Borough Council of
King's Lynn &
West Norfolk

Contaminated Land Review Report

Dersingham Pit Closed Landfill

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Executive Summary

The Borough Council of King's Lynn and West Norfolk has published a contaminated land inspection strategy which sets out how it proposes to fulfil its legal responsibilities for inspection under the contaminated land regime. The legal definition of Contaminated Land in Part 2A of the Environmental Protection Act 1990 (Part 2A) relates to unacceptable risks to human health and/or the wider environment. The contaminated land strategy details how sites are prioritised and the arrangements for inspection.

A former quarry and closed landfill situated in Dersingham has been identified for inspection. The site is now an open space within the Dersingham Bog National Nature Reserve (NNR), RAMSAR site, and Site of Special Scientific Interest (SSSI). The site also falls within the Roydon Common and Dersingham Bog Special Area of Conservation.

Given the former use of the land and the sensitivity of the surrounding area, an initial assessment of the site was undertaken to assess the potential for harm to human health, property, the environment, groundwater and surface waters under Part 2A. Monitoring, site investigations and contaminated land risk assessments have been carried out to characterise the site and to provide a hydrological risk assessment.

The borough council are the enforcing authority for this site. The Contaminated Land Inspection Report by BCKLWN, 2018 concluded that there were potential pollutant linkages. Based on the information provided in the 2018 report the Environment Agency were unable to comment whether the site would meet the definition of significant pollution of controlled waters under Part 2A and recommended further assessment.

As the site was being managed, the site was not determined as contaminated at that time but has been kept under review. This report summarises information from the inspection carried out in 2018 and any new information about the site.

From the review of the site's management, and more recent information, the following can be stated:

- The National Nature Reserve and SSSI are managed under the Dersingham Bog NNR Management Plan which runs from 2021-2026, by Natural England.
- A Conceptualisation and Restoration Plan was carried out in 2023 to help improve ecological conditions on the SSSI.
- Water quality in the landfill perimeter ditch is tested biannually by Norfolk County Council and has been shown to have been relatively stable within the last 5 years. The source term of the pollution is reported to be declining.
- Water Pollution is reported to be of high potential risk to the SSSI in a review by Natural England of pressures impacting Dersingham Bog. The features are reported to be in an unfavourable but recovering condition.

The 2018 Conceptual Model has been revised based on the assumed declining source term, groundwater model and recovering status of the SSSI. A revised conceptual model has been developed. Further work is required to test the assumptions in the 2025 conceptual site model. The closed landfill team at Norfolk County Council have agreed to carry out additional work to address data gaps which will finalise the Part 2A review of the site.

The Dersingham Bog Management Plan is due to be revised in 2026 and it is expected that mitigation and restoration options will be selected as part of development of the 2026-2031 Plan. Therefore, the next review of the site will take place in April 2026

Review Report

The Borough Council of King's Lynn and West Norfolk has published a contaminated land inspection strategy which sets out how it proposes to fulfil its legal responsibilities for inspection under the contaminated land regime. The legal definition of Contaminated Land in Part 2A of the Environmental Protection Act 1990 (Part 2A) relates to unacceptable risks to human health and/or the wider environment. The contaminated land strategy details how sites are prioritised and the arrangements for inspection.

The Contaminated Land Inspection Report by BCKLWN, 2018 concluded that there were potential pollutant linkages resulting from the presence of a landfill adjacent to the Dersingham Bog SSSI. The borough council are the enforcing authority for the site. As the site was being managed the site was not determined as contaminated at that time but has been kept under review. This report summarises information from the inspection carried out in 2018 and any new information about the site.

Location	The site is located to the south west of Dersingham village in West Norfolk. The grid reference for the centre of the site is 568000, 329470 and the nearest postcode is PE31 6LB. The site is shown in Figure 1 in the appendices.
Previous site use	The site is a former quarry. A landfill was opened in 1948 by Docking Rural District Council. Norfolk County Council used the site between 1974 and 1978 for category A (Inerts), B (Plastic and Wood) and C (Domestic waste), after which time it was capped. The landfill is situated directly on the Sandringham Sands. A leachate plume has been detected issuing from the SW corner of the landfill resulting in localised vegetational changes. The capped landfill has become vegetated by mesotrophic type grassland.
Present site use	The site, in the Norfolk Coastal Area of Outstanding Natural Beauty, is a public open space within Dersingham Fen. It is within the Dersingham Bog National Nature Reserve (NNR), RAMSAR site, and Site of Special Scientific Interest (SSSI). The site also falls within the Roydon Common and Dersingham Bog Special Area of Conservation. Dersingham Bog NNR is part of the Sandringham Royal Estate and includes the largest, most intact example of an acid valley mire in East Anglia. It is also one of the last remaining fragments of lowland heathland in south east England. The low-lying mire is dominated by Sphagnum bog mosses. Several uncommon plants are present including round-leaved sundew, oblong-leaved sundew, cranberry, bog asphodel and white beak-sedge. The NNR site supports nationally important numbers of breeding Nightjar. Other notable species include woodlark, grasshopper warbler, tree pipit, and stonechat. The NNR is used for a wide range of research, including: heathland restoration and management, species population dynamics, and geomorphological studies. Some of this research is conducted 'in-house' by Natural England staff. The reserve has also been incorporated into externally managed National research programmes such as Natural England's Long Term Monitoring Network. The NNR site is cattle grazed to prevent it from becoming overrun by scrub. The landfill site itself is fenced to prevent access.

Reports	Dersingham Landfill Site, Hydrological Risk Assessment, Mott MacDonald, 2011 Preliminary Site Assessment, BCKLWN, 2013 Contaminated Land Inspection Report, BCKLWN, 2018 Dersingham Bog NNR Management Plan 2021-2026, Natural England Dersingham Bog & Fen – Conceptualisation & Restoration Plan, April 2023, Fens East Partnership Dersingham Bog SSSI, Condition of Features & Units, accessed November 2024, designatedsites.naturalengland.org.uk
Environment Agency correspondence	The Environment Agency (EA) were contacted in 2018. The EA confirmed that the Leziate Member of the Sandringham Sands Formation (understood to be underlying the site) is designated as a principal aquifer. The overlying superficial head deposits are classified as secondary (undifferentiated) aquifer. The EA indicated that reported contaminant concentrations associated with the landfill have been measured above the environmental quality standards in groundwater sampled from beneath the site and in boreholes and surface water located hydraulically down-gradient of the site. However, based on the information provided the EA were unable to comment whether the site would meet the definition of significant pollution of controlled waters under Part IIA of Environmental Protection Act (1990). The EA recommended further evaluation to assess: • the lateral extent of the groundwater that has been impacted. • the role of the ditch as a controlled water receptor and migration pathway • an updated conceptual site model to inform further groundwater and surface water sampling. • whether the impact on controlled waters is significant.
Groundwater summary	Mott MacDonald, 2011 indicated that the groundwater upwells beneath the toe of the landfill and is incorporated into the water flow of the fen. As the groundwater is flowing upward at this location it was considered that the identified contamination will not be able to migrate into the groundwater. Some updated understanding of the groundwater regime on the site and the wider area is reported in the Management Plan, 2021. Dersingham mire is reported to be primarily fed by an unconfined Greensand aquifer[1]. Dersingham Bog and its immediate catchment comprises the following hydro-geological units: • Lower Chalk aquifer –This is considered to recharge the Dersingham Beds/Sandringham Sands aquifer, although the extent of influence is not known. In addition, there are at least two surface water flows that rise from the Lower Chalk to the north east of the site and travel south west to reach the north eastern part of the site, Dersingham Fen. It is likely that these have a significant local influence on the hydrochemistry of this part of the site. • Carstone Formation – The aquifer becomes confined (with layers of impermeable material both above and below the aquifer) as it dips

[1] An aquifer is rock formation that is porous and permeable and can transmit a significant quantity of water to a borehole, well or spring.

	eastwards. Highly permeable with dual porosity in fissures and matrix flow. This is underlain and at least partially isolated from the Dersingham Beds by the Snettisham Clay member. Rainfall passes through it rapidly and, upon reaching the Snettisham Clay appears as a series of temporary springs, some of which may exert a local influence on the site. • Snettisham Clay aquitard – This stops the movement of water depending upon its relative thickness (varying from 1-6m according to BGS website), the extent of bioturbation and the presence of tunnel valleys. • The Dersingham Beds and Sandringham Sands aquifer are considered to act as a single aquifer, although locally, clay layers may impede some vertical hydraulic movement. Water movement is chiefly by intergranular flow. The groundwater surface is reported to remain close to the ground surface throughout the year. This aquifer is unconfined where it discharges on the reserve, but confined further to the east where the units dip eastwards under the Snettisham Clay, Carstone, Red Chalk, then Lower Chalk. Recent research indicated the confined aquifer is mainly recharged through the Chalk. • Head deposits aquifer – unconfined and in hydraulic continuity with underlying Sandringham Sands aquifer. • Kimmeridge Clay is believed to form the aquiclude at the base. An aquiclude is a geological layer that may be capable of storing water but is unable to transmit it in significant amounts, so the Clay is a non-aquifer.
Norfolk County Council Records	Norfolk County Council's closed landfill team are monitoring the landfill site and have confirmed the following: The waste at the site is thought to be up to 12.3m thick, forming a gently sloping mound from the sandstone escarpment to the fen. The site is unlined and has been restored with a thin cap of topsoil, seeded with grass and planted with trees. Several contaminants have been reported in leachate samples from the ditch at the toe of the landfill. Analysis of pH indicated that leachate from the landfill site has a significant impact on the naturally acidic conditions within the surrounding mire. In previous risk assessments contaminants in leachate, including 4-chloro-2-methylphenol, mercury, ammonia, copper and iron, were considered to be 'non-compliant under Part IIA of the Environmental Protection Act (1990)', Mecoprop was considered to require further assessment. NCC recommended additional analysis of selected analytes to assess the long-term risk to the fen, and also recommended that the nutrients entering the fen should be limited. Bioremediation using reed beds within the toe of the landfill has been piloted.

Preliminary Conceptual site model (2018)

Source	Pathway	Receptor	Probability	Hazard	Risk
Metals and metalloids within waste material	Direct contact Inhalation	Humans	Unlikely	Low	Very Low
Metals and metalloids within waste material	Direct Contact	Property	Unlikely	Low	Very Low
Metals and metalloids within waste material	Direct contact	Environment	High Probability	High	Very High Risk
Metals and metalloids within waste material	Direct contact	Controlled water	High Probability	High	Very High Risk

Summary of previous risk assessment	In 2018 the landfill was considered to be having an adverse effect on Dersingham Fen, mainly due to the elevated level of nutrients and neutral pH in the groundwater contaminated through contact with landfill material. Other contaminants of concern were also identified. Mott MacDonald, 2011 indicated that groundwater upwells beneath the toe of the landfill and flows upward in this location. Therefore, the previous BCKLWN, 2018 inspection report considered that the identified contamination will not be able to migrate into the groundwater and that the risk to Controlled Water (groundwater) is low. The ditch at the toe of the landfill is a significant feature in the conceptual site model both as a Controlled Waters (surface water) receptor and as a pathway for contaminant migration onto Dersingham Bog SSSI. No evidence was noted of significant harm to Humans or Property (including buildings and livestock). It was considered that there were potentially significant pollutant linkages which could affect Controlled Water (surface water) and Environment (Dersingham Bog SSSI). The Environment Agency indicated that additional site investigation is required before it can be established if harm to Controlled Water is significant. The site operators (Natural England) and the organisation which filled the landfill (Norfolk County Council) are cooperating in efforts to mitigate the effects on Dersingham Fen therefore determination as Contaminated Land was not considered to be warranted. The 2018 inspection report recommended that the situation should be monitored assess the progress of the mitigation scheme and the impact on the designated environmental receptors.

Progress on site	Natural England have reviewed some of the pressures impacting the SSSI[2]. Water Pollution is reported (2022) to be of high potential risk. The risk from water pollution is recorded to be related to 'pollution from the old refuse site located within the SSSI, which is leaching pollutants into the ground water, impacting the eastern end of Dersingham Bog.' The SSSI condition status comments (2023) that 'a detailed management plan is in place across the NNR (and SSSI) which is reviewed every 5 years. Extensive and effective restoration and management works have been and continue to be undertaken regularly across the SSSI, therefore it is our view that features are in an unfavourable but recovering condition. In addition, a Landscape Recovery Scheme is being developed, which is likely to address the on-going hydrological pressures affecting the SSSI.' Since the earlier 2018 review report Natural England have reported that in March 2020 2 acres of the nearby mire was damaged by fire. The current Dersingham Bog Management Plan runs from 2021-2026 and concludes that the closed landfill at the northern end of the site continues to have an adverse impact on the mire. 'A leachate plume, issuing from the south west corner and heading in a westerly direction, is raising the nutrient status and pH of the mire. Water quality in the landfill perimeter ditch is tested biannually by Norfolk County Council and has been shown to have been relatively stable within the last 5 years.' The Management Plan suggests that to reduce the effect of the landfill, it is important that the landfill perimeter ditch is not allowed to silt up so that there is direct spillover onto the surrounding mire. Additionally, its recommended that when dredging the ditch, it is critical that the 'slubbings' are deposited on the landfill side of the ditch, not the mire as has occurred in the past. A trial bio-remediation bed ('biobed') has been established on the northern face of the landfill since 2015. The volume of this trial bed was estimated in the Management Plan to be sufficient to treat 25% of the total quantity of leachate from the landfill. An annual extent survey and cutting regime is recommended in the Management plan to monitor and reduce the spread of Phragmites (reeds) in the mire adjacent to the landfill. The Dersingham Bog and Fen – Conceptualisation and Restoration Plan, 2023 was undertaken to study the Dersingham Fen SSSI in partnership with Natural England as part of the Nature for Climate Peatland Grant Scheme Discovery Project. The objectives were to create an eco-hydrological conceptual model of the site, to identify ecological restoration measures, and

[2] https://designatedsites.naturalengland.org.uk/

	to identify and mitigate potential pollutant areas and pathways to improve ecological conditions on the SSSI. The Restoration Plan reports that the historical landfill is a source of nutrients to the surrounding habitats. The drain that runs along the boundary of Dersingham Bog and Fen receives water from the ditch around the landfill in turn transporting these nutrients along its length, and leaching nutrients into the surrounding habitats. This has led to the formation of a dense reedbed that is thriving in the high nutrient conditions. The Restoration Plan suggests an approach to limit the potential for leachate from the landfill to spread onto the bog surface and to contain it within the drainage network and areas already with current high nutrient levels. Actions could include blocking some drains and raising groundwater levels in the SSSI, bunding or blocking selected water pathways to reduce flow or remove pollutant migration pathways. Additionally, one new drain is proposed at the toe of the historic landfill to the boundary drain. This would produce a shorter surface water pathway to the boundary drain, meaning diffuse pollutants will leave the site down a shorter pathway. However, these options have not yet been evaluated. The Dersingham Bog Management Plan is due to be revised in 2026 and it is expected that mitigation and restoration options will be selected as part of development of the 2026-2031 Plan. Any measures to reduce leachate inputs to surface water would also address potential impact on the SSSI.
2018 Conclusions	There were potentially significant pollutant linkages from the closed landfill which could affect Controlled Water and the Dersingham Bog SSSI ecological system. Additional site investigation is required before it can be established if pollution of Controlled Waters is significant, or if there is a significant possibility of such pollution.[3] The closed landfill at the northern end of the Dersingham Bog site continues to have an adverse impact on the mire due to contaminants in the leachate. Water quality in the landfill perimeter ditch is reported to have been relatively stable within the last 5 years. Contamination is raising the nutrient status and pH of the mire.

[3] See Categories of harm in appendix 4

Recent action and revised risk assessment	A meeting took place in January 2025 with Natural England and the NCC Closed Landfills team. It was agreed that further work would be required to update the risk assessment to include: 1. Examine the factors constraining and promoting the spread of Common Reed (Phragmites australis). 2. Updated groundwater risk assessment. (NCC) 3. Updated water level monitoring and indicative water chemistry (pH and conductivity) (NE/NCC) 4. Plan to manage hydrology, particularly ‘long pond’ and the ditch at toe of landfill. A site visit took place in March 2025 with the borough council Contaminated Land Team, Norfolk County Council Closed Landfill Team and Natural England to discuss the most recent monitoring data and current issues on site. Photographs were taken in September 2025 as the impact on vegetation and reed growth is more clear. The visit gave a greater practical understanding of the landfill and wider area. Changes in the extent of the ‘long pond’ and changes in vegetation in relation to the landfill were identified as the most urgent management issues for Natural England. In the Part 2A context, the most recent monitoring data suggest that due to the declining source term and the ‘groundwater fed’ model, there is not a significant possibility of significant harm to the ecological systems and there is not a significant possibility of significant pollution of controlled waters. There is a further consideration as the guidance states that 'harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there.' The Enforcing Authority are required by the statutory guidance to consult English Nature (Natural England in the guidance) and have regard to its comments before deciding whether to or not to make a determination. So, the conservation status of the site is a key consideration. If the feature is unfavourable but recovering we are unlikely to consider that significant harm is being caused. Natural England have confirmed that the landfill is not causing significant harm to the site or the SSSI features. The current SSSI status for the site is 'Unfavourable Recovering'. This is mostly due to the expansion of Long Pond and not because of any pollution from the landfill. The 2018 Conceptual Model has been revised based on the assumed declining source term, groundwater model and recovering status of the SSSI.

Assumed revised conceptual site model, Water and Environment (2025)

Source	Pathway	Receptor	Probability	Hazard	Risk
Metals and metalloids, herbicide, pesticide and nutrients within waste material and leachate	Direct contact	Environment (Ecological System)	Likely	Medium	Moderate Risk
	Direct contact	Controlled waters	Likely	Medium	Moderate Risk

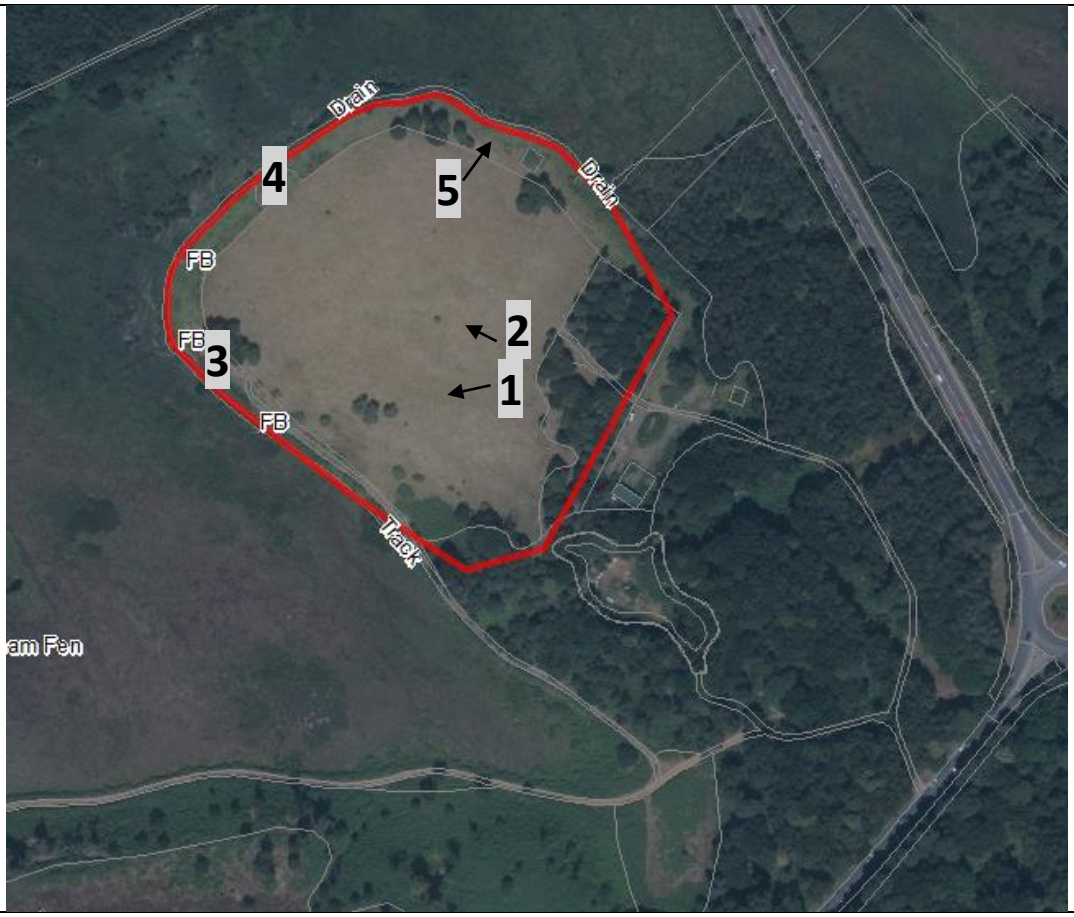
Descriptors adapted from CIRIA C552 and Statutory Guidance

Further action	Further work is required to test the assumptions in the 2025 conceptual site model. The closed landfill team at Norfolk County Council have agreed to carry out the additional work which will finalise the Part 2A review of the site: 1. Groundwater model. 2. Revised groundwater risk assessment, including the role of the ditch as both a receptor and migration pathway. 3. Summary data to evidence declining source term. NCC closed landfill team have confirmed that this work will be carried out. However, the team have had some staffing changes which have delayed production of the reports, and a timescale has not been provided. Natural England have agreed they will need to carry out the following to inform future Part 2A reviews as well as develop the long-term management plan for the site a) Monitor and manage the reed bed. Examine factors constraining and promoting the spread of Common Reed. b) Carry out further work to form a conceptual model to demonstrate the hydrology of the site, biological processes, water levels and indicative water chemistry. c) Develop a plan to manage water levels/hydrology in long pond and ditch at toe of landfill d) Develop a plan for long term management of hydrology and relationship to flood and water management. e) Develop a remediation strategy that can be incorporated into the 2026-2031 Management Plan
Conclusions	Considering the assumed declining source term, groundwater model and recovering status of the SSSI the Conceptual Model can be revised. Based on the assumptions in the revised risk assessment, the site presents a moderate risk to controlled water and could be classified as category 3 water. Additionally, it can be assumed that the site does not represent a significant possibility of significant harm to the SSSI ecosystem. Work is being undertaken to address data gaps and to develop a long-term management plan. Therefore, the next review of the site will take place in April 2026 when the further work should be complete and when the conceptual site model and risk assessment can be finalised.

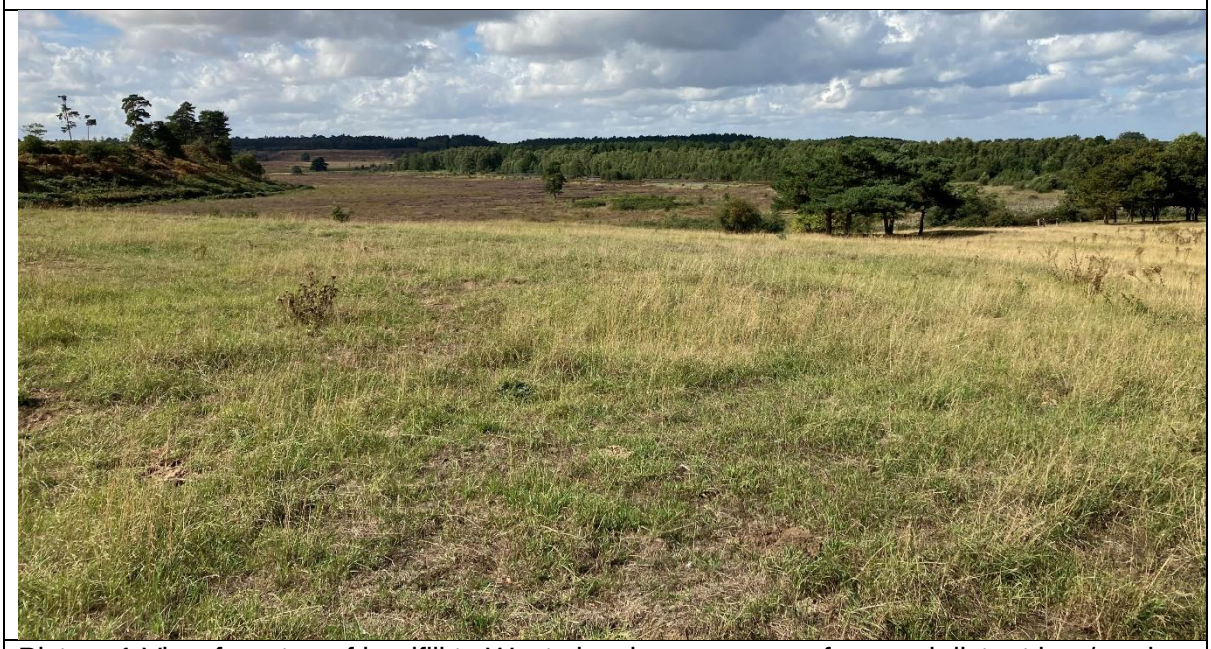
Appendices

1. **Photographs**
2. **Categories of harm & pollution – Controlled Waters & Ecological System**

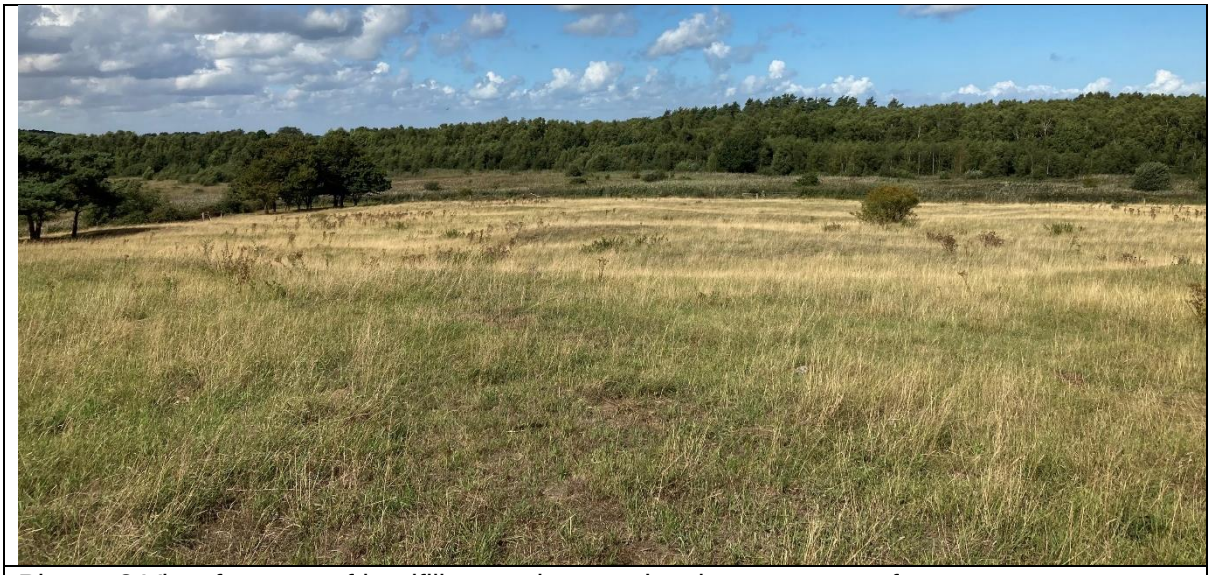
Appendix 1: Photographs



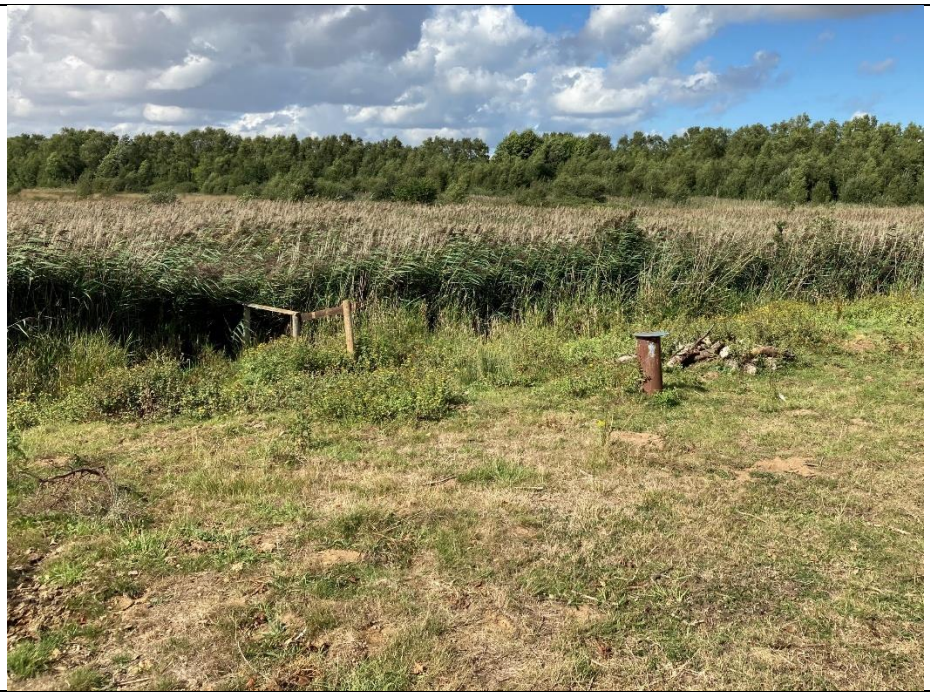
Photograph locations



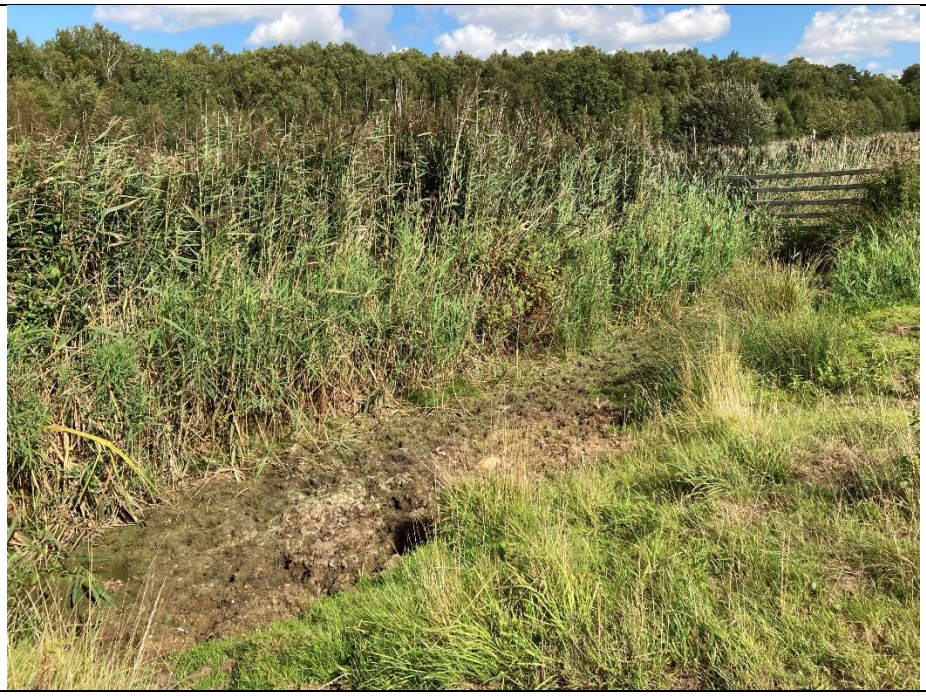
Picture 1 View from top of landfill to West showing uneven surface and distant bog/reeds



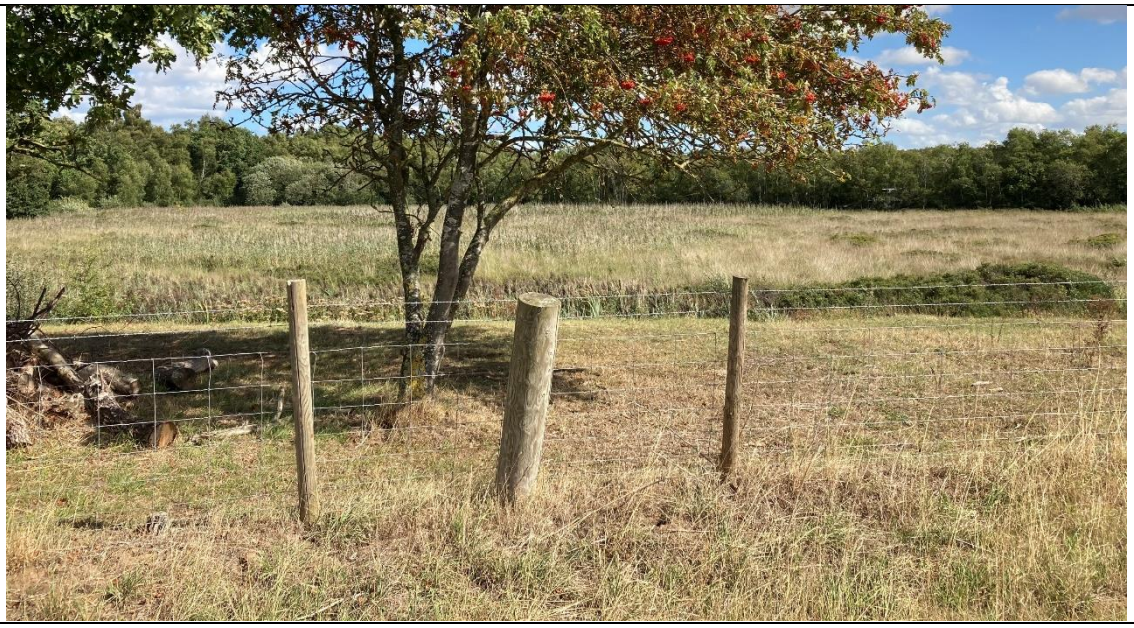
Picture 2 View from top of landfill to north west showing uneven surface



Picture 3 Monitoring borehole and ‘bridge’ to monitoring point at base of landfill. Reeds.



Picture 4 Boggy ditch at toe of landfill. Reeds



Picture 5 View from base of landfill towards north east showing eastern extent of reeds

Appendix 2: 2: Categories of harm & pollution

Environmental Protection Act 1990: Part 2A.
Contaminated Land Statutory Guidance, DEFRA 2012

Table 1: Ecological system effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
Any ecological system, or living organism forming part of such a system, within a location which is: • a site of special scientific interest (under section 28 of the Wildlife and Countryside Act 1981) • a national nature reserve (under s.35 of the 1981 Act) • a marine nature reserve (under s.36 of the 1981 Act) • an area of special protection for birds (under s.3 of the 1981 Act) • a "European site" within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010 • any habitat or site afforded policy protection under paragraph 6 of Planning Policy Statement (PPS 9) on nature conservation (i.e. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); or • any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949.	The following types of harm should be considered to be significant harm: • harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or • harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location. In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010.	Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological receptor where the local authority considers that: • significant harm of that description is more likely than not to result from the contaminant linkage in question; or • there is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration. Any assessment made for these purposes should take into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.

Section 4.4: Significant pollution of controlled waters and significant possibility of such pollution

4.34 This sub-section gives Guidance on how the local authority should go about deciding whether significant pollution of controlled waters is being caused, or whether there is a significant possibility of such pollution being caused. This sub-section deals with controlled waters as a receptor in contaminant linkages, and not as a pathway.

4.35 In establishing whether significant pollution of controlled waters is being caused, or whether there is a significant possibility of such pollution being caused, the local authority should have regard for any technical guidance issued by the Environment Agency to support this Guidance. If the authority considers it likely that land might be contaminated land on such grounds, it should consult the Agency and have strong regard to the Agency's advice.

Pollution of controlled waters

4.36 Under section 78A(9) of Part 2A the term "pollution of controlled waters" means the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter. The term "controlled waters" in relation to England has the same meaning as in Part 3 of the Water Resources Act 1991, except that "ground waters" does not include waters contained in underground strata but above the saturation zone.

4.37 Given that the Part 2A regime seeks to identify and deal with significant pollution (rather than lesser levels of pollution), the local authority should seek to focus on pollution which: (i) may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems; (ii) which may result in damage to material property; or (iii) which may impair or interfere with amenities and other legitimate uses of the environment.

Significant pollution of controlled waters

4.38 The following types of pollution should be considered to constitute significant pollution of controlled waters:

(a) Pollution equivalent to "environmental damage" to surface water or groundwater as defined by The Environmental Damage (Prevention and Remediation) Regulations 2009, but which cannot be dealt with under those Regulations.

(b) Inputs resulting in deterioration of the quality of water abstracted, or intended to be used in the future, for human consumption such that additional treatment would be required to enable that use.

(c) A breach of a statutory surface water Environment Quality Standard, either directly or via a groundwater pathway.

(d) Input of a substance into groundwater resulting in a significant and sustained upward trend in concentration of contaminants (as defined in Article 2(3) of the Groundwater Daughter Directive (2006/118/EC)[5]).

5 Relating to paragraph 4.41(d), Article 2(3) says, "significant and sustained upward trend means any statistically and environmentally significant increase of concentration of a pollutant, group of pollutants, or indicator of pollution in groundwater for which trend reversal is identified as being necessary in accordance with Article 5."

4.39 In some circumstances, the local authority may consider that the following types of pollution may constitute significant pollution: (a) significant concentrations[6] of hazardous substances or non-hazardous pollutants in groundwater; or (b) significant concentrations of priority hazardous substances, priority substances or other specific polluting substances in surface water; at an appropriate, risk-based compliance point[7]. The local authority should only conclude that pollution is significant if it considers that treating the land as contaminated land would be in accordance with the broad objectives of the regime as described in Section 1. This would normally mean that the authority should conclude that less serious forms of pollution are not significant. In such cases the authority should consult the Environment Agency.

4.40 The following types of circumstance should not be considered to be contaminated land on water pollution grounds:

(a) The fact that substances are merely entering water and none of the conditions for considering that significant pollution is being caused set out in paragraphs 4.38 and 4.39 above are being met.

(b) The fact that land is causing a discharge that is not discernible at a location immediately downstream or down-gradient of the land (when compared to upstream or up-gradient concentrations).

(c) Substances entering water in compliance with a discharge authorised under the Environmental Permitting Regulations.

Significant pollution of controlled waters is being caused

4.41 In deciding whether significant pollution of controlled waters is being caused, the local authority should consider that this test is only met where it is satisfied that the substances in question are continuing to enter controlled waters; or that they have already entered the waters and are likely to do so again in such a manner that past and likely future entry in effect constitutes ongoing pollution. For these purposes, the local authority should:

(a) Regard substances as having entered controlled waters where they are dissolved or suspended in those waters, or (if they are immiscible with water) they have direct contact with those waters on or beneath the surface of the water.

(b) Take the term "continuing to enter" to mean any measurable entry of the substance(s) into controlled waters additional to any which has already occurred.

(c) Take the term "likely to do so again" to mean more likely than not to occur again.

4.42 Land should not be determined as contaminated land on grounds that significant pollution of controlled waters is being caused where: (a) the relevant substance(s) are already present in controlled waters; (b) entry into controlled waters of the substance(s) from land has ceased; and (c) it is not likely that further entry will take place.

6 Significant concentrations must be determined on a site and substance specific basis.
7 Appropriate compliance points must be determined on a site and substance specific basis.

Significant possibility of significant pollution of controlled waters

4.43 In deciding whether or not a significant possibility of significant pollution of controlled waters exists, the local authority should first understand the possibility of significant pollution of controlled waters posed by the land, and the levels of certainty/uncertainty attached to that understanding, before it goes on to decide whether or not that possibility is significant. The term "possibility of significant pollution of controlled waters" means the estimated likelihood that significant pollution of controlled waters might occur. In assessing the possibility of significant pollution of controlled waters from land, the local authority should act in accordance with the advice on risk assessment in Section 3 and the guidance in this sub-section.

4.44 In deciding whether the possibility of significant pollution of controlled waters is significant the local authority should bear in mind that Part 2A makes the decision a positive legal test. In other words, for particular land to meet the test the authority needs reasonably to believe that there is a significant possibility of such pollution, rather than to demonstrate that there is not.

4.45 Before making its decision on whether a given possibility of significant pollution of controlled waters is significant, the local authority should consider:

(a) The estimated likelihood that the potential significant pollution of controlled waters would become manifest; the strength of evidence underlying the estimate; and the level of uncertainty underlying the estimate.

(b) The estimated impact of the potential significant pollution if it did occur. This should include consideration of whether the pollution would be likely to cause a breach of European water legislation, or make a major contribution to such a breach.

(c) The estimated timescale over which the significant pollution might become manifest.

(d) The authority's initial estimate of whether remediation is feasible, and if so what it would involve and the extent to which it might provide a solution to the problem; how long it would take; what benefit it would be likely to bring; and whether the benefits would outweigh the costs and any impacts on local society or the environment from taking action.

4.46 The local authority should consider these factors in the context of the broad objectives of the regime as set out in Section 1. It should also consider how the factors interrelate (e.g. likelihood relative to impact). The authority should then decide which of the following categories the land falls into. Categories 1 and 2 would comprise cases where the authority considers that a significant possibility of significant pollution of controlled waters exists. Categories 3 and 4 would comprise cases where the authority considers that a significant possibility of such pollution does not exist.

(a) **Category 1 (Water):** This covers land where the authority considers that there is a strong and compelling case for considering that a significant possibility of significant pollution of controlled waters exists. In particular this would include cases where there is robust science-based evidence for considering that it is likely that high impact pollution (such as the pollution described in paragraph 4.38) would occur if nothing were done to stop it.

(b) **Category 2 (Water):** This covers land where: (i) the authority considers that the strength of evidence to put the land into Category 1 does not exist; but (ii) nonetheless, on the basis of the available scientific evidence and expert opinion, the authority considers that the risks posed by the land are of sufficient concern that the land should be considered to pose a significant possibility of significant pollution of controlled waters on a precautionary basis, with all that this might involve (e.g. likely remediation requirements, and the benefits, costs and other impacts of regulatory intervention). Among other things, this category might include land where there is a relatively low likelihood that the most serious types of significant pollution might occur.

(c) **Category 3 (Water):** This covers land where the authority concludes that the risks are such that (whilst the authority and others might prefer they did not exist) the tests set out in Categories 1 and 2 above are not met, and therefore regulatory intervention under Part 2A is not warranted. This category should include land where the authority considers that it is very unlikely that serious pollution would occur; or where there is a low likelihood that less serious types of significant pollution might occur.

(d) **Category 4 (Water):** This covers land where the authority concludes that there is no risk, or that the level of risk posed is low. In particular, the authority should consider that this is the case where: (a) no contaminant linkage has been established in which controlled waters are the receptor in the linkage; or (b) the possibility only relates to types of pollution described in paragraph 4.40 above (i.e. types of pollution that should not be considered to be significant pollution); or (c) the possibility of water pollution similar to that which might be caused by “background” contamination as explained in Section 3.