

**Hawke Ridge Business Park Ltd and Bellway
Homes Ltd**

Land at Hawke Ridge Business Park

Environmental Statement: Volume 1, Main Text

Chapter 13: Soils, Geology and Contaminated Land





13 SOILS, GEOLOGY AND CONTAMINATED LAND

INTRODUCTION

13.1 It is proposed to construct a new, residential-led, mixed use development comprising approximately 249 residential dwellings, a 64 bed care home, a convenience store and retail facilities plus public open space. Descriptions and details pertaining to the Application Site and the Proposed Development are contained within Chapters 2 and 5 respectively of the Environmental Statement (ES), to which reference should be made.

13.2 This Chapter of the ES considers the key impacts of the Proposed Development (refer to land use parameter plan in Chapter 5 and **Appendix 5**) on human health, controlled waters and the land and ecosystem quality (both on site and the wider surrounding area).

13.3 The following chapter has been written to satisfy the Scoping Opinion from Wiltshire County Council (WCC) and should be read in conjunction with the Wilson Associates reports detailed below. The following considers the possibility of land contamination associated with the previous usage of both the Application Site and its immediate surrounding area. This preliminary contamination assessment is considered necessary in light of the proposed residential / commercial development.

- WA Phase 1 Geo-Environmental Desk Study Report, ref 5636, dated June 2026 (**Appendix 13.1**)
- WA Phase 2 Ground Investigation Report, ref: 5636/3, dated July 2026 (**Appendix 13.2**)

ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

13.4 This section comprises the methodology used to assess the magnitude of an impact and its significance in terms of the considered sensitivity of each receptor. Also included are listings of the policies and guidelines adhered to, as well as the survey techniques used to obtain the relevant data.



Methodology

Criteria for Impact Magnitude

13.5 The criteria for the type of effect is shown in Table 13.1 below and considers both the area and volume (proportional to the Application Site) that is or is likely to be impacted, and either the negative or positive consequences of such an impact in terms of its effect upon one of more of the following:

- Human Health of on-site workers (development phase), users and general public in the surrounding area.
- Controlled surface waters and groundwater resources.
- Proposed landscaped areas (including public area), the on-site ecosystem and the ecosystem of the surrounding area.
- Proposed construction including foundations.
- The natural undisturbed geology (soil and rock).

13.6 The degree of magnitude of an impact has been considered with regard to its potential to cause significant harm to human health, controlled waters or the surrounding ecosystem.

Table 13.1 Impact Magnitude

MAGNITUDE	CRITERIA
Major Adverse	• Significant harm to a human • Significant long-term effect on water quality • Unable to sustain an ecosystem • Irreparable effect on soil / rock.
Moderate Adverse	• Possible significant harm to a human • Possible effect on water quality • Possible long-term effect on ecosystem • Long-term effect on soil / rock.
Minor Adverse	• Possible harm to a human but not significant • Low likelihood of water quality being affected • Low likelihood of ecosystem being affected • Low likelihood of soil / rock being affected
Neutral / Negligible	• No effect
Beneficial (minor / moderate / major) Impact	• A positive effect



Criteria for Impact Sensitivity

13.7 The criteria for the sensitivity of a receptor to any given impact with respect to contaminated land are shown in Table 13.2 below.

Table 13.2 Effect Sensitivity

Site Sensitivity	Criteria
High	• Residential end use • Major aquifer beneath the site or within influencing distance • On-site/off-site surface waters of good to excellent quality • Excellent habitat • Geological sites of National Importance
Medium	• Allotment end use • Minor aquifer beneath the site or within influencing distance • On-site/off-site surface waters of moderate quality • Geological sites of Regional Importance • Good habitat
Low	• Commercial/Industrial end use • Non-aquifer beneath the site • On-site/off-site surface waters of poor quality • Poor habitat • A site of no geological importance

Assessment of Significance

Criteria for Impact Significance

13.8 The significance of a potential effect is based on the combination of the magnitude and sensitivity of any given effect and the criteria for which is shown in Table 13.3.

Table 13.3 Effect Significance

		SENSITIVITY OF RECEPTOR			
		High	Medium	Low	Negligible
MAGNITUDE OF CHANGE	High	Major Significance	Major Significance	Moderate Significance	Negligible



		SENSITIVITY OF RECEPTOR			
		High	Medium	Low	Negligible
	Medium	Major Significance	Moderate Significance	Minor / Moderate Significance	Negligible
	Low	Moderate Significance	Minor / Moderate Significance	Minor Significance	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

- Major Significance: issues which have a high potential to represent a cost or liability to the site owner or occupiers.
- Moderate Significance it is possible but not certain that such issues might arise as a cost or liability for the site owner or occupiers.
- Minor Significance it is considered unlikely that such issues may represent a cost or liability for the owner or occupiers of the site.
- Negligible there is considered to be no significant risk to the present or future site occupants, nor to the environment.

Legislative and Policy Framework

13.9 The following policy documents have been considered and followed within this assessment:

- Environmental Protection Act 1990 – Part IIA
- National Planning Policy Framework (NPPF) (2019) replacing previous version (2012) and previously Planning Policy Statement 23 (PPS 23): Planning and Pollution Control – Annex 2: Development on Land Affected by Contamination

Scoping Criteria

13.10 In accordance with Stroud District Council's Scoping Opinion, the following considers the possibility of land contamination associated with the previous usage of the both the Application Site and its immediate surrounding area. This preliminary contamination assessment is considered necessary in light of the Proposed Residential / Commercial Development.



Limitations to the Assessment

13.11 It should be noted that some limitations apply to our preliminary assessment, and whilst they are referred to within the Phase 1 Geo-Environmental Desk Study report and the Phase 2 Ground Investigation report, they are presented below for completeness:

- Obviously historical Ordnance Survey plans only represent periodic snapshots in time, and do not provide a continuous record of previous site usage. There is therefore a risk that the Application Site may contain waste products associated with previous site usage that may not be evident from the site walkover inspection and/or desk study researches.
- In line with best industry practice the scope of contamination testing has been based upon the site history, current land usage and actual findings, with reference where necessary to DoE Industry Profiles and DEFRA/EA guidance. To the best of our knowledge information concerning the land quality assessment is accurate at the date of issue, however subsurface conditions including ground contamination may vary spatially and with time. There may be conditions pertaining to the Application Site not disclosed by the above sources of information, which might have a bearing upon the recommendations made, were such conditions known. We have however used our professional judgement in order to limit this during the investigation.
- The conclusions and recommendations made in respect of land quality do not address any potential risks to site operatives or ground workers during the construction stage. These issues should be addressed by the Principal Contractor in accordance with the relevant statutory procedures and regulations (CDM Regulations 2015).
- It is important that these limitations be clearly recognised when the findings and recommendations of this report are being interpreted. Additional assessment may be necessary should a significant delay occur between report date and implementation of the proposed scheme to which it relates.

BASELINE CONDITIONS

13.12 This section comprises an initial site description and places the Application Site in context regarding the potential for the presence of contamination. Using the survey techniques listed in references 13.4 to 13.11 the baseline survey information covers the Application Site's history, land use and its environmental setting.



Site Description and Context

13.13 As determined from the walkover survey, the Application Site constitutes two large parcels of agricultural land (Northern Half and Southern Half), which are internally dissected in a roughly east-west direction through the centre by Mill Lane (from which access is made) and Hawke Ridge Business Park.

13.14 Field boundaries appeared to consist of primarily hawthorn/blackthorn. Open ditches (circa 1.0m deep) are present in the middle of both halves to try and aid land drainage. The southern parcel of land also included an area at its lowest elevation within the northeastern corner that appeared to be borderline marshland.

13.15 Topographical data derived from Google Earth indicates the northern half of the Application Site to have an elevation of 48-53m above Ordnance Datum (AOD) with a general fall from northwest to southeast. The southern half has an elevation of 50-56m AOD with a general fall from south to north-northeast.

Baseline Survey Information

Geology

13.16 The geology of the Application Site is shown on the 1:10,000 scale sheet ST 85 SE (2011) (Ref. 13.6); this mapping indicates the Application Site to be underlain in its entirety by bedrock of the Oxford Clay Formation (OxC). This stratum typically comprises grey, sometimes slightly silty mudstone that weathers near surface to firm plastic clay. Overlying superficial Alluvium (AL) is shown to partially cover OxC bedrock, shown to extend across much of the southern half and near the eastern boundary of the northern half. Mapping has record of a geological fault some 125m to the southeast and an area of recorded made ground some 160m to the southeast.

Hydrogeology

13.17 The OxC bedrock is classified by the EA as 'Unproductive' strata. The superficial AL has been designated as a "Secondary B" aquifer, characterised as predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. The Application Site does not lie inside or within influencing distance of a recorded groundwater



source protection zone (SPZ). There are no recorded groundwater abstractions within a 1km radius of the Application Site.

Hydrology

13.18 There are no ponds or watercourses within the Application Site, however a tributary of the Bitham Brook is coincident with the entire eastern boundary of Application Site's northern half. Within the northeast corner of the southern half (at the closest point to the tributary of the Bitham Brook), a small area was noted to be waterlogged (borderline marshland) at the time of the ground investigation. Open ditches (circa 1.0m deep) are present crossing through the middle of both halves. The EA does not consider the main body of the Application Site to be at risk of flooding, however a localised area along the eastern boundary of the Application Site's northern half as well as the northeastern corner of the southern half coincides with a Flood Zone 2, likely associated with the tributary of the Bitham Brook. The entire Application Site surface comprises soft landscaping, therefore rainwater infiltration at the Application Site can currently be regarded as high, subject to natural permeability.

Site History

13.19 The history of both the Application Site and its immediate surrounding area has been deduced by inspection of the historical Ordnance Survey maps provided as part of Wilson Associates Phase 1 Geo-Environmental Desk Study Report 5636 (Ref. 13.4). With the exception of the recent construction of a sewage pumping station located in the eastern corner of the Application Site's northern half, based upon historic Ordnance Survey mapping, the Application Site has remained as undeveloped fields (farmland) since the earliest available mapping of 1884.

Site Sensitivity

13.20 The Application Site does not lie within any environmentally sensitive areas.

Land Use

13.21 Based upon the available information gleaned from the desk study researches (Ref. 13.4), the Application Site and its immediate surrounding area has not previously contained and does not currently contain, or has not previously been affected by any of the following:

- Contaminated land register entries/notices



- Integrated pollution prevention & control enforcements
- Hazardous substances (including explosive or radioactive)
- Fuel Stations
- Coal mining or shallow mining

Potentially Contaminative Uses – On Site

13.22 Based upon the review of historical Ordnance Survey mapping (see paragraph 13.19 and Ref. 13.4) as well as reconnaissance inspection, the Application Site appears unlikely to have been significantly adversely affected by its historical and indeed present usage as agricultural land, although it is recognised that there is the potential for pesticides to be present.

13.23 There have not been any prosecutions relating to pollution incidents to controlled waters within the Application Site.

Potentially Contaminative Uses – Off Site

13.24 Based upon the review of historical Ordnance Survey mapping (see paragraph 13.19 and Ref. 13.4) as well as reconnaissance inspection, a couple of potential sources of contamination were identified. Those include a vehicle repair shop located between the two halves of the Application Site within the Hawke Ridge Business Park (low risk of toxic metals and hydrocarbons) and a historically infilled railway cutting immediately beyond the southern boundary of the Application Site's southern half (recorded as having been infilled with a mixture of inert, industrial, commercial and domestic waste with a last input date of October 1985).

13.25 There have not been any prosecutions relating to pollution incidents to controlled waters within influencing distance of the Application Site.

Summary of Ground Conditions Encountered

13.26 Based upon information available at the time (preceding Phase 1 researches), intrusive investigation was undertaken (Ref 13.8), targeted (as necessary) to reflect both the former/existing site usage though also to provide overall site coverage relative to the Proposed Development layout. Intrusive investigation identified the recorded bedrock of the Oxford Clay Formation beneath the entire Application Site, locally overlain by superficial Alluvium, although the spread of Alluvium across the Applications Site's southern half did not match that shown



on the geological mapping sheet. The foregoing was all overlain by topsoil. Superficial made ground was limited to a single area within the Application Site's northern half only and there was no visual or olfactory evidence of contamination either at surface or in any site arisings. Perched/groundwater was locally identified during the investigation, with subsequent borehole monitoring recording 'locally shallow' standing water levels across the entire Application Site.

13.27 Contamination sampling and laboratory soil testing has been undertaken with analysis based on the principal contaminants of concern as identified within the Phase 1 geo-environmental desk study report (including toxic & phytotoxic metals, polyaromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH) and pesticides). Following detailed contamination risk assessment, from a human health perspective, the Application Site is effectively uncontaminated; as such no pre-construction remediation is considered necessary in respect of human health risk.

13.28 Contamination sampling and laboratory leachate testing has been undertaken with analysis based on the principal contaminants of concern as identified within the Phase 1 geo-environmental desk study report (including toxic & phytotoxic metals and PAH). A single very mild elevation of the leachable toxic metal Chromium has been recorded within the localised made ground, however following detailed contamination risk assessment, from a controlled waters/groundwater perspective, the risk to controlled waters was deemed to be low/negligible and pre-construction remediation is not considered necessary.

ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

Construction Phase

13.29 This section identifies the likely significant effects upon the receptors that may occur as a result of the Proposed Development during its construction phase (as shown in Table 13.4). All potential effects are considered with regard to their likely magnitude, the sensitivity of each receptor and the significance of that effect without any adopted mitigation measures in place. We have also considered the possibility of any cumulative effects.



Table 13.4 Key Effects from the Proposed Development (Construction Phase)

Source	Pathway	Receptor	Effect	Magnitude	Sensitivity	Significance	Justification
Potential low-level / negligible toxic / phytotoxic metals and/or hydrocarbon and/or pesticide contamination in near-surface soils	Direct dermal contact with / ingestion of / inhalation of soil and dust	Construction Workers	Toxic / Phytotoxic Effects; Harm to Human Health' Carcinogenic	Minor / Moderate Adverse	Low (short-term exposure)	Negligible	Only localised made ground recorded across site (agricultural land); no soil contamination suggests no apparent / significant risk to human health; construction phase will offer only limited exposure
	Inhalation of soil dust	Off site General Public	Toxic / Phytotoxic Effects; Harm to Human Health; Carcinogenic	Minor Adverse / Negligible	High (Residential End Use)	Minor / Moderate Significance	Only localised made ground recorded across site (agricultural land); no soil contamination suggests no apparent / significant risk to human health; construction phase will offer only limited exposure
	Surface run-off / Leachate Infiltration	Surrounding Ecosystem	Uptake of identified contaminants by vegetation	Minor adverse	Moderate	Minor Significance	Only localised made ground recorded across site. Leachate analysis of soil samples indicates that the proposed development site poses no apparent/significant risk to the environment. Construction activities unlikely to increase likelihood of leachable contaminants
	Surface run-off	Surface Water	Raise levels of Toxic / Phytotoxic metals / hydrocarbons etc above Environment Agency (EA) Environmental Quality Standards (EQS)	Minor Adverse	Moderate	Minor Significance	Only localised made ground recorded across site. Leachate analysis of soil samples indicates that the proposed development site poses a very low risk to controlled waters. Construction activities unlikely to increase likelihood of leachable contaminants
	Leachate Infiltration	Groundwater	Raise levels of Toxic / Phytotoxic metals / hydrocarbons etc above EA EQS	Minor Adverse	Moderate	Minor Significance	Only localised made ground recorded across site. Leachate analysis of soil samples indicates that the proposed development site poses a very low risk to groundwater. Construction activities unlikely to increase likelihood of leachable contaminants
Potential hydrocarbon contamination from a leaking tank or plant brought in by contractors	Leachate Infiltration / Surface Run-off	Surrounding Ecosystem	Carcinogenic	Moderate Adverse	Moderate	Moderate Significance	Unlikely to be an issue if tanks are bunded, plant is in good working order and contractor follows good health and safety and good working practices
	Surface Run-off	Surface Water	Raise levels of hydrocarbons above EA EQS	Minor Adverse	Moderate	Moderate Significance	Unlikely to be an issue if tanks are bunded, plant is in good working order and contractor follows good health and safety and good working practices
	Leachate Infiltration	Groundwater	Raise levels of hydrocarbons above EA EQS	Moderate Adverse	Moderate	Moderate Significance	Unlikely to be an issue if tanks are bunded, plant is in good working order and contractor follows good health and safety and good working practices



Operational Phase

13.30 This section identifies the likely significant effects upon the receptors that may occur as a result of the Proposed Development during its operational phase (as shown in Table 13.5). All potential effects are considered with regard to their likely magnitude, the sensitivity of each receptor and the significance of that effect without any adopted mitigation measures in place. We have also considered the possibility of any cumulative effects.

Table 13.5 Key Effects from the Proposed Development (Operational Phase)

Source	Pathway	Receptor	Effect	Magnitude	Sensitivity	Significance	Justification
Low-level leachable toxic metal Chromium contamination in localised made ground	Direct dermal contact with / ingestion of / inhalation of soil and dust	Future Site Occupants / Users	Toxic / Phytotoxic Effects; Harm to Human Health; Carcinogenic	Minor / Moderate Adverse	High (Residential End Use)	Moderate / Major Significance	Only localised made ground recorded across site (agricultural land); no soil contamination suggests no apparent / significant risk to human health; operational phase will offer only limited exposure
	Inhalation of soil dust and/or ground gas	Off site General Public	Toxic / Phytotoxic Effects; Harm to Human Health; Carcinogenic	Minor Adverse / Negligible	High (Residential End Use)	Moderate / Minor Significance	Only localised made ground recorded across site (agricultural land); no soil contamination suggests no apparent / significant risk to human health; operational phase will offer only limited exposure; Very low risk that gas protection measures will be required
	Surface run-off / Leachate Infiltration	Surrounding Ecosystem	Uptake of contaminants by vegetation	Minor adverse	Moderate	Minor Significance	Only localised made ground recorded across site (agricultural land); low-level leachable chromium presents no apparent / significant risk to vegetation. Operational activities unlikely to increase likelihood of leachable contaminants
	Surface run-off	Surface Water	Raise levels of Toxic / Phytotoxic metals / hydrocarbons etc above Environment Agency (EA) Environmental Quality Standards (EQS)	Minor Adverse	Moderate	Minor Significance	Only localised made ground recorded across site (agricultural land); low-level leachable chromium presents very low risk to controlled waters. Operational activities unlikely to increase likelihood of leachable contaminants
	Leachate Infiltration	Groundwater	Raise levels of Toxic / Phytotoxic metals / hydrocarbons etc above EA EQS	Minor Adverse	Moderate	Minor Significance	Only localised made ground recorded across site (agricultural land); low-level leachable chromium presents very low risk to groundwater. Operational activities unlikely to increase likelihood of leachable contaminants



MITIGATION AND ENHANCEMENT

Mitigation by Design

13.31 This section notes any potentially significant impacts identified within paragraph 13.29 and 13.30 and describes the type and implementation of the most suitable mitigation strategies (as shown in Table 13.6).

Table 13.6 Mitigation Strategy

Impact	Significance Pre-Mitigation	Description of Mitigation Strategy	Type of Mitigation	Significance Post-Mitigation
Construction Phase Impacts				
Low-level leachable toxic metal chromium impact on human health of construction workers / off-site general public	Negligible	The use of good working practices in line with CDM Regulations 2015; laboratory analysis and contamination risk analysis confirms no apparent / significant risk to human health	None	Negligible
Low-level leachable toxic metal chromium impact on controlled surface waters / groundwater	Negligible	The use of good working practices in line with CDM Regulations 2015; Made ground stratum likely to be briefly exposed at surface following site strip removal of overlying topsoil but laboratory testing suggests that this is likely an isolated value from an area of localised made ground and not considered to represent a larger area of significant contamination therefore risk to controlled waters/groundwater is considered negligible	None	Negligible
Low-level leachable toxic metal chromium impact upon surrounding ecosystem	Negligible	The use of good working practices in line with CDM Regulations 2015; laboratory analysis and contamination risk analysis confirms no apparent / significant risk to vegetation	None	Negligible
Operational Phase Impacts				
Low-level leachable toxic metal chromium impact on human health of future site occupants/users & off-	Negligible	Laboratory analysis and contamination risk analysis confirms no apparent / significant risk to human health	None	Negligible



Impact	Significance Pre-Mitigation	Description of Mitigation Strategy	Type of Mitigation	Significance Post-Mitigation
site general public				
Low-level leachable toxic metal chromium impact on controlled surface waters / groundwater	Negligible	Laboratory testing suggests that this is likely an isolated value from an area of localised made ground and not considered to represent a larger area of significant contamination therefore risk to controlled waters/groundwater is considered negligible	None	Negligible
Low-level leachable toxic metal chromium impact upon surrounding ecosystem	Negligible	The use of good working practices in line with CDM Regulations 2015; laboratory analysis and contamination risk analysis confirms no apparent / significant risk to vegetation	None	Negligible

Additional Mitigation

13.32 This section notes any additional mitigation measures recommended that are not included within the design.

Table 13.7 Mitigation

Ref	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured		
		By Design	By S1.06	By Condition
1	Subject to completion of the gas monitoring program and confirmation of the requirement for mitigation, it may be necessary to adopt landfill gas protection measures within proposed buildings to protect against a potentially gassing off-site historical landfill source (specific scope dependent upon concentration of gas recorded and end-use of affected buildings)	X		

CUMULATIVE AND IN-COMBINATION EFFECTS

13.33 Within the context of the chapter regarding contaminated land, there are not considered to be any cumulative effects, collectively with other proposed off-site developments in and surrounding



Hawke Ridge, Westbury, upon any receptors. Additionally, there are not considered to be any in-combination effects or interactions with other environmental topic areas.

SUMMARY

Introduction

13.34 This chapter of the Environmental Statement (ES) considers the key impacts of a proposed mixed use development scheme on human health, controlled waters and the land and ecosystem quality (both on the Application Site and the wider surrounding area) for an Application Site located in Hawke Ridge, Westbury.

Assessment Approach

13.35 Desk study researches have been used in conjunction with the findings of a site reconnaissance to develop a Preliminary Conceptual Site Model (in line with LCRM guidance) in order to assess the presence of any contamination sources that could potentially pose an adverse risk to future human health and controlled waters in light of the Proposed Development. The findings of the desk study and CSM are used to inform the scope of follow-up intrusive investigation including identification of potential Contaminants of Concern; these are tested as part of the intrusive investigation to provide the data necessary to carry out a Detailed Quantitative Contamination Risk Assessment.

Baseline Conditions

13.36 A review of historical Ordnance Survey plans indicates that, with the exception of the recent construction of a sewage pumping station, the Application Site has remained as undeveloped fields since the earliest available mapping of 1884.

13.37 Below a thin surface mantle of topsoil, localised made ground and partial coverage of superficial Alluvium the Application Site is underlain by 'bedrock' of the Oxford Clay Formation (OxC). The OxC is classified as an Unproductive aquifer, whilst the Alluvium classifies as a 'Secondary B' aquifer. The Application Site does not lie inside or within influencing distance of a recorded groundwater source protection zone (SPZ), and there are no recorded groundwater abstractors within a 1km radius of the Application Site. A tributary of a local brook passes alongside the eastern boundary of the northern half. There are no ponds on the Application Site, however the lowest elevation (in the northeastern corner of the southern half) did appear to be marshland. With



the exception of field/hedge borders, the surface comprises entirely of topsoil, therefore rainwater infiltration can currently be regarded as high, subject to natural permeability.

13.38 The existing agricultural land use and surrounding historical/current land uses does not appear to have had a significant contamination impact on near surface soils. Notwithstanding the foregoing, intrusive investigation has recorded a single minor elevation of leachable toxic metal chromium within localised made ground.

Assessment of Likely Significant Effects

13.39 In view of the above discussions, the various environmental issues which have been considered have been assessed in terms of their likely impact upon human health, controlled waters and the surrounding ecosystem. The risks have been assessed by consideration of the “source-pathway-receptor” concept, the behaviour of potential contaminants within the environment, current and reasonably foreseeable legislation, and the views of and good practices expected by the environmental regulators.

13.40 Several potential impacts have been considered relating to both Construction and Operational Phases of the Proposed Development on human health, controlled waters/groundwater and the ecosystem. Detailed contamination risk assessment using the laboratory test results indicated the presence of inorganic leachable chromium within localised made ground, however risk assessment concluded a negligible risk to surface waters/groundwater receptors. There are not considered to be any cumulative effects relating to contaminated land arising from the Proposed Development or other sites in the vicinity.

Mitigation and Enhancement

13.41 The above pre-mitigation effects have been assessed and the type and description of appropriate mitigation strategies outlined, again relating to the Construction and Operational Phases of the Proposed Development. Intrusive investigation identified no visual or olfactory evidence of contamination in any site arisings and from a human health perspective, the Application Site is effectively uncontaminated. With regards to controlled waters, whilst laboratory leachate analysis identified a single minor elevation of the toxic metal chromium, risk assessment has determined that a single minor and isolated value does not pose a significant risk to surface waters / groundwater. Landfill gas monitoring to date indicates a negligible gas regime for the entire Application Site for which no gas protection measures in new buildings are considered necessary, although monitoring is still ongoing as it has not yet been possible to monitor during worst-case atmospheric conditions.



The Application Site lies in an area where no radon protection measures are necessary within new development, although it is recommended that this be clarified with local Building Control. Notwithstanding the foregoing it should be noted that ground conditions may vary between investigation points, hence a careful watch should be maintained for any abnormalities encountered during site strip etc, which might require referral back to this Practice.

Cumulative and In-combination Effects

13.42 Within the context of the chapter regarding contaminated land, there are not considered to be any cumulative effects, collectively with other proposed off-site developments in and surrounding Hawke Ridge, Westbury, upon any receptors. In addition, there are not considered to be any in-combination effects or interactions with other environmental topic areas.

Conclusion

13.43 With regard to contaminated land, intrusive investigation, laboratory contamination testing and risk assessment indicates that the Application Site is effectively uncontaminated, with no requirement for remediation to address potential risk to human health. Whilst leachable chromium contamination has been identified within localised near surface made ground, risk assessment has concluded that such an isolated mildly elevated value does not pose a significant risk to controlled surface waters or groundwater and mitigation/remediation is not necessary. Whilst considered unlikely, should any additional effects come to light during the construction process, then these should be assessed accordingly by this Practice and appropriate mitigation measures delineated and undertaken, where necessary, subject to local authority approval.

13.44 The above recommendations must not be used in respect of any development differing in any way from the proposals described in this report, without reference back to this Practice or to another geo-environmental specialist.

13.45 Table 13.8 below provides a summary of effects, mitigation and residual effects.



Table 13.8: Summary of Effects, Mitigation and Residual Effects

Receptor / Receiving Environment	Description of Effect	Nature of Effect *	Sensitivity Value **	Magnitude of Effect **	Geographical Importance ***	Significance of Effects ****	Mitigation / Enhancement Measures	Residual Effects ****
Construction								
Construction worker	Dermal contact / ingestion of contaminated soil	Temporary - Direct	Low	Minor / Moderate adverse	Local	Negligible	Use of good working practices in line with CDM Regulations 2015	Negligible
Controlled surface waters / groundwater / ecosystem	Surface run-off, leachate infiltration of leachable Chromium within localised made ground	Permanent - Direct	Moderate	Negligible	Local	Negligible	Use of good working practices in line with CDM Regulations 2015	Negligible
Operation								
Future site occupants /users	Dermal contact / ingestion of contaminated soil	Permanent - Direct	High	Minor / Moderate adverse	Local	N/A	N/A Laboratory and contamination risk analysis confirm no apparent / significant risk to human health	Negligible
Controlled surface waters / groundwater / ecosystem	Surface run-off, leachate infiltration of leachable Chromium within localised made ground	Permanent - Direct	Moderate	Negligible	Local	Negligible	Contamination risk analysis suggests no significant risk	Negligible
Cumulative and In-combination								
N/A								



REFERENCES

Guidance Used

This report has been carried out in general accordance with the requirements of and guidance contained within the following:

Ref 13.1. British Standards Institution (2026); BS10175 'Code of Practice for the Investigation of Potentially Contaminated Sites'

Ref 13.2. Environment Agency (2020); Land Contamination Risk Management (LCRM)

Ref 13.3. Environment Agency/National House Building Council (2000); R&D 66 'Guidance for the Safe Development of Housing on Land Affected by Contamination'

Survey Techniques

The following sources of reference were utilised to enable us to compile this chapter:

Ref 13.4. Wilson Associates (Consulting) Limited (2026); Phase 1 Geo-Environmental Desk Study Report: 5636

Ref 13.5. Site walkover survey conducted as part of recent site investigations

Ref 13.6. Geological Survey of Great Britain (2011); 1:10,000 scale Sheet ST 85 SE

Ref 13.7. Landmark Information Group Service (12th January 2026); Envirocheck Report: 393176755_1_1

Ref 13.8. Wilson Associates (Consulting) Limited (2026); Phase 2 Ground Investigation Report (14th July 2026)

Ref 13.9. UK Health Security Agency (UKHSA) (2026); UK Radon interactive online viewer

Ref 13.10. Construction Industry Research & Information Association (CIRIA) (2007); C665: 'Assessing Risks Posed by Hazardous Ground Gases to Buildings'

Ref 13.11. British Standards Institution (2015); BS8485: 'Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'