Report Prepared at
Land at Sullivan Crescent
Harefield
UB9 6NL

On behalf of
Bugler Developments Limited

Report reference
23-248.05

Report date
January 2025

Prepared by
Aviron Associates Limited

Report Quality Management

Project Name	Land at Sullivan Crescent, Harefield, UB9 6NL		
Project Title	Soil Verification Report		
Client	Bugler Developments Limited		
Project Number	23-248.05		
Version	1		**Date**
Prepared by	James Burkitt BEng (Hons) CEnv MRICS	Managing Director	16/01/2025
Checked by	Vanessa Bell BSc (Hons) MSc	Land Contamination Consultant	16/01/2025

Aviron Associates Limited (Aviron) has prepared this report in accordance with our fee proposal to the above listed Client or their agents and subsequent instructions pertinent to this which were received from the above listed Client.

This report is confidential and non-assignable by the Client. Aviron shall not be responsible for any use of the report or its contents for any other purpose than for which, and to whom, it was prepared and provided.

Should the Client pass copies of this report to other parties for further comment and advice the whole of the report should be provided and used in the context to which it was prepared.

No professional liability or warranty shall be extended to other parties by Aviron in this connection without the explicit written agreement thereto by Aviron.

Should this report be submitted to stakeholders or statutory bodies by any party other than the above listed Client a copyright law may be infringed and the party submitting the report may not be entitled to do so unless accompanied by a covering letter from Aviron or the Client.

For the avoidance of doubt and litigation Aviron should be contacted to establish lawful use of this report.

Aviron Associates Limited
Badgemore House
Badgemore Park
Gravel Hill
Henley on Thames
RG9 4NR

Telephone numbers 01491 413 722
07787 771 686

james@aviron.co.uk
www.aviron.co.uk

Contents

Figures

Appendices

1.0 PROJECT AND SITE INFORMATION

1.1 APPOINTMENT

Aviron Associates Limited (Aviron) was retained by Bugler Developments Limited [the "Client"] to prepare a Soil Verification Report for the following premises:

Land at Sullivan Crescent, Harefield, UB9 6NL (hereafter referred to as the "site").

The purpose of this report is to provide a review of remediation excavation and soil verification works at the site. This report shall demonstrate that any previous (or undiscovered) soil contamination has been removed from the subject gardens and that the plots can be considered suitable for residential occupancy without presenting an occupancy exposure risk.

1.2 THE SITE

Table 1.2 presents the site details.

Table 1.2: Site Details	
Site Location	The site is located off Sullivan Crescent, via gated access between numbers 40 and 42-44, on the south-eastern outskirts of Harefield, equidistant between Chalfont St Peter and Northwood. **Figure 1** is presented as a Site Location Plan.
Land Use	Prior to re-development the site comprised a recently cleared parcel of land, previously occupied by a series of lock-up garages. The garages have been cleared to ground level. **Figure 2** is presented as Pre-Clearance Site Plan The site is in the closing stages of redevelopment into six new semi-detached homes with private gardens set around a new access road and a number of parking bays. **Figure 3** is presented as a Proposed Development Plan.
Surrounding Land Use	The site is bounded by residential properties in all direction.

1.3 REMEDIATION REQUIREMENT

Prior to reviewing this report, the Discovery Strategy, Remediation Action Plan & Verification Plan (DS, RAP & VP) prepared by Aviron should be consulted:

Discovery Strategy, Remediation Action Plan & Verification Plan

Report 23-248.03 (version 1)

Dated 23 October 2023

The above provides a Remediation Method Statement which recommended the remedial actions summarised in Table 1.3.

Table 1.3: Environment Risk Summary			
Medium	**Item**	**Risk Description**	**Comments/Recommendations**
Soils	1	Local Polycyclic Aromatic Hydrocarbons (PAH) soil contamination at WS1 which may present a risk to human health.	Complete hotspot removal and prepare Discovery Strategy, Remediation Action Plan and Verification Plan.
	2	Potential for undiscovered soil contamination around interceptor in the event of removal	Prepare a Discovery Strategy and enact watching brief during site clearance.
	3	Ensure material encountered is suitable for desired water main.	Consult local water authority prior to water main installation.
	4	Any imported Topsoil should be chemically suitable for use in private gardens.	Import suitable Topsoil (BS3882) to sustain planting.
	5	Asbestos in undiscovered locations.	Prepare a Discovery Strategy and enact watching brief during site clearance.
Ground Gas	6	Elevated carbon dioxide and depleted oxygen.	Gas protection should be designed and installed in accordance with BS8485 to CS2. Suitable verification of the installation shall be necessary. Subsequent to the recommendation to install gas protection additional gas risk assessment was completed which determined the absence of risk. The following report should be consulted; *Ground Gas Risk Assessment, reference 23-248.04, version 2, dated November 2024.*
Groundwater	7	Ground conditions are not considered to present a notable risk to groundwater or controlled waters.	Prepare a Discovery Strategy and enact watching brief during groundworks

Soil verification inspections are necessary as follows:

1. Confirm absence of risk to controlled waters following removal of interceptor.
2. Confirm absence of local PAH in native soils local to WS1.
3. Confirmation absence of any undiscovered contamination by means of inspection and sampling of native soils.
4. Confirmation of importation of chemically suitable Topsoil.

1.4 VERIFICATION OBJECTIVES

The objective of this report is to gain regulatory and stake holder approval and written confirmation such that the soil verification (inspection) confirms the absence of contaminative risk to site end users. This report has also been prepared to address the requirements of the Local Planning Authority and also development warranty providers.

2.0 INTERCEPTOR REMOVAL

Aviron were not in attendance during the early stages of groundworks. However, the Client has informed when the interceptor was removed no evidence of soil contamination was observed. The position of the former interceptor is shown in **Figure 2**.

The area of the former interceptor is now encapsulated with permanent hardstanding in the form of the site entrance road.

3.0 VERIFICATION INVESTIGATION AND ASSESSMENT

The following section documents a site visit and investigation which completed in order to confirm the presence or absence of:

1. Local PAH contamination in native sub-soils local to WS1.

2. Any undiscovered contamination across the site by means of inspection and sampling of native sub-soils.

3. Any soil contamination within the imported overlying Topsoil.

3.1 LOCATION OF PAH DISCOVERY

Enclosed as **Figure 4** is a Soil Contamination Identification Plan which presents the location (WS1) where PAH was encountered during the previous of site investigation and referenced within the RAP.

It is understood from Client that the over-site strip to arrange construction levels removed the hotspot of PAH soil contamination local to WS1.

3.2 VERIFICATION INVESTIGATION

In order to verify the absence of PAH potentially remaining on-site in areas of risk exposure (garden areas) a soil sampling and testing investigation was designed. The investigation was to comprise hand excavated trial pits whereby sample locations V1 and V2 were positioned in the south-west of the site local to the position of WS1 to enable inspection and sampling of 'native' soils. The sample locations were targeted to garden/soft landscaped areas where a risk of exposure from PAH (if present) may be expected via the ingestion pathway.

In order to verify the potential for undiscovered soil contamination within the native sub-soils below the overlying imported Topsoil the hand pitting excavation was extended across the site. Sample locations V3 to V7 were positioned to enable inspection and sampling of 'native' soils. The sample locations were targeted to garden/soft landscaped areas where a risk of exposure from undiscovered contamination (if present) may be expected via the ingestion and inhalation (asbestos) pathway.

In order to determine the chemical quality of imported Topsoil samples of the imported material were collected from the excavated arisings of exploratory holes V1 to V7.

Figure 5 is presented as a Verification Trial Hole Location Plan and Table 3.2.1 provides a rationale of exploratory holes and details of ground conditions encountered.

Table 3.2.1: Verification Trial Holes				
Location	**Rationale**	**Evidence of deleterious objects or contamination**	**Thickness of Topsoil (m)**	**Thickness of sub-soil (m)**
V1	Positioned to the west of WS1 within garden area.	Not observed in trial hole or garden area	GL-0.4	0.4-0.5
V2	Positioned to the west of WS1 within garden area.	Not observed in trial hole or garden area	GL-0.3	0.3-0.6
V3	Positioned within rear garden in south of site for spatial coverage.	Not observed in trial hole or garden area	GL-0.3	0.3-0.4
V4	Positioned within rear garden in north of site for spatial coverage.	Not observed in trial hole or garden area	GL-0.3	0.3-0.4
V5	Positioned within rear garden in north of site for spatial coverage.	Not observed in trial hole or garden area	GL-0.3	0.3-0.4
V6	Positioned within rear garden in north of site for spatial coverage.	Not observed in trial hole or garden area	GL-0.4	0.4-0.7
V7	Positioned within rear garden in north of site for spatial coverage.	Not observed in trial hole or garden area	GL-0.3	0.3-0.4
GL = Ground Level.				
Topsoil was described as dark brown, silty, sandy humic Clay				
Native Sub-soil was described as orange, brown, mottled grey sandy gravelly CLAY				

Enclosed within **Appendix I** are Site Inspection Photographs of the Trial Hole arisings.

Soil samples were collected from the underlying natural strata within each trial hole to determine the presence of absence of residual PAH (V1 and V2 by WS1) and also previously undiscovered contamination (V3 to V7).

Additionally composite samples of the imported Topsoil were collected from the excavated arisings to confirm the chemical quality of the imported material.

Table 3.2.2 details the soil samples which were collected and submitted for geochemical analysis.

Table 3.2.2: Soil Geochemical Testing			
Location	**Strata Sampled**	**Objective**	**Analysis**
V1 (0.4-0.5m)	Clay sub-soil	To target the area adjacent to WS1 to determine the presence or absence of PAH.	ES-1
V2 (0.3-0.5m)	Clay sub-soil	To target the area adjacent to WS1 to determine the presence or absence of PAH.	ES-1
V3 (0.3-0.5m)	Clay sub-soil	To provide spatial coverage and determine the presence or absence of previously undiscovered contamination.	ES-1
V4 (0.3-0.4m)	Clay sub-soil	To provide spatial coverage and determine the presence or absence of previously undiscovered contamination.	ES-1
V5 (0.3-0.4m)	Clay sub-soil	To provide spatial coverage and determine the presence or absence of previously undiscovered contamination.	ES-1
V6 (0.4-0.5m)	Clay sub-soil	To provide spatial coverage and determine the presence or absence of previously undiscovered contamination.	ES-1
V7 (0.3-0.4m)	Clay sub-soil	To provide spatial coverage and determine the presence or absence of previously undiscovered contamination.	ES-1
TS1	Imported Topsoil	A composite sample of imported Topsoil from the arisings of V1 to V3.	ES-1
TS2	Imported Topsoil	A composite sample of imported Topsoil from the arisings of V4 to V5.	ES-1
TS3	Imported Topsoil	A composite sample of imported Topsoil from the arisings of V6 to V7.	ES-1
Aviron's "ES-1" suite of laboratory analysis includes; arsenic, barium, cadmium, total chromium, copper, nickel, zinc, lead, mercury, selenium, water soluble boron, total cyanide, total sulphate, water soluble sulphide, speciated Polycyclic Aromatic Hydrocarbons (PAH), speciated Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and Methyl Tert-Butyl Ether (MTBE), organic matter, total phenols, pH and asbestos. The analysis chosen provides broad and suitable screening of soil contaminants to enable potential risk to human health to be determined.			

All soil samples were collected from excavated arisings using a trowel. Clean latex gloves were used each time a soil sample was collected, and all samples were placed into clean sterilised jars for submission to the UKAS/MCERTS accredited laboratory, i2 Analytical Limited.

All sample containers were labelled on-site immediately prior to filling.

Samples for geochemical analysis were then placed into a cool box containing ice packs to maintain refrigerated conditions following collection and transport to the laboratory. Ice packs were changed every

twenty-four hours where necessary to maintain cool conditions and suppress volatiles.

3.3 REMEDIATION TARGETS - IMPORTED SOILS

Aviron has followed the technical approach on Land Contamination Risk Management (LCRM), accessed on gov.uk website and other available guidance to assess contaminant concentrations. LCRM guidance replaces the Contaminated Land Report 11 (CLR11) "Model Procedures for the Management of Land Contamination" prepared by the Environment Agency in 2004. CLR11, which was withdrawn in 2020, provided guidance on the application of management processes when assessing potentially contaminated land.

Details of the methodology and Aviron's position on the adoption of guidance values is outlined below.

The available chemical data, from soil samples tested, is sorted into appropriate datasets depending on sampling regime and ground conditions. An initial generic quantitative risk assessment is completed upon using the relevant tier 1 screening criteria and where appropriate statistical modelling. Risks to human health shall be initially assessed by comparing soil chemical data against various published screening criteria. These have been sourced from the following and in order of preference:

- Category 4 Screening Levels (C4SLs) prepared by the Department of Environmental Food and Rural Affairs (DEFRA) and published March 2014.
- Phase 2 C4SLs prepared by CL:AIRE and published May 2021.
- Suitable 4 Use Levels (S4ULs) prepared by Land Quality Management/Chartered Institute of Environmental Health (LQM/CEIH) and published December 2014. LQM acknowledgement for use of S4ULs. *"Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3275. All rights reserved".*
- Soil Guidance Values (SGVs) prepared by the Environment Agency (EA)/DEFRA and published 2009.
- Soil Generic Assessment Criteria (GAC) prepared by Environment Industries Commission (EIC)/Association of Geotechnical and Geoenvironmental Specialists (AGS)/Contaminated Land: Application In Real Environments (CL:AIRE) and published 2010.

Aviron has adopted the above hierarchy in response to LCRM recommendations.

3.4 REVIEW OF LABORATORY RESULTS

Laboratory certificates of analysis along with the 'residential with plant uptake' end use criteria (private gardens) are enclosed within **Appendix II.**

Concentrations of all determinants analysed:

- Samples **V1 to V17** from in-situ soils to determine the presence or absence of PAH and previously undiscovered contamination recorded **acceptable determinant/chemical concentrations.**
- Samples **TS1 to TS5** from the imported Topsoil, recorded **acceptable determinant/chemical concentrations.**

It is considered that the soil chemistry (and physical nature) of the native sub-soils and imported Topsoil within new gardens is acceptable.

4.0 RISK ASSESSMENT

4.1 METHODOLOGY

A Conceptual Site Model (CSM) has been prepared in accordance with LCRM based on the information obtained as part of this verification exercise which in turn was derived from previous risk assessment works. Possible risks associated with potential sources of contamination and sensitive receptors identified have been assessed via a source-pathway-receptor (SPR) model in accordance with current UK protocols. A risk may only exist where a plausible SPR linkage is presented and where the quantity or concentration of a contaminant is sufficient to pose harm. Under the statutory definition "Contamination" may only exist where contaminants pose a risk of harm to a receptor. Risk may be defined as a function of the likelihood and severity of any adverse effects resulting from a contamination event. This risk classification has been assessed in accordance with CIRIA C552. A summary of how risk is derived and the associated definition is presented in tables 4.1.1 and 4.1.2.

Table 4.1.1 : Risk Ratings Matrix

	Consequence			
Probability	**Severe**	**Medium**	**Mild**	**Minor**
High Likelihood	**Very high risk**	**High risk**	**Moderate Risk**	**Moderate/low risk**
Likely	**High risk**	**Moderate Risk**	**Moderate/low risk**	**Low risk**
Low Likelihood	**Moderate Risk**	**Moderate/low risk**	**Low risk**	**Very low risk**
Unlikely	**Moderate/low risk**	**Low risk**	**Very low risk**	**Very low risk**

Table 4.1.2 : Risk Ratings Definition

Risk Rationale	Definition
Very high risk	A high probability that severe harm could occur to determined receptor from identified contaminant - OR - evidence exists that severe harm to receptor is currently occurring. Urgent investigation and remediation should be considered. If demonstrated this risk is likely to result in substantial liability.
High risk	Harm is likely to occur to determined receptor from identified contaminant. Urgent investigation and short-term risk minimisation remediation followed by longer term fit for purpose remediation should be considered. If demonstrated this risk is likely to result in substantial liability.
Moderate Risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is relatively unlikely that any harm would be severe or should harm occur it is likely to be relatively mild.
Moderate/low risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is unlikely that any harm would be severe or should harm occur it is probable to be relatively mild.
Low risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is unlikely that such harm, if indeed present, would at worst be mild.
Very low risk	There is a low possibility that harm could occur to a receptor. In such event the harm would not be severe.

4.2 SUMMARY OF POLLUTANT LINKAGES FOR PROPOSED LAND USE - CSM

The initial CSM is based upon the proposed site end use and the information currently consulted relating to various risk sources and plausible pollutant linkages and is presented within table 4.2.

Table 4.2 : Conceptual Site Model (for plausible pollutant linkage pathways)

Source	Receptor	Pathway	Probability	Consequence	Risk & Justification
PAH in Soil	End users Construction or Maintenance Workers	Inhalation of fibres	Unlikely	Minor	Very Low PAH verification exercise at two locations local to WS1 has recorded the absence of PAH in soil. Furthermore PAH does not exist within the sub-soil at a further five spatially arranged positions.
Undiscovered Soil Contamination	Construction workers	Direct contact	Unlikely	Minor	Very Low Seven verification trial holes have been completed whereby a sample of the native sub-soil was collected for chemical analysis; all determinants were recorded at acceptable concentrations.
	End users	Direct contact	Unlikely	Minor	
	Adjacent land users	Direct contact via run-off	Unlikely	Minor	
	Soft landscaping	Root uptake	Unlikely	Minor	
	Water supply pipes	Direct contact	Unlikely	Minor	
	Buildings & infrastructure	Direct contact	Unlikely	Minor	
Contaminants within imported soil to new gardens	End users Soft Landscaping	Direct contact	Unlikely	Minor	Very Low All concentrations of determinants recorded at acceptable concentrations within imported soil.

It is considered that **the site** presents a **VERY LOW** risk and no further assessment is considered necessary.

5.0 CONCLUSIONS

Soil verification investigation, comprising the hand pitting of position V1 to V7, has determined the absence PAH soil contamination local to WS1 and also across the site. Thus, the assertion from the Client that it was removed from site during the early stages of groundworks appears to be reliable.

Furthermore, the soil verification investigation has determined the absence previously undiscovered soil contamination across the site in areas of exposure, being gardens.

A thickness of 300-400mm of clean Topsoil has been placed within completed private gardens as verified within trial holes V1 to V7.

Three samples have been collected from the imported Topsoil which confirms the chemical suitability of the imported soils for use at a residential development within the gardens and soft landscaping.

It is considered that in-situ soils within gardens and soft landscaped areas do not present a chemical risk to human health from dermal contact, ingestion, inhalation or gassing via organic degradation.

The completed gardens and soft landscaping are considered fit for purpose and no further assessment is considered necessary.

6.0 PROJECT INSTRUCTION AND LIMITATIONS

6.1 SCOPE OF WORKS

The following scope of work was undertaken in accordance with an agreed proposal prior to the works:

- Attend site as instructed to complete a site inspection and collect soil samples for verification laboratory analysis.
- All soil samples shall be collected in accordance with the instruction and ground conditions and submitted to UKAS/MCERTS accredited laboratories for testing.
- Prepare a Verification Report to document the exercise and determine if the site is fit for purpose.

Aviron has relied upon information received from the Client and their agents as accurate, unless contradicted by written documentation or site observations.

6.2 PUBLISHED GUIDANCE

This report follows the technical approach presented on Land Contamination Risk Management (LCRM), accessed on gov.uk website. The guidance replaced the Contaminated Land Report 11 (CLR11) "Model Procedures for the Management of Land Contamination" prepared by the Environment Agency in 2004. CLR11, which was withdrawn in 2020, provided guidance on the application of management processes when assessing potentially contaminated land.

This project and report have been designed to fulfil the information requirements set out in LCRM. This report is additionally prepared in accordance with current guidance notes, standards and practices as set out by the Environment Agency and statutory organisations in order to establish potential and significant contaminant linkages as defined in Part IIA of the Environmental Protection Act 1990.

7.3 LIMITATIONS

Aviron's scope of work has been designed to meet the timeframe and budgets. As such it may follow that further work would be prudent upon evaluation of the ground conditions. The scope of work provided shall provide a view of site conditions and understanding of potential geo-environmental risks and possible mitigation procedures.

The information used in this report has been derived from the site investigation, which in turn were based on known current and historical land uses identified at the site and surrounding area, available to Aviron at the time of the investigation.

Intrusive points chosen relate to the data collected and the risk assessment will rely on these points only. It therefore follows that some areas of the site will not be examined. It is always possible that some areas not investigated may contain conditions which would be impossible to determine due to lack of evidence or time and budget restrictions.

Should changes in legislation, statutory requirements or industry practices occurred following issue of this report, this report should be viewed in light of these changes.

Should a notable time period elapse between the date issue of this report and the date of application of this report changes to site dynamics may occur and in particular the site inspection notes may no longer be applicable should any change of use occur to the site in the interim.

7.0 REFERENCES AND OTHER SOURCES OF INFORMATION

Aviron. Reports listed in section 1.0 and 2.0.

NHBC (2010). National House Building Council Standards. Chapter 4.

BS EN ISO 22475-1 Geotechnical investigation and testing - sampling methods and groundwater measurements.

BS10175: 2011. British Standards Institute. Investigation of Potentially Contaminated Land - Code of Practice

LQM/CIEH: Paul Nathanail, Caroline McCaffrey, Andy Gillett, Richard Ogden and Judith Nathanail. 2014. The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham. ISBN 978-0-9931084-0-2. "Copyright Land Quality Management Limited reproduced with permission; Publication number S4UL3275. All rights reserved"

SP1010 - Development of Category 4 Screening Levels for Land Affected by Contamination. Final Project Report (Revision 2). Contaminated Land : Applications In Real Environmental (CL:AIRE). September 2014.

SR2: Human health toxicological assessment of contaminants in soil, Science Report SC050021/SR2, Environment Agency, August 2008.

SR7: Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values, Science Report SC050021/SR7, Environment Agency, November 2008.

Environment Agency. July 2005. Guidance on Requirements for Land Contamination Reports.

Figures

Legend

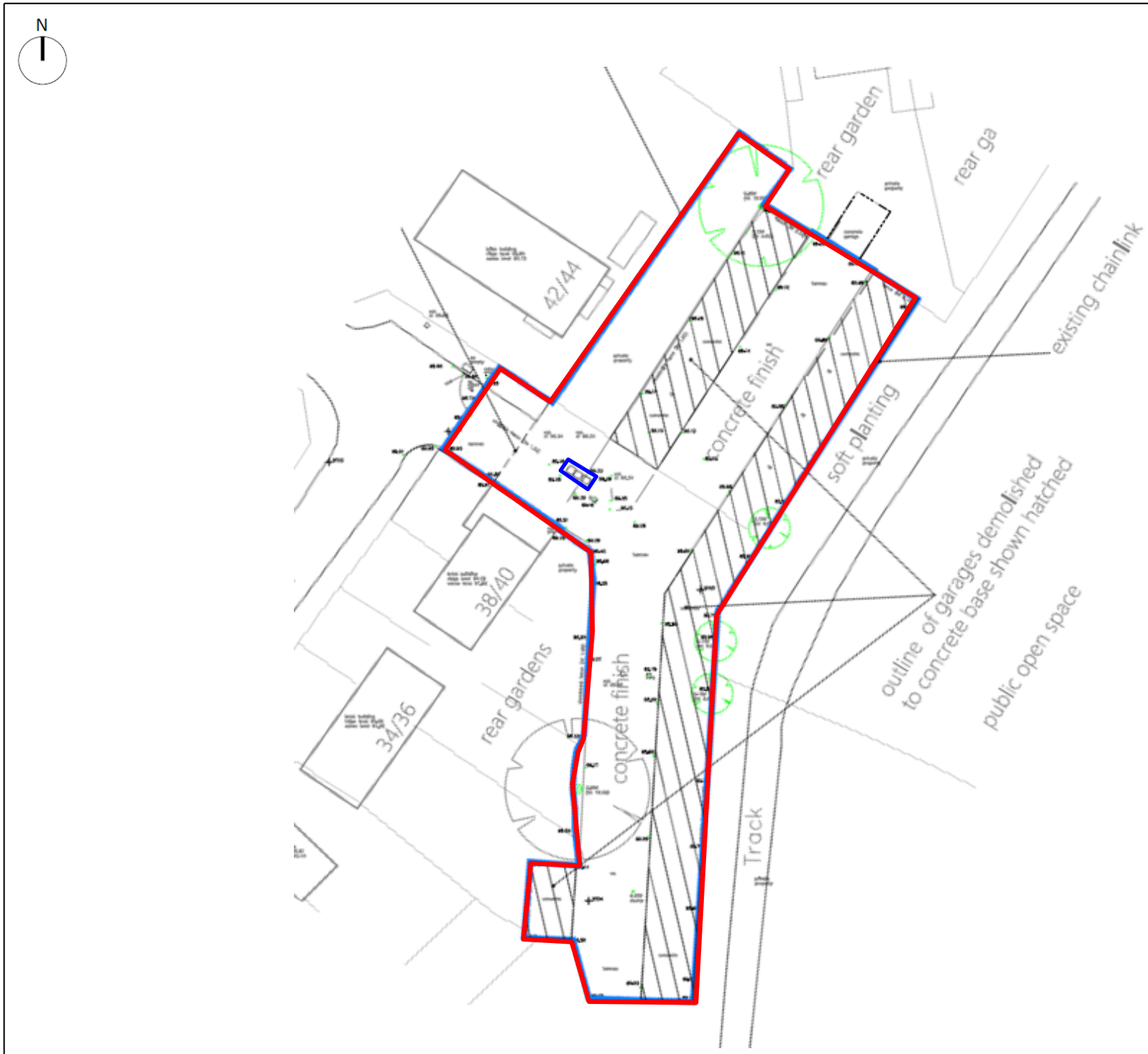
Approximate Site Boundary

Notes

Figure 1

Drawing Title	Site Location Plan
Project Number	23-248.05
Project Title	Land at Sullivan Crescent, Harefield, UB9 6NL
Drawn by	DN
Checked by	JB
Scale	NTS

Aviron Associates Limited - Badgemore House - Gravel Hill - Henley on Thames - RG9 4NR - T: 01491 413 722 - M: 07787 771 686 - E: james@aviron.co.uk



Legend

Approximate Site Boundary

Interceptor Chambers

Notes

Figure 2

Drawing Title

Pre-Clearance Site Layout Plan

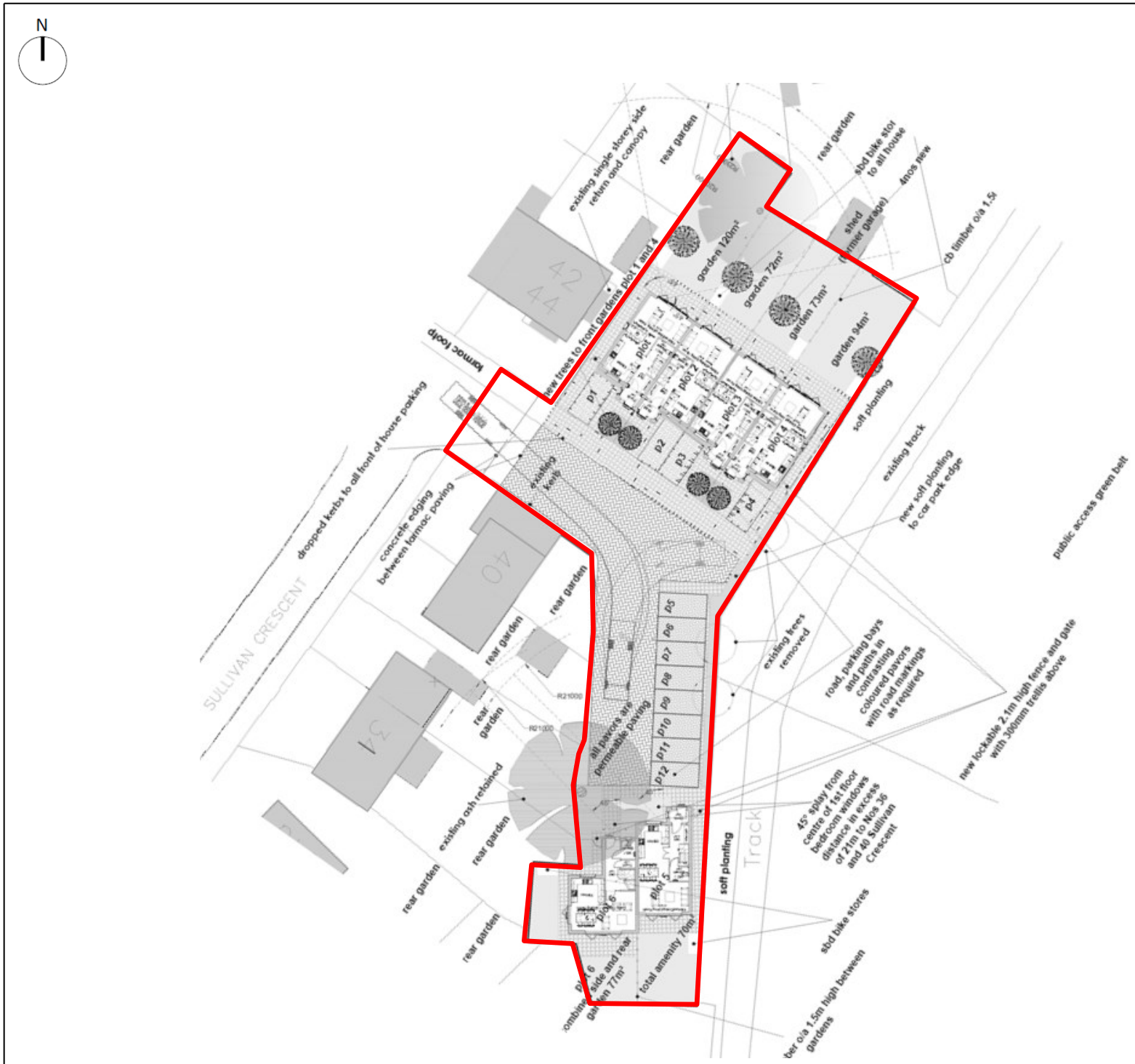
Project Number	23-248.05

Project Title

Land at Sullivan Crescent, Harefield, UB9 6NL

Drawn by	DN
Checked by	JB
Scale	NTS

Aviron Associates Limited - Badgemore House - Gravel Hill - Henley on Thames - RG9 4NR - T: 01491 413 722 - M: 07787 771 686 - E: james@aviron.co.uk



Legend

Approximate Site Boundary

Notes

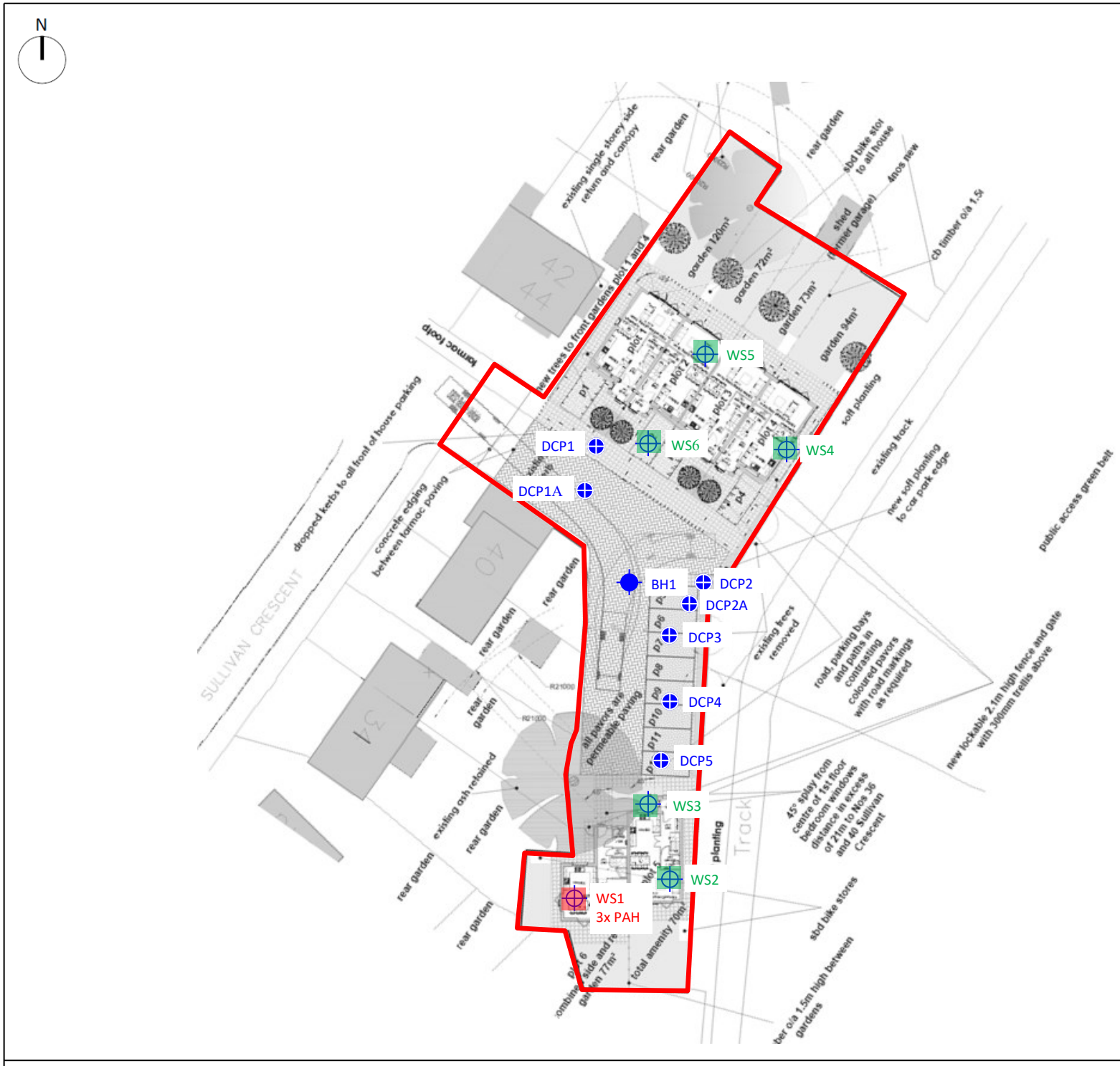
Figure 3

Drawing Title

Proposed Development Plan

Project Number	23-248.05
Project Title	Land at Sullivan Crescent, Harefield, UB9 6NL
Drawn by	DN
Checked by	JB
Scale	NTS

Aviron Associates Limited - Badgemore House - Gravel Hill - Henley on Thames - RG9 4NR - T: 01491 413 722 - M: 07787 771 686 - E: james@aviron.co.uk



Legend

- Approximate Site Boundary
- ‘Contaminated’ Location
- ‘Uncontaminated’ Location

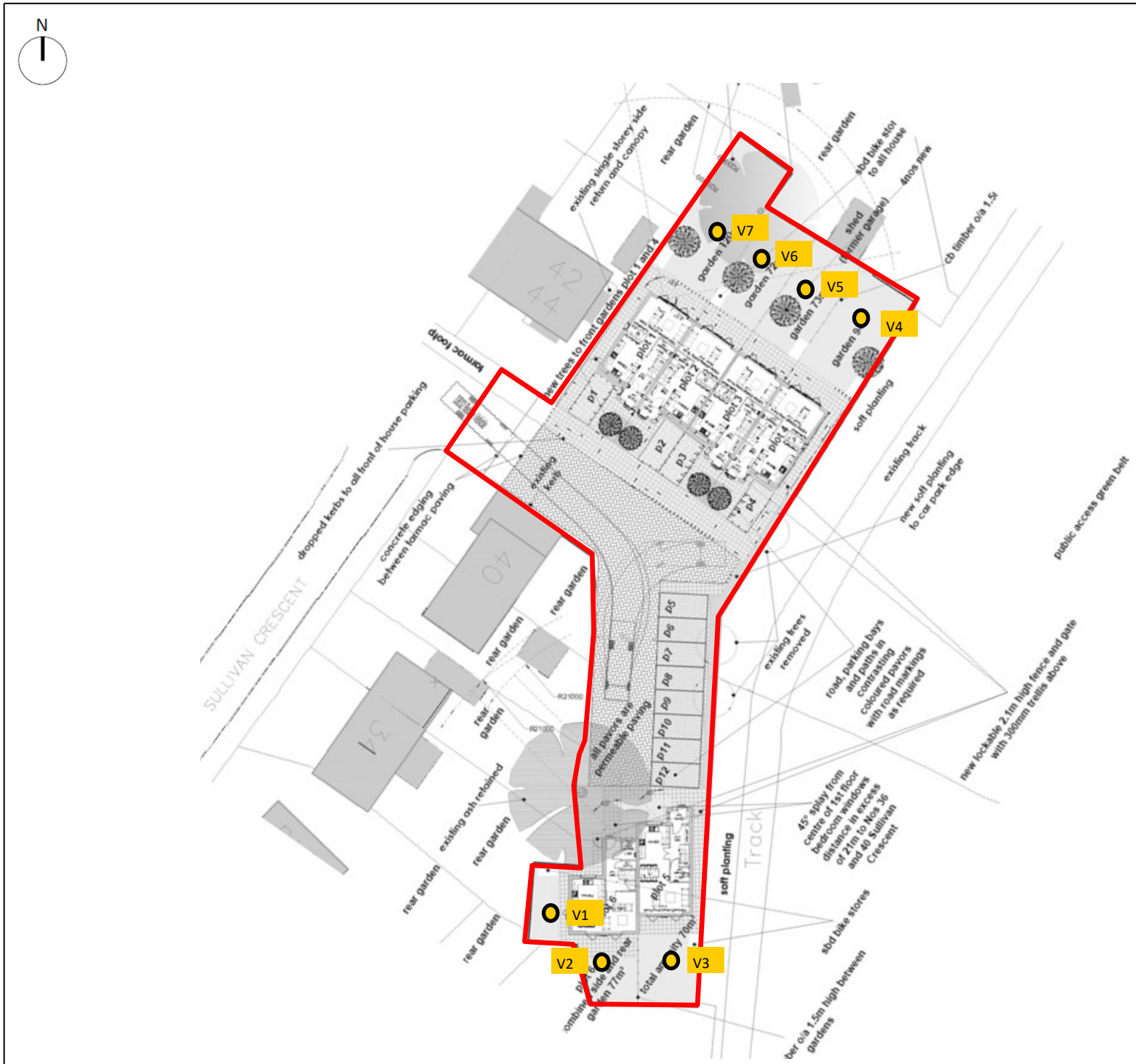
Notes

Where exploratory holes are not high-lighted red or green; no testing has been completed.

Figure 4

Drawing Title	Soil Contamination Identification Plan
Project Number	23-248.05
Project Title	Land at Sullivan Crescent, Harefield, UB9 6NL
Drawn by	DN
Checked by	JB
Scale	NTS

Aviron Associates Limited - Badgemore House - Gravel Hill - Henley on Thames - RG9 4NR - T: 01491 413 722 - M: 07787 771 686 - E: james@aviron.co.uk



Legend

Approximate Site Boundary

Verification Sample Location

Notes

Figure 5

Drawing Title

Verification Trial Hole Location Plan

Project Number	23-248.05
Project Title	Land at Sullivan Crescent, Harefield, UB9 6NL
Drawn by	DN
Checked by	JB
Scale	NTS

Aviron Associates Limited - Badgemore House - Gravel Hill - Henley on Thames - RG9 4NR - T: 01491 413 722 - M: 07787 771 686 - E: james@aviron.co.uk

Appendices

I Site Inspection Photographs

II Laboratory Certificates of Analysis and Assessment Criteria

Appendix

I Site Inspection Photographs

Verification Trial Hole Photographs

Project Number 23-248.05 **Project Title** Land at Sullivan Crescent, Harefield, UB9 6NL **Taken by** AC **Date** 09/01/2024

V1 - Depth

V1 - Arisings

V1 - Position

V2 - Depth

V2 - Arisings

V2 - Position

Verification Trial Hole Photographs

Project Number 23-248.05 **Project Title** Land at Sullivan Crescent, Harefield, UB9 6NL **Taken by** AC **Date** 09/01/2024

V3 - Depth

V3 - Arisings

V3 - Position

V4 - Depth

V4 - Arisings

V4 - Position

Verification Trial Hole Photographs

Project Number 23-248.05 **Project Title** Land at Sullivan Crescent, Harefield, UB9 6NL **Taken by** AC **Date** 09/01/2024

V5 - Depth

V5 - Arisings

V5 - Position

V6 - Depth

V6 - Arisings

V6 - Position

Verification Trial Hole Photographs

Project Number 23-248.05 **Project Title** Land at Sullivan Crescent, Harefield, UB9 6NL **Taken by** AC **Date** 09/01/2024

V7 - Depth

V7 - Arisings

V7 - Position

Appendix

II Laboratory Certificates of Analysis and Assessment Criteria

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-00694-1
Initial Date of Issue:	16-Jan-2025
Re-Issue Details:	
Client	Aviron Associates Ltd
Client Address:	Badgemore House Badgemore Park Gravel Hill Reading Henley on Thames RG9 4NR
Contact(s):	David Norman James Burkitt Orlando Blackwell
Project	23-248.05 Land at Sullivan Crescent

Quotation No.:		**Date Received:**	13-Jan-2025
Order No.:	23-248.05	**Date Instructed:**	13-Jan-2025
No. of Samples:	10		
Turnaround (Wkdays):	4	**Results Due:**	16-Jan-2025
Date Approved:	16-Jan-2025		

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: 23-248.05 Land at Sullivan Crescent

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-00694	25-00694	25-00694	25-00694	25-00694	25-00694	25-00694
Quotation No.:				**Chemtest Sample ID.:**		1916272	1916273	1916274	1916275	1916276	1916277	1916278
				Sample Location:		V1	V2	V3	V4	V5	V6	V7
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.4	0.3	0.3	0.3	0.3	0.4	0.3
				Bottom Depth (m):		0.5	0.5	0.5	0.4	0.4	0.5	0.4
				Date Sampled:		09-Jan-2025	09-Jan-2025	09-Jan-2025	09-Jan-2025	09-Jan-2025	09-Jan-2025	09-Jan-2025
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		U	2192		N/A	-	-	-	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	20	19	20	19	21	18	12
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones and Roots	Stones	Stones and Roots	Stones and Roots	Stones, Roots and leafs	Stones and Roots
Soil Texture		N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH at 20C		M	2010		4.0	8.8	9.0	8.6	8.7	8.6	9.4	8.5
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	2.5	2.2	2.3	2.0	2.7	1.4	1.5
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.16	0.055	0.045	0.038	0.039	0.084	0.032
Total Sulphur		U	2175	%	0.010	0.040	0.040	0.040	0.050	0.040	0.060	0.030
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphate (Total)		U	2430	%	0.010	0.19	0.15	0.17	0.12	0.14	0.20	0.11
Arsenic		M	2455	mg/kg	0.5	10	8.7	11	8.5	8.3	9.2	6.8
Barium		M	2455	mg/kg	0.5	49	35	40	24	37	61	30
Cadmium		M	2455	mg/kg	0.10	0.16	0.17	0.22	0.17	0.14	0.26	< 0.10
Chromium		M	2455	mg/kg	0.5	20	15	19	13	18	20	19
Copper		M	2455	mg/kg	0.50	20	16	19	13	18	25	13
Mercury		M	2455	mg/kg	0.05	0.05	< 0.05	0.05	< 0.05	< 0.05	0.06	0.05
Nickel		M	2455	mg/kg	0.50	18	15	19	13	14	17	9.9
Lead		M	2455	mg/kg	0.50	26	21	23	15	20	36	21
Selenium		M	2455	mg/kg	0.25	0.49	0.44	0.74	0.58	0.48	0.66	0.51
Zinc		M	2455	mg/kg	0.50	91	61	77	56	60	82	42
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	2.4	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	7.4	4.7	22	14	4.6	4.8	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	9.6	7.7	49	29	12	24	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	21	12	72	44	18	29	< 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	21	12	72	44	18	29	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Results - Soil

Project: 23-248.05 Land at Sullivan Crescent

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-00694	25-00694	25-00694	25-00694	25-00694	25-00694	25-00694
Quotation No.:				**Chemtest Sample ID.:**		1916272	1916273	1916274	1916275	1916276	1916277	1916278
				Sample Location:		V1	V2	V3	V4	V5	V6	V7
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.4	0.3	0.3	0.3	0.3	0.4	0.3
				Bottom Depth (m):		0.5	0.5	0.5	0.4	0.4	0.5	0.4
				Date Sampled:		09-Jan-2025	09-Jan-2025	09-Jan-2025	09-Jan-2025	09-Jan-2025	09-Jan-2025	09-Jan-2025
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	17	< 1.0	3.6	1.7	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	3.1	< 1.0	8.1	3.3	2.8	< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	3.5	7.5	31	19	17	4.7	2.2
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	4.7	5.6	19	13	16	8.1	< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	4.9	3.7	12	7.4	5.7	37	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	28	14	62	37	36	13	< 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	33	17	74	45	42	50	< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	49	26	130	81	54	42	< 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	54	30	150	89	60	79	< 10
Organic Matter		M	2625	%	0.40	2.5	3.7	4.1	4.5	3.8	23	2.2
Naphthalene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.8	< 0.10
Anthracene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.24	< 0.10
Fluoranthene		M	2700	mg/kg	0.10	0.67	< 0.10	0.61	1.6	0.29	1.4	0.23
Pyrene		M	2700	mg/kg	0.10	0.75	< 0.10	0.44	0.52	0.27	1.2	0.25
Benzo[a]anthracene		M	2700	mg/kg	0.10	0.40	< 0.10	< 0.10	< 0.10	< 0.10	0.48	< 0.10
Chrysene		M	2700	mg/kg	0.10	0.79	< 0.10	< 0.10	< 0.10	< 0.10	1.2	< 0.10
Benzo[b]fluoranthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.65	< 0.10
Benzo[k]fluoranthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.26	< 0.10
Benzo[a]pyrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.71	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		M	2700	mg/kg	2.0	2.6	< 2.0	< 2.0	2.1	< 2.0	7.9	< 2.0
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.46	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 23-248.05 Land at Sullivan Crescent

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-00694	25-00694	25-00694
Quotation No.:				**Chemtest Sample ID.:**		1916279	1916280	1916281
				Sample Location:		TS1	TS2	TS3
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.1	0.1	0.1
				Bottom Depth (m):		0.3	0.3	0.3
				Date Sampled:		09-Jan-2025	09-Jan-2025	09-Jan-2025
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type		U	2192		N/A	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	15	22	18
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Sand	Sand	Sand
pH at 20C		M	2010		4.0	9.2	8.8	9.6
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	2.0	2.1	1.6
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.18	0.059	0.18
Total Sulphur		U	2175	%	0.010	0.11	0.050	0.050
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Sulphate (Total)		U	2430	%	0.010	0.20	0.23	0.31
Arsenic		M	2455	mg/kg	0.5	9.3	280	10
Barium		M	2455	mg/kg	0.5	50	63	100
Cadmium		M	2455	mg/kg	0.10	0.29	0.74	0.16
Chromium		M	2455	mg/kg	0.5	21	37	24
Copper		M	2455	mg/kg	0.50	28	27	28
Mercury		M	2455	mg/kg	0.05	< 0.05	0.48	0.05
Nickel		M	2455	mg/kg	0.50	19	60	16
Lead		M	2455	mg/kg	0.50	28	58	25
Selenium		M	2455	mg/kg	0.25	0.54	2.1	0.44
Zinc		M	2455	mg/kg	0.50	1600	150	70
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	5.9	13	5.1
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	22	72	32
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	13	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	28	86	37
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	28	98	37
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05

Results - Soil

Project: 23-248.05 Land at Sullivan Crescent

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-00694	25-00694	25-00694
Quotation No.:				**Chemtest Sample ID.:**		1916279	1916280	1916281
				Sample Location:		TS1	TS2	TS3
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.1	0.1	0.1
				Bottom Depth (m):		0.3	0.3	0.3
				Date Sampled:		09-Jan-2025	09-Jan-2025	09-Jan-2025
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**			
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	4.6	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	8.6	24	6.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	7.3	14	8.3
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	12	27	14
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	16	44	14
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	28	71	28
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	44	130	51
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	56	170	65
Organic Matter		M	2625	%	0.40	4.0	6.2	3.3
Naphthalene		M	2700	mg/kg	0.10	0.27	< 0.10	< 0.10
Acenaphthylene		M	2700	mg/kg	0.10	0.36	< 0.10	< 0.10
Acenaphthene		M	2700	mg/kg	0.10	1.0	< 0.10	< 0.10
Fluorene		M	2700	mg/kg	0.10	0.89	< 0.10	< 0.10
Phenanthrene		M	2700	mg/kg	0.10	9.3	< 0.10	1.4
Anthracene		M	2700	mg/kg	0.10	3.0	< 0.10	0.38
Fluoranthene		M	2700	mg/kg	0.10	15	1.4	2.6
Pyrene		M	2700	mg/kg	0.10	14	0.41	2.6
Benzo[a]anthracene		M	2700	mg/kg	0.10	6.6	< 0.10	1.2
Chrysene		M	2700	mg/kg	0.10	7.8	< 0.10	1.6
Benzo[b]fluoranthene		M	2700	mg/kg	0.10	7.8	< 0.10	1.5
Benzo[k]fluoranthene		M	2700	mg/kg	0.10	5.1	< 0.10	0.68
Benzo[a]pyrene		M	2700	mg/kg	0.10	6.0	< 0.10	1.1
Indeno(1,2,3-c,d)Pyrene		M	2700	mg/kg	0.10	3.4	< 0.10	0.67
Dibenz(a,h)Anthracene		M	2700	mg/kg	0.10	0.94	< 0.10	0.18
Benzo[g,h,i]perylene		M	2700	mg/kg	0.10	3.2	< 0.10	0.91
Total Of 16 PAH's		M	2700	mg/kg	2.0	85	< 2.0	15
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	0.29	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
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.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
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.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	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/Heptane extraction / GCxGC FID detection	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	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-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
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	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical 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

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 ≤ 30°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.

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

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 - Insufficient Sample (Applies to LOI in Trommel Fines Only)

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.

Water Sample Category Key for Accreditation

Report Information

DW - Drinking Water
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

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Residential with Homegrown Produce
Soil Screening Values
Private Gardens

Determinant	1% SOM (mg/kg)	2.5% SOM (mg/kg)	6% SOM (mg/kg)	Criteria
METALS, SEMI-METALS, INROGANICS + PAH				
Arsenic	37	37	37	C4SL/LQM S4UL
Boron	290	290	290	LQM S4UL
Cadmium	11	11	11	LQM S4UL
Chromium III	910	910	910	LQM S4UL
Chromium IV	6	6	6	LQM S4UL
Copper	2,400	2,400	2,400	LQM S4UL
Mercury	1.2	1.2	1.2	LQM S4UL
Nickel	180	180	180	LQM S4UL
Lead	200	200	200	LQM S4UL
Selenium	250	250	250	LQM S4UL
Zinc	3,700	3,700	3,700	LQM S4UL
Free Cyanide	34	34	34	ATRISK
Acenaphthene	210	510	1100	LQM S4UL
Acenaphthylene	170	420	920	LQM S4UL
Anthracene	2,400	5,400	11,000	LQM S4UL
Benzo(a)anthracene	7.2	11	13	LQM S4UL
Benzo(a)pyrene	2.2	2.7	3	LQM S4UL
Benzo(b)fluoranthene	2.6	3.3	3.7	LQM S4UL
Benzo(ghi)perylene	320	340	350	LQM S4UL
Benzo(k)fluoranthene	77	93	100	LQM S4UL
Chrysene	15	22	27	LQM S4UL
Dibenz(ah)anthracene	0.24	0.28	0.3	LQM S4UL
Fluoranthene	280	560	890	LQM S4UL
Fluorene	170	400	860	LQM S4UL
Indeno(123-cd)pyrene	27	36	41	LQM S4UL
Naphthalene	2.3	5.6	13	LQM S4UL
Phenanthrene	95	220	440	LQM S4UL

Determinant	1% SOM (mg/kg)	2.5% SOM (mg/kg)	6% SOM (mg/kg)	Criteria
Pyrene	620	1,200	2,000	LQM S4UL
Phenols	78	0.98	1.1	LQM S4UL
TOTAL PETROLEUM HYDOCARBONS				
Benzene	0.087	0.17	0.37	LQM S4UL
Toluene	130	290	660	LQM S4UL
Ethlybenzene	47	110	260	LQM S4UL
o-xylene	60	140	330	LQM S4UL
m-xylene	59	140	320	LQM S4UL
p-xylene	56	130	310	LQM S4UL
Aliphatic EC 5-6	42	78	160	LQM S4UL
Aliphatic EC >6-8	100	230	530	LQM S4UL
Aliphatic EC >8-10	27	65	150	LQM S4UL
Aliphatic EC >10-12	130	330	760	LQM S4UL
Aliphatic EC >12-16	1,100	2,400	4300	LQM S4UL
Aliphatic EC >16-35	65,000	92,000	110,000	LQM S4UL
Aliphatic EC >35-44	65,000	92,000	110,000	LQM S4UL
Aromatic EC 5-7 (benzene)	70	140	300	LQM S4UL
Aromatic EC >7-8 (toluene)	130	290	660	LQM S4UL
Aromatic EC >8-10	34	83	190	LQM S4UL
Aromatic EC >10-12	74	180	380	LQM S4UL
Aromatic EC >12-16	140	330	660	LQM S4UL
Aromatic EC >16-21	260	540	930	LQM S4UL
Aromatic EC >21-35	1,100	1,500	1,700	LQM S4UL
Aromatic EC >35-44	1,100	1,500	1,700	LQM S4UL
Aromatic EC >44-70	1,600	1,800	1,900	LQM S4UL
ASBESTOS				
None Detectable			Aviron Adopted Value	

AVIRON ASSOCIATES LIMITED

is a dynamic company of Chartered Environmental Surveyors and Geotechnical Engineers.

We continuously work hard to ensure our services are the most technically competent, efficient and viable in our market place. Our years of experience of vastly varied sites and projects compliment our ability to deliver assured and effective Ground Investigations and Risk Assessments of both Brownfield, Greenfield and Currently Developed Land.

Our clients choose Aviron to plan, design and manage their Ground Investigations and Land Remediation Schemes assisting in land procurement to deliver engineering requirements, discharge planning and ensure their sites are suitable, developable and sustainable.

Our tenaciously committed team ensure regardless of project value we will always deliver quickly, effectively and exceed expectations.

AVIRON ASSOCIATES LIMITED
Badgemore House
Badgemore Park
Gravel Hill
Henley on Thames
Oxfordshire
RG9 4NR
TELEPHONE: 07787 771 686 / 01491 413 722
FAX : 01491 413 722
ENQUIRIES: james@aviron.co.uk
WEB: www.aviron.co.uk