Land at Newark Road, Sutton-in-Ashfield

Appeal Reference: APP/W3005/W/24/3350529

LAND CONTAMINATION

PROOF OF EVIDENCE

Produced on behalf of

Hallam Land

December 2024

P22-070

22070-RLL-24-XX-RP-O-0002

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Appendix A: Illustrative Masterplan (drg no EMS.2254_120 01 Rev D)

Appendix B: EA correspondence to ADC. Ref: LT/2022/127177/01-L01. Dated 12/09/22.

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Appendix D: Letter from RLL to Pegasus, passed on to ADC. Dated 18/09/24.

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Appendix G: Drainage Statement. Dated 16/12/24

DECLARATION

'The evidence which I have prepared and provided for this appeal is true and has been prepared and is given in accordance with guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.'

1 Introduction

1.1 Planning Appeal

1.1.1 An outline Planning application reference V/2022/0629 was submitted on behalf of the appellant (Hallam Land) to the Local Planning Authority (LPA) Ashfield District Council (ADC) on 12th August 2022 and validated on 23rd August 2022.

1.1.2 This appeal follows the non-determination of a planning application for outline planning permission (with all matters reserved except for the access from Newark Road) for up to 300 dwellings, open space, drainage and green infrastructure on land at Newark Road and Coxmoor Road, Ashfield-in-Sutton, by Ashfield District Council within the prescribed period.

1.1.3 An updated alternative illustrative masterplan (drg no EMS.2254_120 01 Rev D) is provided at Appendix A of my proof.

1.1.4 Whilst the officer recommendation was to grant planning permission taking into account the responses from statutory consultees and third parties, members failed to reach a decision.

1.1.5 As per the meeting minutes (CD 3.3) of the Planning Committee Meeting held on 31st July 2024, "members sought clarification and reassurance with regard to the proposed drainage and contamination strategies which might give rise to the potential for contamination of the watercourse from previous landfill and or provided conflicting strategies".

1.1.6 The applicant, Hallam Land, has exercised its right to appeal the non-determination.

1.1.7 The evidence I provide on behalf of Hallam Land is in relation to this appeal reference APP/W3005/W/24/3350529 and is in respect of land contamination risks.

1.1.8 The Local Planning Authority (LPA) did not issue a formal decision notice but the authority's Planning Committee resolved on 23 October 2024 that it would have been minded to refuse the application on 5 grounds. This is now reflected in the ADC statement of case (CD 9.3).

1.1.9 Putative Reason for Refusal (RfR) 4 related to land contamination, stating that insufficient information has been provided to demonstrate that the development proposed would be suitable to provide a residential use taking account of ground conditions and risks arising from contamination; which is noted to be a different position from that given in July 2024 (outlined above in 1.1.4). The RfR stated that

the development would be contrary to paragraphs 180c) and 189 of the National Planning Policy Framework (2023).

1.1.10 No objections to the development proposals were raised by ADC Contaminated Land Officer as the lead statutory consultee on risks to human health arising from contaminated land.

1.1.11 No objections to the development proposals were raised by Environment Agency as the lead statutory consultee on risks to controlled waters arising from contaminated land.

1.1.12 It is however noted that during the planning application process, local people have raised concerns about land contamination matters. The issues raised in the 'third party representations' can be summarised as follows:

i) The nature and composition of landfill material in the northern part of the site

ii) The potential risks relating to 'landfill gas' being present

iii) The potential mobilisation of contaminants risk due to groundwater / surface water

iv) The potential disturbance of contaminants as a result of the proposed construction works.

1.1.13 I have considered all of the above points and address them in my evidence. I conclude that all of these matters (to the extent that any such issues are valid or relevant) are capable of being addressed by the appeal scheme, with appropriate measures secured by condition. As discussed in Section 3, the imposition of conditions is a standard approach when addressing potential risks arising from land contamination.

1.1.14 The evidence is set out as follows:

- In Section 2, I have provided an overview of the site location and description, and an overview of the land contamination risks at the site.
- In Section 3, I outline the legislation and guidance which stipulates how land contamination risks should be considered in the determination of a planning application.
- In Section 4, I consider the site-specific land contamination issues and demonstrate that the proposed development would not be at risk from any residual issues.

- In Section 5, I review case studies including developments with similar issues to this site and how these were dealt with during the planning process.
- In Section 6, I discuss comments from the officers of the Council.
- In Section 7, I address the response of the Environment Agency (CD 2.26) and those of the ADC Contaminated Land Officer (CD 2.24, 2.31. 2.32), including the most recent response following the submission of additional information. I also discuss third party representations including concerns raised by locals relating to land contamination.
- In Section 8, I conclude that following appropriate mitigation this site shall not be at risk from land contamination issues.

1.1.15 I conclude that the proposed development, from a land contamination perspective, accords with the NPPF and the relevant statutory and regulatory requirements.

1.2 Credentials

1.2.1 My qualifications are MEng (Hons) CEnv MIEnvSc FGS FRGS DoWCoP QP. I graduated from the University of Nottingham in 2011 with an MEng Masters Degree in Civil Engineering.

1.2.2 I gained Chartership as an Environmentalist, via the Institute of Environmental Sciences (IES), in 2021. As well as being a Fellow of both the Geological Society and the Royal Geographical Society, I am also a Qualified Person in accordance with the Definition of Waste: Code of Practice.

1.2.3 After graduating in 2011 I worked for 11 years for LBH Wembley Engineering, a small specialist geo-environmental consultancy. I subsequently joined HSP Consulting Engineers as an Associate Director to lead a team of geo-environmental engineers; following which I joined Rodgers Leask as an Associate Director in January 2024 to establish a new geo-environmental department in their Nottingham office.

1.2.4 With over thirteen years' experience providing geo-environmental engineering on complex construction projects, I have developed a wealth of experience delivering technical input on commercial, industrial, education, leisure and residential schemes.

1.2.5 I am primarily involved in the evaluation of information available on brownfield sites to provide an assessment of the site condition in terms of land contamination risks including human health, groundwater and ground gas risk assessment, and wider environmental impacts of a proposed development. This

variously involves the design, coordination and interpretation of complex ground investigations.

1.2.6 Where required, I am responsible for the design and validation of remediation solutions to ensure that a site is safe and suitable for its intended use. This can also include an assessment of risks associated with different foundation solutions and the potential impact on underlying aquifers, together with the design of protection measures to mitigate any residual risks.

1.2.7 I have substantial experience preparing and approving Materials Management Plans to ensure the sustainable re-use of soil by demonstrating the suitability, certainty and quantity of use.

1.2.8 I am also often engaged to undertake peer reviews to provide a second opinion on any technical or contentious issues.

1.2.9 In terms of specific project experience, I have been involved in the assessment and development of former landfill sites in Walton-on-Thames, Hythe, Leicester and Borehamwood. I have also overseen the investigation, assessment and remediation of many brownfield sites affected by land contamination. Sites include:

- Sky Film Studios, Borehamwood – partially developed on a 1960s landfill.
- Princes Parade, Hythe – proposed residential scheme on a coastal landfill.
- Heathside School, Walton-on-Thames – school development on a 1970s landfill.
- Brook Mead Academy, Leicester – school development on a Victorian landfill.
- Castle Mead Academy, Leicester – school development on a former dairy depot.
- Shoreditch High Street – hotel and restaurant developed on a former fuel station
- Nottingham University Academy of Science & Technology – college developed on a former fire station.

2 Site Overview

2.1 Existing site and surrounding area

2.1.1 The Site is located approximately 1.80 km east of Sutton-in-Ashfield town centre, directly southeast of Newark Road (B6022) and southwest of Coxmoor Road (B6139). The site is approximately centred on National Grid Reference E451649, N358215. The site is approximately 21.4 hectares in total.

2.1.2 The Site comprises two agricultural fields in a reversed 'L' shape. The Site is bounded by hedgerows and trees.

2.1.3 A small extension of the site expands from the northwest of the site connecting to Searby road to the west of the site. This extension comprises approximately 0.4 ha of undeveloped overgrown land.

2.1.4 The site is located within a mixed use area with industrial units located north of the site beyond Newark Road and the private gardens of residential properties bounding the west of the site along Searby Road. Further west are additional residential properties fronting Harby Avenue and Sotheby Avenue.

2.1.5 To the northeast of the site, beyond Coxmoor Road, is an area of undeveloped woodland and greenspace which was historically the Sutton Quarry Landfill Site. Land southeast, south and southwest of the site are generally agricultural fields. Large residential properties are also located south of the site along Coxmoor Road.

2.1.6 Site levels are highest along the southeastern corner of the site (177.23 m AOD) falling westward towards the eastern boundary of the site and the rear of residential properties on Searby Road (144.34 m AOD).

2.2 Geology

2.2.1 British Geological Survey (BGS) mapping indicates infilled ground, defined as 'excavations, partly or wholly backfilled' across much of the northern area of the site where a former sand pit is mapped.

2.2.2 No superficial deposits are mapped across the majority of the site. However, two limited tongues of superficial material are mapped in the south of the site: one consisting of head deposits (variably comprising clay, sand and gravel) and the other comprising glaciofluvial deposits (sand and gravel).

2.2.3 The underlying bedrock geology is mapped as the Lenton Sandstone Formation (formerly classified as the Lower Mottled Sandstone) across almost the entirety of the site. This formation is usually encountered as a very fine to medium

grained sandstone with subordinate units of mudstone. As such, weathered natural bedrock material likely to be encountered at shallow depths is expected to consist of clayey sand deposits with some isolated beds of clay. A small area along the eastern boundary of the site is mapped as being underlain by the Chester Formation (sandstone) overlying the Lenton Sandstone Formation.

2.2.4 The Lenton Sandstone Formation is underlain by the Edlington Formation (formerly classified as the Middle Permian Marl) and further underlain by the Cadeby Formation (formerly classified as the Lower Magnesium Limestone and Lower Permian Marl). At greater depth the Cadeby Formation is unconformably overlying the Pennine Middle and Lower Coal Measures Formation, with the Top Hard Coal Seam within the Middle Coal Measures Formation mapped to be dipping 10° westward, potentially indicating the dip direction of the rest of the formation.

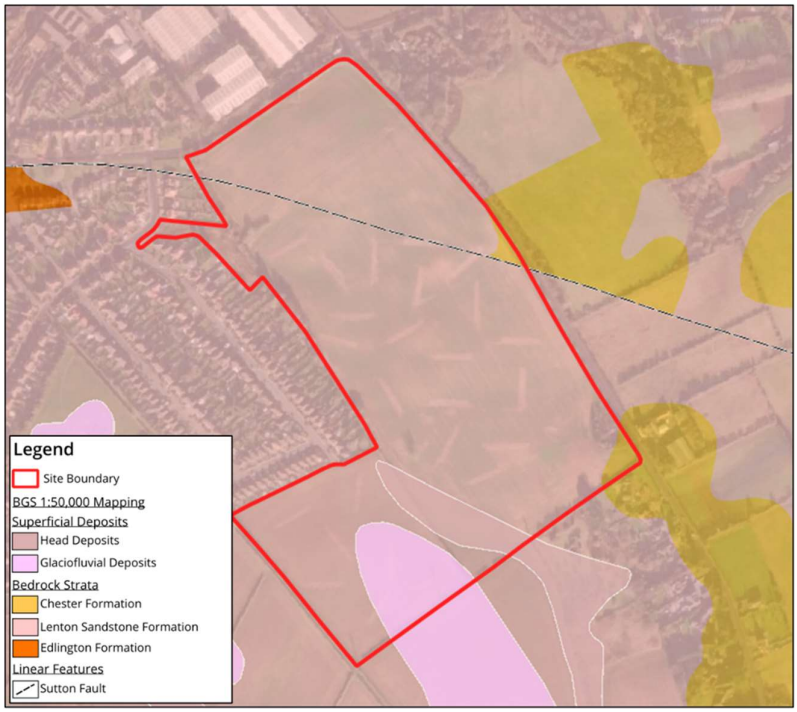


Figure 1: Mapped Geology (BGS 1:50,000)

2.3 Hydrology and Hydrogeology

2.3.1 The closest significant surface water feature to the Site is a culverted section of the River Maun, located approximately 645 m north of the site. A tributary of the Cauldwell Brook is mapped approximately 540 m southeast of the site.

2.3.2 A drainage ditch is located adjacent to the southern boundary of the site. There is a natural shallow valley that runs from this to a smaller ditch running along the western boundary of the site, behind properties of Searby Road. It has been shown that these features are connected via a 150mm open-jointed land drain at 600mm depth. More detail is available in the appended Drainage Statement (Appendix G).

2.3.3 Surface water run-off flows towards the ditch along the western boundary before discharging to the sewer beneath Searby Road. More detail is available in the appended Drainage Statement (Appendix G).

2.3.4 No surface water abstractions for drinking water are located within 2 km of the site.

2.3.5 A single licensed surface water abstraction is located within 1 km of the site:

- Coxmoor Golf Club, approximately 350 m southeast of the site, has a license issued in March 1997 (reissued in December 2018) for the storage of abstracted surface water for spray irrigation.

2.3.6 The Environment Agency classifies aquifers dependent on the stratum type and usage of the aquifer. Both the Chester Formation and the Lenton Sandstone Formation are classified as Principal Aquifers.

2.3.7 The superficial Glaciofluvial Deposits are classified as a Secondary A Aquifer and the Head Deposits are classified as a Secondary (Undifferentiated) Aquifer. However, given the mapped size of these deposits and the underlying Principal Aquifer it is unlikely that any significant body of groundwater is contained within these superficial deposits.

2.3.8 As a method of regulating the protection of groundwater bodies for potable use, the Environment Agency classifies certain areas of aquifers as Source Protection Zones (SPZ). These zones show the level of risk to the source (where water is abstracted) from contamination. The zones are modelled based upon how long it will take for groundwater to travel below ground to the source, and the area around the source which need protecting from potential pollutants based upon the regional stratigraphy.

2.3.9 The Site is wholly underlain by a SPZIII – Total Catchment Zone. This is defined by the EA for unconfined aquifers as:

- "the area around an abstraction source within which all groundwater can potentially feed in the abstraction source."

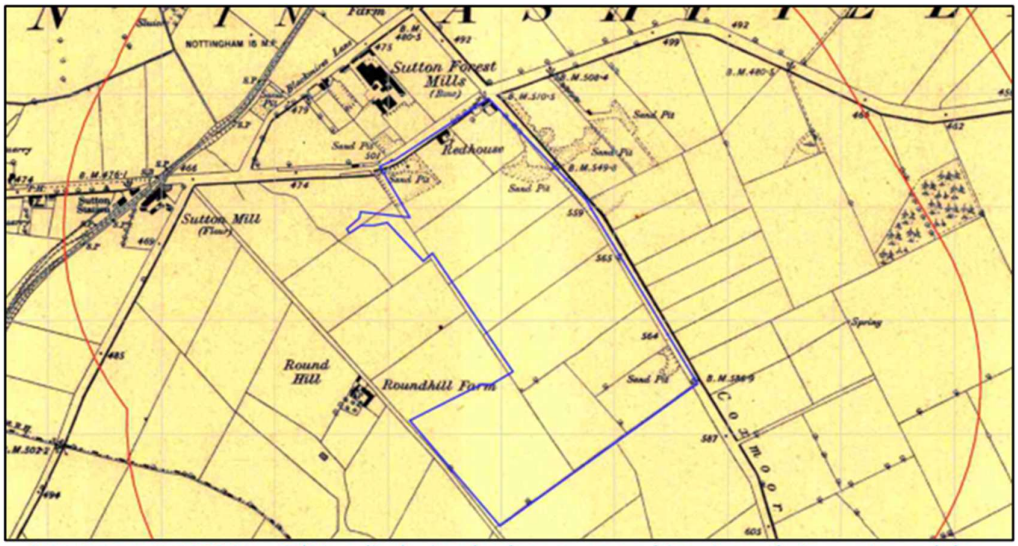
2.3.10 The SPZIII in which the site is located is likely to be associated with several abstractions points to the northeast, east and southeast of the site. The closest locations to the site is listed as Papplewick Pumping Station (a Victorian pumping station now a tourist attraction) located approximately 8.7 km southeast of the site.

2.3.11 The standard third party report on environmental information states that no potable water abstractions are located within 2km of the site; however in light of the above information regarding Source Protection Zones, it is evident that there are actually no potable water abstractions within 10km.

2.3.12 As of 2019, the groundwater body underlying the site (Idle Torne – PT Sandstone Nottinghamshire & Doncaster - Water Body ID: GB40401G301500) was given an overall rating of Poor, together with a Poor chemical rating for a General Chemical Test and Chemical Drinking Water Protected Area test.

2.4 Historical Land Use

2.4.1 The earliest map edition of the Site is 1878, showing three small sand pits present on site: one in the northeast, one in the northwest and one in the southeast. The rest of the site was mapped as undeveloped land and likely used as agricultural land, similar to much of the surrounding area of the site. Newark Road and Coxmoor Road were mapped in their present positions.

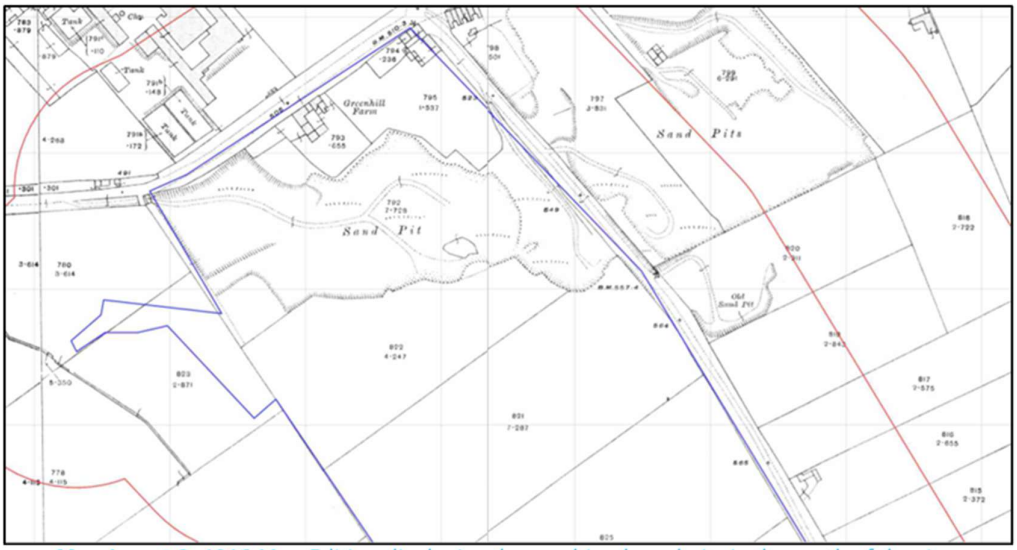


Map Insert 1: *1878 Map Edition displaying the three separate historic sand pits on site and the former Redhouse property along the northern boundary.*

2.4.2 Northeast of the site, beyond Coxmoor Road, were two sand pits on the land that would later become the Sutton Quarry Landfill Site. To the north of the site, beyond Newark Road, was a small sand pit and the Sutton Forest Mills was mapped for processing bone. Along the northern boundary of the site were two mapped properties: one in the centre of the northern boundary labelled as Redhouse Farm, and one unlabelled property in the northwest corner of the site.

2.4.3 The 1900 mapping shows that the sand pits in the northeast and northwest of the site had expanded. The pit to the southeast of the site remained the same size and was now labelled as an 'Old Sand Pit'. Redhouse Farm to the north of the site was renamed as Greenhill Farm. The pits related to the Sutton Quarry Landfill area were also shown to have expanded. The Sutton Forest Mills had expanded over the sand pit north of the site and replacing it with two large tanks. No further details are currently available for these tanks.

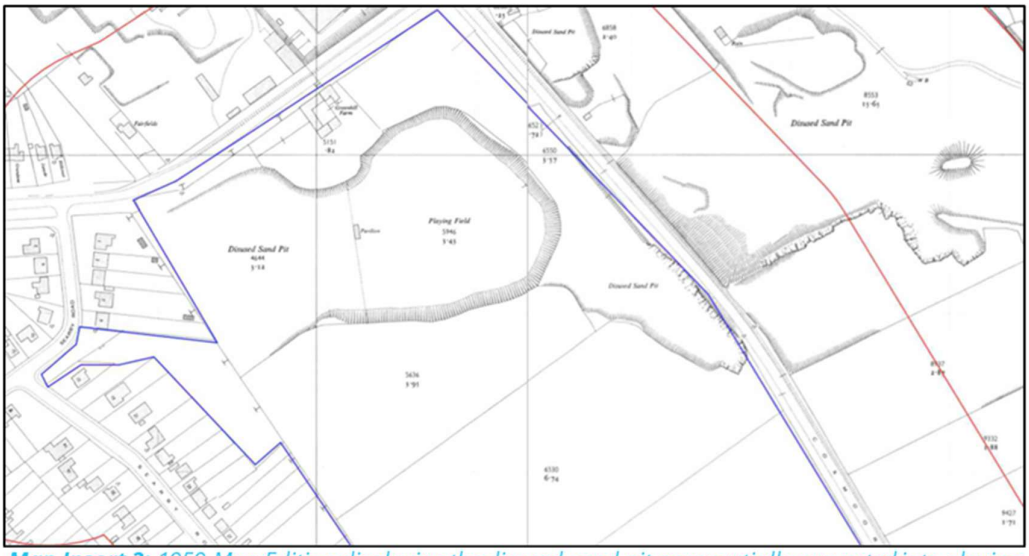
2.4.4 By 1914 the sand pits in the northeast and northwest of the site had expanded to such a point that they merged into one large excavation in the north of the site. The entrance of the sand pit appeared to be the northwestern corner of the site. The Sutton Forest Mills stopped expanding with the filter beds no longer mapped and likely infilled.



Map Insert 2: *1916 Map Edition displaying the combined sand pits in the north of the site.*

2.4.5 By 1939 grassland is mapped within the sand pit in the north of the site, suggesting inactivity. This was also mapped within the sand pits of the future Sutton Quarry Landfill Site. The Sutton Forest Mills was no longer mapped.

2.4.6 The eastern and western sides of the northern sand pit were mapped as disused by 1959, with the central area of the excavation mapped as a playing field, including a small pavilion. An outcrop was mapped along the eastern boundary of the disused sand pit, suggesting the excavation was of sufficient depth to reach bedrock material. The property in the northeast corner of the site was no longer mapped. Residential housing associated with Searby Road was mapped along the western boundary of the site and appear relatively unchanged up to the present. The nearby sand pits associated with the Sutton Quarry Landfill were also mapped as disused. Beyond the northern boundary of the site, undefined industrial works were mapped on the site of the former Sutton Forest Mills and the former filter beds.



Map Insert 3: *1959 Map Edition displaying the disused sand pit now partially converted into playing fields.*

2.4.7 By 1974, Greenhill Farm along the northern boundary of the site was no longer mapped. The sand pit in the north of the site was still mapped as disused and partially used as a playing field.

2.4.8 The sand pit in the north of the site was infilled between 1980 and 1983. The landfill was registered for the disposal of **inert waste**. More information on environmental permitting is provided in the following section.

2.4.9 To the northeast of the site, on the opposite side of Coxmoor Road, Sutton Quarry Landfill was licensed to accept construction industry waste, commercial waste and non-hazardous industrial waste from 1990.

2.4.10 Aerial photography from 2001 shows the site to have returned to agricultural use. The former Sutton Quarry Landfill site appears to have been infilled and covered by 2007.

2.5 Environmental Permitting

Disused Sand Quarry

2.5.1 Much of the northern end of the site is registered as a Historic Landfill Site by the Environment Agency (EA) under the name 'Disused Sand Quarry' operated by Stamford Waste Disposal Limited. The landfill is registered for the disposal of **inert waste**, with the first input occurring on 31/03/1980 and the final input occurring on 28/11/1983. The license for the landfill was surrendered in October 1992. The area of the landfill is approximately 4.74 ha.

Figure 2: Mapped Environmental Agency Landfill Boundary

2.5.2 The license issued (Ref: 4/80/100/55NW) to Stamford Waste Disposal Limited was issued by Nottinghamshire County Council to allow the disposal of up to 250 tonnes of per day of construction industry waste, consisting of soil, spoil, rubble, excavated materials and demolition materials. Disposal of any **combustible or putrescible material or other waste likely to cause pollution was prohibited**.

2.5.3 The license required the final layer of deposited material to be a 0.5 m thick layer to be kept free of material likely to interfere with the final restoration or subsequent cultivation of the site.

2.5.4 The landfill operation was also subject to planning consent by Ashfield District Council in February 1980 (Ref: V/1979/1030) to "restore land to original level and return to agricultural use".

3 Statutory Guidance, Planning Policy and Technical Guidance

3.1 Statutory Guidance

Department for Environment, Food & Rural Affairs (DEFRA) 2012

3.1.1 Part 2A of the Environmental Protection Act 1990 from DEFRA provides the Contaminated Land Statutory Guidance, referred to in both the NPPF and MHCLG guiding principles, and sets out the legal framework for dealing with contaminated land in England.

3.1.2 Within this guidance, the term "Contaminated Land" means land which meets the Part 2A legal definition of contaminated land; which is not the definition that is applied when considering the management of land affected by contamination under the planning regime. As such, this will henceforth be referred to as Part 2A Contaminated Land.

3.1.3 The Part 2A guidance is only introduced here to provide context, insofar as demonstrating that the site does not present an unacceptable risk and therefore meets the criteria to grant planning permission.

3.1.4 The overarching objectives of the Government's policy are:

*"a) To identify and remove **unacceptable risks** to human health and the environment.*
*b) To seek to ensure that contaminated land is made **suitable** for its current use.*
c) To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development."

3.1.5 There are four possible grounds for the determination of land as Part 2A Contaminated Land:

"a) Significant harm is being caused to a human, or relevant non-human, receptor.
b) There is a significant possibility of significant harm being caused to a human, or relevant non-human, receptor.
c) Significant pollution of controlled waters is being caused.
d) There is a significant possibility of significant pollution of controlled waters being caused."

3.1.6 It is the sole responsibility of the local authority to identify and determine Part 2A Contaminated Land.

Local Authority Contaminated Land Strategy

3.1.7 As required under Part 2A of the Environmental Protection Act 1990, Ashfield District Council was required to produce a Contaminated Land Strategy (CLS) to set out the objectives, priorities and programme to address the legacy of land contamination within the District. Initially produced in 2001, the CLS was updated in 2006.

3.1.8 As of 2006, this site was not under consideration. This site not been determined as Part 2A Contaminated Land by Ashfield District Council.

3.2 Planning Policy

National Planning Policy Framework (NPPF) 2024

3.2.1 The National Planning Policy Framework (NPPF) was first published in March 2012, and most recently updated on 12th December 2024. The NPPF provides guidance on Ground Conditions and Pollution, and those relevant to contamination are Paragraphs 124-125, 187, 196-197.

3.2.2 Paragraph 124 states that *"strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or 'brownfield' land."*

3.2.3 Paragraph 125 states that *"planning policies and decisions should…*

c) give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, ***proposals for which should be approved unless substantial harm would be caused****, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land."*

3.2.4 Paragraph 187 states *"planning policies and decisions should contribute to and enhance the natural and local environment by…*

e) preventing new and existing development from contributing to, being put at ***unacceptable risk*** *from, or being adversely affected by****, unacceptable levels*** *of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."

3.2.5 Paragraph 196 states *"planning policies and decisions should ensure that:*

*a) a site is **suitable** for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);*
b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and
c) adequate site investigation information, prepared by a competent person, is available to inform these assessments."

3.2.6 Paragraph 197 states *"Where a site is affected by contamination or land stability issues, responsibility for securing safe development rests with the developer and/or landowner."*

3.2.7 In summary, the NPPF identifies the need to address the issue of potentially contaminated land through the planning process. The NPPF requires developments to ensure that any **unacceptable risks** from soil pollution are mitigated through appropriate remediation. In view of paragraphs 180 and 189, it is therefore a matter of determining what is an unacceptable risk rather than demonstrating zero risk.

3.2.8 As such, the NPPF requires the site to be rendered suitable for its proposed use, taking account of ground conditions and that as a minimum, after remediation the land cannot be capable of being determined as "Contaminated Land" under Part 2A of the Environmental Protection Act (EPA) 1990.

Ministry of Housing, Communities and Local Government (MHCLG) 2019

3.2.9 The MHCLG provides planning practice guidance including guiding principles on how planning can deal with land affected by contamination. This guidance states that *"before granting outline planning permission a local planning authority will, among other matters, need to be satisfied that:*

- *it understands the contaminated condition of the site;*
- *the proposed development is appropriate as a means of remediating it; and*
- *it has sufficient information to be confident that it will be able to grant permission in full at a later stage bearing in mind the need for the necessary remediation to be viable and practicable."*

3.2.10 The guidance also states that "*local planning authorities should be satisfied that a proposed development will be appropriate for its location and not pose an **unacceptable risk**... Local planning authorities **should work with applicants** to find acceptable ways forward if there are concerns about land contamination... To help secure necessary mitigation, planning permission can be granted subject*

to conditions and/or planning obligations, where the relevant tests are met." (my emphasis).

3.2.11 Aligning with the NPPF, these guiding principles state that *"after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A."*

Local Planning Policy

3.2.12 The 2002 Ashfield Local Plan policies related to contaminated land (EV15) and water quality (EV16) have not been saved beyond 2007 and therefore do not form part of the development plan for the District.

3.3 Technical Guidance

Environment Agency Guidance (LCRM)

3.3.1 The Environment Agency have set out the principles of managing land contamination risks via the GOV.UK website (last updated 20th July 2023). The Land Contamination Risk Management (LCRM) guidance provides a staged approach to:

- identify and assess if there is an **unacceptable risk**
- assess what remediation options are suitable to manage the risk
- plan and carry out remediation
- verify that remediation has worked

3.3.2 In accordance with the NPPF, where a development is proposed on land that is known or suspected of being contaminated, the developer is responsible for ensuring that the completed development is safe and suitable for use for the purpose for which it is intended and is free from unacceptable risks to human health, buildings and other property, controlled waters, and the wider environment.

3.3.3 The principles of risk assessment, as set out in the LCRM guidance, that enable this process can be briefly summarised as follows:

PRELIMINARY RISK ASSESSMENT

3.3.4 The preliminary risk assessment report comprises:

- a desktop study which identifies all current and previous uses at the site and surrounding area as well as the potential contaminants associated with those uses

- a site reconnaissance
- a conceptual model indicating potential pollutant linkages between sources, pathways and receptors, including those in the surrounding area and those planned at the site
- a qualitative risk assessment of any potentially unacceptable risks arising from the identified pollutant linkages to human health, controlled waters and the wider environment including ecological receptors and building materials

3.3.5 A preliminary risk assessment (also referred to as a Phase 1 Geo-Environmental Desk Study) was produced by RLL in 2022 and was submitted to support the planning application. On the basis of this report, both the ADC Contaminated Land Officer and the Environment Agency determined that the was no reason to object to the scheme and planning permission should be granted, subject to the standard conditions. No further information was sought or felt necessary at this stage of the planning process.

SITE INVESTIGATION & UPDATED RISK ASSESSMENT

3.3.6 The site investigation scheme is based upon and targets the risks identified in the approved preliminary risk assessment and includes investigation of soil, groundwater and ground gas as required to explore the existence of any identified potentially significant pollutant linkages and to determine the risks posed by any contamination to human health, controlled waters and the wider environment.

3.3.7 Following a site investigation undertaken in compliance with the site investigation scheme, an updated and quantitative risk assessment is undertaken to assess the degree and nature of any contamination identified on the site through the site investigation; including a revised conceptual site model from the preliminary risk assessment based on the information gathered through the site investigation to confirm the existence of any remaining pollutant linkages and determine the risks posed by any contamination to human health, controlled waters and the wider environment.

3.3.8 Whilst this stage of the LCRM process is not routinely required to support a planning application, this has now been undertaken by Eastwood Consulting Engineers. A Geotechnical and Geo-Environmental Site Investigation report was produced in May 2022, followed by a Hydrogeological Review and Groundwater Piling Assessment in July 2022.

REMEDIATION STRATEGY

3.3.9 The remediation scheme details the remediation works required to mitigate any remaining risks identified in the updated risk assessment. The scheme may require detailed remediation plans and method statements to be drawn up for each required remedial activity and will include a verification plan that sets out what information is to be collected as evidence that the necessary remedial objectives have been satisfactorily achieved.

3.3.10 A remediation strategy is not required to support a planning application. It is standard practice for this document to be secured by condition and a strategy will be developed in due course for agreement with the ADC Contamination Land Officer and Environment Agency.

VERIFICATION REPORT

3.3.11 Once the remediation has been completed a verification report is produced providing the collected evidence required by the verification plan and including:

- details of the remediation works carried out
- results of validation sampling, testing or monitoring
- analysis of any imported soils
- waste management documentation

3.3.12 Given the nature of this work, it is not possible to produce this report until development has commenced and it is therefore secured by condition.

SUMMARY

3.3.13 In summary, LCRM provides a framework to ensure that, in accordance with the National Planning Policy Framework (NPPF), following appropriate remediation, the completed development is safe and suitable for the intended use and is free from any unacceptable risks to human health, buildings and other property, controlled waters, and the wider environment.

3.3.14 I have outlined above that the first stage of the preliminary risk assessment, as required for a planning application, was submitted with no technical objections raised. The following stage of the LCRM process, site investigation and updated risk assessment, was not originally submitted in support of the planning application as it was not required by regulators, nor did the Council members seek this additional information in the July 2024 meeting.

3.3.15 Following the reasons for refusal, outlined in the Council's Statement of Case, the documents produced to meet the requirements of this stage of LCRM have now provided in support of this appeal.

3.3.16 The remediation strategy, and verification thereof, will be agreed with the regulators and will be secured by condition.

3.3.17 In addition to the LCRM guidelines, there is a wide variety of guidance documents used in reference to the investigation and remediation of contaminated land, and the following is a summary of key documents:

BS10175:2011+A2:2017: Investigation of potentially contaminated sites – Code of practice. Dated 2017.

3.3.18 The British Standard outlines the procedures required for the investigation of contaminated sites, including both the desk study and the ground investigation stages. The investigations undertaken on this site have undertaken in accordance with this guidance and are listed in Clause 6.3 of this statement.

CIRIA C552: Contaminated land risk assessment: A guide to good practice. Dated 2001

3.3.19 This guidance standardises the determination of risk related to contaminated ground and provides the definitions and methodology of determining risk levels from Low to Very High. The reports submitted for this development have been prepared in accordance with this guidance.

BS8485:2015+A1:2019: Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings. Dated 2019

3.3.20 The British Standard sets out how appropriate ground gas protective measures are determined for a site and the proposed structures. The ground gas risk assessments undertaken for this site have been prepared in accordance with this guidance.

CIRIA C665: Assessing risks posed by hazardous ground gas to buildings. Dated 2007.

3.3.21 This guidance document focuses on the methodology of assessing ground gas risk for residential dwellings and other buildings. This document has been followed by the relevant ground gas risk assessments in determining the ground gas regime for this site.

Development on Land Affected by Contamination Technical Guidance for Developers, Landowners and Consultants, by the Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG). Dated June 2020, Version 11.2.

3.3.22 This guidance specifies what information should be submitted to the Local Planning Authority when a planning application for a vulnerable end-use (e.g. residential housing) is submitted for a site which is potentially contaminated. The guidance is adopted by 46 local planning authorities including Newark and Sherwood District Council and Gedling Borough Council in Nottinghamshire; however, in the absence of specific contaminated land policies, it is unknown whether Ashfield District Council endorse this document. The desk study and ground investigation report are both produced in accordance with this guidance document.

National House Building Council (NHBC) Standards. Dated 2024.

3.3.23 The NHBC outline their requires for the assessment of ground conditions for residential dwellings and the implementation of structural remedial measures, such as ground gas membranes and ventilated voids. The document is based upon other pieces of guidance such as BS10175 and BS8485.

NC/99/73: Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention. Dated May 2001. Withdrawn

3.3.24 This document has been withdrawn; however, it still provides a clear and pragmatic approach to piling risk assessment, setting out six scenarios which require justification. In the absence of any alternative guidance, this document is routinely adopted by industry and is followed by ECE within their Hydrogeological Review and Groundwater Piling Assessment.

R&D Publication 66: 2008, Volume 1: Guidance for the Safe Development of Housing on Land Affected by Contamination by the NHBC, Environment Agency and Chartered Institute for Environmental Health. Dated 2008.

3.3.25 This guidance presents the necessary steps for hazard identification, risk assessment and remediation required for residential housing whilst aligning with other guidance such as the CLR11 (now replaced by LCRM, discussed above). The reports submitted for this development have followed the principles of this guidance document.

Verification Requirements for Cover Systems: Technical Guidance for Developers, Landowners and Consultants by the Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG). Dated June 2021, Version 4.1.

3.3.26 This guidance outlines the required information for the verification of clean cover systems. The guidance is adopted by 55 local planning authorities including Newark and Sherwood District Council and Gedling Borough Council in Nottinghamshire; however, in the absence of specific contaminated land policies, it is unknown whether Ashfield District Council endorse this document. This statement recommends the use of the YALPAG document during the construction phase of the development to assist in discharging contaminated land conditions that would be anticipated for a development of this nature.

3.4 Land Contamination Screening Criteria

3.4.1 The Department for Environment, Food and Rural Affairs has published a policy companion document considering the use of 'Category 4 Screening Levels' in providing a simple test for deciding when land is suitable for use and definitely not Part 2A Contaminated Land; which is the minimum requirement for planning approval.

3.4.2 C4SLs are an aid to deciding whether the contaminant is present at a concentration or amount that might be harmful and are based around a 'low risk' excess lifetime cancer risk (ELCR) of 1 in 50,000.

3.4.3 However, Suitable 4 Use Levels (published by LQM / CIEH) are based on a minimal risk approach and ELCR of 1 in 100,000. As such the S4ULs are designed to meet the criteria of safe and suitable for use that are still at the core of what the planning system expects.

3.4.4 As such, the assessment of this site has adopted the more conservative S4ULs, unless otherwise stated.

4 Site Specific Contamination Risk

4.1 Introduction

4.1.1 The north of the site has been subject to historic sand extraction and subsequent licensed landfilling of inert construction and demolition waste.

4.1.2 In accordance with the guidance outlined above, the potential risks associated with the resultant presence of Made Ground should be investigated and assessed, including the risk to human health through direct pathways of ingestion, inhalation or dermal contact; risks to controlled waters and risk of ground gas generation.

4.1.3 The following section presents the potential contamination risks identified on site and provides a summary of the mitigation measures proposed.

4.2 Typical Scope of works at Outline Planning Stage

4.2.1 As part of their online guidance for how planning can deal with land affected by contamination, MHCLG state that the information required should be *"proportionate to the decision at the outline stage, but before granting outline planning permission a local planning authority will, among other matters, need to be satisfied that:*

- *it understands the contaminated condition of the site;*
- *the proposed development is appropriate as a means of remediating it; and*
- *it has sufficient information to be confident that it will be able to grant permission in full at a later stage bearing in mind the need for the necessary remediation to be viable and practicable."*

4.2.2 Local planning authorities should be satisfied that a proposed development will be appropriate for its location and not pose an unacceptable risk; however responsibility for securing a safe development ultimately rests with the developer and/or landowner. Local planning authorities are therefore encouraged to work with applicants to find acceptable ways forward if there are concerns about land contamination. In order to secure necessary mitigation, planning permission can be granted subject to conditions and/or planning obligations.

4.2.3 It is therefore noted that no technical objections have been received in relation to land contamination, either in substance or in relation to the need for any more information, on the basis of the desk study report submitted to support the planning application. Moreover, as required by the technical officers of ADC, planning conditions will stipulate that further investigation and assessment is

undertaken in accordance with the principles laid out by the Environment Agency in the Land Contamination Risk Management guidance.

4.2.4 The proposed development is considered to be in accordance with the NPPF and the relevant statutory and regulatory requirements in relation to contamination risk, subject to conditions; hence it is considered that there is no justification for the application to be refused on the basis of land contamination risk, or inadequacy of information to judge that risk.

4.2.5 Nevertheless, as discussed in the following sections, additional site investigation and assessment has been undertaken and provided to the Council for their review in determining whether the site is suitable for residential development, after the Council had indicated its reasons for refusal, which are different to the issues raised in July 2024.

4.3 Investigation Works undertaken

4.3.1 The following report was prepared to support the planning application and is provided as a Core Document (CD 1.41):

- Phase 1 Geo-Environmental Desk Study by RLL. Ref: 22070-RL-22-XX-RP-O-0001, dated February 2022, containing the following appendices:
  - Technical Note – Permeability Testing and Ground Gas Monitoring by RLL. Ref: P16-549, dated September 2017.
  - Technical Note – Ground Gas Risk Assessment by RLL. Ref: P16-549, dated May 2018.

4.3.2 The following report was shared by the council during the planning application process and uploaded to the planning portal on 13/03/24 (CD 13.1).

- Geotechnical and Environmental Land Quality Audit Report by Scott Wilson Kirkpatrick & Co Ltd (SWK). Ref: CWCSB/GEO.425, dated August 1998.

4.3.3 The following reports have been submitted since the Council's decision to defend the appeal:

- Geotechnical and Geo-Environmental Site Investigation by Eastwood Consulting Engineers (ECE). Ref: KE/ACR/46924-002, dated May 2022. (CD 13.2)
- Hydrogeological Review and Groundwater Piling Assessment by ECE. Ref: KE/DN/46924-004, dated July 2022. (CD 13.3)

- Letter to Clare Clarke (Pegasus Group) from Stewart Friel (RLL). Ref: 16549-RLL-24-XX-CO-O-0001, dated September 2024. (CD 13.4)

4.3.4 Investigation has been undertaken in a phased approach in accordance with recommended best practice (listed in Section 3) commencing with a desk study, followed by intrusive investigations. The desk study is required to produce a conceptual model for the site, and the intrusive investigations designed to investigate the issues identified by the conceptual model. The conceptual model is intended to investigate contamination issues based on a source, pathway, receptor pollutant linkage, whereby key issues are defined by the desk study phase and then investigated by intrusive works to identify issues requiring further consideration at design stage.

4.3.5 The findings of the investigations, in relation to land contamination, are summarised below.

4.4 Ground Conditions

4.4.1 A total of 122 exploratory positions have been undertaken across the site as part of four phases of ground investigation. Of these, 90 are located in the north of the site in the landfill area. There is no specific guidance on the frequency / density of investigation points; hence the scope of investigation was planned and undertaken in accordance with the findings of the preliminary risk assessment and conceptual site model, as per standard industry practice.

4.4.2 It is evident from the figure below that, in consideration of all intrusive work to date, there has been extensive investigation of the landfill area.

4.4.3 A covering of topsoil is present across the site, generally comprising of a brown clayey/silty sand with rare/occasional gravel of brick and coal. Topsoil was identified to range in thickness, generally between 0.10 and 0.40 m bgl.

4.4.4 Away from the historic landfill, the topsoil is underlain by natural weathered bedrock material of the Lenton Sandstone Formation comprising a slightly clayey sand with sandstone lithorelics. This weathered material ranged in thickness between 1.60 and 2.80 m. The underlying sandstone was encountered generally between 1.80 and 3.20 m bgl.

4.4.5 In the north of the site, within the mapped historic landfill area, the topsoil is generally underlain by a 'capping layer' comprising reworked orangish brown slightly clayey/silty sand. This capping layer is variable in thickness, ranging between 0.40 and 1.80 m bgl.

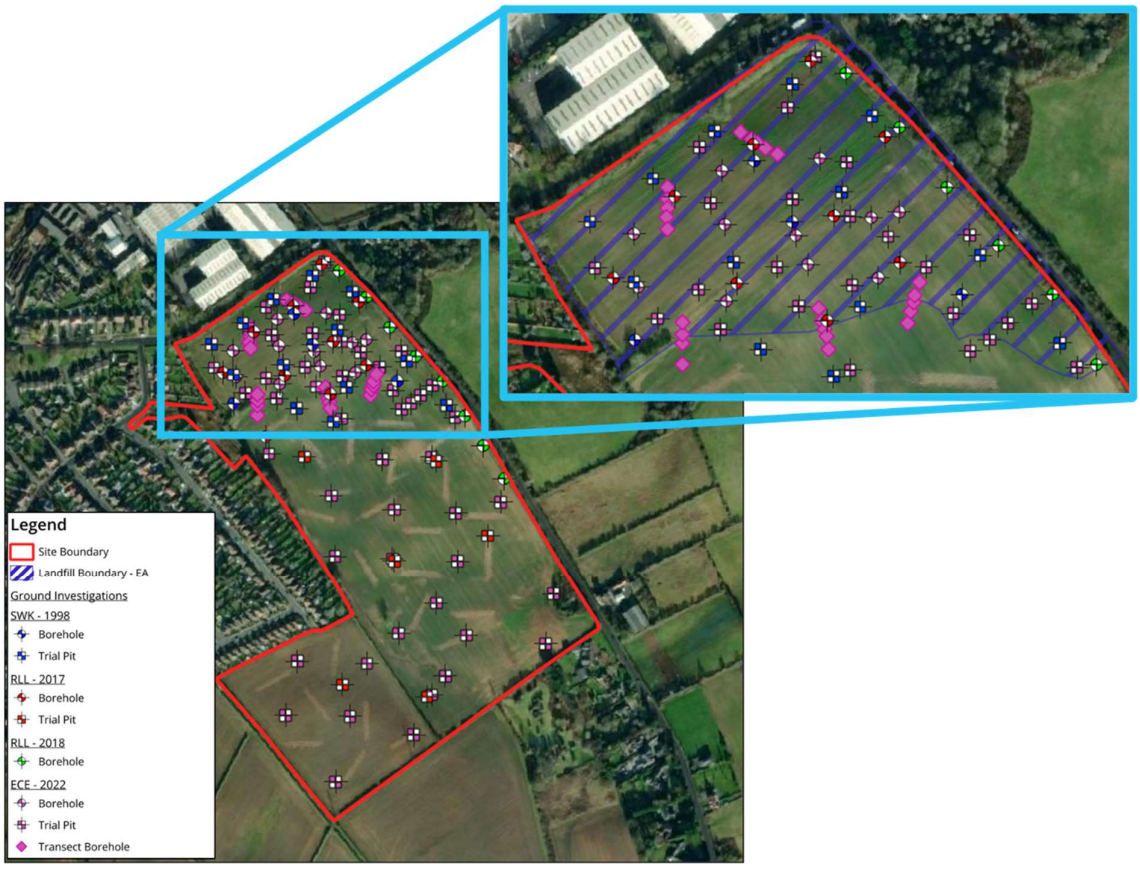


Figure 3: Intrusive Locations undertaken since 1998. Inset map indicates locations within the mapped landfill area of the site.

4.4.6 Significant deposits of Made Ground are present beneath the capping layer, reaching a maximum depth of 13.00 m bgl. The Made Ground has predominantly been recorded as a clayey sandy gravel including sandstone, limestone, quartzite, brick (including whole bricks) and concrete (including cobbles and boulders) with localised lenses of reworked gravelly clay material. The Made Ground also variably contained numerous minor constituents across the site, falling into three categories:

- Common building materials including slate, ceramic, rebar reinforcement, glass, lead and macadam.
- Miscellaneous material likely related to construction site waste including wood fragments, wooden posts, rubber, wire, metal fragments, plastic fragments and bags, cloth and paper.
- Burnt products including coal, ash, slag, clinker, burnt shale and isolated barrels filled with ash.

4.4.7 No Asbestos Containing Materials (ACM) were identified within the Made Ground.

4.4.8 No domestic waste or putrescible material has been identified within the landfill.

4.4.9 No visual evidence of significant contamination was identified in any of the ground investigations.

4.4.10 Sandstone bedrock was generally encountered directly beneath the Made Ground in the landfill.

4.4.11 Of the 122 intrusive locations undertaken across the site only seven water strikes were identified, of which only three were identified within Made Ground. The strikes ranged in depth between 2.10 and 6.00 m bgl (145.9 – 154.9 m AOD). Deeper strikes in CP02 and CP03 of the ECE investigation (4.80 – 6.00 m bgl) recorded wet pockets of Made Ground material recovered. No sustained ingress of water into the boreholes was recorded. These strikes are judged to be the result of surface water infiltrating through more permeable soils rather than representing a groundwater body.

4.4.12 Natural soils and Made Ground were found to be relatively porous allowing some rainfall to infiltrate. Soakaway testing undertaken by RLL in 2017, however, identified that infiltration rates were too low for accommodating drainage from the proposed development for design purposes, but were indicative of a degree of the permeability of the site.

4.4.13 As part of the twelve monitoring rounds undertaken by RLL, most locations had dry monitoring wells with no consistent water levels identified. A single round of monitoring identified a groundwater level of 1.85 m bgl at one location; no other levels of this depth were identified. The localised presence of water is considered to be sub-surface / perched water rather than a groundwater body.

4.5 Contamination Risks to Human Health

4.5.1 11 soil samples of Made Ground from 7 locations within the landfill area were tested in 1998, ranging in depth between 0.50 and 3.00 m bgl. These samples were tested for a selection of determinands including heavy metals, Diesel Range Organic (DRO) hydrocarbons (C10 – C28), Mineral Oil and Semi-Volatile Organic Compounds (SVOCs).

4.5.2 53 soil samples were tested in 2022. 33 samples were taken from the landfill area, comprising 12 samples of topsoil, 3 samples of reworked material from the capping layer, 16 samples of Made Ground (ranging in depth between 0.60 and 7.10 m bgl) and 2 samples of natural material underlying the Made Ground. These samples were tested for a selection of common determinands including asbestos, heavy metals, Polycyclic Aromatic Hydrocarbons (PAH), Total Petroleum Hydrocarbons (TPH), SVOC and VOC. The remaining 20 samples were used for

testing topsoil and natural weathered material across the remaining area of the site.

4.5.3 There is no "standard" sampling frequency for site investigations. The sampling strategy was therefore planned in consideration of the preliminary risk assessment and refined on the basis of the ground conditions encountered, as per standard industry practice.

4.5.4 Odours were sporadically recorded across a number of locations at variable depths, which included organic, hydrocarbon and chemical odours within the Made Ground. No odours were observed at surface and are therefore not considered to be an environmental issue. An odour at depth is not deemed to be a concern in itself, but can be considered to be evidence that there may be potential contamination that should be investigated and sampled. No visual or olfactory evidence of contamination was recorded beyond the initial 0.6 m of natural bedrock strata.

4.5.5 No asbestos has been identified in any of the 44 samples tested.

4.5.6 No evidence of contamination was identified within reworked material from the capping layer or within natural material underlying the Made Ground.

4.5.7 ECE also identified a single marginal exceedance of Cadmium (12 mg/kg) at 2.10 m depth, when compared to the adopted very conservative S4UL GAC value (11 mg/kg). When Cadmium is compared against C4SL GAC for the same end-use scenario, which is the minimum requirement to demonstrate that there is no unacceptable risk, no exceedances are identified and so no remedial measures would be required. Moreover, when compared to S4UL GAC values for residential development with no plant uptake the value is more than seven times below the GAC value of 85 mg/kg. Consequently, there is not considered to be any requirement for remedial measures in respect of cadmium; however the proposed clean cover system, which is a main part of the overall approach to mitigation for the site and is explained further below, will provide additional assurance.

4.5.8 Of the 27 samples of Made Ground, two exceedances of Lead have been identified in TP07 (SWK) and TP05 (ECE), identified at depths of 1.20 m bgl and 2.10 m bgl. In the absence of S4UL values for Lead, C4SL values have been adopted using the same end-use scenario. Given the depth of these exceedances, Lead is also considered unlikely to present a risk to future site users. Additionally, the use of a 600mm clean cover system, as explained in the mitigation section below will provide a further barrier to protect site users.