



Geo-Environmental

VERIFICATION REPORT

for land at

BOORLEY GARDENS, WINCHESTER ROAD

HEDGE END, SOUTHAMPTON, SO32 2UA

on behalf of

BELLWAY HOMES



Report:	VERIFICATION REPORT
Site:	BOORLEY GARDENS, WINCHESTER ROAD, HEDGE END, SOUTHAMPTON, SO32 2UA
Client:	BELLWAY HOMES
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AMENDMENT RECORD

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1.0	29/09/2023	First issue	SA	GR	KOD
2.0	11/07/2024	Updated to include verification of clean soil placement in garden areas of Plots 18-23 in former Park Farm area under ref. GE22457	SA	GR	GR
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1.0 INTRODUCTION

1.1 General

Following a desk study and two phases of intrusive investigations undertaken by third parties, two further phases of intrusive investigation by Geo-Environmental Services Limited ('Geo-Environmental') and development of a Remediation Strategy and Verification Plan (RSVP), referenced GE20346/RSVPv4/MAR23, Geo-Environmental was appointed by Jackson Rowe on behalf of Bellway Homes and Miller Homes to prepare a Verification Report. The Verification Report was to compile the relevant information in relation to the residential development at Boorley Gardens, Winchester Road, Hedge End, Southampton, SO32 2UA, herein referred to as 'the site' (see Figure 1). This report relates specifically to the reduced dig undertaken in a specific section of the wider site (also shown in Figure 1). Remediation was not required in other areas of the site.

This report sets out the works undertaken to date to provide independent verification of the risk mitigation measures undertaken to protect the development and end users thereof. This report provides final validation for the reduced dig works undertaken. However, the Local Authority Pollution Control Specialist requested confirmation that the soils used to construct the garden areas in the contamination affected area of the site were 'free from contamination'. Therefore, this updated report prepared for Bellway Homes provides final validation for works undertaken and independent inspection in relation to soil placement in gardens of Plots 9-28 (i.e. all plots in the area of the site which required remediation).

1.2 Objectives

A desk study and two phases of intrusive investigations undertaken by third parties and two further phases of intrusive investigation undertaken by Geo-Environmental identified the presence of potential hazards and through a risk assessment process a series of pollutant linkages were identified which required action to mitigate or otherwise reduce the risk. The Remediation Strategy and Verification Plan (RSVP) sets out the proposed remedial works to be undertaken on the subject site to support its development for a proposed residential end use.

This Verification Report (VR) presents the details and findings of inspection visits undertaken by Geo-Environmental and/or to compile data provided by the Client in order to demonstrate that the soil risk mitigation measures were implemented as detailed within the RSVP.

1.3 Planning Permission

It is understood that outline planning permission was granted at appeal for the site under Application Number O/15/75953 (appeal ref. APP/W1715/W/15/3130073 dated 30th November 2016). The following conditions relating to land contamination were attached to the permission:

Condition 18.

No work shall commence on site until the following has been submitted to, and approved in writing by the LPA:

- a) A Report of Preliminary Investigation comprising a Desk Study, Conceptual Site Model, and Preliminary Risk Assessment documenting previous and existing land uses of the site and adjacent land in accordance with national guidance and as set out in Contaminated Land Report Nos. 11, CLR11, and BS 10175:2011+A1:2013 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the LPA;*
- b) A Report of a site investigation documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the Preliminary Investigation and in accordance with BS 10175:2011+A1:2013, and BS 8576:2013 and unless otherwise agreed with the LPA;*

- c) *A detailed site specific scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance a [sic] and monitoring.*

Such a scheme shall include nomination of a competent person to oversee the implementation of the works.

Condition 19.

The development hereby permitted shall not be occupied / brought into use until there has been submitted to the LPA verification by the competent person approved under the provisions of condition 18(c) that any remediation scheme required and approved under the provisions of condition 18(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the LPA in advance of implementation).

Unless agreed in writing with the LPA such verification shall comply with the guidance contained in CLR11 and EA Guidance for the Safe Development of Housing on Land Affected by Contamination - R&D Publication 66: 2008. Typically, such a report would comprise:

- A description of the site and its background, and summary of relevant site information;*
- A description of the remediation objectives and remedial works carried out;*
- Verification data, including - data (sample locations/analytical results, as built drawings of the implemented scheme, photographs of the remediation works in progress, etc;*
- Certificates demonstrating that imported and / or material left in situ is free from contamination, gas / vapour membranes have been installed correctly.*

Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 21(c) [sic].

It is understood that a Reserved Matters Application has been approved by Eastleigh Borough Council (ref. RM/17/81628, dated 16th January 2019) for Phase 1 of the development (equating to 301No. residential dwellings with associated parking, road infrastructure, landscaping, open space, surface water drainage networks, on-site waste water treatment works, provision of additional vehicular parking for Hedge End Railway Station and bus only connection to Shamblehurst Lane North).

It is understood that a Reserved Matters Application (ref. RM/18/84466 dated 9th April 2021) has also been approved for Phase 2 of the development (equating to 143 dwellings with associated parking, landscaping, open space and works, including diversion of a drainage ditch).

It is understood that a Reserved Matters Application (ref. RM/19/86658 dated 5th April 2022) has also been approved for Phase 3 of the development (equating to development of 236 residential dwellings with associated parking, landscaping and open space).

No conditions relating to land contamination were noted to be attached to these Reserved Matters approvals. However, it should be noted that the lack of planning conditions applied to the development in relation to contamination would not remove the developer's responsibility to deal with contamination identified in line with current guidance, regulations and duty of care.

This Verification Report has been prepared to address Condition 19 of the outline planning permission for the site.

2.0 BACKGROUND

This Verification Report has been produced in order to demonstrate that the works required and presented within the Remediation Strategy and Verification Plan (RSVP) have been carried out. The RSVP for the site was developed by Geo-Environmental following several phases of investigation works for the site undertaken by third parties and Geo-Environmental including:

- Desk Study Report, Ref. E-E1589/LJE/CDS, dated November 2014, prepared by Opus International Consultants (UK) Ltd for Gleeson Developments, Miller Homes and Welbeck Strategic Land LLP;
- Geo Environmental Site Investigation Report, Ref. BRD2924-OR1-C, dated 21st July 2017, prepared by BRD Environmental for Gleeson Strategic Land and Miller Homes;
- Geo-Environmental Report, Ref. CRM.1668.012.GE.R.001.A, dated January 2021, prepared by Enzygo Geoenvironmental for Bellway Homes;
- Detailed Quantitative Gas Risk Assessment, dated 30th June 2022, prepared by Geo-Environmental for Bellway Homes & Miller Homes, Ref. GE20584/DQGRA/JUN22;
- Ground Appraisal Report, dated 9th March 2023, prepared by Geo-Environmental for Bellway Homes & Miller Homes, Ref. GE20584/GARv2/MAR23.

Whilst a summary of these reports is presented below, reference should be made to the full reports for further details. The factual correctness of third party information is assumed and no liability is accepted for any errors in such information or subsequent assessment thereof.

2.1 Proposed Site Use

It is understood that the site is proposed to be developed for a residential land use with, together with a primary school and open space leisure areas.

2.2 Investigation and Assessment

Opus (2014)

The report comprised a review of historical mapping and environmental dataset information pertaining to the site, an account of a site walkover and a preliminary risk assessment for the proposed development at the site (stated as up to 680 dwellings, a local centre, a primary school and public open space).

The report identified the underlying geology at the site to comprise Wittering Formation or Earnley Sand in the southern portion of the site. Superficial Alluvium was recorded along the northern site boundary. Reference to the environmental information indicated no radon protection measures were required at the site.

The Wittering Formation and Earnley Sand were classified as Secondary 'A' aquifers. An aquifer status was not reported for the Alluvium. The site was noted to lie outside any Source Protection Zone (SPZ). No groundwater abstractions were recorded within 1km.

The nearest surface water was reportedly a tertiary river running along the northern boundary. The nearest surface water abstraction was recorded c.310m east of the site. The nearest discharge consent was recorded c.45m west and comprised public sewage to a freshwater stream/river. The nearest pollution incident occurred in 1998, c.15m west of the site involving the release of petrol into a storm drain recorded as a minor (Category 3) incident.

No historic or active landfills or waste treatment sites were recorded within 1km of the site. Nine contemporary

trade entries were recorded within 100m of the site including general engineers, joinery, road haulage, door manufacturers, macadam laying contractors, gate manufacturers, and pet food and animal feeds.

Historically, the site was reported as predominantly farmland with a railway line on the western boundary throughout the mapping editions reviewed. Park Farm, a complex of farm buildings, was located in the east of the site from the 1960s. Hedge End and Boorley Green became increasingly expanded with predominantly residential developments over the mapped period.

A site walkover was undertaken as part of the desk study. At that time, the site largely comprised grazing pasture for sheep and horses. A number of drainage ditches were noted within the site. A stream was reported on the northern boundary. Park Farm in the east comprised a farmhouse with garden, a milking parlour and various barns utilised for livestock housing and haylage and straw storage. Several of the barns were noted to be roofed and clad with what was potentially asbestos cement. Three old 205 litre storage drums were noted adjacent to a lean-to. An above ground oil tank in a concrete bund was noted in the front garden of the farmhouse. An above ground diesel storage tank with integrated bund was recorded adjacent to one of the farm buildings. No visual or olfactory evidence of hydrocarbon contamination was reportedly observed at either tank location. During the walkover survey, Opus were advised that a horse was buried in one of the paddocks at Park Farm.

The Preliminary Risk Assessment identified the oil and diesel tanks, agrochemicals, manure piles, and asbestos within buildings as potential on-site sources of contamination. The adjacent railway and Braxell Cottage haulage vehicle repair to the east were identified as potential off-site sources. Risk ratings of low to medium were generally assigned to receptors, with a medium risk assigned to future site users in relation to soil contamination, and a medium to high risk assigned in terms of the asbestos containing materials in the farm buildings.

The report recommended a ground investigation including laboratory analysis of soil samples was undertaken.

BRD Environmental (2017)

BRD Environmental's intrusive investigation at the site comprised 31No. machine excavated trial pits to depths of up to 3.00m bgl and 15No. windowless sample boreholes to depths of 3.00m to 5.00m bgl. Soakage testing was undertaken in 6No. trial pits. Combined gas and groundwater monitoring boreholes were installed to 4m bgl in 10No. of the boreholes. Ground gas and groundwater monitoring was undertaken on 6No. occasions during August and September 2017.

The investigation reportedly encountered a mantle of Topsoil or Topsoil containing very low proportions of anthropogenic materials (brick and charcoal) overlying clay soils of the Wittering Formation and London Clay Formation. Made Ground to depths of between 0.20m and 0.25m bgl was reported in two locations (WS5 and WS6) within the yard area of Park Farm in the east of the site. During the return monitoring, groundwater was reported at depths ranging between 0.75m to 2.76m bgl.

A human health risk assessment of the results of geochemical laboratory testing undertaken on soil samples obtained during this investigation reported elevated concentrations of PAH compounds (Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(a,h)anthracene) in one location (WS6 at 0.20m bgl) and chrysotile asbestos fibres in two locations (WS5 at 0.10m bgl and WS6 at 0.20m bgl). All elevated contaminant concentrations were recorded within the Made Ground soils encountered in the Park Farm yard. Recommendations were made for further investigation in the Park Farm area of the site to assess the extent of contaminated soils followed by a reduced dig and off-site disposal of impacted soils or re-used under hardstanding (if/where deemed to be suitable).

The BRD Environmental report indicated the only source of ground gases to be natural soils with low organic

content and identified the risk as negligible. Nevertheless, ground gas monitoring was undertaken in 10No. boreholes across the site on 6No. occasions between August and September 2017. The monitoring reported methane at concentrations between 0.0% and 0.2%, carbon dioxide between 0.5% and 13.1% and oxygen between 5.2% and 20.3%. Flow rates were recorded between <0.0l/hr and 0.5l/hr. Atmospheric pressure was recorded between 1006mb and 1021mb. Based on the maximum concentrations of carbon dioxide recorded, the report stated the gas regime of the Park Farm area of the site was NHBC Amber 1, for which gas protection measures would be required. The report stated that the area of the site outside Park Farm could be classified Green as elevated carbon dioxide was only recorded in three boreholes (WS3, WS5 and WS6) in or near Park Farm. Recommendations were made for further investigation and gas monitoring in the area of Park Farm to 'delineate' the extent of elevated carbon dioxide concentrations. Zonation of the site in terms of the recorded ground gas concentrations alone is not in line with best practice and a detailed ground gas risk assessment has now been undertaken for the site. It should be noted that the Opus International Consultants (UK), November 2014 desk study report for the site has not been provided to allow a separate review of the potential source of ground gases identified as part of the Phase 1 assessment of the site.

The report stated that, the soil contaminant concentrations recorded at the site were not considered to present any significant risk to groundwater.

Enzygo Geoenvironmental (2021)

The report gave an account and interpretation of a supplementary investigation undertaken at the site. The investigation was undertaken in two fields which BRD Environmental were unable to access in 2017 and in the area around Park Farm including additional ground gas monitoring.

The investigation comprised 12No. window sampler boreholes to a maximum depth of up to 5.0m bgl, five of which were in the area surrounding Park Farm. Five boreholes were installed with combined gas and groundwater monitoring standpipes, three of which were in the fields immediately surrounding Park Farm. Ground gas and groundwater monitoring was undertaken on 6No. occasions during January and February 2021. Borehole WS6 from the BRD investigation was also monitored on 4No. occasions.

The investigation recorded Made Ground to between 0.20m to 0.90m bgl in all locations, formed of sandy clay with occasional brick and ash. Clay and sand-based soil of the Wittering Formation were encountered below the Made Ground. Groundwater was recorded at between 2m and 4m bgl during the investigation and between 0.11m and 1.15m bgl during the return monitoring.

Twelve samples of Made Ground were submitted for laboratory testing for a suite of common brownfield contaminants. No elevated contaminants were identified when screening against Tier 1 assessment criteria by Enzygo, but the report referenced the elevated PAH and asbestos reported within the BRD report. The report recommended removal of the impacted Made Ground identified by BRD in the Park Farm area where soft landscaping is proposed.

The Enzygo report initially identified a negligible risk of ground gases at the site. However, ground gas monitoring was undertaken on 6No. occasions over a 1 month period. The monitoring recorded methane at <0.1% throughout, carbon dioxide ranging between 0.9% and 16.9% and oxygen between 5.2% and 20.3%. Flows were recorded between <0.0009l/hr and <0.0172l/hr. Atmospheric pressure ranged between 986mb and 1035mb. Carbon dioxide was noted to be recorded in excess of 5% in WS101, WS103, WS105 and WS6. These were attributed to the potential presence of a former cesspit at Park Farm, although no evidence for such a feature was presented. Recommendations were made for the site to be zoned as Characteristic Situation 1 in areas outside of Park Farm and Characteristic Situation 2 within the area of Park Farm, which would require gas protection measures. Again, zonation of the site in terms of the recorded ground gas concentrations alone is not in line with

best practice and a detailed ground gas risk assessment has now been undertaken for the site.

Geo-Environmental Ground Appraisal Report and Detailed Quantitative Gas Risk Assessment

Two phases of intrusive investigation were undertaken in the Park Farm area of the site by Geo-Environmental and detailed in the Ground Appraisal Report (GE20584/GARv2/MAR23).

Initially an intrusive investigation comprising 5No. dynamic sampler boreholes was undertaken in May 2022. The investigation was undertaken to support the Detailed Quantitative Gas Risk Assessment for the site but also to undertake a contamination assessment of soils. The boreholes were drilled to 5.00m bgl and installed with ground gas monitoring standpipes. Geochemical testing of soil and groundwater samples was undertaken. Three return ground gas and VOC monitoring visits were undertaken between 26th May and 15th June 2022.

The initial investigation revealed ground conditions comprising a mantle of Made Ground or Topsoil overlying clay soils of the Wittering Formation with London Clay Formation at depth. Faint or mild diesel odours and possible staining was recorded to 3.50m bgl on WS202 adjacent to the above ground diesel storage tank (also the location of a former steel single skin tank). Groundwater was recorded at between 0.59m and 3.51m bgl during return monitoring.

No elevated soil contaminant concentrations in terms of human health were recorded during the May 2022 investigation. Minor hydrocarbon impact was observed in soils in WS202 adjacent to an above ground diesel tank, with some potential hydrocarbon breakdown products identified in soils analysed. A groundwater sample from this location recorded elevated metal compound concentrations and three volatile organic compounds (VOCs). The metal concentrations were considered representative of general background groundwater quality in the area of the site. The VOCs were potentially associated with the natural breakdown and degradation of minor spillages of fuels at the site. Further localised investigation was recommended in the area of the diesel tank following demolition and site clearance.

The Detailed Quantitative Gas Risk Assessment (GE20584/DQGRA/JUN22) concluded that the site should be considered a Characteristic Situation 1 classification, with no requirement for gas protection measures.

A post demolition investigation was undertaken in February 2023 following demolition and removal of the buildings and hardstanding at Park Farm. The investigation comprised 13No. trial pits to a maximum depth of 2.50m bgl targeting areas below former buildings and hardstanding. Four trial pits also targeted the area surrounding the diesel tanks which had been removed.

The 2023 investigation revealed up to 0.55m depth of Made Ground overlying clay soils of the Wittering Formation. Groundwater was recorded at depths between 1.30m and 1.80m bgl. Slight hydrocarbon odours were noted with two trial pits (TP102 and TP103) in the area of the former diesel tank to a maximum 2.30m bgl.

The contamination testing recorded elevated PAH and Lead concentrations within a sample of Made Ground from TP107 in terms of human health. Fragments of asbestos cement were recorded on the site surface in two locations and within Made Ground soil in TP112. A reduced dig exercise to remove the Lead, PAH and asbestos containing Made Ground from within proposed private gardens and areas of soft landscaping was recommended.

Slightly elevated TPH concentrations were recorded within soils sampled in the area of the former diesel tank. However, as the contamination source had been removed and minor soil based impact would be expected to degrade over time, such that no remediation in terms of groundwater protection was considered to be required.

2.3 Conceptual Site Model

The conceptual site model (CSM) developed as part of the risk assessment identified particular hazards, or potential hazards which were considered to require intervention (remediation) to mitigate the risk of harm.

2.4 Approach for Remediation, Monitoring and Validation

Remediation works were proposed to break the pathways of identified sources of contamination to receptors. The aim of the remediation was not necessarily to remove all contamination from the site but to provide betterment and to reduce the identified risk to an acceptable level with respect to relevant receptors, e.g. human health, the built environment and controlled waters.

The remediation works undertaken comprised a reduced dig in the former Park Farm area of the site, and subsequent off-site disposal of Made Ground.

3.0 SOILS

3.1 End Users

With reference to the intrusive investigations undertaken by third parties and Geo-Environmental, it was considered that the Made Ground soils in the Park Farm area of the site were variously impacted by PAH, Lead and asbestos. As such, remedial measures were deemed necessary to protect end users of the proposed properties from soil contamination within private garden and soft landscaped areas across the site.

Given the nature of the contaminants identified within these soils and their recorded depths, the impacted soils were to be removed entirely back to natural ground across the whole of the Park Farm area. Validation inspection, sampling and laboratory testing of exposed soils following the reduced dig was to be undertaken.

Following the reduced dig, certifiably 'clean' Topsoil and subsoil was to be used to construct garden areas and areas of soft landscaping.

4.0 REDUCED DIG AND SOILS DISPOSAL

The reduced dig was undertaken by Statom Group between 31st July and 31st August 2023. Statom's factual Remediation Validation Report is included as Appendix A. The arising soils were disposed of off-site and Statom's report includes the relevant waste transfer notes and waste consignment notes.

Statom's works also removed a former septic tank from the site which was previously identified during Geo-Environmental's investigations and not identified as a contamination risk.

Independent inspection of the reduced dig was undertaken by Geo-Environmental on 10th and 26th August 2023. The records of these independent validation inspections are presented in Appendix B and discussed within Section 5.1 of this report.

5.0 INSPECTION/VALIDATION

5.1 Validation inspection of reduced dig works

Validation inspection visits were undertaken during and upon completion of the reduced dig works. The inspections were undertaken on 10th and 26th August 2023 by a Geo-Environmental Engineer. Inspection of the exposed formation in completed areas was undertaken to visually confirm the removal of Made Ground soils.

The inspections confirmed that in all inspected areas, Made Ground had been removed exposing natural soils. In general, the natural ground conditions were found to comprise firm to stiff orange and grey mottled clay with varying proportions of sand and rare to frequent roots and rootlets.

Validation samples of the exposed formation were also obtained and were submitted to a UKAS accredited laboratory for testing for a suite of commonly occurring brownfield contaminants including asbestos to confirm the chemical suitability of the exposed natural soils. Nine samples were obtained (referenced Base #1 to Base #9) in locations providing a broad coverage of the site. The locations of these samples are shown in Figure 3. The laboratory test results are presented within Appendix C.

The results of the analyses were compared to the Suitable for Use (S4UL) Levels and Category 4 Screening Level (C4SL) for 'private gardens with home-grown produce' (representative of the development end use), which are summarised in Table 5.1 below:

Determinand	Soil Screening Value (mg/kg)	Sample Max. Conc. (mg/kg)	Below Screening Value?
Arsenic	37	8.1	Yes
Benzo(a)pyrene	2.7	0.37	Yes
Beryllium	1.7	0.65	Yes
Boron (Water Soluble)	290	0.8	Yes
Cadmium	11	<0.2	Yes
Chromium (Total)	130	33	Yes
Copper	2400	48	Yes
Hexavalent Chromium	6	<1.8	Yes
Lead	200	57	Yes
Mercury (inorganic)	40	<0.3	Yes
Nickel	180	9.8	Yes
Phenols	110	<1.0	Yes
Selenium	250	<1.0	Yes
Total Petroleum Hydrocarbons	110	35.4	Yes
Vanadium	410	43	Yes
Zinc	3700	200	Yes

Table 5.1 Summary of Chemical Analyses (Validation Inspection Visits 10/08/2023 & 26/08/2023)

The results indicated that all of the determinands tested were below the limiting concentrations set within the Remediation Strategy and Verification Plan (RSVP).

All samples were submitted for asbestos screening and returned with no asbestos fibres identified.

In addition, the results of the speciated hydrocarbon analyses were all returned as either below the laboratory detection limits or below their respective human health screening values for the proposed end use.

5.2 Validation inspection of shallow soils within private gardens (Plots 18-23)

Following the reduced dig detailed in Section 5.1, it is understood that site-won clean subsoil and Topsoil was utilised to construct the garden areas of these plots.

The inspection/validation of the shallow soils installed within the private gardens was undertaken by a Geo-Environmental Engineer on 24th June 2024 (Plots 18-21 and sampling of Topsoil awaiting spreading on Plots 22 & 23) and 8th July 2024 (Plots 22-23 following Topsoil spreading). The visual inspection records including site photographs and hand pit logs are presented in Appendix B.

Inspection comprised six shallow hand pits (HP01 to HP04, and Plot22 and Plot23) which were excavated by an Engineer from Geo-Environmental within each of the rear garden areas of Plots 18-23, to confirm the status of the shallow soils. Photographs and site inspection records taken during this inspection visit are presented in Appendix B, which confirm the depth of the installed Topsoil, along with soil logs of the material encountered. It should be noted that at the point of inspection the turf and any further soil likely associated with the turf placement had not been laid within the rear garden areas of Plots 18-21. Turf had been laid in Plots 22 and 23, but was lifted to expose the soil surface and inspection measurements did not take account of the turf on these two plots.

The inspection confirmed that in all inspected areas (hand pits HP01 to HP04, and Plot22 and Plot23) the Topsoil was found to be between 200mm and 250mm in thickness overlying subsoil within all hand pits.

Six soil samples (three of Topsoil and three of subsoil), obtained during the validation inspection and referenced HP01 at 0.60m bgl (Plot 18, subsoil), HP02 at 0.10m bgl (Plot 19, Topsoil), HP03 at 0.15m bgl (Plot 20, Topsoil), HP03 at 0.45m bgl (Plot 20, subsoil), HP04 at 0.40m bgl (Plot 21, subsoil), and T/S2 (Topsoil heap to be spread on Plots 22 & 23), were submitted to a UKAS accredited laboratory for testing for a suite of commonly occurring brownfield contaminants including asbestos screening to confirm the chemical suitability of the soils. The laboratory test results are presented within Appendix C (laboratory certificate 24-027122-1).

The results of the analyses were compared to the Suitable for Use (S4UL) Levels and Category 4 Screening Level (C4SL) for 'private gardens with home-grown produce' (representative of the development end use), which are summarised in Table 5.2 below:

Determinand	Soil Screening Value (mg/kg)	Sample Max. Conc. (mg/kg)	Below Screening Value?
Arsenic	37	10	Yes
Benzo(a)pyrene	2.7	<0.05	Yes
Beryllium	1.7	0.56	Yes
Boron (Water Soluble)	290	0.6	Yes
Cadmium	11	<0.2	Yes
Chromium (Total)	130	26	Yes
Copper	2400	22	Yes
Hexavalent Chromium	6	<1.8	Yes
Lead	200	45	Yes
Mercury (inorganic)	40	<0.3	Yes
Nickel	180	7	Yes
Phenols	110	<1.0	Yes
Selenium	250	<1.0	Yes
Total Petroleum Hydrocarbons	110	11	Yes
Vanadium	410	42	Yes

Determinand	Soil Screening Value (mg/kg)	Sample Max. Conc. (mg/kg)	Below Screening Value?
Zinc	3700	68	Yes

Table 5.2 Summary of chemical analyses (Plots 18-23 Inspection Visit 24/06/2024)

The results indicated that all of the determinands tested were below the limiting concentrations set within the Remediation Strategy and Verification Plan (RSVP).

All samples were submitted for asbestos screening and returned with no asbestos fibres identified.

In addition, the results of the speciated hydrocarbon analyses were all returned as either below the laboratory detection limits or below their respective human health screening values for the proposed end use.

A soil sample was obtained from HP01 at 0.10m bgl (Plot 18, Topsoil) and was submitted for analysis of the soil's nutritional and soil composition, the results of which were assessed to confirm the materials suitability for Topsoil for general landscape purposes. Assessment in terms of the suitability of the soil's nutritional, physical and chemical properties has been undertaken by comparing the laboratory testing results against the criteria in Table 1 in BS3882:2015 *Specification for Topsoil*. Table 5.3 shows the instances where the soil properties fall outside the suitability criteria for a 'multipurpose Topsoil':

Determinand	BS2882 Criteria for Multipurpose Topsoil	Sample ID	Concentration / Result	Comments
Potassium	121-1500mg/l	HP01 at 0.15m	109mg/l	Result slightly below criteria

Table 5.3 Summary of soil properties outside suitability criteria for 'multipurpose Topsoil' (HP01 at 0.10m bgl, Plot 18, Topsoil)

The soils tested within the Topsoil are suitable for use in garden and landscaped areas of the site in terms of human health. The majority of the physical, nutritional and chemical properties of these soils fall within the criteria set out in BS3882 for a 'multipurpose Topsoil'.

The extractable potassium result is slightly below the range set out in BS3882 for multipurpose Topsoil. However, this marginal non-compliance is not considered to prevent the use of these soils as Topsoil.

5.3 Validation inspection of shallow soils within private gardens (Plots 11-14, 16 & 17)

Following the reduced dig detailed in Section 5.1, it is understood that site-won clean subsoil and Topsoil was utilised to construct the garden areas of these plots.

The inspection/validation of the shallow soils installed within the private gardens was undertaken by a Geo-Environmental Engineer on 30th January 2025. The visual inspection records including site photographs and hand pit logs are presented in Appendix B.

Inspection comprised six shallow hand pits (P11 to P14, P16 & P17) which were excavated by an Engineer from Geo-Environmental within each of the rear garden areas of Plots 11-14, 16 & 17, to confirm the status of the shallow soils. Photographs and site inspection records taken during this inspection visit are presented in Appendix B, which confirm the depth of the installed Topsoil, along with soil logs of the material encountered. It should be noted that at the point of inspection the turf and any further soil likely associated with the turf placement had not been laid within any of the rear garden areas.

The inspection confirmed that in all inspected areas (P11 to P14, P16 & P17) the Topsoil was found to be 200mm in thickness overlying subsoil within all hand pits.

Four soil samples (two of Topsoil and two of subsoil), obtained during the validation inspection and referenced P11 at 0.10m bgl (Plot 11, Topsoil), P11 at 0.40m bgl (Plot 11, subsoil), P13 at 0.10m bgl (Plot 13, Topsoil) and P13 at 0.40m bgl (Plot 13, subsoil), were submitted to a UKAS accredited laboratory for testing for a suite of commonly occurring brownfield contaminants including asbestos screening to confirm the chemical suitability of the soils. The laboratory test results are presented within Appendix C (laboratory certificate 25-005045-1).

The results of the analyses were compared to the Suitable for Use (S4UL) Levels and Category 4 Screening Level (C4SL) for 'private gardens with home-grown produce' (representative of the development end use), which are summarised in Table 5.4 below:

Determinand	Soil Screening Value (mg/kg)	Sample Max. Conc. (mg/kg)	Below Screening Value?
Arsenic	37	8.5	Yes
Benzo(a)pyrene	2.7	0.12	Yes
Beryllium	1.7	0.56	Yes
Boron (Water Soluble)	290	1.1	Yes
Cadmium	11	<0.2	Yes
Chromium (Total)	130	29	Yes
Copper	2400	31	Yes
Hexavalent Chromium	6	<1.8	Yes
Lead	200	17	Yes
Mercury (inorganic)	40	<0.3	Yes
Nickel	180	7.2	Yes
Phenols	110	<1.0	Yes
Selenium	250	<1.0	Yes
Total Petroleum Hydrocarbons	110	11	Yes
Vanadium	410	41	Yes
Zinc	3700	61	Yes

Table 5.4 Summary of chemical analyses (Plots 11-14, 16 & 17 Inspection Visit 30/01/2025)

The results indicated that all of the determinands tested were below the limiting concentrations set within the Remediation Strategy and Verification Plan (RSVP).

All samples were submitted for asbestos screening and returned with no asbestos fibres identified.

In addition, the results of the speciated hydrocarbon analyses were all returned as either below the laboratory detection limits or below their respective human health screening values for the proposed end use.

A soil sample was obtained from P13 at 0.10m bgl (Plot 13, Topsoil) and was submitted for analysis of the soil's nutritional and soil composition, the results of which were assessed to confirm the materials suitability for Topsoil for general landscape purposes. Assessment in terms of the suitability of the soil's nutritional, physical and chemical properties has been undertaken by comparing the laboratory testing results against the criteria in Table 1 in BS3882:2015 *Specification for Topsoil*. Table 5.5 shows the instances where the soil properties fall outside the suitability criteria for a 'multipurpose Topsoil':

Determinand	BS2882 Criteria for Multipurpose Topsoil	Sample ID	Concentration / Result	Comments
Phosphate	16-140mg/l	P13 at 0.10m	12mg/l	Result slightly below criteria

Table 5.5 Summary of soil properties outside suitability criteria for ‘multipurpose Topsoil’ (P13 at 0.10m bgl, Plot 13, Topsoil)

The Topsoil samples tested are suitable for use in garden and landscaped areas of the site in terms of human health. The majority of the physical, nutritional and chemical properties of these soils fall within the criteria set out in BS3882 for a ‘multipurpose Topsoil’.

The extractable phosphate result is slightly below the range set out in BS3882 for multipurpose Topsoil. However, this marginal non-compliance is not considered to prevent the use of these soils as Topsoil. Indeed, the soil meets the criteria for a low fertility Topsoil as set out in BS3882.

5.4 Validation inspection of shallow soils within private gardens (Plots 9, 14, 16, 17 & 24-28)

Following the reduced dig detailed in Section 5.1, it is understood that site-won clean subsoil and Topsoil was utilised to construct the garden areas of these plots.

The inspection/validation of the shallow soils installed within the private gardens was undertaken by a Geo-Environmental Engineer on 10th April 2025. The visual inspection records including site photographs and hand pit logs are presented in Appendix B.

Inspection comprised nine shallow hand pits (P9, P14, P16, P17 & P24-P28) which were excavated by an Engineer from Geo-Environmental within each of the rear garden areas of Plots 9, 14, 16, 17 & 24-28, to confirm the status of the shallow soils. Repeat inspection and sampling of Plots 14, 16 and 17 was undertaken due to non-compliance of inspected soils in Plot 15 (see Section 5.5). Photographs and site inspection records taken during this inspection visit are presented in Appendix B, which confirm the depth of the installed Topsoil, along with soil logs of the material encountered. It should be noted that at the point of inspection the turf and any further soil likely associated with the turf placement had not been laid within any of the rear garden areas.

The inspection confirmed that in all inspected areas (P9, P14, P16, P17 & P24-P28) the Topsoil was found to be between 250mm to 300mm in thickness overlying subsoil within all hand pits.

Nine soil samples, five of Topsoil from Plots 14, 17, 24, 26 and 28, and four of subsoil from Plots 9, 17, 25 and 27, obtained during the validation inspection were submitted to a UKAS accredited laboratory for testing for a suite of commonly occurring brownfield contaminants including asbestos screening to confirm the chemical suitability of the soils. The laboratory test results are presented within Appendix C (laboratory certificate 25-018949-1).

The results of the analyses were compared to the Suitable for Use (S4UL) Levels and Category 4 Screening Level (C4SL) for ‘private gardens with home-grown produce’ (representative of the development end use), which are summarised in Table 5.6 below:

Determinand	Soil Screening Value (mg/kg)	Sample Max. Conc. (mg/kg)	Below Screening Value?
Arsenic	37	9.8	Yes
Benzo(a)pyrene	2.7	0.74	Yes
Beryllium	1.7	0.59	Yes
Boron (Water Soluble)	290	1.5	Yes

Determinand	Soil Screening Value (mg/kg)	Sample Max. Conc. (mg/kg)	Below Screening Value?
Cadmium	11	<0.2	Yes
Chromium (Total)	130	29	Yes
Copper	2400	23	Yes
Hexavalent Chromium	6	<1.8	Yes
Lead	200	29	Yes
Mercury (inorganic)	40	<0.3	Yes
Nickel	180	8.8	Yes
Phenols	110	<1.0	Yes
Selenium	250	<1.0	Yes
Total Petroleum Hydrocarbons	110*	330	No However, TPH species are below their respective S4UL
Vanadium	410	42	Yes
Zinc	3700	63	Yes

NOTES: * – if exceeded assess against S4ULs for relevant TPH species

Table 5.6 Summary of chemical analyses (Plots 9, 14, 16, 17 & 24-28 Inspection Visit 10/04/2025)

The results indicated that all of the determinands tested were below the limiting concentrations set within the Remediation Strategy and Verification Plan (RSVP).

All samples were submitted for asbestos screening and returned with no asbestos fibres identified.

In addition, the results of the speciated hydrocarbon analyses were all returned as either below the laboratory detection limits or below their respective human health screening values for the proposed end use.

A soil sample was obtained from P27 at 0.10m bgl (Plot 27, Topsoil) and was submitted for analysis of the soil's nutritional and soil composition, the results of which were assessed to confirm the materials suitability for Topsoil for general landscape purposes. Assessment in terms of the suitability of the soil's nutritional, physical and chemical properties has been undertaken by comparing the laboratory testing results against the criteria in Table 1 in BS3882:2015 *Specification for Topsoil*. Table 5.7 shows the instances where the soil properties fall outside the suitability criteria for a 'multipurpose Topsoil':

Determinand	BS2882 Criteria for Multipurpose Topsoil	Sample ID	Concentration / Result	Comments
Nitrogen	>0.15%	P27 at 0.10m	0.14%	Result slightly below criteria
Phosphate	16-140mg/l		12mg/l	Result slightly below criteria

Table 5.7 Summary of soil properties outside suitability criteria for 'multipurpose Topsoil' (P27 at 0.10m bgl, Plot 27, Topsoil)

The Topsoil samples tested are suitable for use in garden and landscaped areas of the site in terms of human health. The majority of the physical, nutritional and chemical properties of these soils fall within the criteria set out in BS3882 for a 'multipurpose Topsoil'.

The extractable phosphate and nitrogen results are slightly below the criteria set out in BS3882 for multipurpose Topsoil. However, this marginal non-compliance is not considered to prevent the use of these soils as Topsoil. Indeed, the soil meets the criteria for a low fertility Topsoil as set out in BS3882.

5.5 Validation inspection of shallow soils within private gardens (Plot 15)

Following the reduced dig detailed in Section 5.1, it is understood that site-won clean subsoil and Topsoil was utilised to construct the garden area of this plot.

The inspection/validation of the shallow soils installed within the private garden was initially undertaken by a Geo-Environmental Engineer on 30th January 2025. The visual inspection records including site photographs and hand pit logs are presented in Appendix B.

Inspection comprised a shallow hand pit (P15) which were excavated by an Engineer from Geo-Environmental within the rear garden area of Plot 15, to confirm the status of the shallow soils. Within P15 (Plot 15) 200mm of Topsoil was found to overlie Made Ground which included a 20-30mm fragment of suspected asbestos cement sheet. The fragment was sampled and subjected to laboratory testing which confirmed it contained chrysotile asbestos fibres (see Appendix C, laboratory certificate 25-005045-1).

As such, the both the Topsoil and Made Ground in the rear garden were removed and replaced by the groundworks contractor. Geo-Environmental did not oversee the removal and replacement.

Reinspection of Plot 15 was subsequently undertaken on 1st May 2025. Inspection comprised a shallow hand pit (VP15A) which was excavated by an Engineer from Geo-Environmental within the rear garden area of Plot 15, to confirm the status of the shallow soils. Photographs and site inspection records taken during these inspection visits are presented in Appendix B, which confirm the depth of the installed Topsoil, along with soil logs of the material encountered. It should be noted that at the point of inspection the turf and any further soil likely associated with the turf placement had not been laid within any of the rear garden areas.

The inspection confirmed that in inspected areas (VP15A) the Topsoil was found to be 300mm in thickness overlying subsoil within the hand pit.

Two soil samples, one each of Topsoil and subsoil, obtained during the validation inspection and referenced VP15A at 0.10m bgl (Plot 15, Topsoil) and VP15A at 0.40m bgl (Plot 15, subsoil) were submitted to a UKAS accredited laboratory for testing for a suite of commonly occurring brownfield contaminants including asbestos screening to confirm the chemical suitability of the soils. The laboratory test results are presented within Appendix C (laboratory certificate 25-022620-1).

The results of the analyses were compared to the Suitable for Use (S4UL) Levels and Category 4 Screening Level (C4SL) for 'private gardens with home-grown produce' (representative of the development end use), which are summarised in Table 5.8 below:

Determinand	Soil Screening Value (mg/kg)	Sample Max. Conc. (mg/kg)	Below Screening Value?
Arsenic	37	12	Yes
Benzo(a)pyrene	2.7	<0.05	Yes
Beryllium	1.7	0.51	Yes
Boron (Water Soluble)	290	1.0	Yes
Cadmium	11	<0.2	Yes
Chromium (Total)	130	28	Yes
Copper	2400	39	Yes
Hexavalent Chromium	6	<1.8	Yes
Lead	200	25	Yes

Determinand	Soil Screening Value (mg/kg)	Sample Max. Conc. (mg/kg)	Below Screening Value?
Mercury (inorganic)	40	<0.3	Yes
Nickel	180	7.6	Yes
Phenols	110	<1.0	Yes
Selenium	250	<1.0	Yes
Total Petroleum Hydrocarbons	110	36	Yes
Vanadium	410	37	Yes
Zinc	3700	36	Yes

Table 5.8 Summary of chemical analyses (Plot 15 Inspection Visit 01/05/2025)

The results indicated that all of the determinands tested were below the limiting concentrations set within the Remediation Strategy and Verification Plan (RSVP).

All samples were submitted for asbestos screening and returned with no asbestos fibres identified.

In addition, the results of the speciated hydrocarbon analyses were all returned as either below the laboratory detection limits or below their respective human health screening values for the proposed end use.

5.6 Validation inspection of shallow soils within private gardens (Plot 10)

Following the reduced dig detailed in Section 5.1, it is understood that site-won clean subsoil and Topsoil was utilised to construct the garden area of this plot.

The inspection/validation of the shallow soils installed within the private garden was undertaken by a Geo-Environmental Engineer on 1st May 2025. The visual inspection records including site photographs and hand pit log are presented in Appendix B.

Inspection comprised one shallow hand pit (VP10) which was excavated by an Engineer from Geo-Environmental within the rear garden area of Plot 10, to confirm the status of the shallow soils. Photographs and site inspection records taken during this inspection visit are presented in Appendix B, which confirm the depth of the installed Topsoil, along with soil log of the material encountered. It should be noted that at the point of inspection the turf and any further soil likely associated with the turf placement had not been laid within any of the rear garden area.

The inspection confirmed that in the inspected area (VP10) the Topsoil was found to be 200mm in thickness overlying subsoil within the hand pit.

No chemical testing on soil samples was undertaken for this Plot. It should be noted that of the 20 Plots inspected at the site chemical testing of 11 samples of Topsoil and 10 samples of subsoil was undertaken, giving a minimum ratio of one test per two plots per soil type. This is in line with NHBC Guidance and Good Practice document 'Verification of covers systems – testing criteria for topsoil and subsoil'. The number of samples tested also significantly exceeds the number of tests required by the Imported Soil Specification, included in the RSVP, for imported soils, although the soils utilised were site-won.

6.0 DISCOVERY STRATEGY

The discovery of a fragment of asbestos cement within soils on Plot during a validation visit followed the approach set out in the discovery strategy to clarify, assess and mitigate the risk or potential risk of harm. Section 5.5 above describes the post-remediation verification on this plot.

A discovery strategy remains in place throughout the development works on this site. Geo-Environmental has not been made aware of any other discoveries having been made to date and thus, the strategy as set out in the RSVP did not require enacting, to the best of our knowledge. However, the strategy remains in place for the remainder of the development works.

7.0 VERIFICATION

In accordance with the Client's instruction, Geo-Environmental undertook routine and independent inspection during key stages of the reduced dig process. The risk mitigation measures in relation to remedial measures, reduced dig across the former Park Farm area of the site, and shallow garden soils in Plots 9-28 have been inspected and were considered to comply with the requirements of the Remediation Strategy and Verification Plan at the point of inspection, unless specifically highlighted herein.

The verification of the reduced dig was undertaken by Geo-Environmental in part by obtaining samples of the exposed formation soils following the reduced dig. There was no visual evidence on the site to indicate that the areas remote from the sampling locations were likely to differ significantly from the areas where the samples were obtained. It has been assumed based on the data available that the results of these samples are representative of the exposed formation soils within former Park Farm area of the site.

Geo-Environmental can only verify the reduced dig works at the locations inspected at the time of site visits. Geo-Environmental accepts no liability for areas that have not been directly overseen or inspected or works that have subsequently been undertaken on the site following our inspection visits that may in any way alter or affect the validation works inspected and reported herein.

The inspection of the shallow gardens soils was undertaken by Geo-Environmental via the excavation of a selected number of hand pits. There was no visual evidence on the site to indicate that the areas remote from the pits were likely to differ significantly from the areas where the pits were located. However, the confirmation of depth and composition of Topsoil and subsoil has only been independently verified by Geo-Environmental within these hand pit locations. It has been assumed based on the data available that these hand pits are representative of the reduced dig works undertaken across required area and imported soils within the garden areas of Plots 9-28.

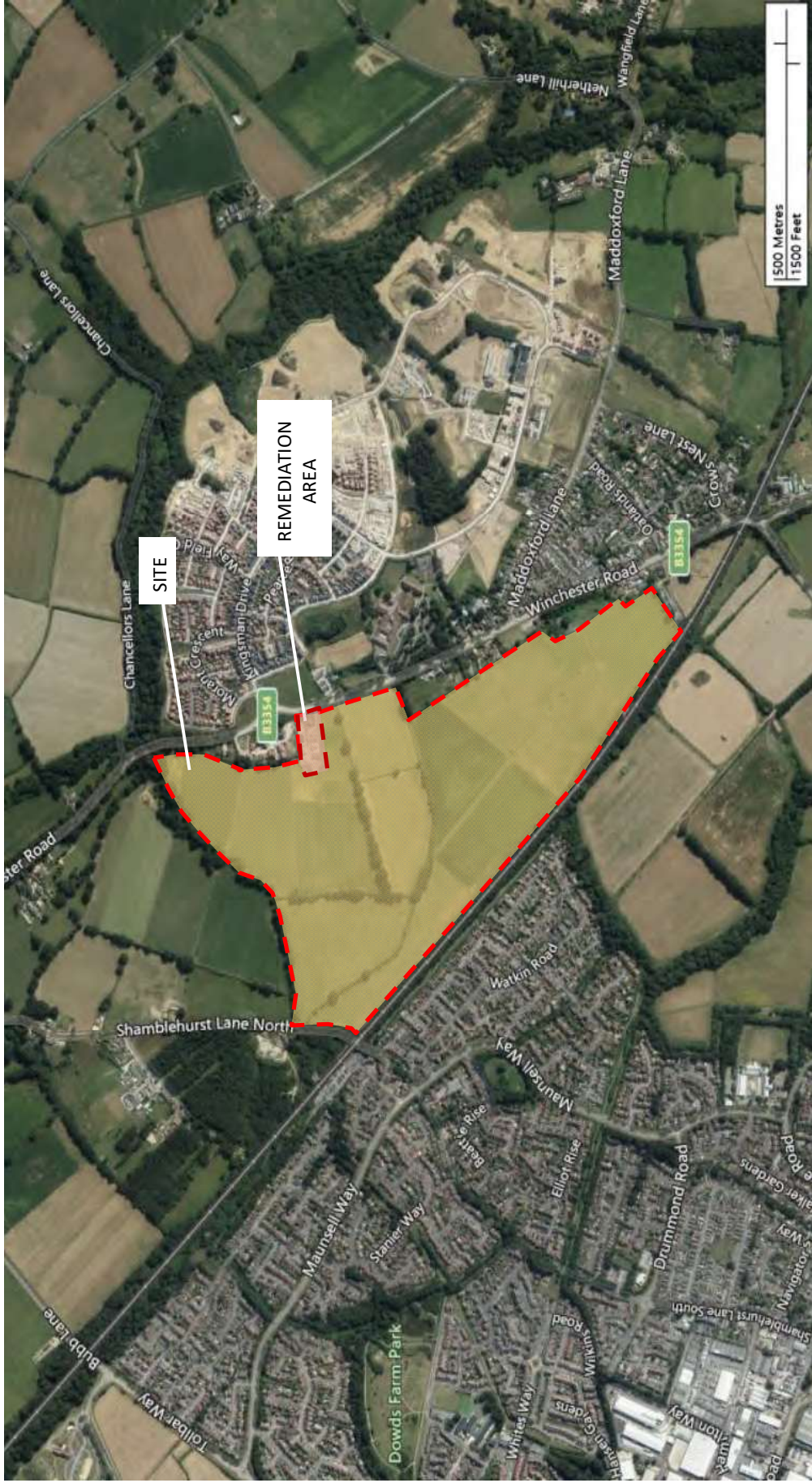
Geo-Environmental can only verify the installation of a cover system at the locations and depths inspected at the time of inspections. Geo-Environmental accepts no liability for areas that have not been directly overseen or inspected or works that have subsequently been undertaken on the site following our inspection visit(s) that may in any way alter or affect the validation works inspected and reported herein.

The report relates to the validation of the shallow garden soils placed within Plots 9-28 (i.e. all plots in the area of the site which required remediation).

This report remains the property of Geo-Environmental and the Client has no rights to, or reliance upon this document or supporting documents until such time as payment has been received in full for all invoices for works undertaken in connection with this report.

FIGURES





Project:	Boorley Gardens, Winchester Road, Hedge End		Title	Site Location Plan
Client:	Bellway Homes & Miller Homes		Geo-Environmental Services Ltd	
Ref No:	GE20346	Revision:	0	Unit 7 Danworth Farm, Cuckfield Road
Drawn:	SA	Date:	28/09/2023	Hurstpierpoint, West Sussex BN6 9GL
Figure:	1	Scale:	Not To Scale	+44(0)1273 832972 www.gesi.net



Project:	Boorley Gardens, Winchester Road, Hedge End		Title	Development Layout Plan
Client:	Bellway Homes & Miller Homes		Geo-Environmental Services Ltd	
Ref No:	GE20346	Revision:	1	
Drawn:	SA	Date:	02/07/2024	
Figure:	2	Scale:	Not To Scale	
			Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesi.net	
			 Geo-Environmental	



Project:	Boorley Gardens, Park Farm Area		Title	Location of Validation Samples	 Geo-Environmental
Client:	Bellway Homes & Miller Homes		Geo-Environmental Services Ltd		
Ref No:	GE20346	Revision:	Unit 7 Danworth Farm, Cuckfield Road		
Drawn:	FG	Date:	Hurstpierpoint, West Sussex BN6 9GL		
Figure:	3	Scale:	+44(0)1273 832972 www.gesi.net		

APPENDIX A

Statom Remediation Validation Report



Statom Remediation Validation Report

**Boorely Gardens, Winchester Road,
Southampton, SO32 2BX**



STATOM GROUP
REMEDIATION • GROUNDWORKS • STRUCTURES

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Factual Letter Report for the completed remediation works at Park Farm of Boorley Gardens, Southampton.

Introduction

Statom Group Ltd. (hereafter referred as 'SGL') were appointed by Jackson Rowe (the client) to carry out the remediation at a project for Park Farm at Boorely Gardens, Winchester Road, Southampton, SO32 2BX. Following the instruction from the client the works commenced on 31st July 2023 and completed within 4 weeks, ending by 31st August 2023.

This letter report covers the factual record of works completed by Statom including the procedures, equipment, and the requirement for remediation works according to the environmental supporting documents listed below.

Supporting documents	Issued date
Remediation Strategy and Verification Plan (GE20346/RSVPv4/MAR23)	March 2023
Ground Appraisal Report (GE20584/GARv2/MAR23)	March 2023
JR1-2262 Park Farm remediation DRAFT rev 3	April 2023

Background

Ground Appraisal Report by Geo-Environmental Services Ltd. (hereafter referred as 'GESL') (GE20584/GARv2/MAR23) affirmed hydrocarbon contaminations during their intrusive site investigations. Asbestos fragments were also recorded after demolition of farmyards and farmhouse. Therefore, to remove the risk to human health and the environment the land needed to be remediated. The proposed development includes residential units comprising private gardens, landscaping, and public open spaces with parking facilities. Following the site investigations, GESL were appointed to produce a Remediation Strategy and Verification Plan (GE20346/RSVPv4/MAR23) for the site. The proposed remedial works required by SGL were carried out in an area known as Parcel 1D within the greater Boorley Development. Parcel 1D has an area of approximately 2.5 ha located at National Grid Reference 450346, 115099. Appendix A Figure 1 illustrates the site location plan. SGL remedial works included excavating the made ground and soft landscaping across the site down to virgin ground (depths ranged from between 100-550 mm) and disposal offsite of the arisings following the appropriate waste classification. A detailed description of the works completed by SGL has been provided below.

Works Completed

- SGL Review of the site investigation prior to commencement of works.
- Upon the identification of key potential environmental aspects and impacts, Construction Environmental Management Plan (CEMP) was developed to propose appropriate environmental measures and mitigation measures.
- Site set up was completed (boundary fencing & signage, welfare & storage areas etc.) as shown in Appendix A Figure 2.
- Remedial works were carried out in 5 Areas/phases within Parcel 1D as illustrated in Appendix A Figure 3.
- Made ground in each area was scraped to the virgin ground which was between 150 mm and 400 mm.
- Excavated soil of each area was then stockpiled within the same phase to prevent any potential cross contaminations as shown in Appendix A Figure 3.
- Soil samples were taken by a geo-environmental engineer from these individual stockpiles and sent to an UKAS Accredited Laboratory. Results obtained are attached in Appendix C.
- Samples were scheduled for a range of determinants to aid with waste characterisation and WAC testing was scheduled on some of the representative materials to aid with disposal.
- All the excavated soil were disposed offsite using 8-wheel tippers provided by a licensed waste carriers and their Waste Carrier Licenses are shown in Appendix E.
- From the testing some of the material in Area A was identified to contain visible chrysotile asbestos fragments. This area was dampened down with water suppression and real time air monitoring set up. The material was then carefully segregated out and disposed of site to Dunton Technologies Waste Treatment Facility using an 8-wheel tipper lorry. Hazardous Waste Consignment Notes were issued during this process as shown in Appendix D. All hazardous soils removal from this area occurred on the 9th August 2023.
- Excavated soil arisings in other areas were accepted under the 17.05.04 EWC code to be disposed offsite by TJ Transports Haulage and Waste Transfer Notes (WTNs) were issued for every load removed during this process as shown in Appendix D.
- Dust monitoring was carried out using dust frisbee gauges throughout the duration of the project with reports being produced by a laboratory on a weekly basis from 4 dust frisbee locations along the site boundary as shown in Appendix A Figure 2. Dust frisbee bottle samples were tested for both dust analysis and asbestos ID.
- Real-time asbestos monitoring was also conducted during works using Alert Pro 1000. Daily reports were produced indicating the amounts of airborne fibres in the surrounding air during the monitored period. No alarms or warnings were raised by

Alert Pro 1000 which meant it was safe to carry out the works in the site. Alert Pro 1000 and dust monitoring result reports are attached in Appendix F.

- Handheld noise monitors were used daily along the site boundaries to monitor noise levels during the working day and during site activities.
- Once the made ground had been removed off site and the formation was at the natural geology, GESL were informed so they could carry out a visual assessment of each individual area and tick a sign off sheet (Appendix G)
- Inspection Test Plans (ITPs) were also completed for each area at the end of works and sign off sheets were completed by the client following the data review and approval. Sign off sheets and ITPs for area A, B, C, D, and E are attached in Appendix G.
- Surveys at the site were completed at the start of the works prior to excavation and then again at the end of the project to show the difference present the finished levels upon completion. These survey drawings can be found within Appendix H.

Summary

SGL have successfully completed the remediation requirements set out within the GESL and Jackson Rowe reports within programme, enabling the site to be handed back over to the client ready for the next phase of development. The risk to human health of workers and future occupiers of the site along with contamination risks posed to the surrounding environment has been greatly reduced following the remedial works carried out by Statom Group.

If you have any questions regarding the works completed by Statom or the information contained within this report, please do not hesitate to get in contact.

Yours Sincerely

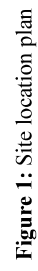
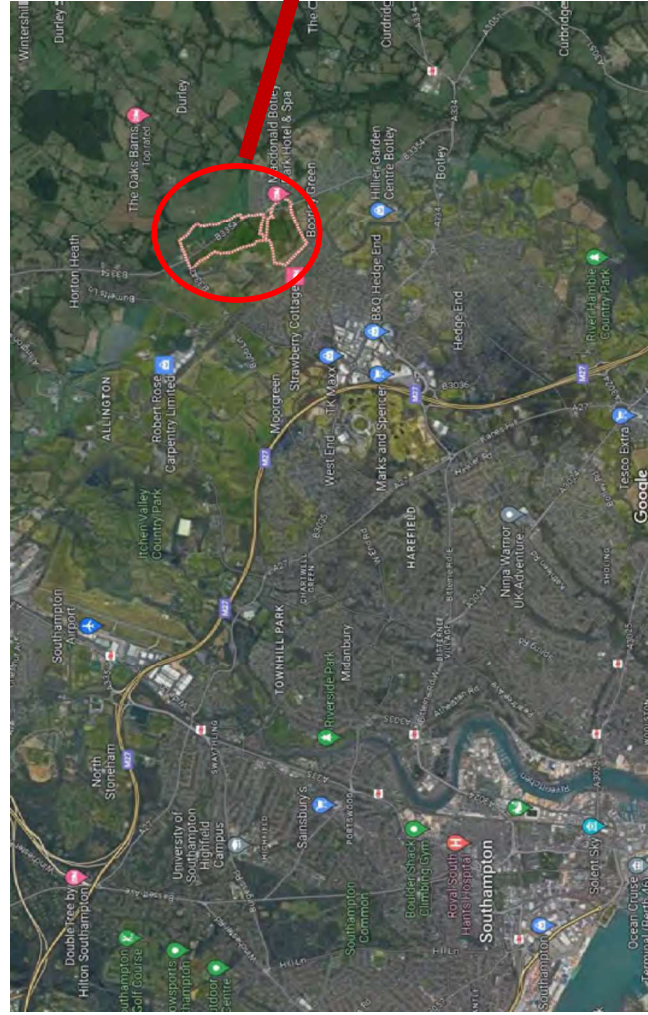
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Approved by

Michael Gillman
Group Environmental Manager
michael.gillman@statom.co.uk

APPENDIX A

Site location & site setting plan



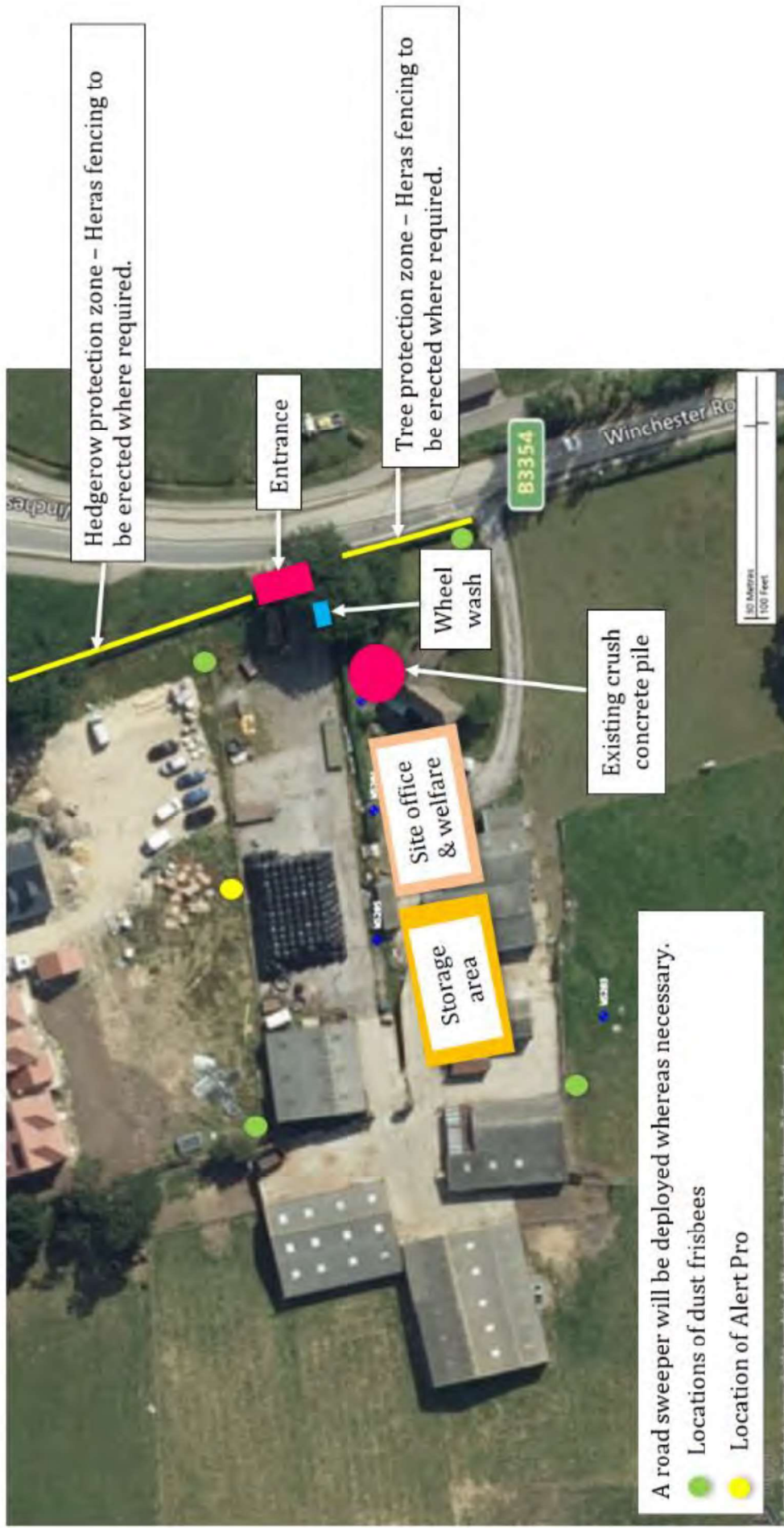


Figure 2: Location of different installations within the site plan

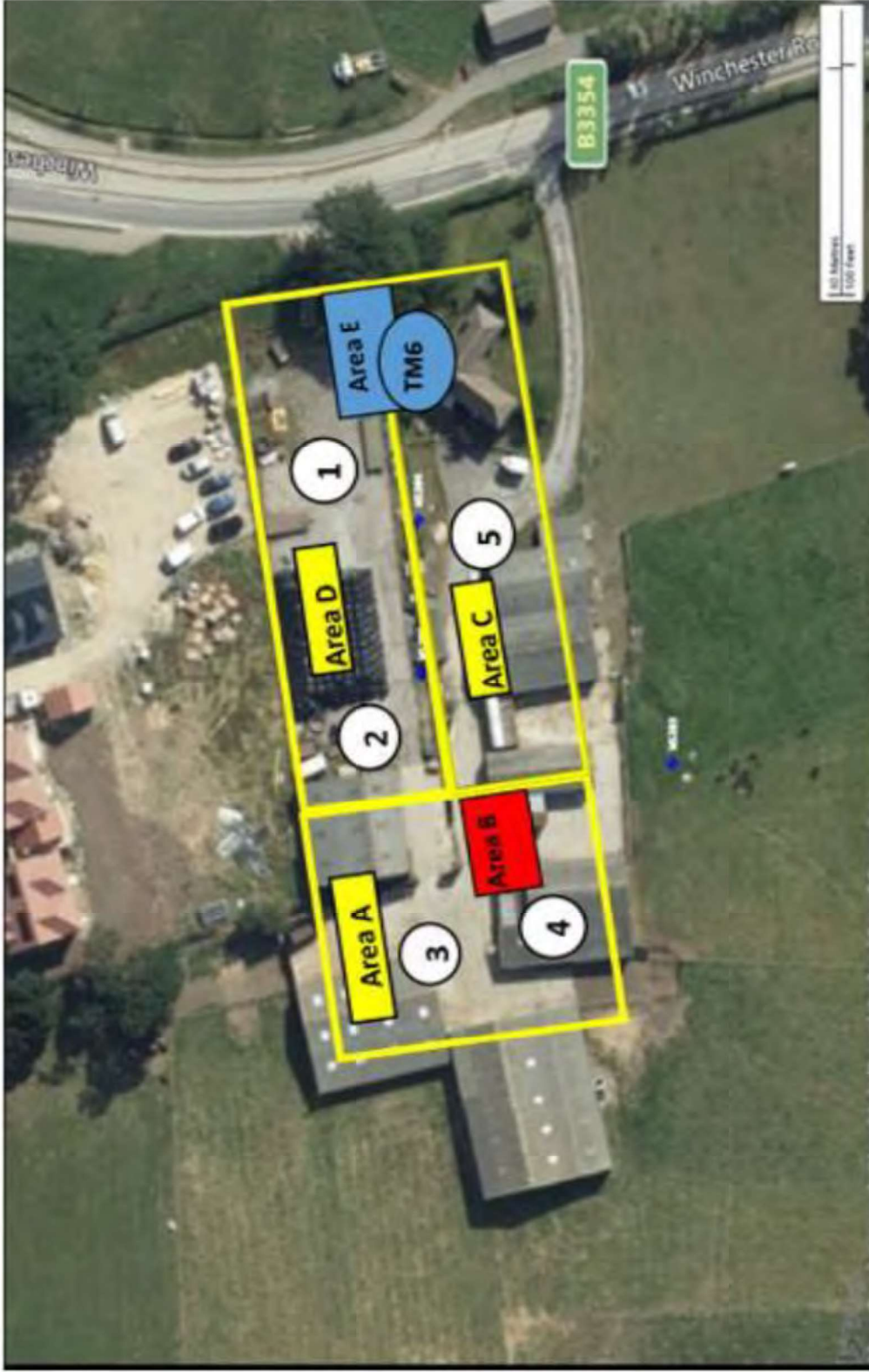


Figure 3: Soil and tarmac sampling locations within different areas

Appendix B

Site Photographs

Statom Group Limited

Statom House, 795 London Road, Grays, Essex, RM20 3LH

Tel: 01708 222 777

www.statom.co.uk

Registered in England and Wales

Company No: 8785228 VAT 177634867

ST176 Park Farm QA - ITP photo Library of Pre-Site Photos Areas A-E



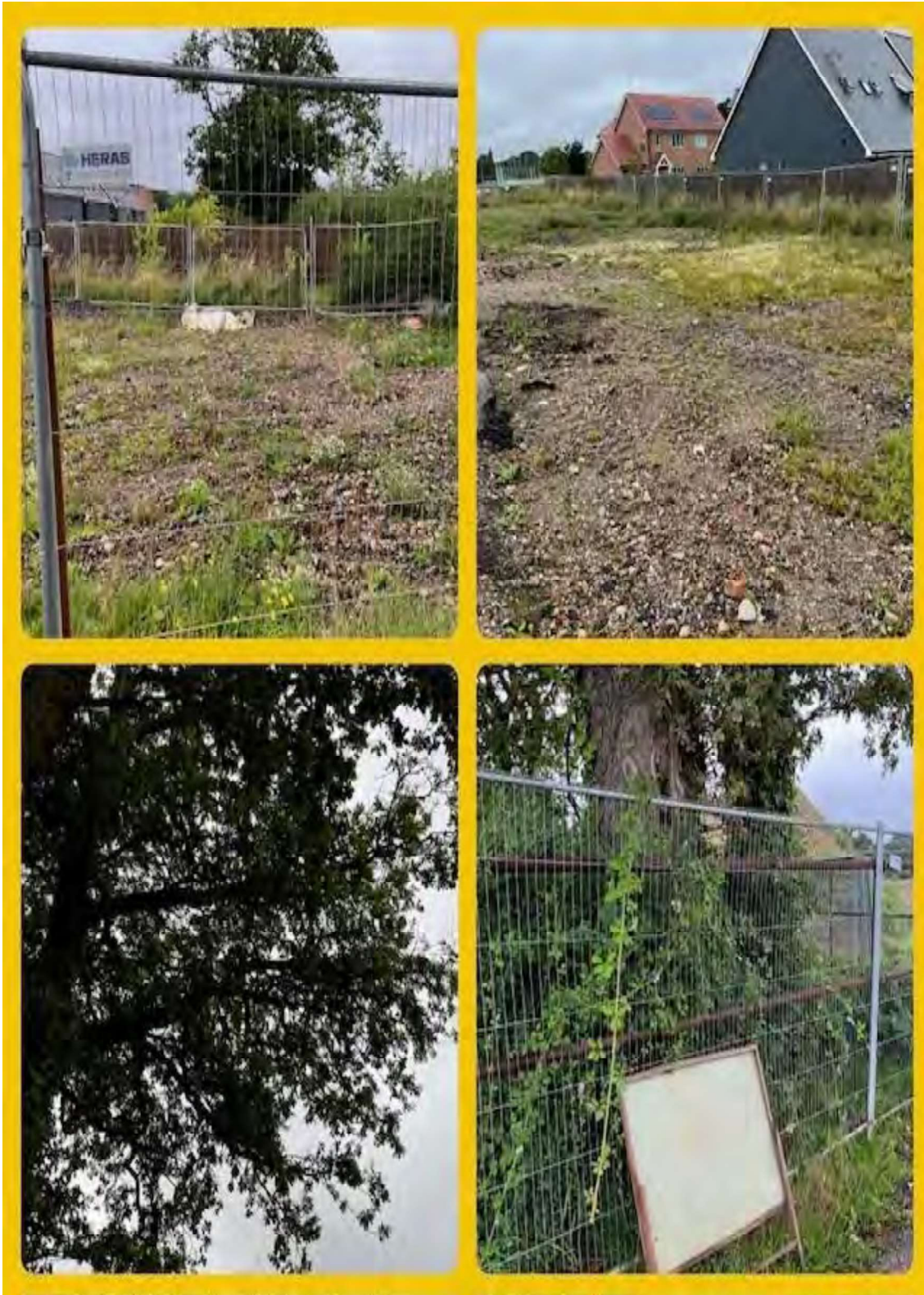
ST176 Park Farm QA - ITP photo Library of Pre-Site Photos Areas A-E



ST176 Park Farm QA - ITP photo Library of Pre-Site Photos Areas A-E



ST176 Park Farm QA - ITP photo Library of Pre-Site Photos Areas A-E



ST176 Park Farm QA - ITP photo Library of Pre-Site Photos Areas A-E



ST176 Park Farm QA - ITP photo Library of Pre-Site Photos Areas A-E



ST176 Park Farm QA - ITP photo Library of Area A RLD back to Virgin ground



ST176 Park Farm QA - ITP photo Library of Area A RLD back to Virgin ground



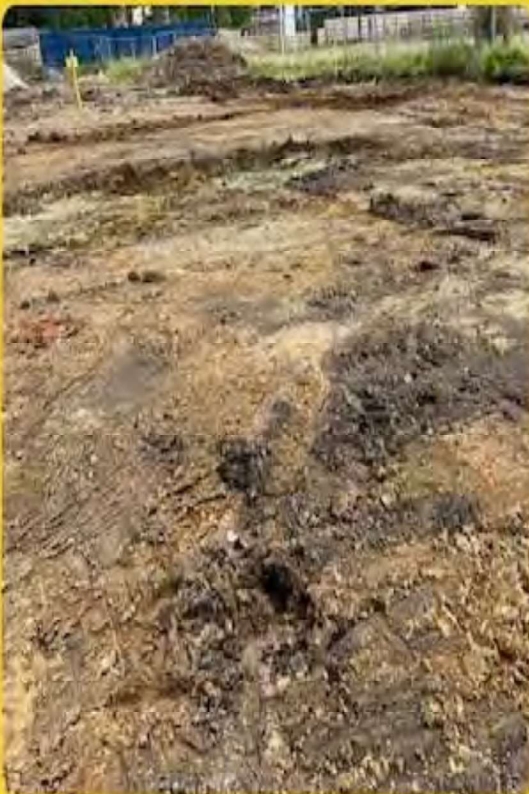
ST176 Park Farm QA - ITP photo Library of Area A RLD back to Virgin ground



ST176 Park Farm QA - ITP photo Library of Area A RLD back to Virgin ground



ST176 Park Farm QA - ITP photo Library of Area A RLD back to Virgin ground



ST176 Park Farm QA - ITP photo Library of Area A RLD back to Virgin ground

