

Our reference: 1921134 L01 (00)

18 May 2025

NHS Property Services
C/O Mr Joe Bowden (Gardiner and Theobald LLP)

Sent by Email only

**RE: NORTHWOOD AND PINNER HEALTH CENTRE, OFF PINNER ROAD, NORTHWOOD, HA6 1BT
– SOFT PLANTING/LANDSCAPING CLEAN COVER VALIDATION**

Dear Joe,

1. Introduction

RSK Limited have been commissioned by NHS Property Services to perform validation of the prepared landscaping/ planters to the new Northwood and Pinner Health Centre, off Pinner Road, Northwood, HA6 1BT.

Works were carried out in accordance with the RSK Remediation Method Statement (RMS) reference 1921134 R02 (00), dated February 2024.

In line with the RSK RMS, the scope of works for the validation for the landscaping/ planters associated with the new Health Centre were as follows:

- Verification of the placement of a minimum 600 mm capping layer comprising certified subsoil / topsoil (unless natural London Clay soils are encountered at a shallower depth) with the prepared landscaping/ planters.
- Undertake chemical analysis of validation samples from placed topsoil/subsoil, focused on key determinants including metals, speciated Polycyclic Aromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH), BTEX, and asbestos screening, at a minimum frequency of one sample per 250 m³ or a minimum of five samples per material source.
- Produce a verification letter report detailing the findings.

This report is subject to the RSK service constraints included in **Appendix A**.

2. Imported Topsoil and Subsoil

Topsoil utilised within the clean cover-capping layer was imported from Springbridge Direct, Denham, Middlesex. The topsoil is described as a brown sandy loam with flints, roots and wood. The testing results provided indicate that all key determinants tested are below the RSK screening criteria for residential without home grown produce (i.e. communal gardens and landscaping) given in **Appendix B**. On this basis the soil is unlikely to pose a long-term risk to human health and is considered acceptable for placement within landscaping/planters. In addition, the certificates demonstrate a general compliance to BS: 3882: 2015 (topsoil). Copies of the certification records provided by Gardiner and Theobald are contained in **Appendix C**.

Subsoil utilised within the clean cover-capping layer was imported from Matthias Construction Materials (MCM), Surrey. The subsoil is described as a brown sand with gravel. The testing certificates demonstrate a general compliance to BS: 8601: 2013 (subsoil) and acceptable for placement within landscaping/planters. Copies of the certification records provided by Gardiner and Theobald are contained in **Appendix C**.

3. Site Works

RSK attended site on 15 April 2025 (with some areas still under preparation) and again on 11 May 2025 (following completion of all areas) to inspect and verify that the landscaping/ planters associated with the Health Centre had been prepared to provide a minimum of 600 mm of subsoil/topsoil cover, in accordance with the recommendations set out in the RSK RMS.

A series of hand-dug validation pits, designated HP01 to HP10, were undertaken within the landscaped/ planter areas to verify the soil profile and the thickness of imported cover soils. The validation pits were photographed, with the photographic records provided in **Appendix D** and their locations are shown on **Figure 1**.

The validation pits were found to be generally consistent across the landscaping/ planters, comprising a dark grey to brown, slightly gravelly sandy topsoil containing organic matter, roots, and flint to a minimum depth of 200mm, but more typically between 300mm and 450mm below ground level. This was found to overlie an orange-brown, slightly gravelly sand, or locally a brown clayey gravelly sand, to a minimum depth of 600mm below ground level. The placed capping materials were observed to overlie either reworked London Clay or crushed concrete.

During the April 2026 visit, RSK collected five samples of topsoil and five samples of subsoil for laboratory analysis, including testing for metals, PAHs, TPH, and asbestos. Samples were obtained either from placed materials or from materials being placed at (completed or proposed) hand pit locations, to confirm the chemical suitability of the soils, in accordance with the RSK RMS.

4. Chemical Analysis

The soil results from the placed topsoil and subsoil within the prepared landscaping/ planters to the Health Care Centre have been directly compared against the GAC for residential without home grown produce (i.e. communal gardens and landscaping) at 1% SOM as given in **Appendix B**.

Results from the chemical analysis (given in **Appendix E**) of the placed topsoil and subsoil indicates that all key determinants tested are below the screening criteria for residential without home grown produce. In addition, asbestos fibres were not encountered.

5. Conclusion

Based on the recent site visits to validate the soil placed within the landscaping/ planters associated with the new Health Centre, RSK are satisfied that the works carried out, have been completed in line with the RSK RMS and that the placed topsoil and subsoil is of an acceptable depth and quality and is unlikely to pose a long-term risk to human health.

We hope that you will find the enclosed sufficient, however, please do not hesitate to contact the undersigned if you require any further information.

Yours sincerely

For RSK Environment Ltd



Cameron Jones
Apprentice Geo-Environmental Engineer

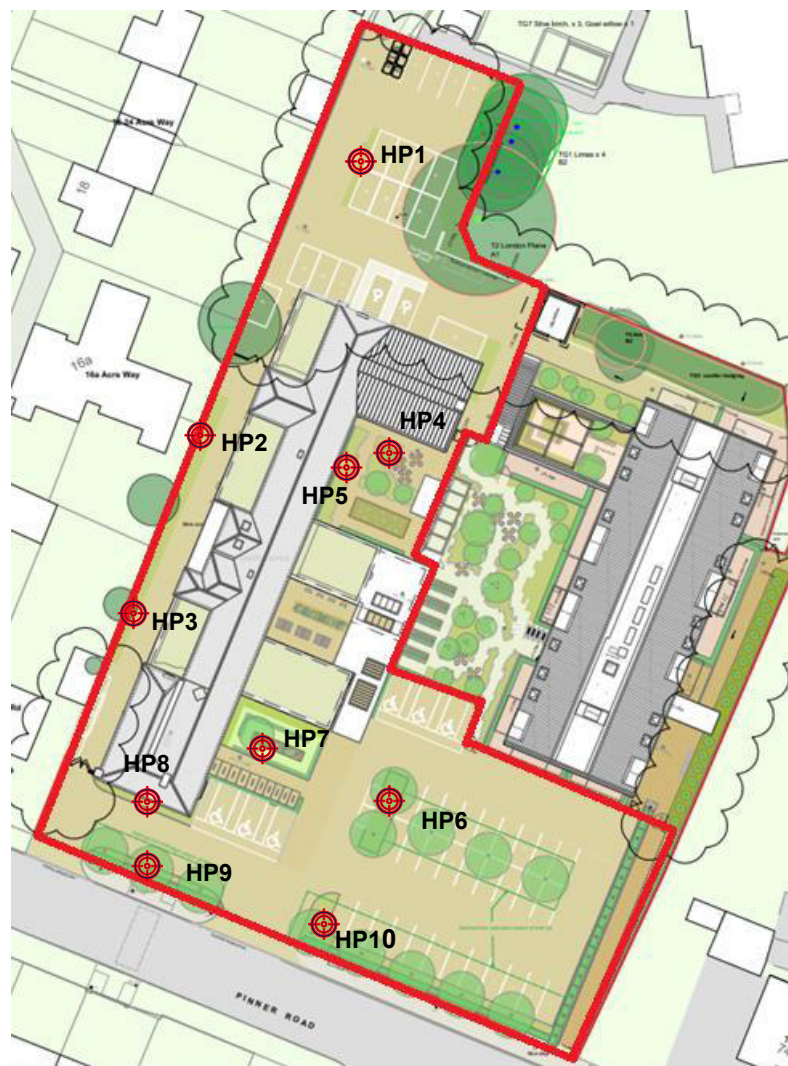


Stuart Jeffery
Associate

Enclosed,

Figure 1	Site plan
Appendix A	Service Constraints
Appendix B	Residential without home grown produce GAC
Appendix C	Imported topsoil and subsoil certificates
Appendix D	Site photographic log
Appendix E	Chemical analyses certificates

FIGURES



LEGEND
 Hand pit location

HEALTH CENTRE - SITE VALIDATION PLAN 	Client: NHS Property Services	Figure No: 1
	Site: Northwood Health Centre	Job No: 1921134
	Scale: NTS	Source: GT

APPENDIX A

SERVICE CONSTRAINTS

1. Service Constraints

1.1. This Report (the "Report") and any study, inspection, investigation, sampling, testing and or interpretation carried out in connection with the Report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) trading as RSK Geosciences, for the Client named in the first paragraph of the Report (the "Client") in accordance with the terms of an RSK Fee Proposal including RSK Environment Standard Terms and Conditions (the "Appointment") between RSK and the Client, unless otherwise stated in the first paragraph of the Report. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by a geo-environmental consultant at the time the Services were performed. Nothing in this Report shall be construed as imposing any fitness for purpose obligation. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.

1.2 Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services. RSK shall not be liable in respect of any action or proceedings arising out of or in connection with this Report whether in contract, in tort, for breach of statutory duty or otherwise after the expiry of six (6) years from either (i) the date of the Report or (ii) such earlier date as prescribed by law, unless varied in the terms of the Appointment.

1.3 Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent, or condone any party, other than the Client relying upon the Services. Should this Report or any part of this Report, or details of the Services or any part of the Services, be made known to any such party, and such party relies thereon, that party does so wholly at its own and sole risk, and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent geo-environmental consultant and/or lawyer.

1.4 The Client shall not, without the prior written consent of RSK, assign, transfer, charge, mortgage, subcontract, or deal in any other manner with all or any of the benefits provided in this Report. Unless specified in the Appointment, RSK shall not be obliged to assign the benefit of the Report whether by collateral warranty, third party rights pursuant to the Contracts (Rights of Third Parties) Act 1999, letter of reliance or otherwise. If RSK agrees to any assignment of the benefit of this Report, in whatever form, benefits to third parties through collateral warranties, third party rights or letters of reliance shall not be provided unless a fee for each right, warranty or letter is agreed. The form of wording used in the warranty or letter shall be provided by RSK for agreement by the Client. Any reasonable changes to the form of wording will be implemented by mutual agreement, however the terms in the warranty or letter cannot offer the third party any greater benefit than the Appointment offered to the Client.

1.5 It is the understanding of RSK that this Report is to be used for the purpose described in the introduction to the Report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the Report is used, or the proposed use of the site change, this Report may no longer be valid and any further use of or reliance upon the Report in those circumstances by the Client without the review and advice of RSK shall be at the Client's sole and own risk. RSK shall not be liable for any use of this Report for any purpose other than that for which it was provided.

1.6 The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions contained in this Report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the Report in the future shall be at the Client's own and sole risk.

1.7 The observations and conclusions described in this Report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out, or required by the Appointment between the Client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this Report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, fuel storage, persistent bio-accumulative or toxic chemicals (including PFAS and related compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.

1.8 The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of desk based publicly available information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services and the limitations below:

- a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.
- b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.
- c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the Services.
- d. The Client has identified in writing to RSK, the information, reports, findings, surveys and preliminary works RSK may not rely upon when providing the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK, and including the doing of any independent investigation of the information provided to RSK, save as otherwise provided in the terms of the Appointment between the Client and RSK.

1.9 Any site drawing(s) provided in this Report is (are) not meant to be an accurate base plan for scale measurement but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for accurate setting out and should be considered indicative only.

1.10 Should RSK be requested to review the Report after the date of issue of this Report, RSK shall be entitled to additional payment at the existing rates, or such other terms as agreed between RSK and the Client.

2. Service Constraints where the Report provides an intrusive assessment of ground conditions:

2.1 The intrusive environmental ground investigation aspects of the Services are a limited sampling of soil from the site, at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this Report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent

of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope agreed between the Client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species (not tested) are not present.

2.2 The comments given in this Report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development, site usage, timescales or the Client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an indicative assessment of ground conditions on site. There may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

2.3 Where the Services include Investigation of an exploratory nature or relating to physical ground works, any costings and prices provided in the Report are estimated and provided for guidance purposes only. The actual cost and time quantities shall be remeasured and shall be dependent upon the ground or other conditions, constraints present, and number and depth of the investigation locations, which shall influence the number of samples and tests required, and the quantities of soil being classified.

2.4 Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works. However, this Report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

2.5 Unless stated otherwise, only preliminary geotechnical recommendations are presented in this Report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed. Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this Report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7, although this is subject to the restrictions imposed on the investigation, as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this Report will not meet the requirements of a Geotechnical Design Report (GDR) and should therefore be used for preliminary guidance only.

3. Service Constraints where the Report relates to Surface Water Management:

3.1 The Surface Water Management Inspection (SWMI) Report, documents provided, observations, actions, and recommendations, with respect to the management of potential pollution issues to surface waters, made during the site Inspection visit, are those present at the time of the visit, and may not represent those recorded by others on the same day.

3.2 The comments given in this Report and the opinions expressed are based on the weather, ground and ground water conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the inspection and therefore could not be taken into account. In addition, groundwater levels and flows, may vary from those Reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

3.3 RSK places a degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this Report was prepared.

3.4 This Report is a live document, to be continually reviewed and updated as the development progresses or other changes occur on site. RSK can only maintain the currency of this Report through the Client requesting support with supplementary site visits or attendance at meetings ahead of key stages of the development in relation to surface water management. Our risk rating assesses a number of risk factors in line with the source-pathway- receptor model and is therefore subject to constant change.

3.5 Standard design drawings are indicative. Material types, dimensions and construction details will need to be adjusted by the Client to suit the specific conditions / flows on Site.

3.6 The full responsibility for implementing the site-specific protection and maintenance measures to protect the surface water system as stated in this Report, remains with the Client and their site management team. Additional control measures may be required to achieve the objectives set out in the Surface Water Management Plan to be implemented and financed by the Client.

4. Service Constraints where the Report relates to Waste Management:

4.1 In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not necessarily become waste until the criteria above are met. Excavation arisings from the development may therefore be classified as waste if surplus to requirements and/or unsuitable for re-use.

4.2 It is the duty of the waste producer, to ensure that all waste is accurately classified prior to waste disposal. Technical Guidance WM3 (EA, 2018) sets out in its Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. Unless otherwise stated, the waste assessment presented in this Report should be considered as preliminary and further testing and assessment of the waste under the provisions of a Waste Sampling Plan may be required to obtain the necessary level of data required for basic characterisation of the waste in support of disposal.

4.3 Unless stated otherwise in the Report, information relating to historical operations at the site was not reviewed as part of the assessment by RSK. In addition, unless otherwise stated in the Services, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this Report are based solely on any information that were provided to RSK (e.g., laboratory chemical data, exploratory hole records) and were completed without prejudice for our Client.

4.4 RSK's assumes that any ground investigation data, chemical testing results etc., that were provided by the Client to inform the waste assessment and supporting review were carried out in accordance with current best practice and relevant guidance/ standards, where applicable. Thus, the

comments given in this Report and the opinions expressed are based solely on the information provided by the Client. However, it is noted that there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account as part of the RSK assessment.

5. Service Constraints for Construction Environmental Management Plan Reports:

5.1 This Report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

5.2 The measures and comments outlined in this Report and any opinions expressed are based on the plans provided at the time and discussions with relevant parties. However, there may be conditions pertaining to the site that have not been disclosed by investigations and therefore could not be taken into account.

5.3 This CEMP is a live document and is subject to change throughout the project, as and when necessary, to ensure management of environmental aspects remains relevant, and to ensure continued compliance with legislation and commitments as they may change. RSK understands that this CEMP will be reviewed by the Client every six months and updated as and when necessary.

5.4 It is the full responsibility of the Principal Contractor/ Client to ensure that their works do not contravene legal requirements, and adherence to this CEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

6. Service Constraints where the Report relates to Ground Gas Membrane Verification:

6.1 This Report is limited to the verification of the gas resistant membrane/vapour membrane/radon barrier after installation and no inspections were undertaken of the substrate (i.e. prepared ground). The Report therefore does not constitute as a full verification of ground gas protection system.

6.2 The comments given in this Report and the opinions expressed, are based on the condition of the ground gas membrane as encountered at the time of inspection by suitably qualified personnel. RSK cannot accept liability for any subsequent change to the status of the gas membrane by follow-on trades or other construction activity.

6.3 Where not designed by RSK, the verification of protection measures is carried out with reference to the gas protection design provided by the Client. RSK assume the scope of gas protection measures as determined by third parties to be correct and to have achieved any required approval from authorities.

6.4 The Ground Gas Design Report/Remediation Strategy and Verification Plan contains details of the procedures to be adopted for inspection and validation of the works. However, it should be noted that responsibility for the correct implementation of the strategy lies with the appointed contractor. RSK cannot be held responsible for any remedial works that are carried out without the agreed procedures involving either direct supervision by RSK, or inspection and validation of the works by a representative from RSK.

7. Service Constraints for Environmental Due Diligence (EDD) Reports:

7.1 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the site, therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information.

7.2 This Report describes the results of the EDD exercise. The scope of this EDD Report, where appropriate, covers legal or regulatory compliance with respect to UK or international regulations associated with environmental matters.

7.3 As with any EDD exercise, there is a certain degree of dependence upon information provided by the target company. The EDD does not include a site walkover / visit or liaison with site representatives unless identified in the Services. Therefore, the assessment is based on the available desk study information. Also, there is a certain degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this EDD exercise was performed.

7.4 This Report, including all supporting data and notes (collectively referred to hereinafter as "information"), was prepared or collected by RSK for the benefit of its Client.

7.5 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment and the site inspection visit. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the Site therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information and observations collected during the site inspection visit.

8. Service Constraints for Ground source heat energy Reports:

8.1 It is understood that this is a desktop survey only and that there are no requirements for a site walkover, service utility survey, or provision of service plans. These services can be provided upon request if required.

8.2 At a later stage, it is possible that a thermal response test (TRT) will need to be completed, for which a test borehole will have to be drilled, and these would be costed at the time. RSK can provide all aspects of subsequent site work for a GSHP system if required.

9. Service Constraints for Water Abstraction Borehole Reports:

9.1 The Report aims principally to only identify and assess the suitability of the site for a water abstraction borehole. This Report should be considered in the light of any changes in legislation, statutory requirements, and industry practices, that have occurred subsequent to the date of the Report.

9.2 Unless stated in the Report, the opinions expressed in this Report including all comments and recommendations provided are on the basis of the information obtained from a desk-based assessment.

APPENDIX B

RESIDENTIAL WITHOUT HOME GROWN PRODUCE GAC

Generic assessment criteria for human health: residential scenario without home-grown produce

Background

RSK's generic assessment criteria (GAC) were initially prepared following the publication by the Environment Agency (EA) of soil guideline value (SGV) and toxicological (TOX) reports, and associated publications in 2009⁽¹⁾. RSK GAC were updated following the publication of GAC by LQM/CIEH in 2009⁽²⁾. RSK GAC are periodically revised when updated information on toxicological, land use or receptor parameters is published.

Updates to the RSK GAC

In 2014, the publication of Category 4 Screening Levels (C4SL)^(3,4), as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3)⁽⁵⁾ used in the generation of SGVs.

C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern (LLTC; see Section 2.3 of research project report SP1010⁽³⁾). Where a C4SL has been published, the RSK GAC duplicates the C4SL published values using all input parameters within the SP1010 final project report⁽³⁾ and associated appendices⁽⁶⁾, and adopts them as GAC for these six substances.

For all other substances the C4SL exposure modifications relevant for residential without home-grown produce end use have been applied to the current RSK GAC. These include alterations to daily inhalation rates for residential and commercial scenarios, reducing soil adherence factors in children (age classes 1 to 12 only) and reducing exposure frequency for dermal contact outdoors.

The RSK GAC have also been revised with updated toxicology published by LQM/CIEH in 2015⁽⁷⁾ or by the USEPA⁽¹⁴⁾, where a C4SL has not been published.

RSK GAC derivation for metals and organic compounds

Model selection

Soil assessment criteria (SAC) were calculated using the Contaminated Land Exposure Assessment (CLEA) tool v1.071, supporting EA guidance^(5,8,9) and revised exposure scenarios published for the C4SL⁽³⁾. The SAC are also termed GAC.

Conceptual model

In accordance with SR3⁽⁵⁾, the residential without home-grown produce scenario considers risks to a female child between the ages of 0 and 6 years old as the highest risk scenario. In accordance with Box 3.1 of SR3⁽⁵⁾, the pathways considered for production of the SAC in the residential without home-grown produce scenario are

- direct soil and dust ingestion in areas of soft landscaping
- dermal contact with soil and indoor dust

- inhalation of indoor and outdoor dust and vapours.

Figure 1 is a conceptual model illustrating these linkages.

In line with guidance in the EA SGV report for cadmium⁽¹⁾, the RSK GAC for cadmium has been derived based on estimates representative of lifetime exposure. Although young children are generally more likely to have higher exposures to soil contaminants, the renal toxicity of cadmium, and the derivation of the TDI_{oral} and TDI_{inh} , are based on considerations of the kidney burden accumulated over 50 years or so. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period.

With respect to volatilisation, the CLEA model assumes a simple linear partitioning of a chemical in the soil between the sorbed, dissolved and vapour phase⁽⁹⁾. The upper boundaries of this partitioning are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. The CLEA model estimates saturated soil concentrations where these limits are reached⁽⁹⁾. The CLEA software uses a traffic light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous- or vapour-based soil saturation limits. Model output cells are flagged red where the saturated soil concentration has been exceeded and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10%. In this case, further consideration of the following is required⁽⁹⁾:

- Free phase contamination may be present.
- Exposure from the vapour pathways will be over-predicted by the model, as in reality the vapour phase concentration will not increase at concentrations above saturation limits
- Where the vapour pathway contribution is greater than 90%, it is unlikely the relevant health criteria value (HCV) will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Where the vapour pathway is the predominant pathway (contributes greater than 90% of exposure) or the only exposure route considered and the cell is highlighted red (SAC exceeds saturation limit), the risk based on the assumed conceptual model is likely to be negligible as the vapour risk is assumed to be tolerable at maximum possible soil concentrations. In such circumstances, the vapour pathway exposure should be considered based on the presence of free phase or non-aqueous phase liquid sources and the measured concentrations of volatile organic compounds (VOC) in the vapour phase. Screening could be considered based on setting the SAC as the modelled soil saturation limits. However, as stated within the CLEA handbook⁽⁹⁾, this is likely to not be practical in many cases because of the very low saturation limits and, in any case, is highly conservative.

It should also be noted that for mixtures of compounds, free phase may be present where soil (or groundwater) concentrations are well below saturation limits for individual compounds.

Where the vapour pathway is only one of the exposure pathways considered, an additional approach can then be utilised as detailed within Section 4.12 of the CLEA model handbook⁽⁹⁾, which explains how to calculate an effective assessment criterion manually.

SR3⁽⁵⁾ states that, as a general rule of thumb, it is recognised that estimating vapour phase concentrations from dissolved and sorbed phase contamination by petroleum hydrocarbons are at least a factor of ten higher than those likely to be measured on-site. RSK has therefore applied an empirical subsurface to indoor air correction factor of 10 into the CLEA model chemical database for all petroleum hydrocarbon fractions (including BTEX, trimethylbenzenes and the

polycyclic aromatic hydrocarbons (PAH) naphthalene, acenaphthene and acenaphthylene) to reduce this conservatism.

Input selection

The most up-to-date published chemical and toxicological data was obtained from EA Report SC050021/SR7⁽¹⁰⁾, the EA TOX⁽¹¹⁾ reports, the C4SL SP1010 project report and associated appendices^(3,6), the 2015 LQM/CIEH report⁽⁷⁾ or the USEPA IRIS database⁽¹⁴⁾. Where a C4SL has been published, the RSK GAC have duplicated the C4SL published values using all input parameters within the SP1010 final project report⁽³⁾ and associated appendices⁽⁶⁾, and has adopted them as GAC for these six substances. Toxicological and specific chemical parameters for 1,2,4-trimethylbenzene, barium and methyl tertiary-butyl ether (MTBE) were obtained from the CL:AIRE Soil Generic Assessment Criteria report⁽¹¹⁾.

For TPH, aromatic hydrocarbons C₅–C₈ were not modelled, as this range comprises benzene (>EC5-EC7) and toluene (>EC7-EC8), which are modelled separately.

Physical parameters

For the residential without home-grown produce scenario, the CLEA default building is a small, two-storey terrace house with a concrete ground-bearing slab. SR3⁽⁵⁾ notes this residential building type to be the most conservative in terms of potential for vapour intrusion. The building parameters used in the production of the RSK GACs are the default CLEA v1.06 inputs presented in Table 3.3 of SR3⁽³⁾, with a dust loading factor detailed in Section 9.3 of SR3⁽⁵⁾. The parameters for a sandy loam soil type were used in line with Table 4.4 of SR3⁽⁵⁾. This includes a value of 6% for the percentage of soil organic matter (SOM) within the soil. In RSK's experience, this is rather high for many sites. To avoid undertaking site-specific risk assessments for this SOM, RSK has produced an additional set of GAC for SOM of 1% and 2.5% for all substances using the CLEA tool.

Summary of modifications to the default CLEA SR3⁽⁵⁾ input parameters for residential without home-grown produce

In summary, the RSK GAC were produced using the default input parameters for soil properties, the air dispersion model, building properties and the vapour model detailed in SR3⁽⁵⁾. Modifications to the default SR3⁽⁵⁾ exposure scenarios based on the C4SL exposure scenarios⁽³⁾ are presented in Table 2 below.

The final selected GAC are presented by pathway in Table 3 and the combined GAC in Table 4.

Figure 1: Conceptual model for CLEA residential scenario without home-grown produce

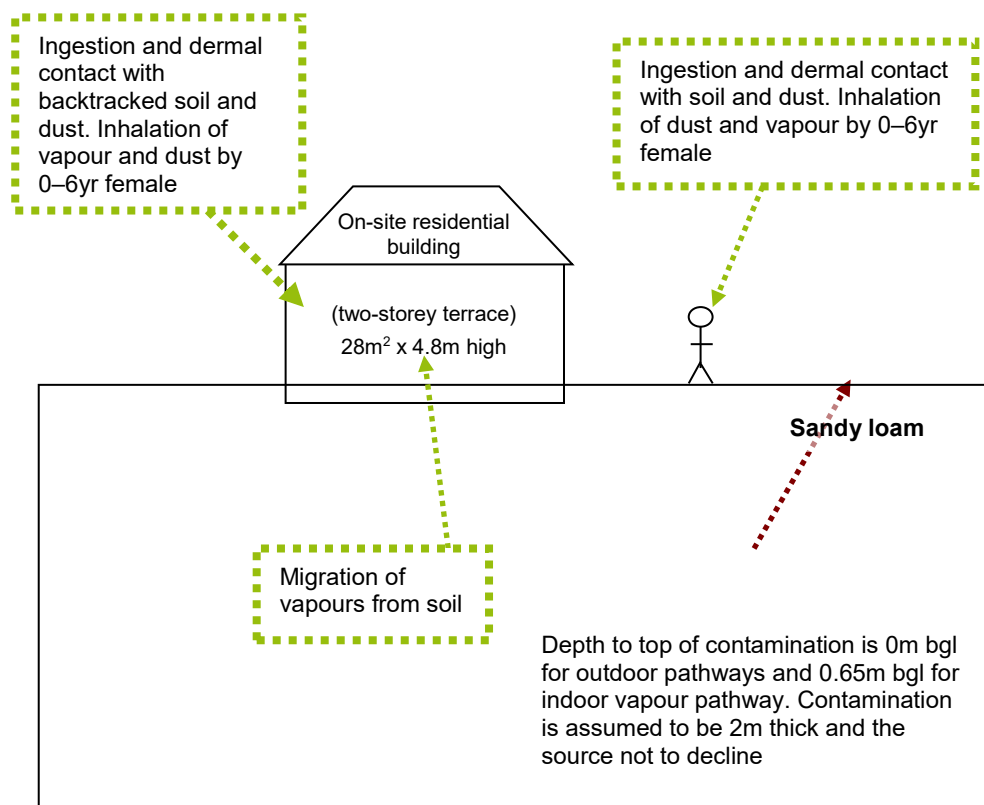


Table 1: Exposure assessment parameters for residential scenario without home-grown produce – inputs for CLEA model

Parameter	Value	Justification
Land use	Residential without home-grown produce	Chosen land use
Receptor	Female child	Key generic assumption given in Box 3.1, SR3 ⁽⁵⁾
Building	Small terraced house	Key generic assumption given in Box 3.1, SR3 ⁽⁵⁾ . Small, two-storey terraced house chosen, as it is the most conservative residential building type in terms of protection from vapor intrusion (Section 3.4.6, SR3) ⁽⁵⁾
Soil type	Sandy loam	Most common UK soil type (Section 4.3.1, from Table 3.1, SR3) ⁽⁵⁾
Start age class (AC)	1	Range of age classes corresponding to key generic assumption that the critical receptor is a young female child aged 0–6. From Box 3.1, SR3 ⁽⁵⁾
End AC	6	
SOM (%)	6	Representative of sandy loamy soil according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents' ⁽¹³⁾
	1	To provide SAC for sites where SOM <6% as often observed by RSK
	2.5	
pH	7	Model default

Table 2: Residential without home-grown produce – modified receptor data

Parameter	Unit	Age class					
		1	2	3	4	5	6
Soil to skin adherence factor – (outdoor)	mg soil/cm ² skin	0.1	0.1	0.1	0.1	0.1	0.1
Justification		Table 3.5, SP1010 ⁽³⁾					
Inhalation rate	m ³ day ⁻¹	5.4	8.0	8.9	10.1	10.1	10.1
Justification		Mean value USEPA, 2011 ⁽¹²⁾ ; Table 3.2, SP1010 ⁽³⁾					
Notes: For cadmium , the exposure assessment for a residential land use is based on estimates representative of lifetime exposure AC1-18. This is because the TDLo _{ra} and TDLo _{inh} are based on considerations of the kidney burden accumulated over 50 years. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period. See the Environment Agency Science Report SC05002/ TOX 3 ⁽¹⁾ , Science Report SC050021/Cadmium SGV ⁽¹⁾ and the project report SP1010 ⁽³⁾ for more information.							

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GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITHOUT HOME-GROWN PRODUCE



Table 3

Human Health Generic Assessment Criteria by Pathway for Residential Scenario Without Home-Grown Produce

Compound	Notes	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Metals													
Arsenic	(a,b)	3.99E+01	5.26E+02	NR	NR	3.99E+01	5.26E+02	NR	NR	3.99E+01	5.26E+02	NR	NR
Barium	(b)	1.35E+03	NR	NR	NR	1.35E+03	NR	NR	NR	1.35E+03	NR	NR	NR
Beryllium		1.56E+02	1.72E+00	NR	NR	1.56E+02	1.72E+00	NR	NR	1.56E+02	1.72E+00	NR	NR
Boron		1.08E+04	5.20E+06	NR	NR	1.08E+04	5.20E+06	NR	NR	1.08E+04	5.20E+06	NR	NR
Cadmium	(a)	1.95E+02	4.88E+02	1.49E+02	NR	1.95E+02	4.88E+02	1.49E+02	NR	1.95E+02	4.88E+02	1.49E+02	NR
Chromium (III) - trivalent	(c)	1.98E+04	9.07E+02	NR	NR	1.98E+04	9.07E+02	NR	NR	1.98E+04	9.07E+02	NR	NR
Chromium (VI) - hexavalent	(a,d)	5.91E+01	2.06E+01	NR	NR	5.91E+01	2.06E+01	NR	NR	5.91E+01	2.06E+01	NR	NR
Copper		1.08E+04	1.41E+04	7.13E+03	NR	1.08E+04	1.41E+04	7.13E+03	NR	1.08E+04	1.41E+04	7.13E+03	NR
Lead	(a)	3.14E+02	NR	NR	NR	3.14E+02	NR	NR	NR	3.14E+02	NR	NR	NR
Elemental Mercury (Hg ⁰)	(d)	NR	2.41E-01	NR	4.31E+00	NR	5.74E-01	NR	1.07E+01	NR	1.25E+00	NR	2.58E+01
Inorganic Mercury (Hg ²⁺)		5.71E+01	3.63E+03	5.62E+01	NR	5.71E+01	3.63E+03	5.62E+01	NR	5.71E+01	3.63E+03	5.62E+01	NR
Methyl Mercury (Hg ⁴⁺)		1.80E+01	1.87E+01	9.16E+00	7.33E+01	1.80E+01	3.62E+01	1.20E+01	1.42E+02	1.80E+01	7.68E+01	1.46E+01	3.04E+02
Nickel	(d)	1.88E+02	1.81E+02	NR	NR	1.88E+02	1.81E+02	NR	NR	1.88E+02	1.81E+02	NR	NR
Selenium	(b)	4.31E+02	NR	NR	NR	4.31E+02	NR	NR	NR	4.31E+02	NR	NR	NR
Vanadium		1.17E+03	1.46E+03	NR	NR	1.17E+03	1.46E+03	NR	NR	1.17E+03	1.46E+03	NR	NR
Zinc	(b)	4.05E+04	3.63E+07	NR	NR	4.05E+04	3.63E+07	NR	NR	4.05E+04	3.63E+07	NR	NR
Cyanide (free)		4.03E+01	1.37E+04	4.02E+01	NR	4.03E+01	1.37E+04	4.02E+01	NR	4.03E+01	1.37E+04	4.02E+01	NR
Volatile Organic Compounds													
Benzene	(a)	7.36E+01	9.01E-01	8.90E-01	1.22E+03	7.36E+01	1.68E+00	1.64E+00	2.26E+03	7.36E+01	3.48E+00	3.33E+00	4.71E+03
Toluene		2.87E+04	9.08E+02	8.80E+02	8.69E+02	2.87E+04	2.00E+03	1.87E+03	1.92E+03	2.87E+04	4.55E+03	3.93E+03	4.36E+03
Ethylbenzene		1.29E+04	8.34E+01	8.29E+01	5.18E+02	1.29E+04	1.96E+02	1.93E+02	1.22E+03	1.29E+04	4.58E+02	4.42E+02	2.84E+03
Xylene - m		2.32E+04	8.25E+01	8.22E+01	6.25E+02	2.32E+04	1.95E+02	1.93E+02	1.47E+03	2.32E+04	4.56E+02	4.47E+02	3.46E+03
Xylene - o		2.32E+04	8.87E+01	8.83E+01	4.78E+02	2.32E+04	2.08E+02	2.06E+02	1.12E+03	2.32E+04	4.86E+02	4.76E+02	2.62E+03
Xylene - p		2.32E+04	7.93E+01	7.90E+01	5.76E+02	2.32E+04	1.86E+02	1.85E+02	1.35E+03	2.32E+04	4.36E+02	4.28E+02	3.17E+03
Total xylene		2.32E+04	7.93E+01	7.90E+01	6.25E+02	2.32E+04	1.86E+02	1.85E+02	1.47E+03	2.32E+04	4.36E+02	4.28E+02	3.46E+03
Methyl tertiary-Butyl ether (MTBE)		3.87E+04	1.04E+02	1.04E+02	2.04E+04	3.87E+04	1.69E+02	1.69E+02	3.31E+04	3.87E+04	3.21E+02	3.19E+02	6.27E+04
Trichloroethene		6.45E+01	1.72E-02	1.72E-02	1.54E+03	6.45E+01	3.59E-02	3.59E-02	3.22E+03	6.45E+01	7.98E-02	7.97E-02	7.14E+03
Tetrachloroethene		7.13E+02	1.79E-01	1.79E-01	4.24E+02	7.13E+02	4.02E-01	4.02E-01	9.51E+02	7.13E+02	9.21E-01	9.20E-01	2.18E+03
1,1,1-Trichloroethane		7.74E+04	9.01E+00	9.01E+00	1.43E+03	7.74E+04	1.84E+01	1.84E+01	2.92E+03	7.74E+04	4.04E+01	4.04E+01	6.39E+03
1,1,1,2-Tetrachloroethane		7.34E+02	1.54E+00	1.53E+00	2.60E+03	7.34E+02	3.56E+00	3.55E+00	6.02E+03	7.34E+02	8.29E+00	8.20E+00	1.40E+04
1,1,2,2-Tetrachloroethane		7.34E+02	3.92E+00	3.90E+00	2.67E+03	7.34E+02	8.04E+00	7.95E+00	5.46E+03	7.34E+02	1.76E+01	1.72E+01	1.20E+04
Carbon Tetrachloride		5.15E+02	2.58E-02	2.58E-02	1.52E+03	5.15E+02	5.65E-02	5.64E-02	3.32E+03	5.15E+02	1.28E-01	1.28E-01	7.54E+03
1,2-Dichloroethane		1.55E+01	9.20E-03	9.20E-03	3.41E+03	1.55E+01	1.33E-02	1.33E-02	4.91E+03	1.55E+01	2.28E-02	2.27E-02	8.43E+03
Vinyl Chloride		1.81E+00	7.73E-04	7.73E-04	1.36E+03	1.81E+00	1.00E-03	9.99E-04	1.76E+03	1.81E+00	1.53E-03	1.53E-03	2.69E+03
1,2,4-Trimethylbenzene		NR	5.58E+00	NR	4.74E+02	NR	1.29E+01	NR	1.16E+03	NR	2.69E+01	NR	2.76E+03
1,3,5-Trimethylbenzene	(e)	NR	NR	NR	2.30E+02	NR	NR	NR	5.52E+02	NR	NR	NR	1.30E+03
Semi-Volatile Organic Compounds													
Acenaphthene		7.64E+03	4.86E+04	6.60E+03	5.70E+01	7.64E+03	1.18E+05	7.17E+03	1.41E+02	7.64E+03	2.68E+05	7.43E+03	3.36E+02
Acenaphthylene		7.65E+03	4.59E+04	6.55E+03	8.61E+01	7.65E+03	1.11E+05	7.15E+03	2.12E+02	7.65E+03	2.53E+05	7.42E+03	5.06E+02
Anthracene		3.82E+04	1.53E+05	3.06E+04	1.17E+00	3.82E+04	3.77E+05	3.47E+04	2.91E+00	3.82E+04	8.76E+05	3.66E+04	6.96E+00
Benzo(a)anthracene		1.98E+01	2.47E+01	1.10E+01	1.71E+00	1.98E+01	4.37E+01	1.36E+01	4.28E+00	1.98E+01	6.26E+01	1.50E+01	1.03E+01
Benzo(a)pyrene	(a)	5.34E+00	3.51E+01	NR	9.11E-01	5.34E+00	3.77E+01	NR	2.28E+00	5.34E+00	3.89E+01	NR	5.46E+00
Benzo(b)fluoranthene		4.97E+00	1.93E+01	3.95E+00	1.22E+00	4.97E+00	2.13E+01	4.03E+00	3.04E+00	4.97E+00	2.22E+01	4.06E+00	7.29E+00
Benzo(g,h,i)perylene		4.38E+02	1.87E+03	3.55E+02	1.54E-02	4.38E+02	1.94E+03	3.58E+02	3.85E-02	4.38E+02	1.97E+03	3.59E+02	9.23E-02
Benzo(k)fluoranthene		1.31E+02	5.41E+02	1.06E+02	6.87E-01	1.31E+02	5.76E+02	1.07E+02	1.72E+00	1.31E+02	5.91E+02	1.07E+02	4.12E+00
Chrysene		3.95E+01	1.19E+02	2.97E+01	4.40E-01	3.95E+01	1.49E+02	3.12E+01	1.10E+00	3.95E+01	1.66E+02	3.19E+01	2.64E+00
Dibenzo(a,h)anthracene		3.95E-01	1.45E+00	3.10E-01	3.93E-03	3.95E-01	1.64E+00	3.18E-01	9.82E-03	3.95E-01	1.74E+00	3.22E-01	2.36E-02
Fluoranthene		1.59E+03	3.83E+04	1.53E+03	1.89E+01	1.59E+03	8.87E+04	1.56E+03	4.73E+01	1.59E+03	1.83E+05	1.58E+03	1.13E+02

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITHOUT HOME-GROWN PRODUCE



Table 3

Human Health Generic Assessment Criteria by Pathway for Residential Scenario Without Home-Grown Produce

Compound	Notes	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Fluorene		5.09E+03	6.20E+03	2.80E+03	3.09E+01	5.09E+03	1.53E+04	3.82E+03	7.65E+01	5.09E+03	3.62E+04	4.47E+03	1.83E+02
Indeno(1,2,3-cd)pyrene		5.65E+01	2.12E+02	4.46E+01	6.13E-02	5.65E+01	2.38E+02	4.56E+01	1.53E-01	5.65E+01	2.50E+02	4.60E+01	3.68E-01
Naphthalene		2.50E+03	2.33E+01	2.31E+01	7.64E+01	2.50E+03	5.58E+01	5.46E+01	1.83E+02	2.50E+03	1.31E+02	1.25E+02	4.32E+02
Phenanthrene		1.58E+03	7.17E+03	1.30E+03	3.60E+01	1.58E+03	1.76E+04	1.45E+03	8.96E+01	1.58E+03	4.07E+04	1.52E+03	2.14E+02
Pyrene		3.82E+03	8.79E+04	3.66E+03	2.20E+00	3.82E+03	2.04E+05	3.75E+03	5.49E+00	3.82E+03	4.23E+05	3.79E+03	1.32E+01
Phenol		6.48E+04	4.58E+02	4.55E+02	2.42E+04	6.48E+04	6.95E+02	6.88E+02	3.81E+04	6.48E+04	1.19E+03	1.17E+03	7.03E+04
Total Petroleum Hydrocarbons													
Aliphatic hydrocarbons >EC ₅ -EC ₆		3.23E+05	4.24E+01	4.24E+01	3.04E+02	3.23E+05	7.79E+01	7.79E+01	5.58E+02	3.23E+05	1.61E+02	1.61E+02	1.15E+03
Aliphatic hydrocarbons >EC ₆ -EC ₈		3.23E+05	1.04E+02	1.04E+02	1.44E+02	3.23E+05	2.31E+02	2.31E+02	3.22E+02	3.23E+05	5.29E+02	5.29E+02	7.36E+02
Aliphatic hydrocarbons >EC ₈ -EC ₁₀		6.45E+03	2.68E+01	2.68E+01	7.77E+01	6.45E+03	6.55E+01	6.53E+01	1.90E+02	6.45E+03	1.56E+02	1.55E+02	4.51E+02
Aliphatic hydrocarbons >EC ₁₀ -EC ₁₂		6.45E+03	1.33E+02	1.32E+02	4.75E+01	6.45E+03	3.31E+02	3.27E+02	1.18E+02	6.45E+03	7.93E+02	7.67E+02	2.83E+02
Aliphatic hydrocarbons >EC ₁₂ -EC ₁₆		6.45E+03	1.11E+03	1.06E+03	2.37E+01	6.45E+03	2.78E+03	2.42E+03	5.91E+01	6.45E+03	6.67E+03	4.37E+03	1.42E+02
Aliphatic hydrocarbons >EC ₁₆ -EC ₃₅	(b)	6.50E+04	NR	NR	8.48E+00	9.25E+04	NR	NR	2.12E+01	1.11E+05	NR	NR	5.09E+01
Aliphatic hydrocarbons >EC ₃₅ -EC ₄₄	(b)	6.50E+04	NR	NR	8.48E+00	9.25E+04	NR	NR	2.12E+01	1.11E+05	NR	NR	5.09E+01
Aromatic hydrocarbons >EC ₈ -EC ₁₀		2.58E+03	4.74E+01	4.72E+01	6.13E+02	2.58E+03	1.16E+02	1.15E+02	1.50E+03	2.58E+03	2.77E+02	2.69E+02	3.58E+03
Aromatic hydrocarbons >EC ₁₀ -EC ₁₂		2.58E+03	2.58E+02	2.52E+02	3.64E+02	2.58E+03	6.39E+02	5.94E+02	8.99E+02	2.58E+03	1.52E+03	1.24E+03	2.15E+03
Aromatic hydrocarbons >EC ₁₂ -EC ₁₆		2.58E+03	2.85E+03	1.80E+03	1.69E+02	2.58E+03	7.07E+03	2.30E+03	4.19E+02	2.58E+03	1.68E+04	2.48E+03	1.00E+03
Aromatic hydrocarbons >EC ₁₆ -EC ₂₁	(b)	1.86E+03	NR	NR	5.37E+01	1.90E+03	NR	NR	1.34E+02	1.92E+03	NR	NR	3.21E+02
Aromatic hydrocarbons >EC ₂₁ -EC ₃₅	(b)	1.93E+03	NR	NR	4.83E+00	1.93E+03	NR	NR	1.21E+01	1.93E+03	NR	NR	2.90E+01
Aromatic hydrocarbons >EC ₃₅ -EC ₄₄	(b)	1.93E+03	NR	NR	4.83E+00	1.93E+03	NR	NR	1.21E+01	1.93E+03	NR	NR	2.90E+01

Notes:

EC - equivalent carbon. GrAC - groundwater assessment criteria. SAC - soil assessment criteria.

The CLEA model output is colour coded depending upon whether the soil saturation limit has been exceeded.

	Calculated SAC exceeds soil saturation limit and may significantly affect the interpretation of any exceedances as the contribution of the indoor and outdoor vapour pathway to total exposure is >10%.
	Calculated SAC exceeds soil saturation limit but the exceedance will not affect the SAC significantly as the contribution of the indoor and outdoor vapour pathway to total exposure is <10%.
	Calculated SAC does not exceed the soil saturation limit.

The SAC for organic compounds are dependant upon soil organic matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58. 1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs naphthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway (Section 10.1.1, SR3)

(a) SAC for arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead are derived using the C4SL toxicology data.

(b) SAC for boron and selenium should not include the inhalation pathway as no expert group HCV has been derived; aliphatic and aromatic hydrocarbons >EC16 should not include inhalation pathway due to their non-volatile nature and inhalation exposure being minimal (oral, dermal and inhalation exposure is compared to the oral HCV); arsenic should only be based on oral contribution (rather than combined) owing to the relative small contribution from inhalation in accordance with the SGV report. The Oral SAC should be adopted for zinc and benzo(a)pyrene.

(c) SAC for CrIII should be based on the lower of the oral and inhalation SAC (see LQM/CIEH 2015 Section 6.8)

(d) SAC for elemental mercury, chromium VI and nickel should be based on the inhalation pathway only.

(e) SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data, SAC for 1,2,4 trimethylbenzene may be used.

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITHOUT HOME-GROWN PRODUCE



Table 4
Human health generic assessment criteria for residential without home-grown produce

Compound	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals			
Arsenic	40	40	40
Barium	1,300	1,300	1,300
Beryllium	1.7	1.7	1.7
Boron	11,000	11,000	11,000
Cadmium	149	149	149
Chromium (III) - trivalent	910	910	910
Chromium (VI) - hexavalent	21	21	21
Copper	7,100	7,100	7,100
Lead	310	310	310
Elemental Mercury (Hg ⁰)	0.2	0.6	1.2
Inorganic Mercury (Hg ²⁺)	56	56	56
Methyl Mercury (Hg ⁴⁺)	9	12	15
Nickel	180	180	180
Selenium	430	430	430
Vanadium	1,200	1,200	1,200
Zinc	40,000	40,000	40,000
Cyanide (free)	40	40	40
Volatile Organic Compounds			
Benzene	0.9	1.6	3.3
Toluene	900 (869)	1,900	3,900
Ethylbenzene	80	190	440
Xylene - m	80	190	450
Xylene - o	90	210	480
Xylene - p	80	180	430
Total xylene	80	180	430
Methyl tertiary-Butyl ether (MTBE)	100	170	320
Trichloroethene	0.02	0.04	0.08
Tetrachloroethene	0.2	0.4	0.9
1,1,1-Trichloroethane	9.0	18.4	40.4
1,1,1,2 Tetrachloroethane	1.5	3.5	8.2
1,1,2,2-Tetrachloroethane	3.9	8.0	17.2
Carbon Tetrachloride	0.026	0.056	0.128
1,2-Dichloroethane	0.009	0.013	0.023
Vinyl Chloride	0.0008	0.0010	0.0015
1,2,4-Trimethylbenzene	5.6	12.9	26.9
1,3,5-Trimethylbenzene	NR	NR	NR
Semi-Volatile Organic Compounds			
Acenaphthene	6,600 (57)	7,200	7,400
Acenaphthylene	6,600 (86)	7,200	7,400
Anthracene	31,000 (1.17)	35,000	37,000
Benzo(a)anthracene	11.0	13.6	15.0
Benzo(a)pyrene	5.3	5.3	5.3
Benzo(b)fluoranthene	4.0	4.0	4.1
Benzo(g,h,i)perylene	355	358	359
Benzo(k)fluoranthene	106	107	107
Chrysene	30	31	32
Dibenzo(a,h)anthracene	0.31	0.32	0.32
Fluoranthene	1,500	1,600	1,600
Fluorene	2,800 (31)	3,800 (77)	4,500 (183)
Indeno(1,2,3-cd)pyrene	45	46	46
Naphthalene	23	55	125
Phenanthrene	1,300 (36)	1,450	1,520
Pyrene	3,700	3,800	3,800
Phenol	440*	688	1,170
Total Petroleum Hydrocarbons			
Aliphatic hydrocarbons EC ₅ -EC ₆	42	78	161
Aliphatic hydrocarbons >EC ₆ -EC ₈	100	230	530
Aliphatic hydrocarbons >EC ₈ -EC ₁₀	27	65	155
Aliphatic hydrocarbons >EC ₁₀ -EC ₁₂	130 (48)	330 (118)	770 (283)
Aliphatic hydrocarbons >EC ₁₂ -EC ₁₆	1,100 (24)	2,400 (59)	4,400 (142)
Aliphatic hydrocarbons >EC ₁₆ -EC ₃₅	65,000 (8)	92,000 (21)	111,000
Aliphatic hydrocarbons >EC ₃₅ -EC ₄₄	65,000 (8)	92,000 (21)	111,000
Aromatic hydrocarbons >EC ₈ -EC ₁₀	47	115	269
Aromatic hydrocarbons >EC ₁₀ -EC ₁₂	300	600	1,200
Aromatic hydrocarbons >EC ₁₂ -EC ₁₆	1,800 (169)	2,300 (419)	2,500
Aromatic hydrocarbons >EC ₁₆ -EC ₂₁	1,900	1,900	1,900
Aromatic hydrocarbons >EC ₂₁ -EC ₃₅	1,900	1,900	1,900
Aromatic hydrocarbons >EC ₃₅ -EC ₄₄	1,900	1,900	1,900
Minerals			
Asbestos	Stage 1 test – No asbestos detected with ID; Stage 2 test - <0.001% dry weight (exceedance of either equates to an exceedance of the GAC) ¹		
Notes:			
¹ - Generic assessment criteria not calculated owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.			
NR - SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data, SAC for 1,2,4 trimethylbenzene may be used			
EC - equivalent carbon. SAC - soil assessment criteria.			
¹ LOD for weight of asbestos per unit weight of soil calculated on a dry weight basis using PLM, handpicking and gravimetry.			
The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58.			
1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.			
SAC for TPH fractions, PAHs naphthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway, section 10.1.1, SR3.			
(VALUE IN BRACKETS)			
RSK has adopted an approach for petroleum hydrocarbons in accordance with LQM/CIEH whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the SAC with the corresponding solubility or vapour saturation limits given in brackets.			

APPENDIX C

IMPORTED TOPSOIL AND SUBSOIL CERTIFICATES



Amended Report

Report No.:	26-00597-2		
Initial Date of Issue:	02-Feb-2026	Date of Re-Issue:	02-Feb-2026
Re-Issue Details:	This report has been revised and directly supersedes 26-00597-1 in its entirety		
Client	<i>Springbridge Direct Ltd</i>		
Client Address:	<i>Oxford Road Denham Middlesex UB9 4DF</i>		
Contact(s):	<i>Tom Hawkins Ellissa Dunn</i>		
Project	<i>Springbridge Yard</i>		
Quotation No.:	Q26-40242	Date Received:	13-Jan-2026
Order No.:	10456	Date Instructed:	13-Jan-2026
No. of Samples:	3		
Turnaround (Wkdays):	14	Results Due:	30-Jan-2026
Date Approved:	02-Feb-2026	Subcon Results Due:	03-Feb-2026

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Springbridge Yard

Client: Springbridge Direct Ltd		Chemtest Job No.:				26-00597
Quotation No.: Q26-40242		Chemtest Sample ID.:				2072360
Order No.: 10456		Client Sample Ref.:				Topsoil
		Client Sample ID.:				Top
		Sample Type:				SOIL
		Date Sampled:				07-Jan-2026
		Time Sampled:				11:00
		Asbestos Lab:				DURHAM
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
ACM Type		N	2192		N/A	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected
Moisture		N	2030	%	0.020	12
Soil Colour		N	2030		N/A	Brown
Other Material		N	2030		N/A	None
Soil Texture		N	2030		N/A	Loamy Sand
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.75
Cyanide (Total)		M	2300	mg/kg	0.50	1.0
Arsenic		M	2455	mg/kg	0.5	10
Cadmium		M	2455	mg/kg	0.10	0.12
Chromium		M	2455	mg/kg	0.5	9.0
Copper		M	2455	mg/kg	0.50	9.1
Mercury		M	2455	mg/kg	0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	10
Lead		M	2455	mg/kg	0.50	19
Selenium		M	2455	mg/kg	0.25	< 0.25
Zinc		M	2455	mg/kg	0.50	38
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50
Aliphatic EPH >C10-C12	EH_2D_AL_#1	M	5002	mg/kg	2.00	< 2.0
Aliphatic EPH >C12-C16	EH_2D_AL_#1	M	5002	mg/kg	2.00	< 2.0
Aliphatic EPH >C16-C21	EH_2D_AL_#1	M	5002	mg/kg	2.00	3.4
Aliphatic EPH >C21-C35	EH_2D_AL_#1	M	5002	mg/kg	3.00	13
Aliphatic EPH >C35-C40	EH_2D_AL_#1	N	5002	mg/kg	10.00	< 10
Total Aliphatic EPH >C10-C35	EH_2D_AL_#1	M	5002	mg/kg	7.00	17
Total Aliphatic EPH >C10-C40	EH_2D_AL_#1	N	5002	mg/kg	10.00	18
Aromatic EPH >C10-C12	EH_2D_AR_#1	U	5002	mg/kg	2.00	< 2.0

Results - Soil

Project: Springbridge Yard

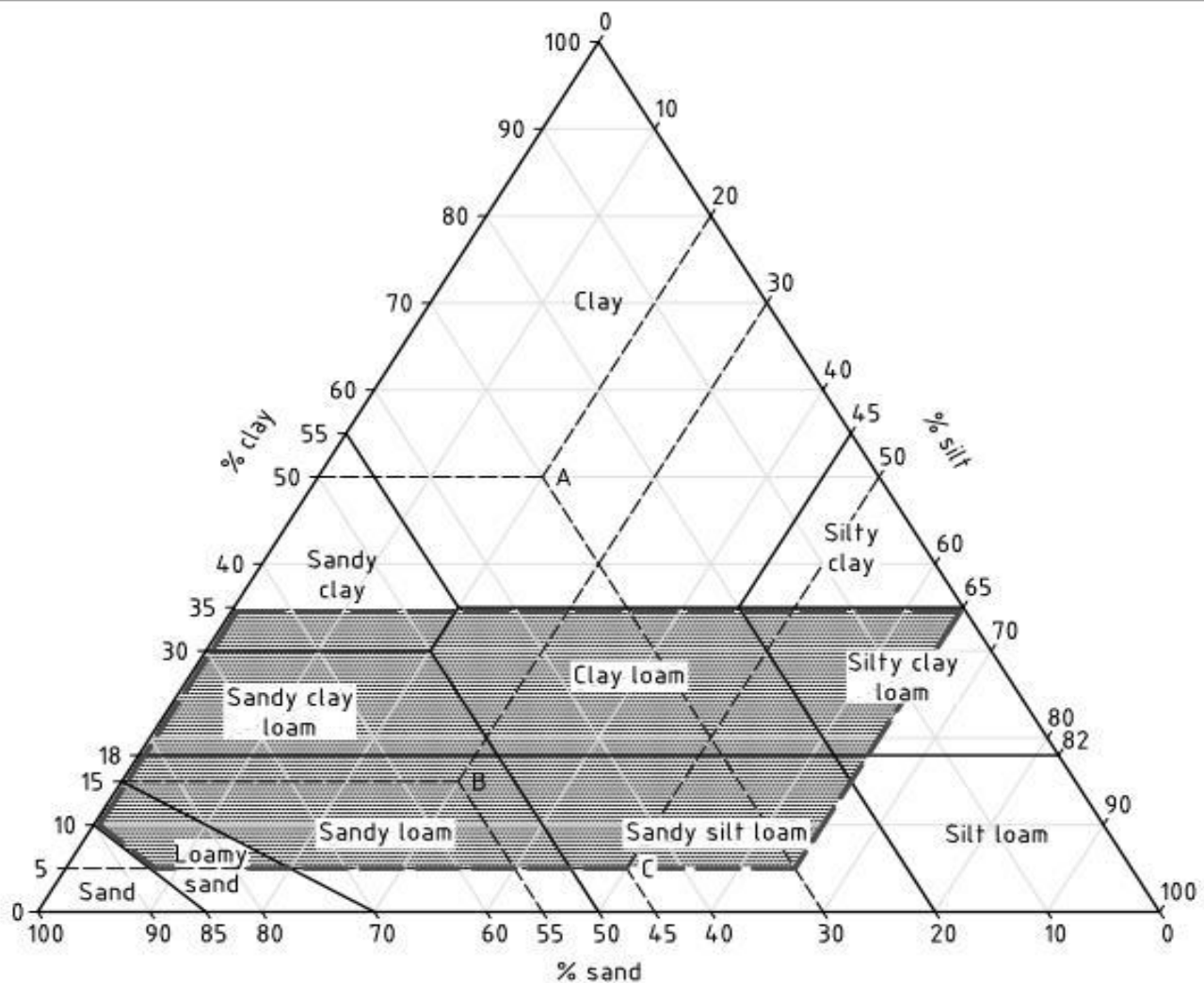
Client: Springbridge Direct Ltd		Chemtest Job No.:		26-00597		
Quotation No.: Q26-40242		Chemtest Sample ID.:		2072360		
Order No.: 10456		Client Sample Ref.:		Topsoil		
		Client Sample ID.:		Top		
		Sample Type:		SOIL		
		Date Sampled:		07-Jan-2026		
		Time Sampled:		11:00		
		Asbestos Lab:		DURHAM		
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Aromatic EPH >C12-C16	EH_2D_AR_#1	U	5002	mg/kg	2.00	2.7
Aromatic EPH >C16-C21	EH_2D_AR_#1	U	5002	mg/kg	2.00	10
Aromatic EPH >C21-C35	EH_2D_AR_#1	U	5002	mg/kg	2.00	21
Aromatic EPH >C35-C40	EH_2D_AR_#1	N	5002	mg/kg	1.00	30
Total Aromatic EPH >C10-C35	EH_2D_AR_#1	U	5002	mg/kg	4.00	35
Total Aromatic EPH >C10-C40	EH_2D_AR_#1	N	5002	mg/kg	10.00	65
Total EPH >C10-C35	EH_2D_Total_#1	U	5002	mg/kg	10.00	52
Total EPH >C10-C40	EH_2D_Total_#1	N	5002	mg/kg	10.00	83
Benzene		M	2760	µg/kg	1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0
Nitrogen (Total)		SN	2790	%	0.10	0.25
Naphthalene		M	2800	mg/kg	0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10

Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 26-00597
 Chemtest Sample ID.: 2072360
 Client Sample Ref.: Topsoil
 Client Reference:
 Client Sample ID.: Top
 Top Depth (m):
 Bottom Depth (m):
 Date Sampled: 07-Jan-2026
 Time Sampled:

Parameter	Units	Multipurpose Range	Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture					Acid	Low F	Calc.
Clay content (Sub Contracted)	%		5.0				
Silt content (Sub Contracted)	%		11.0				
Sand content (Sub Contracted)	%		84				
Soil texture class		See Attached Chart	Loamy Sand	YES			
Mass Loss on Ignition							
Clay 5-20%		3.0-20	5.6	YES	NO	YES	NO
Clay 20-35%		5.0-20					
Stone Content	% m/m						
>2mm (Sub Contracted)		0-30	15	YES			
>20mm (Sub Contracted)		0-10	0.000	YES			
>50mm (Sub Contracted)		0	0.000	YES			
Soil pH value		5.5-8.5	8.1	YES	NO	YES	YES
Carbonate (Calcareous only)	%		< 0.10				NO
Electrical Conductivity	µS/cm	If >3300 do ESP	3200	YES			
Available Nutrient Content							
Nitrogen %		>0.15	0.28	YES	YES		YES
Extractable phosphorus	mg/l	16-140	140	YES	YES	NO	YES
Extractable potassium	mg/l	121-1500	160	YES	NO		NO
Extractable magnesium	mg/l	51-600	64	YES	YES		YES
Carbon : Nitrogen Ratio		<20:1	12.0/1	YES	YES	YES	YES
Exchangeable sodium	%	<15	1.7				
Available Calcium	mg/l		1100				
Available Sodium	mg/l		24				
Phytotoxic Contaminants (by soil pH)		< 6.0	6.0-7.0	> 7.0			
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	21	YES	
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	5.6	YES	
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	< 5.0	YES	
Visible Contaminants	% mm						
>2mm		<0.5		0.000	YES		
..... of which plastics		<0.25		0.000	YES		
..... man-made sharps		zero in 1kg		0.000	YES		

Texture Classification Chart**Key**

Area within which the texture of topsoil is required to fall

NOTE Examples of textural classification are as follows.

- Soil A with 30% sand, 20% silt and 50% clay is in the "clay" textural class.
- Soil B with 55% sand, 30% silt and 15% clay is in the "sandy loam" textural class.
- Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.

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Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2115	Total Nitrogen in Soils	Nitrogen	Determination by elemental analyser	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2192	Asbestos Quantification in Soils Sediments Ballast & Aggregate Crushed Concrete & Demolition Rubble	Asbestos	Polarised light microscopy / Gravimetry	
2260	Carbonate	Carbonate	Titration	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2400	Cations	Cations	ICP-MS	
2420	Phosphate	Phosphate	Spectrophotometry - Discrete analyser	
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2620	LOI 440	LOI 440 Trommel Fines	Determination of the proportion by mass that is lost from a soil by ignition at 440°C.	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and Trimethylphenols>Note: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
5002	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Hexane extraction / GCxGC FID detection	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Text example All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at $\leq 30^{\circ}\text{C}$ prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Where analysis is performed on a dried and crushed sample, it has been prepared by crushing all of the sample. If material has been removed prior to crushing, or by request of the client, this will be stated on the report.

NEW_ASB Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL

DURHAM Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - The required amount of sample for analysis was not received
- H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water (Non-Regulatory)
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
cs@etuki.eurofins.com

ANALYTICAL TEST REPORT

Report Number 25-08019, issue number 1

Contract name: BS8601 Subsoil Testing

Client reference: Not Supplied

Clients name: Matthias Construction Materials (south-east) Ltd

Clients address: Matthias Construction Materials (south-east) Ltd
7 Coppergate Mews
103-107 Brighton Road
Surrey
KT6 5NE

Samples received: 15/08/2025

Analysis started: 15/08/2025

Analysis completed: 26/08/2025

Report issued: 26/08/2025

Key

U UKAS accredited test

M MCERTS & UKAS accredited test

(B) Analysis performed at Southampton Site

I/S Insufficient sample to carry out test

U/S Sample not suitable for testing

NAD No Asbestos Detected



Approved by: Sam Rogerson
Receipt and Reporting Manager

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
% Moisture reported as MCERTS drying at 30°C

Lab ref	Sample ID	Depth (m)	Sample description	Material removed	% Removed	% Moisture
63307	A	-	Brown Sand with Gravel.	-	-	7.2

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

- a Sampling date not provided
- b Sampling time not provided (waters only)
- c Sample not received in appropriate containers
- d Storage Temperature
- e Headspace present in sample container
- f Sample exceeded sampling to receipt
- g Sample exceeded holding time(s)

Lab ref	Sample ID	Depth (m)	Deviating	Tests (Reason for deviation)
63307	A	-	Y	a

SOILS

Lab Number					63307
Sample ID					A
Sampling Date					Not Supplied
Test	Method	Accred	LoD	Units	
Asbestos					
Asbestos Identification	SUBCO N	SU	0	-	NAD
Metals					
Copper (HNO3 Extractable)	CE054	N	1	mg/kg	2.73
Copper (HNO3 Extractable)	CE054	N	1.6	mg/kg	2.73
Nickel (HNO3 Extractable)	CE054	N	1	mg/kg	8.62
Zinc (HNO3 Extractable)	CE054	N	1	mg/kg	18.1
Combustion					
Moisture Content	CE001	N	0.1	%	7.2
Total Carbon	CE198	M	0.1	%	a 1.21
Total Organic Carbon	CE197	M	0.1	%	a 0.35
Loss on Ignition	CE006	U	0.1	%	a 1.18
Miscellaneous					
% >2mm	CE118	N	0	%	5.2
% > 20mm	CE118	N	0	%	0.0
% >50mm	CE118	N	0	%	0.0
% Clay	CE118	N	0	%	8.3
% Sand	CE118	N	0	%	76.2
% Silt	CE118	N	0	%	15.5
% Plastics	CE118	N	0	%	0.0
% Sharps	CE118	N	0	%	0.0
Wet Chem					
Electrical Conductivity	CE007	U	10	µS/cm	a 180
pH	CE004	M	0.1	pH units	a 8.5

DECLARATION OF COMPLIANCE
(BS8601:2013)



Lab ref	63307	Date received	15/08/2025
Contract name	BS8601 Subsoil Testing	Analysis started	19/08/2025
Sample ID	A	Analysis completed	21/08/2025
OS Grid reference	Not supplied	Report issued	26/08/2025
Date sampled	Not Supplied		

Test	Units	Result	Compliant with Multipurpose? (Y/N)	Compliant with specific purpose? (Y/N)	
				Acidic	Calcareous
Texture					
Clay content	% w/w	8	Y	Y	Y
Silt content	% w/w	16	Y	Y	Y
Sand content	% w/w	76	Y	Y	Y
Soil texture	class	SANDY LOAM	Y	Y	Y

Stone content					
>2mm	% w/w	5	Y	Y	Y
>20mm	% w/w	0	Y	Y	Y
>75mm	% w/w	0	Y	Y	Y

Mass loss on ignition	% w/w	1.2	Y	Y	Y
pH ¹	pH units	8.5	Y	N	Y
Carbonate (calcareous only)	% w/w	4.3			Y
Electrical conductivity ²	µS/cm	180			
Exchangeable sodium percentage	%	-	Y	Y	Y

Phytotoxic contaminants (by soil pH)					
Copper (Nitric acid extract)	mg/kg Cu	3	Y	Y	Y
Nickel (Nitric acid extract)	mg/kg Ni	9	Y	Y	Y
Zinc (Nitric acid extract)	mg/kg Zn	18	Y	Y	Y

OTHER CONTAMINANTS					
>2mm	% w/w	<0.1	Y	Y	Y
...of which plastics	% w/w	0	Y	Y	Y
Sharps	% w/w	None	Y	Y	Y

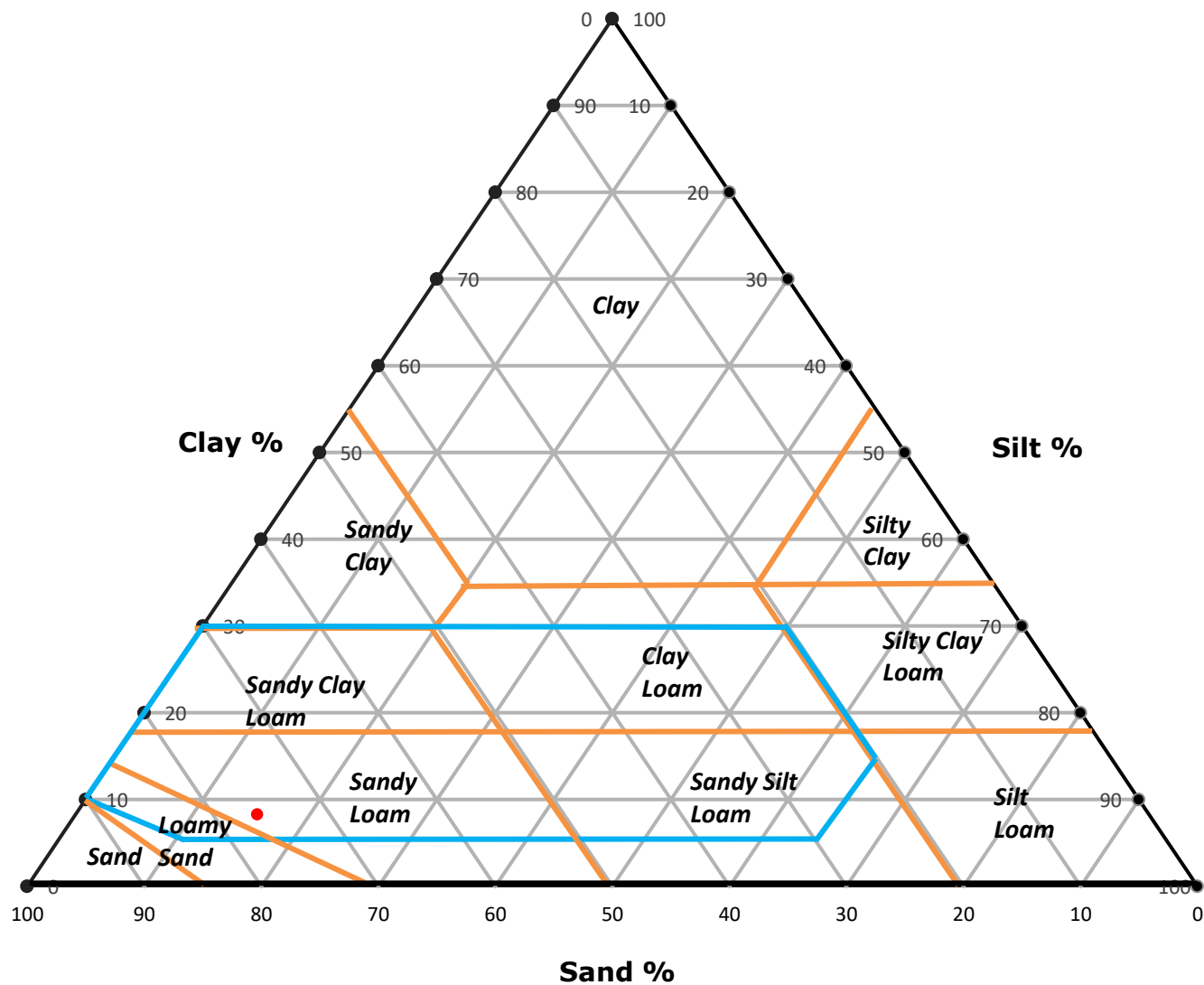
¹ Results are accredited to MCERTS if matrix confirmed as soil
² Results in leachate are accredited to ISO17025

Disclaimer: The limits in this report are provided for guidance only and values are transcribed from BS8601:2013

Chemtech Environmental Ltd does not take responsibility for any errors or omissions in the transcription, and all data should be verified by the end user.

Any assessments made are based on the published results from the Laboratory and make no assessment of uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. Method uncertainty levels can be provided independently upon request.

Assessment is outside the scope of the laboratory's UKAS accreditation.



METHOD DETAILS

METHOD	TESTNAME	METHOD SUMMARY	ANALYSIS BASIS
SUBCON	Asbestos Soil	HSG248	Air Dried Sample
CE007	Electrical conductivity of Solids	Potentiometric	As submitted sample
CE004	pH of Soil	Potentiometric	As submitted sample
CE198	Primacs in Soil	Primacs	Air dried sample
CE006	Loss on ignition at 440 deg C	Gravimetric	Air dried sample

REPORT INFORMATION

Report No.:25-08019, issue number 1

Key	
U	ISO17025 Accredited Result
M	ISO17025 and MCERTS Accredited Result
N	Do not currently hold accreditation
^	MCERTS accreditation not applicable for sample matrix
*	ISO17025 accreditation not applicable for sample matrix
S	Subcontracted
I/S	Insufficient Sample
U/S	Unsuitable sample
N/T	Not tested
<	Means "less than"
>	Means "greater than"

LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

This report shall not be reproduced except in full, without prior written approval.

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

The results relate only to the sample received.

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Moisture Content Calculated on a Wet Weight basis (at 30°C)

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

Sampling was undertaken by Chemtech Environmental Limited and is outside the UKAS accreditation scope.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

For soils and solids, all results are reported on a dry basis (30°C). Samples dried at no more than 30°C in a drying cabinet.

For soils and solids, analytical results are inclusive of stones, where applicable.

'Client Reference', 'Sample ID', 'Sample Location', 'Sample Type', 'Depth', 'Sample Date' and 'Sample Time' information is provided by the customer

Sample Retention and Disposal

All soil samples will be retained for a period of 4 weeks from the point of receipt

All water samples will be retained for a period of 2 weeks from the point of Reporting

Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

Unless specifically identified (noted as "(B)" in analyte name) all internal analysis performed at Durham site

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Statement of Conformity

Statement of Conformity

Where Chemtech reports a statement of conformity to a specification, the decision rules applied are derived from the Ilac document ILAC G8:09/2019.

Acceptance limits (AL), applied are derived from the tolerance limits (TL) by you the client or applicable standard (e.g. 2003.33.EC Council Decision, BS3882, BS8601)

Agreed and reported Decision Rule:

"PASS" if the result < TL, and the bias / precision values for the process meet the targets defined within the methodology and/or applied accreditation.

Reported Decisions:

Result < TL for determinands: PASS

Result > TL for determinands: FAIL

Definitions Used:

Acceptance limit (AL) Specified upper or lower bounds of permissible measured quantity values.

Tolerance limit (TL) Specified upper or lower bound of permissible values of a property.

Accreditation of WAC/BS3882/BS8601

Accreditation in Soil to MCERTS is only applicable for specific matrix types identified as soil (Sand/Loam/Clay) during the sample assessment

If the sample is classified as not soil, not accreditation is conveyed

APPENDIX D

SITE PHOTOGRAPHIC LOG

		Report No: 1921134	PHOTOGRAPHIC LOG
Gardiner and Theobald		Site Location: Northwood and Inner Pinner Health Centre.	
Photo No. 1	Date: April 2026		
Direction Photo Taken: N/A			
Description: Hand pit HP01 within landscaping showing min 600 mm of placed topsoil/subsoil.			

Photo No. 2	Date: May 2026	
Direction Photo Taken: N/A		
Description : Hand pit HP02 within landscaping showing min 600 mm of placed topsoil/subsoil.		

		Report No: 1921134	PHOTOGRAPHIC LOG
Gardiner and Theobald		Site Location: Northwood and Inner Pinner Health Centre	
Photo No. 3	Date: April 2026		
Direction Photo Taken: N/A			
Description: Hand pit HP03 within landscaping showing min 600 mm of placed topsoil/subsoil..			

Photo No. 4	Date: April 2026	
Direction Photo Taken: N/A		
Description: Hand pit HP04 within landscaping showing min 600 mm of placed topsoil/subsoil.		

		Report No: 1921134	PHOTOGRAPHIC LOG
Gardiner and Theobald		Site Location: Northwood and Inner Pinner Health Centre	
Photo No. 5	Date: May 2026		
Direction Photo Taken: N/A			
Description: Hand pit HP05 within landscaping showing min 600 mm of placed topsoil/subsoil.			

Photo No. 6	Date: May 2026	
Direction Photo Taken: N/A		
Description: Hand pit HP05 within landscaping showing min 600 mm of placed topsoil/subsoil.		

		Report No: 1921134	PHOTOGRAPHIC LOG
Gardiner and Theobald		Site Location: Northwood and Inner Pinner Health Centre	
Photo No. 7	Date: May 2026		
Direction Photo Taken: N/A			
Description: Hand pit HP06 within landscaping showing min 600 mm of placed topsoil/subsoil.			

Photo No. 8	Date: May 2026	
Direction Photo Taken: N/A		
Description: Hand pit HP07 within landscaping showing min 600 mm of placed topsoil/subsoil.		

		Report No: 1921134	PHOTOGRAPHIC LOG
Gardiner and Theobald		Site Location: Northwood and Inner Pinner Health Centre	
Photo No. 9	Date: May 2026		

Photo No. 10	Date: May 2026	
Direction Photo Taken: N/A		
Description: Hand pit HP08 within landscaping showing min 600 mm of placed topsoil/subsoil.		

		Report No: 1921134	PHOTOGRAPHIC LOG
Gardiner and Theobald		Site Location: Northwood and Inner Pinner Health Centre	
Photo No. 11	Date: May 2026		
Direction Photo Taken: N/A			
Description: Hand pit HP09 within landscaping showing min 600 mm of placed topsoil/subsoil.			

Photo No. 12	Date: May 2026	
Direction Photo Taken: N/A		
Description: Hand pit HP09 within landscaping showing min 600 mm of placed topsoil/subsoil..		

		Report No: 1921134	PHOTOGRAPHIC LOG
Gardiner and Theobald		Site Location: Northwood and Inner Pinner Health Centre	
Photo No. 13	Date: May 2026		
Direction Photo Taken: N/A			
Description: Hand pit HP10 within landscaping showing min 600 mm of placed topsoil/subsoil.			

APPENDIX E

CHEMICAL ANALYSIS CERTIFICATES

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 26/04629
Issue Number: 1
Date: 28 April, 2026

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew Tranter/Stuart Jeffery
Project Name: Northwood Health Centre
Project Ref: 1921134
Order No: N/A
Date Samples Received: 16/04/26
Date Instructions Received: 16/04/26
Date Analysis Completed: 28/04/26

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 26/04629

Client Project Name: Northwood Health Centre

Client Project Ref: 1921134

Lab Sample ID	26/04629/1	26/04629/5	26/04629/6	26/04629/7	26/04629/8	26/04629/10	26/04629/11	Units	Limit of Detection	Method ref
Client Sample No	1	1	2	1	2	1	2			
Client Sample ID	HP01	HP03	HP03	HP04	HP04	HP06	HP06			
Depth to Top	0.10	0.10	0.40	0.10	0.40	0.10	0.50			
Depth To Bottom										
Date Sampled	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	4AE	4AE	4AE	4AE	4AE	4AE			
% Stones >10mm _A	<0.1	<0.1	5.0	3.1	19.8	<0.1	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	7.76	7.88	8.06	7.74	8.63	7.47	7.99	pH	0.01	A-T-031s
Arsenic _D ^{M#}	9	8	8	9	6	7	10	mg/kg	1	A-T-024s
Cadmium _D	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-024s
Copper _D ^{M#}	34	30	11	31	10	33	12	mg/kg	1	A-T-024s
Chromium _D ^{M#}	22	16	12	17	11	16	13	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead _D ^{M#}	94	75	15	72	17	96	12	mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	13	12	11	13	10	13	18	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	111	106	33	108	32	247	53	mg/kg	1	A-T-024s

Envirolab Job Number: 26/04629

Client Project Name: Northwood Health Centre

Client Project Ref: 1921134

Lab Sample ID	26/04629/1	26/04629/5	26/04629/6	26/04629/7	26/04629/8	26/04629/10	26/04629/11	Units	Limit of Detection	Method ref
Client Sample No	1	1	2	1	2	1	2			
Client Sample ID	HP01	HP03	HP03	HP04	HP04	HP06	HP06			
Depth to Top	0.10	0.10	0.40	0.10	0.40	0.10	0.50			
Depth To Bottom										
Date Sampled	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	4AE	4AE	4AE	4AE	4AE	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual) _D	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 26/04629

Client Project Name: Northwood Health Centre

Client Project Ref: 1921134

Lab Sample ID	26/04629/1	26/04629/5	26/04629/6	26/04629/7	26/04629/8	26/04629/10	26/04629/11	Units	Limit of Detection	Method ref
Client Sample No	1	1	2	1	2	1	2			
Client Sample ID	HP01	HP03	HP03	HP04	HP04	HP06	HP06			
Depth to Top	0.10	0.10	0.40	0.10	0.40	0.10	0.50			
Depth To Bottom										
Date Sampled	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	4AE	4AE	4AE	4AE	4AE	4AE			
PAH-16MS										
Acenaphthene _A ^{M#}	0.22	0.03	<0.01	0.01	0.02	0.09	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.03	0.01	<0.01	0.01	<0.01	0.04	<0.01	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.54	0.10	0.02	0.05	0.08	0.41	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.19	0.55	0.24	0.45	0.44	1.76	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.04	0.59	0.29	0.43	0.41	1.40	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.24	0.69	0.36	0.53	0.50	1.59	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.57	0.38	0.19	0.26	0.26	0.71	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.44	0.24	0.12	0.18	0.17	0.52	<0.07	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.25	0.60	0.29	0.49	0.47	1.63	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.15	0.08	<0.04	0.05	0.06	0.19	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	3.04	1.12	0.33	0.88	0.87	3.38	<0.08	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.27	0.03	<0.01	0.01	0.02	0.13	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.68	0.45	0.23	0.31	0.32	0.89	<0.03	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	2.43	0.32	0.08	0.23	0.28	1.33	<0.03	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.44	0.99	0.31	0.78	0.76	3.19	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	15.6	6.18	2.46	4.67	4.66	17.3	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 26/04629

Client Project Name: Northwood Health Centre

Client Project Ref: 1921134

Lab Sample ID	26/04629/1	26/04629/5	26/04629/6	26/04629/7	26/04629/8	26/04629/10	26/04629/11	Units	Limit of Detection	Method ref
Client Sample No	1	1	2	1	2	1	2			
Client Sample ID	HP01	HP03	HP03	HP04	HP04	HP06	HP06			
Depth to Top	0.10	0.10	0.40	0.10	0.40	0.10	0.50			
Depth To Bottom										
Date Sampled	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26	15-Apr-26			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	4AE	4AE	4AE	4AE	4AE	4AE			
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1	<1	<10	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1	<1	<10	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	1	1	<1	1	<1	<10	<1	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	8	8	<1	8	5	14	<1	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	87	95	10	79	60	247	3	mg/kg	1	A-T-055s
Total Aliphatics _A	97	105	10	88	66	261	3	mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1	<1	<1	<10	<1	mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1	<1	<10	<1	mg/kg	1	A-T-055s
Aro >C12-C16 _A	7	6	<1	5	5	19	<1	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	20	22	3	19	20	82	<1	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	61	67	9	53	62	162	2	mg/kg	1	A-T-055s
Total Aromatics _A	89	95	12	76	86	263	2	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	185	200	22	164	152	524	6	mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 26/04629

Client Project Name: Northwood Health Centre

Client Project Ref: 1921134

Lab Sample ID	26/04629/12	26/04629/13	26/04629/14					Units	Limit of Detection	Method ref
Client Sample No	1	2	1							
Client Sample ID	HP07	HP07	HP08							
Depth to Top	0.20	0.50	0.60							
Depth To Bottom										
Date Sampled	15-Apr-26	15-Apr-26	15-Apr-26							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AE	1A	5AE							
% Stones >10mm _A	<0.1	10.2	8.7					% w/w	0.1	A-T-044
pH _D ^{M#}	7.68	8.28	8.01					pH	0.01	A-T-031s
Arsenic _D ^{M#}	7	8	9					mg/kg	1	A-T-024s
Cadmium _D	<1.0	<1.0	<1.0					mg/kg	1	A-T-024s
Copper _D ^{M#}	32	7	11					mg/kg	1	A-T-024s
Chromium _D ^{M#}	15	13	15					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	92	7	22					mg/kg	1	A-T-024s
Mercury _D	0.29	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	10	14	16					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	112	35	58					mg/kg	1	A-T-024s

Envirolab Job Number: 26/04629

Client Project Name: Northwood Health Centre

Client Project Ref: 1921134

Lab Sample ID	26/04629/12	26/04629/13	26/04629/14					Units	Limit of Detection	Method ref
Client Sample No	1	2	1							
Client Sample ID	HP07	HP07	HP08							
Depth to Top	0.20	0.50	0.60							
Depth To Bottom										
Date Sampled	15-Apr-26	15-Apr-26	15-Apr-26							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AE	1A	5AE							
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual) _D	-	-	-							A-T-045
Asbestos Matrix (microscope) _D	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 26/04629

Client Project Name: Northwood Health Centre

Client Project Ref: 1921134

Lab Sample ID	26/04629/12	26/04629/13	26/04629/14					Units	Limit of Detection	Method ref
Client Sample No	1	2	1							
Client Sample ID	HP07	HP07	HP08							
Depth to Top	0.20	0.50	0.60							
Depth To Bottom										
Date Sampled	15-Apr-26	15-Apr-26	15-Apr-26							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AE	1A	5AE							
PAH-16MS										
Acenaphthene _A ^{M#}	0.08	<0.01	0.21					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.04	<0.01	0.02					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.45	<0.02	0.29					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.42	<0.04	0.19					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.13	<0.04	0.14					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.33	<0.05	0.17					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.64	<0.05	0.08					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.51	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.33	<0.06	0.25					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.14	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.83	<0.08	0.61					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.09	<0.01	0.25					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.76	<0.03	0.09					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.08	<0.03	1.07					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.59	<0.07	0.44					mg/kg	0.07	A-T-019s
Total PAH-16MS_A^{M#}	14.4	<0.08	3.81					mg/kg	0.01	A-T-019s

Envirolab Job Number: 26/04629

Client Project Name: Northwood Health Centre

Client Project Ref: 1921134

Lab Sample ID	26/04629/12	26/04629/13	26/04629/14					Units	Limit of Detection	Method ref
Client Sample No	1	2	1							
Client Sample ID	HP07	HP07	HP08							
Depth to Top	0.20	0.50	0.60							
Depth To Bottom										
Date Sampled	15-Apr-26	15-Apr-26	15-Apr-26							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AE	1A	5AE							
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<5	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<5	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<5	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	9	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	125	<1	3					mg/kg	1	A-T-055s
Total Aliphatics _A	134	<1	3					mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<5	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<5	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	9	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	36	<1	2					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	100	<1	6					mg/kg	1	A-T-055s
Total Aromatics _A	145	<1	8					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	279	<1	11					mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

- This report shall not be reproduced, except in full, without written approval from Envirolab.
- The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
- The results reported herein relate only to the material supplied to the laboratory.
- The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
- Analytical results reflect the quality of the sample at the time of analysis only.
- Opinions and Interpretations expressed are outside our scope of accreditation.
- A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
- If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
- Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript “#”	Accredited to ISO 17025
Superscript “M”	Accredited to MCertS
Superscript “U”	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript “A”	Analysis performed on as-received Sample
Subscript “D”	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript “D” on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript “A”	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
Subscript “@”	Result is an opinion
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis

“Trace Asbestos Identified” will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any “D” subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.

Results “with Clean up” indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.

Where these humic substances have been identified in any IDs from “TPH CWG with clean up” please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: RSK Environment Ltd Hemel, 18 Frogmore Road, Hemel Hempstead,
Hertfordshire, UK, HP3 9RT

Project: Northwood Health Centre

Clients Project No: 1921134

Project No: 26/04629

Date Received: 16/04/2026 (am)

Cool Box Temperatures (°C): 10.5, 10.1

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	26/04629/1	26/04629/5	26/04629/6	26/04629/7	26/04629/8	26/04629/10	26/04629/11	26/04629/12	26/04629/13	26/04629/14
Client Sample No	1	1	2	1	2	1	2	1	2	1
Client Sample ID/Depth	HP01 0.10m	HP03 0.10m	HP03 0.40m	HP04 0.10m	HP04 0.40m	HP06 0.10m	HP06 0.50m	HP07 0.20m	HP07 0.50m	HP08 0.60m
Date Sampled	15/04/26	15/04/26	15/04/26	15/04/26	15/04/26	15/04/26	15/04/26	15/04/26	15/04/26	15/04/26
A-T-019s	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026
A-T-022s	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026
A-T-024s	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026	28/04/2026
A-T-031s	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026
A-T-040s	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026
A-T-044	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026	27/04/2026
A-T-045	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026
A-T-055s	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026	22/04/2026
Calc-As Recd	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026	24/04/2026

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report