playing field to the rear and a larger playing field positioned northeast of the Site.

Historically, most of the Site remained undeveloped, with only a single railway track running across the southern boundary, until 1905 when a building was developed on the eastern portion of the Site. However, early maps dating 1872 and 1905 report two Antiquities sites within the Site boundary, including a Saxon Cemetery to the west and 'Upper Court' to the east. The entire Site was then developed in 1962 with a factory being built on the eastern half and a car depot being built on the western half. The factory has remained till the current day however the car depot was abandoned in 1977. The local area (<250m) was predominantly comprised of open and agricultural fields until the late 1930's, with residential developments to the northeast. Regionally (250-1km) the area was open fields with small residential settlements to the southeast. These started expanding round to the north and south of the Site with significant expansion occurring to the north in 1962 and to the south in 1979.

The Site is underlain by Superficial Head Deposits (Unproductive Aquifer) with bedrock geology comprising the Margate Chalk Member (Principal Aquifer of high vulnerability). The Site is located within a groundwater SPZ 1 and 2 – Inner and Outer Catchment. The Site is not located in a Drinking Water Protected Area (DrWPA) for groundwater or surface water and no surface water features are present within 250m of the Site boundary (nearest receptor is Sandwich Bay, 0.85km southwest of the Site).

An initial CSM has been developed based on the relevant findings in this Phase 1 Assessment. Potential sources of contamination have been identified in connection to the historical use of the Site and the following preliminary risk assessment of the relevant pollutant linkages has been produced:

Onsite Sources:

- **Future End Users:**
  - **Moderate Risk** associated with ingestion, dermal contact, inhalation of indoor and outdoor dust and vapours from made ground and the existing industrial property.

- **Groundwater:**
  - **Moderate Risk** of vertical soil leaching to Principal Aquifer.
- **Surface Water:**
  - **Low Risk** of surface run-off to nearby receptors (nearest receptor is Sandwich Coast, 0.85km southwest).
- **Buildings and Structures:**
  - **Moderate Risk** associated with ground gas accumulation within the buildings due to impacted shallow soils from previous and current uses.
  - **Moderate / Low Risk** associated with aggressive ground conditions (pH and sulphate on concrete)
  - **Moderate / Low Risk** associated with hydrocarbons / VOC's permeation of plastic utilities pipes.

Off-Site Sources:

- **Moderate / Low Risk** associated with lateral migration of contaminants from surrounding historical and current land uses, historic tanks, electrical substations, road and rail network and residential developments.

7.2. Recommendations

From a review of the relevant findings, historical land use, anticipated ground conditions and previous intrusive investigation, Ecologia does not anticipate significant risks from potential contamination. However, the redevelopment will involve the demolition of the existing factory which has the potential for shallow impacted ground.

Therefore, a further intrusive investigation is recommended as part of development works, which should comprise shallow soils testing and deeper boreholes for ground gas monitoring purposes. Additionally, as a minimum it is recommended that the following is considered during the development construction works:

- A detailed UXO risk assessment to be conducted prior to any ground penetrative works, given the Site's location in a High UXO risk area.
- An archaeological assessment prior to any ground penetrative works to confirm the protection status of the reported Antiquities sites: 'Upper Court' and Saxon cemetery.
- A discovery strategy (procedures to be followed should unexpected contamination be identified) during redevelopment works in the event that unforeseen and suspected contamination is encountered, the client should stop works and further assessment undertaken by experienced Environmental Consultant. The discovery strategy may be a requirement / condition of the LPA as the planning application progresses.
- Appropriate PPE for ground workers, to mitigate potential risks from dermal contact, ingestion and inhalation of contamination materials / soils.
- Good housekeeping rules should also be observed on site i.e. washing of hands before eating etc. in accordance with health and safety regulations.

The above recommendations should be presented to the Local Authority for comment and agreement. Typically, we would expect the recommendations to be conditioned as part of a planning application (i.e. Construction Management Plan).

If redevelopment plans change, potential risks would need to be reassessed and the GQRA, CSM and recommendations refined accordingly.

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https://zeticauxo.com/

APPENDIX I

FIGURES

Proposed Site Plan 1:500

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Tel: 01227 458181
info@thinkcdp.com www.thinkcdp.com

1:500 scale bar
0m 10m 20m 30m 40m
CDP original printed to scale. Prints from PDF's could distort

North

Flambeau Europlast Ltd