



Geo-Environmental

REMEDIATION STRATEGY & VERIFICATION PLAN

for the land at

FARMYARD (FY), WOODCROFT FARM,

WOODCROFT LANE, LOVEDEAN, PO8 9QA

on behalf of

GRAINGER PLC



Remediation Strategy & Verification Plan

Report:	REMEDIATION STRATEGY & VERIFICATION PLAN
Site:	FARMYARD (FY), WOODCROFT FARM, WOODCROFT LANE, LOVEDEAN, PO8 9QA
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1.0 INTRODUCTION

1.1 General

Following a Phase I and Phase II assessment of the site undertaken by third parties, detailed within reports listed below, Geo-Environmental was appointed by Grainger PLC, to undertake supplementary investigation and to formulate a Remediation Strategy in relation to the proposed development at Woodcroft Farm, Woodcroft Lane, Lovedean, PO8 9QA herein referred to as 'the site' (Figures 1 and 2). Three distinct areas of the development site were identified as being impacted by contamination. Separate Remediation Strategies will be written for each of these distinct areas, therefore this Remediation Strategy is specific to the area of the development site known as the former farmyard area, as shown in Figure 2.

This Remediation Strategy & Verification Plan for the Farmyard (RSVP-FY), should be read in conjunction with the Remediation Strategy & Verification Plans for the former chalk pit (RSVP-CP) and horse arena (RSVP-HA).

The site as a whole, has been the subject to Phase I Ground Condition Report, ref 21834, dated 2010 prepared by Peter Brett Associates (PBA), which included a desk study and preliminary risk assessment for the overall Woodcroft Farm site; a Factual Report, ref RML 4750, dated October 2011 prepared by Risk Management Limited, which included ground investigation and laboratory test results; and a Geoenvironmental and Geotechnical Ground Investigation Report, ref 21834-030-R02, dated July 2013 prepared by PBA, which presented an interpretative assessment of the overall Woodcroft Farm site.

In addition to the above reports, Geo-Environmental was commissioned in 2017 to undertake a review of these reports, and supplementary testing and assessment. This was reported with a Soil Contamination Assessment ref. GE16662-FG02-170929, dated 29th September 2017. An additional phase of investigation was also commissioned in 2018 to support development of the remedial strategy and the findings are incorporated herein. Subsequently, a Detailed Quantitative Gas Risk Assessment (DQGRA) was commissioned from The Environmental Protection Group Ltd (EPG), ref. EPG/8938/2018/DQGRA/V1 dated October 2018, in relation to the infilled former chalk pit located to the west of the farmyard area. The findings of the DQGRA have relevance to the farmyard area and thus are referred to in this RSVP.

The remedial strategy presented herein has been developed to reflect the findings from all phases of the assessments undertaken on this site, in respect to the farmyard area. Based on the findings of the investigations it is considered that remediation works would be required with respect to soil contamination identified within the Made Ground within the farmyard area on the site.

1.2 Objectives

The Remediation Strategy & 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 with private gardens.

1.3 Planning Permission

It is understood that a planning application has been approved for the site by Havant Borough Council under Planning Reference APP/13/00804. The following pre-commencement planning conditions have been attached to the application which relate to the remediation and validation of land contamination on the site.

11. Prior to the commencement of construction within any specified phase or defined area the development approved by this Planning Permission (as may be agreed in writing by the Local Planning Authority), a scheme to deal with the risks associated with contamination of the site shall be submitted to and approved in writing by the



Local Planning Authority. That scheme shall include all of the following elements unless specifically excluded in writing by the Local Planning Authority.

1. A scheme of further investigation, based on the previously submitted GeoEnvironmental & Geotechnical report. The scope of the investigation shall be sufficient to:
 - confirm the preliminary assessment of the nature and extent of contamination at the site,
 - inform an appropriate assessment of the risks to all receptors that may be affected, including controlled waters, and;
 - enable the appropriate design of remediation and/or risk mitigation measures (if required).
2. The results of the further investigation and risk assessment (1) and if appropriate, a method statement based on these results giving full details of the remediation and/or risk mitigation measures required, and how they are to be undertaken.
3. A verification report or statement (as appropriate) upon completion of the works set out in (2) [if any], confirming that measures undertaken have been implemented in accordance with the method statement, and have achieved the required performance standards. The verification report / statement shall provide details of any measures necessary for maintenance, further monitoring and reporting.

All elements shall be adhered to unless agreed in writing by the Local Planning Authority.

Reason: To prevent future occupants of proposed residential properties being exposed to unacceptable risks from identified contamination & soil gas associated with automotive repair and landfill activity previously undertaken at the site, and to ensure that the site does not pose an unacceptable risk to the groundwater Source Protection Zone 1; having due regard to policies and proposals E1 of the Hampshire County Structure plan 1996-2011 (Review), and DM10 of the Havant Borough Adopted Core Strategy (2011), and DM17 of the Draft Local Plan (Allocations) 2012.

12. Prior to the commencement of construction of any part of the development approved by this Planning Permission, a protocol for the identification & assessment of any unforeseen ground conditions shall be submitted to and approved in writing by the Local Planning Authority. The provisions of the approved protocol shall be observed throughout the undertaking of all relevant construction activities.

Reason: For the protection of workers and the general public during the development of potentially contaminated land, and to prevent future occupants of proposed residential properties being exposed to unacceptable risks from unidentified &/or unexpected contamination that may be associated with previous activities undertaken at the site; having due regard to policies and proposals E1 of the Hampshire County Structure plan 1996-2011 (Review), and DM10 of the Havant Borough Adopted Core Strategy (2011), and DM17 of the Draft Local Plan (Allocations) 2012.

13. If, during development, contamination not previously identified at the site is found to be present, then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until the developer has submitted, and obtained written approval from the Local Planning Authority for an addendum to the Method Statement required under Condition 1, (2). This addendum shall detail how this unexpected contamination shall be dealt with, and the development shall not be carried out other than in accordance with the approved details.

Reason: For the protection of workers and the general public during the development of potentially contaminated land, and to prevent future occupants of proposed residential properties being exposed to unacceptable risks from unidentified &/or unexpected contamination that may be associated with previous activities undertaken at the site; having due regard to policies and proposals E1 of the Hampshire County Structure plan 1996-2011 (Review),



and DM10 of the Havant Borough Adopted Core Strategy (2011), and DM17 of the Draft Local Plan (Allocations) 2012.



2.0 BACKGROUND

This Remediation Strategy & Verification Plan (RSVP) has been developed from the findings of the various phases of assessment.

A brief overview of salient findings of the reports is presented below. For further information, the individual reports should be referred to directly.

2.1 Overview

The wider site's previous uses included use as a farm with associated barns and buildings, scrapyard, horse arena and a former chalk pit which was infilled as an inert landfill. The portion of the site considered specifically herein comprised the former farmyard area, as shown in Figure 2.

The ground conditions encountered within the farmyard comprised Made Ground and/or in isolated locations a mantle of Topsoil, overlying sandy clay and clay with occasional bands of sand. Chalk was encountered within two locations, TP215 and TP312. Made Ground was encountered within the majority of investigation locations to depths between 0.25m bgl and 2.2m bgl, and comprised, gravelly clay with brick, concrete, flint cobbles, tarmac and chalk fragments, ash and charcoal; clayey fine to coarse flint and chalk gravel with brick, concrete, tarmac and pieces of tree; sandy clay with plastic, decaying roots, flint gravel and glass. Cement tile and cement sheet fragments were observed to be present sporadically across the farmyard area following demolition and clearance. It was considered that these surface fragments potentially comprised Asbestos Containing Material and could require a 'litter picking' exercise to be completed prior to commencing any remediation or ground works.

The Made Ground and/or Topsoil was underlain by soft to firm clay and sandy clay in the majority of locations with occasional bands of sand overlying the Chalk. The Chalk was only encountered within two locations, TP215 and TP312 within the farmyard area from a depth of between 1.70m bgl and 2.30m bgl.

Previous investigation and testing by third parties identified exceedances of metals and PAH along with the presence of asbestos within the Made Ground in the farmyard area of the site. Therefore, further investigation and testing was undertaken to inform this RSVP and is presented herein.

The recent investigation and testing of soils on site identified contaminant concentrations of concern within the Made Ground in relation to Arsenic, Beryllium, Lead, Nickel, PAH and Asbestos. It is considered that remedial action would be warranted to protect end users of a residential development on this site in relation to the contaminants identified.

Groundwater was not encountered within any of the investigation locations and is anticipated to be present at depths in excess of 25m bgl.

Subsequent to several phases of intrusive investigation and ground gas monitoring, and a surface emissions survey, a Detailed Quantitative Gas Risk Assessment was undertaken by EPG in relation to the infilled chalk pit located immediately to the west of the farmyard area. The DQGRA concluded that ground gas protection measures were not required for the proposed residential development.

2.2 Supplementary Intrusive Investigation Works – Farmyard

As part of the formulation of a remedial strategy further intrusive investigation works were undertaken between 14th May 2018 and 18th May 2018, in order to delineate areas of previously identified contamination. In relation to the farmyard area these works comprised the excavation of 7No. trial pits to depths of up to 3m bgl with



associated environmental sampling and testing at various depths, and 6No. trial trenches to depths of up to 2m bgl to establish the extent of the area of Made Ground, and access areas previously densely vegetated. The locations of the trial pits and trenches are presented in Figure 3 with the exploratory hole logs presented in Appendix A and the results of the geochemical analysis and statistical assessments presented in Appendix B.

Further discussion relating to the implications of these supplementary investigation works is presented in Section 3 of this report.

2.3 Proposed Site Use

The proposed development is understood to comprise the development of 288 residential units, associated car parking, open space and landscaping. The farmyard area covers c. 30-40 plots (houses and flats) and associated gardens/areas of soft landscaping.

2.4 Conceptual Site model

Assessment of the investigation findings have identified particular hazards, or potential hazards which were considered to require intervention (remediation) to mitigate the risk of harm. Remediation works are proposed to break the identified plausible pollutant linkages associated with respect to soil contamination within private garden areas proposed within the farmyard area, thereby mitigating the associated risk of harm to human health.

This would be undertaken as several phases of works on site:

- 1) Surface strip of up 1.0m of Made Ground, or the full extent of the Made Ground where Made Ground is less than 1.0m bgl, overlying the farmyard area to remove the asbestos impacted soils. Excavation and disposal (with/without prior treatment/separation subject to space and time constraints) of the impacted soils identified within the Made Ground beneath the farmyard area. The impacted soils would not be suitable for re-use within private garden areas or areas of soft landscaping and will need to be segregated from other materials on site to avoid cross contamination. If excavated soils are to be stored on site prior to their removal they will need to be placed on sheeting to prevent the spread of any asbestos or asbestos containing material.
- 2) Excavation and disposal of the impacted soils identified within the Made Ground within the farmyard area together with validation sampling at the base and sides of the excavation(s), where necessary. The detail and extent of excavations is subject to the final development levels across the site.
- 3) Installation of a soil cover system in private garden areas and areas of soft landscaping to break the pollutant linkage for the contaminants identified within the Made Ground soils in the farmyard area, and to also provide suitable growing media. Where the reduced dig does not remove all of the Made Ground and hence the cover system is to be laid over Made Ground, it shall incorporate a 150mm thick break layer formed of stone or crushed concrete with a geotextile membrane laid above and beneath, and overlain by a deter to dig geofabric to act as a visible deterrent overlain by a minimum 300mm thickness of subsoil and a minimum of 300mm of Topsoil. Where the reduced dig removes all Made Ground and exposes uncontaminated natural strata, the soil cover system shall comprise clean subsoil and a minimum 300mm of suitable Topsoil, the thickness of subsoil in this scenario will be defined by the difference between the finished garden level (minus 300mm Topsoil) and the reduced dig level. The cover system is likely to be completed with Topsoil placement towards the end of plot specific development with the placement of Topsoil.
- 4) It may be possible to re-use the impacted Made Ground on site where deemed suitable (geotechnically and geochemically without treatment) beneath proposed building footprints and areas of hardstanding in line with a Materials Management Plan (MMP), subject to the appropriate documentation, Definition



of Waste Code of Practice (DoWCoP) assessment, Qualified Person (QP as defined in DoWCoP) declaration and agreement of the Regulators.

The aim of the remediation is not to remove all contamination identified on site but to reduce the identified risk to an acceptable level with respect to human health, the built environment and controlled waters.



3.0 GROUND GAS

Intrusive ground investigation works undertaken over several phases identified the presence of deep Made Ground and/or landfill material within the former chalk pit located adjacent to the farmyard area. The investigations have included several phases of ground gas monitoring and most recently, a surface emissions survey. The findings of the various phases of investigation and monitoring have been assessed in detail by EPG as part of completion of a DQGRA, which concluded that no ground gas protection measures were required for the proposed residential development on the chalk pit area and thus no protection measures are required for plots bordering the former chalk pit area.



4.0 SOILS

The ground conditions within the farmyard have been established through several phases of intrusive investigation. Encountered soils comprised Made Ground and/or in isolated locations a mantle of Topsoil, overlying sandy clay and clay with occasional bands of sand, overlying Chalk.

Made Ground was encountered within the majority of investigation locations to depths between 0.25m bgl and 2.2m bgl, and was found to comprise gravelly clay with brick, concrete, flint cobbles, tarmac and chalk fragments, ash and charcoal; clayey fine to coarse flint and chalk gravel with brick, concrete, tarmac and pieces of tree; sandy clay with plastic, decaying roots, flint gravel and glass. Possible asbestos tiles were noted to be present at c.0.5m bgl within TP239.

Cement tile and cement sheet fragments were observed to be present sporadically across the farmyard area following demolition and clearance. It was considered that these surface fragments potentially comprised Asbestos Containing Material and could require a 'litter picking' exercise to be completed prior to commencing any remediation or ground works.

A review of chemical analysis of the soil samples from the farmyard area was undertaken, including the most recent samples taken for delineation purposes, and the results compared individually against the relevant GAC, SSAC or C4SL for a proposed residential end use (with plant uptake). Individual exceedances above the respective assessment criteria were identified for Arsenic, Beryllium, Lead, Nickel, and PAH compounds as summarised in Table 1.

Determinand	Tier 1 Criteria mg/kg	Depth m bgl	Concentration mg/kg	Geology
Arsenic	S4UL – 37 SSAC – 38.03	TP314 at 1.6	243	Natural
Beryllium	S4UL – 1.7 SSAC – 1.72	TP220 at 0.2 TP312 at 1.45 TP315 at 2.3 TP316 at 1.9 TP317 at 0.65	3.0 2.9 2.1 1.7 6.9	Made Ground Natural
Lead	S4UL – 200	TP315 at 0.2	220	Made Ground
Nickel	S4UL – 180 SSAC – 149	TP314 at 1.6	271	Natural
Benzo(b)fluoranthene	S4UL – 2.6 SSAC – 4.94	TP215 at 0.3 TP315 at 0.2	3.0 3.1	Made Ground
Benzo(a)pyrene	S4UL – 2.2 SSAC – 3.93	TP215 at 0.3 TP315 at 0.2	3.1 2.7	Made Ground
Dibenzo(a,h)anthracene	S4UL – 0.24 SSAC – 0.39	TP215 at 0.3 TP225 at 0.25 TP239 at 0.3 TP312 at 0.2 TP313 at 0.25 TP315 at 0.2	0.6 0.8 0.3 0.3 0.3 0.5	Made Ground

Table 1 Summary of exceedances against Tier 1 assessment criteria

The tier 1 exceedances were screened against the Site Specific Assessment Criteria (SSAC) calculated for the site. A number of those initially identified as exceedances were found to be below the calculated SSAC. The following initial exceedances were found to be below the SSAC:



- Beryllium, TP316 at 1.9m, identified 1.7mg/kg compared to a SSAC of 1.72mg/kg
- Benzo(b)fluoranthene TP215 at 0.3m and TP315 at 0.2m, identified 3mg/kg and 3.1mg/kg compared to a SSAC of 4.94mg/kg
- Benzo(a)pyrene, TP215 at 0.3m and TP315 at 0.2m, identified 3.1mg/kg and 2.7mg/kg compared to a SSAC of 3.93mg/kg
- Dibenzo(a,h)anthracene, TP239 at 0.3m, TP312 at 0.2m, and TP313 at 0.25m, all reported as 0.3mg/kg compared to a SSAC of 0.39mg/kg

The calculated SSAC were based on a residential exposure scenario with plant uptake so as to provide a conservative assessment and cover the most sensitive end use scenario. It is therefore considered that the initial exceedances found to be below the calculated SSAC do not require further assessment nor is further remedial action warranted with respect to these substances and/or locations.

Table 2 summarises the results that were found to exceed the calculated SSAC for a residential end use with plant uptake.

Determinand	Tier 1 Criteria mg/kg	Depth m bgl	Concentration mg/kg	Geology
Arsenic	S4UL – 37 SSAC – 38.03	TP314 at 1.6	243	Natural
Beryllium	S4UL – 1.7 SSAC – 1.72	TP220 at 0.2 TP312 at 1.45 TP315 at 2.3 TP317 at 0.65	3.0 2.9 2.1 6.9	Made Ground Natural
Lead	S4UL – 200	TP315 at 0.2	220	Made Ground
Nickel	S4UL – 180 SSAC – 149	TP314 at 1.6	271	Natural
Dibenzo(a,h)anthracene	S4UL – 0.24 SSAC – 0.39	TP215 at 0.3 TP225 at 0.25 TP315 at 0.2	0.6 0.8 0.5	Made Ground

Table 2 Summary of exceedances against the calculated SSAC

Therefore, the results were assessed further through statistical assessment as described below.

Statistical analysis of the samples within the dataset was undertaken in accordance with guidance contained in the CIEH/CL:AIRE report 'Comparing Soil Contamination Data with a Critical Concentration' (May 2008). If the contamination status of the soils is considered in a planning context, the null hypothesis tested by the analysis is whether the true mean concentration is equal to or greater than the critical concentration for a given determinand, with the critical concentration being the relevant SSAC or GAC (the soil screening value) for that determinand in the context of the intended end use of the site. If the analysis shows that the true mean concentration is less than the critical concentration the null hypothesis can be rejected. The guidance recommends that for the null hypothesis to be rejected the analysis should show that there is a 95% (or higher) likelihood that the true mean concentration is below the critical concentration. Where this is the case the site is considered to be acceptable for the planned end use without any necessary remedial measures.

Statistical assessment was undertaken on all results of geochemical testing undertaken by Geo-Environmental, for heavy metals and PAH from within the farmyard area of the site only. Due to the depth and extent of Made Ground encountered within the farmyard area, it was deemed appropriate to assess the results from this area in isolation as they were not deemed to be representative of the soils encountered elsewhere on the wider site.



The statistical analysis showed that whilst potential statistical outliers were recorded within the datasets the null hypothesis could be rejected for Arsenic, Beryllium, Lead and Nickel. Initial assessment of the dataset for Dibenzo(a,h)anthracene indicated that the null hypothesis could be rejected, however further detailed assessment that assessed the results solely from the Made Ground beneath the farmyard area showed that the null hypothesis could not be rejected. As such the identified elevated concentrations of Dibenzo(a,h)anthracene were considered representative of the Made Ground beneath the farmyard area. Whilst statistical outliers were identified for a number for other substances, all reported concentrations (and statistical upper confidence limit concentrations) were below the relevant SSAC. The results of the statistical assessments are presented within Appendix B.

In addition, the identified elevated concentrations of both Arsenic and Nickel were found within a soil sample from 1.6m bgl (TP314). Given the depth that these elevated concentrations were identified it is considered unlikely that sensitive receptors would be exposed to these identified elevated concentrations, assuming finished development levels are similar to or higher than current ground level. Notwithstanding this, remedial measures to address other identified contaminants within the Made Ground are required.

All samples were submitted for asbestos screening and where asbestos was identified quantification testing was carried out. The locations where asbestos was identified are summarised in Table 3.

Location and Depth (m bgl)	Type	Free Fibres (%)	Total (%)
TP225 at 0.25	Chrysotile	<0.001	3.54
TP239 at 0.5	Chrysotile	<0.001	25.0
TP315 at 0.2	Chrysotile (fibre bundle)	<0.001	<0.001

Table 3 Summary of locations of asbestos identified

The asbestos identified within TP239 was in the form of asbestos tiling. The tile fragments discovered were relatively intact within the ground. During the additional delineation investigation works carried out in May 2018, demolition of the farm buildings within the farmyard area had been completed and the resultant crushed materials were being stockpiled within this area. Potential asbestos containing materials (ACM) were observed by engineers from Geo-Environmental within these stockpiled materials and also as sporadic occurrences at ground level across the farmyard area. It is therefore considered prudent to assume the presence or likely presence of ACM within the surface soils across the farmyard area. Photographs taken of these materials showing their location within the farmyard area are presented within Appendix C. In addition, previous investigations undertaken by third parties also identified the presence of asbestos within soils in the farmyard complex area.

Based on the above assessment it is considered that remedial action would be warranted to protect end users of a residential development on this site in relation to the presence Asbestos and concentrations of Dibenzo(a,h)anthracene identified within the Made Ground within the farmyard area, as shown on Figure 4 and Figure 5. Remedial action to protect end users from impacted soil is discussed in Section 4.2 below.

4.1 Site Workers

It is the responsibility of the Principal Contractor and their appointed sub-contractors to implement and manage safe systems of work, prepare their own risk assessments in accordance with Health and Safety legislation in order to protect persons in their employ, as well as mitigate the risk of harm to others due to works in their control. Special consideration should be given to the provisions of the Construction (Design & Management) Regulations 2015, Health and Safety at Work Act and the Control of Substances Hazardous to Human Health regulations to protect the safety of persons in their employment. Additional guidance can be sought from the CIRIA publications entitled "A Guide for Safe Working on Contaminated Sites" and "Environmental Good Practice on site guide (fourth edition)".



In addition to the safe systems of works to be implemented alongside appropriate risk assessments and method statements, all site personnel shall benefit from on-site hygiene facilities including wash area, toilets and drying room.

Separate canteen area and welfare facilities should be provided. All eating and drinking should be restricted to the canteen area and only once site personnel have removed outer PPE and washed exposed skin.

In the event of dry spells, or where the exposed surface becomes dry, regular damping down of the surface of the site will be required to prevent the release of soil dust which could impact on site operatives or migrate off-site, thereby mitigating both off-site exposure and nuisance for neighbours.

4.2 End Users

The tier 1 contamination assessment has identified several locations where reported concentrations were either elevated, or exceeded the Tier 1 screening criteria within the Made Ground of the farmyard area. In addition, ACMs and asbestos fibres have been identified both visually and within chemical analysis to be present within the Made Ground. Potential ACM was also observed to be present as sporadic occurrence at ground level following demolition and clearance of the former farm buildings.

Subject to final development levels a combination of a 1m reduced dig or complete removal of the Made Ground where Made Ground is found to be less than 1m bgl, and the installation of a clean cover system within private gardens and areas of soft landscaping will be required within the farmyard area. The reduced dig should be undertaken to remove the Made Ground up to 1m bgl beneath the farmyard area as identified from investigation works on the site. The excavated materials will be disposed of offsite, or segregated and stockpiled on site for re-use (subject to acceptability criteria for re-use being achieved). Validation inspections will be undertaken at the base and sides of the excavation to demonstrate that where a reduced dig of less than 1m bgl has been undertaken the full extent of the Made Ground has been removed. Due to the identified presence of asbestos within the Made Ground in the farmyard area material excavated as part of the reduced dig will not be suitable for re-use within private gardens or areas of soft landscaping.

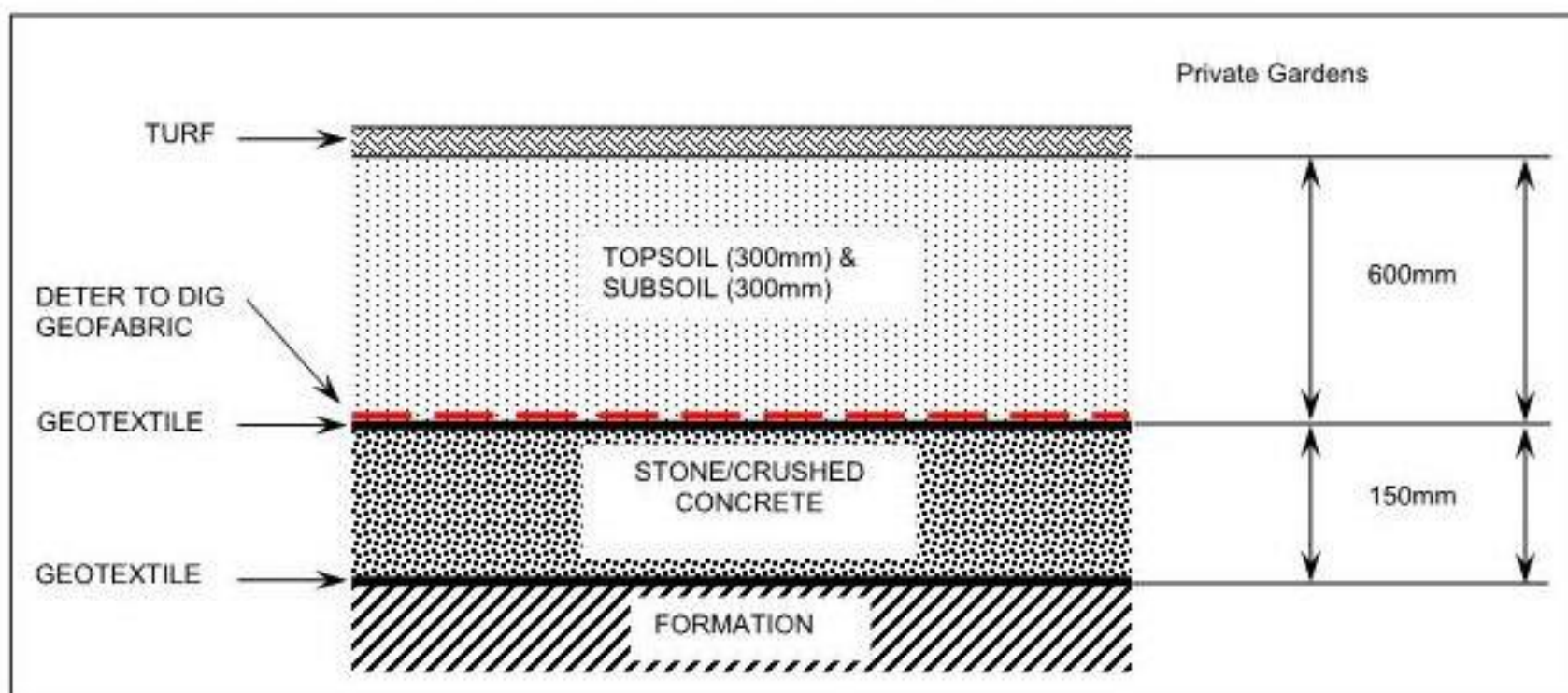
Given the nature of the contaminants identified within the Made Ground across the farmyard area (principal risk driver is Asbestos) a soil cover system will be installed within all gardens and soft landscaping areas. The cover systems should comprise certifiably 'clean' Topsoil and subsoil. Both aspects of the cover system should be both chemically and physically suitable for the proposed end use. Given the presence of asbestos a BRE Soil Cover system with a minimum soil cover thickness of 600mm would be required in proposed gardens and 450mm in areas of soft landscaping. The upper 300mm of a cover system should comprise Topsoil.

Where the reduced dig removes all of the Made Ground, subject to verification inspection, the cover system shall comprise subsoil and a minimum 300mm thickness of Topsoil.

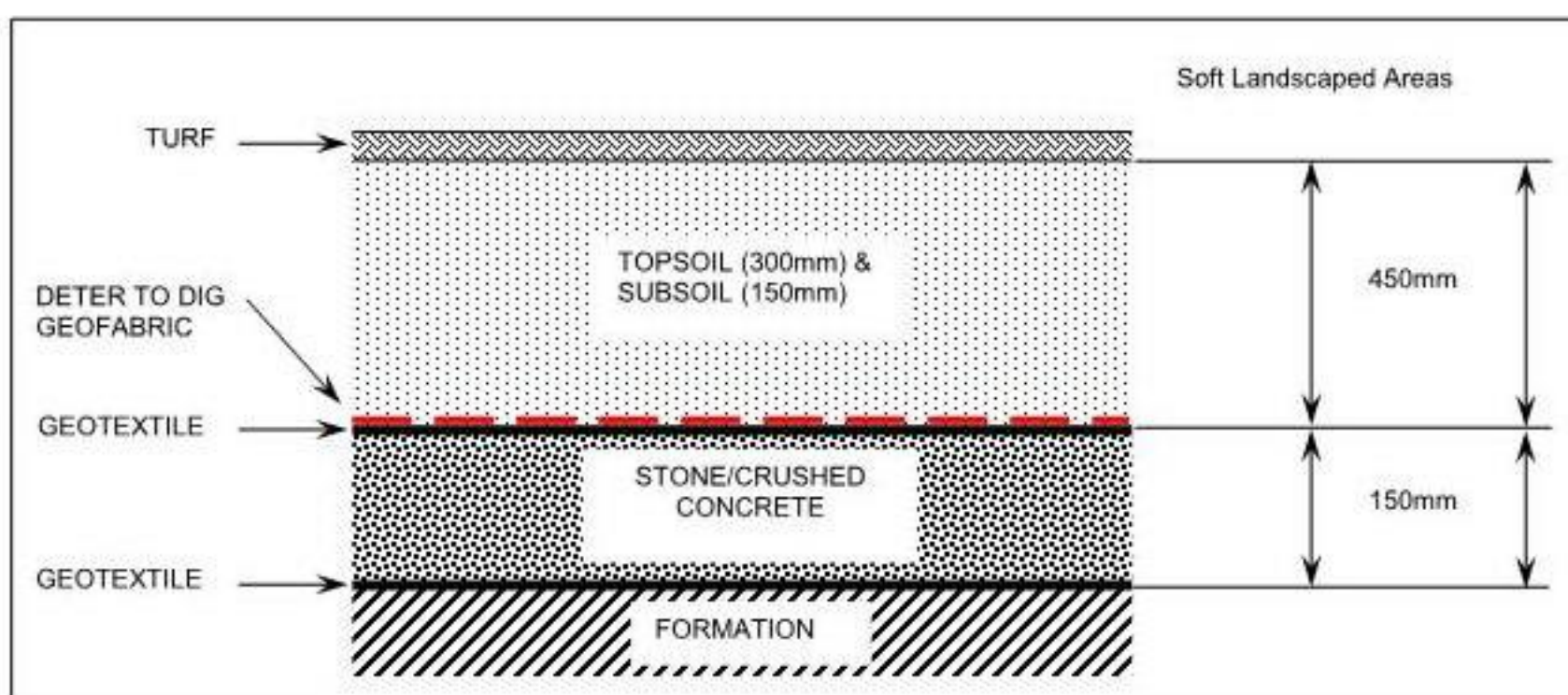
Prior to commencement of the reduced dig exercise, a 'litter picking' exercise will be required to remove ACM from the ground surface. This shall be undertaken by the appropriate contractor and verified by the Environmental Consultant.

Where Made Ground remains in place following the reduced dig, the cover system should incorporate a capillary break layer comprising 150mm depth of stone or crushed concrete, between two layers of geotextile. A high visibility deter to dig geofabric shall be laid over the upper geotextile to provide a visible deterrent to excavation. Any soils imported onto the site should be verified free from contamination with chemical testing undertaken to confirm their suitability for use within private gardens and areas of soft landscaping.

An example of the recommended cover system for use in private gardens is provided below:



An example of the recommended cover system for use in areas of soft landscaping is provided below:



With regards to private gardens and areas of soft landscaping, it is recommended that Topsoil is placed to provide a suitable growing medium for proposed planting areas as part of the cover system described above. It is considered unlikely that it will be necessary to import Topsoil to the site, however if it is necessary to import topsoil on to the development then, prior to importation, the chemical, physical and nutritional suitability should be verified. Importation of Topsoil or subsoil from unverified or unsuitable sources would require their removal from site and replacement with suitable materials. As a matter of good practice, it is recommended that the location, approximate extent and thickness of any imported topsoil are recorded and presented in the Validation/Verification Report to be prepared by the Environmental Consultant. Soil importation criteria is detailed in Appendix D.



Where soils are proposed to be located beneath building footprints or hard standing, the plausible pollutant linkage for direct contact is removed and thus risk of harm to end users from exposure to the contaminants is removed, as roads, buildings and permanent hard cover would sever the pollutant linkage and thus the impacted shallow soils could remain in these areas.

Any soils imported onto the site should be verified free from contamination with chemical testing undertaken to confirm their suitability for use within areas of soft landscaping.

Should any regrading works be required on site which propose re-use materials (to include Made Ground) on the site of origin a Materials Management Plan will be developed for the site under the Code of Practice where:

- 1.) They are suitable for use at the location in question (without prior treatment)
- 2.) They won't cause unacceptable risks to people or the environment
- 3.) They are used in the right quantities
- 4.) There is certainty of use

As such excavated soils on site will be removed from site for disposal, treatment at an appropriately licensed facility or re-used under the CL:AIRE Definition of Waste, Code of Practice where it can be demonstrated that there is a need for the use of the materials and where the risk is demonstrated to be acceptable under a Materials Management Plan.

Where contaminated soils are located in an area of permanent hard cover, e.g. building footprint, road, driveway or the like, then the hard cover would break the pollutant linkage and remediation would not be required in terms of the risk to human health, however limited works may be required in these areas to provide a suitable working platform for development to proceed.

4.3 Inspection/Validation

Verification of remediation measures shall be required through regular inspection at key stages of the works to include:

- The removal of Made Ground across the farmyard area, placement of a cover system, including verification of any additional subsoil and/or Topsoil in order to allow for the installation of the capping system required in private gardens and areas managed soft landscaping areas.

It is likely that verification will be undertaken in stages, such as site preparation, reduced dig, subsoil placement and topsoil placement. As such, final verification of the completed cover system is likely to be at the end of construction.

Details of these works would be presented within a verification report for the site, to include the requirements of the Code of Practice should materials be proposed to be re-used under the Definition of Waste Code of Practice.

4.4 Built Environment

Buried plastics laid in contact with contaminated soils may be susceptible to attack by aggressive chemicals; therefore, potable water supplies may potentially become contaminated or tainted. Proposed remedial measures to address contaminants found within the Made Ground in the farmyard area include a reduced dig of either 1m bgl or the depth of the Made Ground if shallower. Whilst the upper metre of impacted materials will be removed from garden areas water supply pipes are likely to be installed within Made Ground soils.



The use of barrier pipe possibly with cast iron connections is likely to be required for potable water supplies through the farmyard area.

The utility company should be consulted in order to confirm their specific requirements in this respect. Potable supply pipe installation should be confirmed and verified through inspection during construction.

As a matter of good practice and to maximise the protection to maintenance workers, clean, granular backfill should be used in service runs and marker tapes for all buried services. This would not mitigate the requirement for the water supply pipe.



5.0 WASTE

5.1 Waste Classification and Segregation

Waste may be defined as any substance or object in Annex 1 of the Waste Framework Directive which the holder discards, intends to discard, or is required to discard. The holder of waste is anyone in possession of waste or generates it and therefore both the contractor and ultimately the developer are responsible for safe disposal of waste.

The following information is provided for preliminary guidance purposes, as different facilities or operators may have differing acceptance criteria and further Waste Acceptance Criteria (WAC) analysis may be required to confirm the exact classification.

Waste Acceptance Criteria (WAC) testing was undertaken on samples of the Made Ground within the farmyard area from TP225 at 0.3m bgl and details are provided below:

- TP225 at 0.3m bgl (Made Ground) soils classified as 'Inert Waste'

However, asbestos was identified within the Made Ground in the farmyard area. Quantification of this asbestos was undertaken and based on these results Made Ground within the farmyard area would have an initial classification of Hazardous for waste disposal purposes. As such, it is recommended that once materials for disposal have been identified, then further WAC testing should be undertaken to further classify the materials for the purpose of disposal. However, it is understood that wherever possible, site won materials including Made Ground from the farmyard area will be retained for re-use where suitable and subject to regulatory approval.

In the event of dry spells, or where the exposed surface becomes dry, it is recommended that the surface of the site is regularly damped down to prevent the release of soil dust which could migrate off-site and thereby mitigate both off-site exposure and nuisance for neighbours.

It is proposed to re-use materials on site under a Materials Management Plan which will be developed for the construction works on this site. This will include contingency plans in any unexpected contamination is encountered during the development. Soils (including Made Ground) demonstrated to contain low concentrations of asbestos fibres can (with the agreement of the Local Authority Environmental Health Officer) be re-used beneath building footprints and areas of hardstanding and be placed at depth beneath a suitable capping layer, where it can be demonstrated that there is a requirement for such materials and where the risk is acceptable, i.e. the source, pathway, receptor linkage has been severed. This should also take consideration of longer term maintenance works that may be required across the site.

In accordance with CL:AIRE Code of Practice (2011) materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded by the holder'. Current guidance recommends the retention and re-use of site won soils where there is a need for the materials and where the risk is acceptable

The Code of Practice therefore allows soils to be reused on site where the following criteria are met:

- Pollution of the environment and harm to human health is prevented in reusing the excavated materials;
- The material are suitable for use (without any further processing);
- There is certainty of use; and
- The quantity that is absolutely necessary (and no more) is used.



In order to comply with the Code of Practice, a Material Management Plan (MMP) that confirms the above criteria are met has to be prepared. The material management plan must be reviewed by a 'Qualified Person' who then issues a declaration to the Environment Agency. Geo-Environmental can provide this service should it be required.

Where materials do not meet the required criteria, it may be possible to treat them under an environmental permit so that they may be re-used on site.

Should material be required and reused under the Definition of Waste Code of Practice, the reuse of material will need to be fully documented and included within the Verification Report produced on completion of the works.



6.0 DISCOVERY STRATEGY

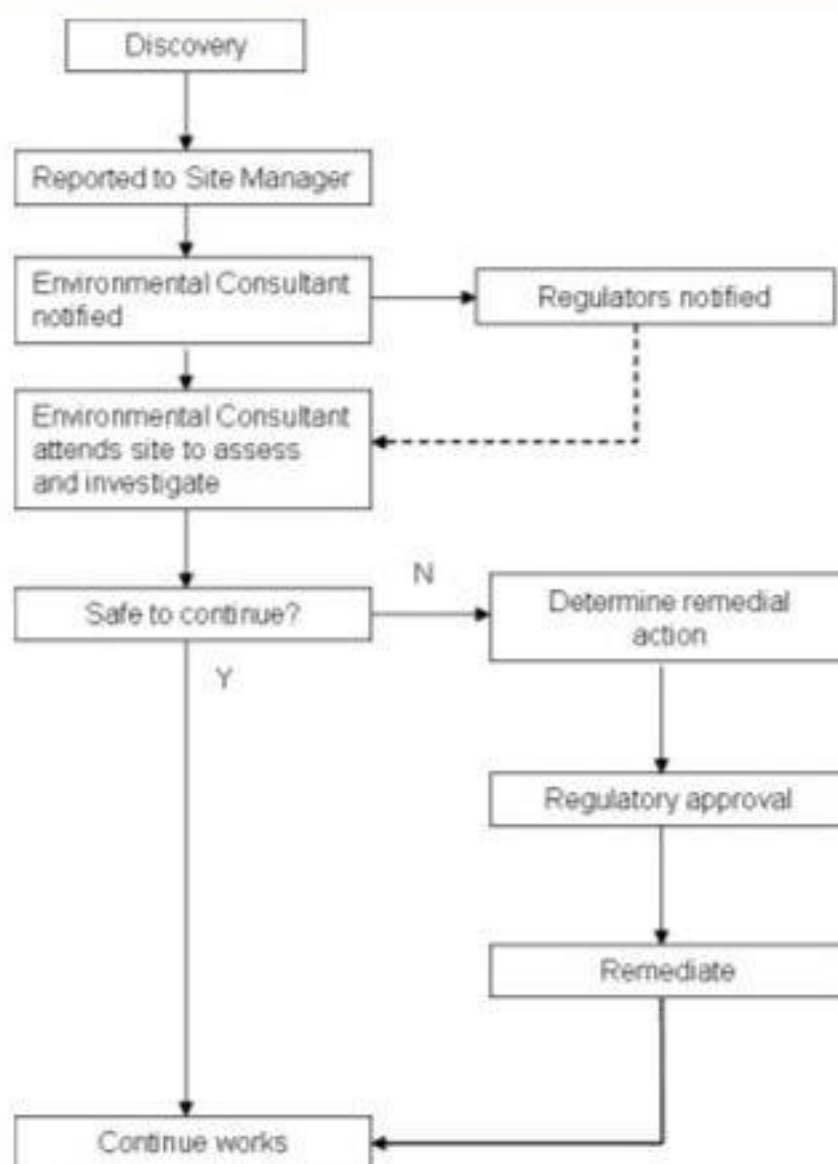
Whilst the site has been the subject of several phases of investigation and assessment, it remains possible that previously unexpected soil conditions may be encountered during the process of site preparation and construction.

Examples may include oily pockets within the soil, pockets of cement boarding or fibrous materials within the soil, black ashy materials, soils exhibiting strong odours, brightly coloured materials, and former structures or brickwork.

Should previously undiscovered contamination be encountered during the demolition/construction of the new buildings the following course of action should be adhered to:

- Works in the area of the suspected contamination should cease immediately. The ground workers should report any suspected contamination immediately to the Client's site supervisor. The supervisor should contact the Environmental Consultant, who should visit the site to assess the extent of the 'contamination'.
- The Environmental Consultant shall make records of their inspection, and pass details of these to the Local Authority.
- Where the conditions revealed differ from those previously anticipated, the Environmental Consultant shall take samples as deemed appropriate to be dispatched for appropriate chemical testing.
- Depending on the results of the testing either: 1) no further work will be required; 2) a further detailed risk assessment will be required; and/or 3) localised specific remedial measures will be necessary. Appraisal criteria will vary depending on the nature of the assessment.
- The results of any such testing will be sent to the Regulatory Authority for consultation. If further remediation is required, the Regulatory Authority will be informed of the date and time of the proposed works.
- Any further remediation will be undertaken in accordance with a method statement submitted to the Local Authority for approval. The works shall be supervised by the Environmental Consultant who shall provide a Verification Report for the Local Authorities purposes.

The process is summarised overleaf:



A copy of this strategy should be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious or contaminated materials they may encounter.



7.0 VERIFICATION

Verification is required to be undertaken throughout the course of the remediation works. The Verification Report will be submitted to the Client, NHBC and Local Authority for formal approval and Environment Agency if requested as part of any works completed under the Definition of Waste Code of Practice.

The Verification Report will refer to the works as set out within this RSVP and as required by any relevant planning conditions. The report will detail findings of any further investigation works (if undertaken on the site) in relation to Asbestos and Dibenzo(a,h)anthracene within the Made Ground of the farmyard area within proposed private gardens and areas of managed soft landscaping, as well as include relevant site based information such as records from site inspections, locations where the impacted soils were excavated and re-used on site or disposed of and validation sampling where required.

Photographs of specific remedial or waste handling measures and an audit trail for any imported subsoil and Topsoil, including source, provenance, analytical results, placement location and thickness (should subsoil and/or Topsoil be imported).

A summary of verification proposals is presented in Table 4 below.

The remedial works will be inspected and validated by the Environmental Consultant (Geo-Environmental).



Reference	Principal requirements	Design or construction related	Site visit required by Qualified Geo-Environmental Engineer	Supporting documentation
1.0 Verification general principles	Geo-Environmental have been commissioned to supervise remedial works within the Farmyard Area at Woodcroft Farm, Lovedean. These works require excavations of impacted Made Ground and installation of a soil cover system within private gardens and areas of soft landscaping. The aforementioned work is in line with the approach adopted for site investigation and risk assessment and previously undertaken by Geo-Environmental in respect of the development.	Construction	Yes – See below	Details of construction programme to be provided by client/contractor.
2.0 Excavation of Made Ground	Reduced dig exercise to excavate of Made Ground within the farmyard area up to 1m bgl or to natural strata if shallower to be overseen and verified by Geo-Environmental.	Construction	Yes – 5 days' notice required	Regular visits to site required to confirm works being undertaken validation sampling within the natural soils following removal of the impacted material.
3.0 Cover System	Cover system to be constructed by the ground workers and inspected by the Environmental Consultant	Construction	Yes - 5 days' notice required	Samples to be taken and chemical test results presented in the report. Thickness and construction of cover system to be verified.
4.0 Waste Management	Waste soils arisings from the site strip will be disposed of appropriately with WAC testing undertake once soils for disposal have been identified. The results should be presented to the landfill site prior to removal for confirmation of the classification.	Design and Construction	No (unless further testing required where 5 days' notice required)	Chemical test results (WAC)



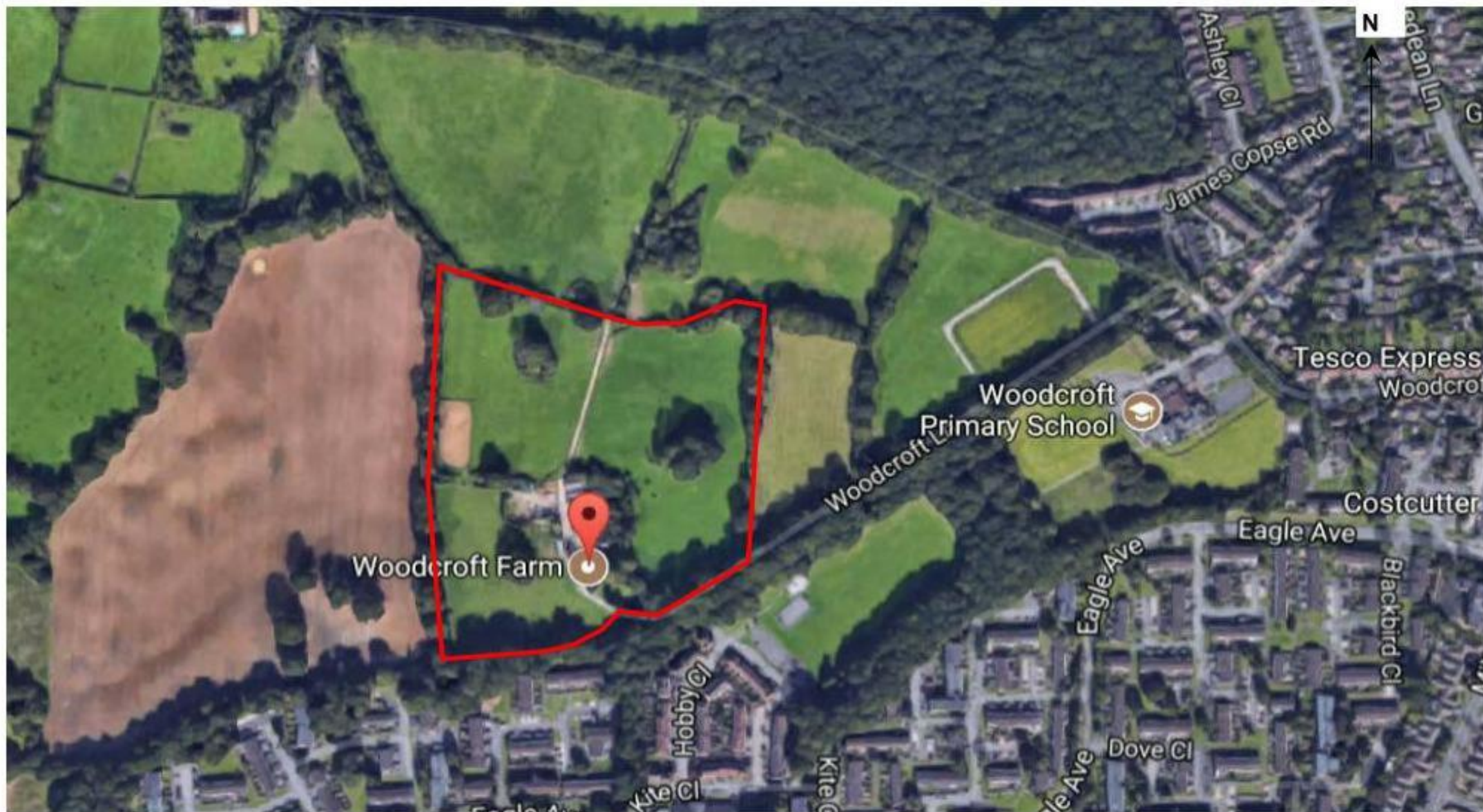
Reference	Principal requirements	Design or construction related	Site visit required by Qualified Geo-Environmental Engineer	Supporting documentation
	Waste tickets for the removal of arisings should be compiled for submission as part of the verification report for each phase of the development. The waste tickets will be required to demonstrate that the approximate amount of material being removed is equal to the summed volume on the waste tickets.			Waste tickets
	Where it is demonstrated that there is a need for materials to be re-used on site and that the risk is acceptable, soils may be re-used on site under the Definition of Waste Code of Practice under a Materials Management Plan for the site.			Records of material movements on site to be provided for inclusion in the validation report. (Assumed to be recorded by Ground workers, if not then independent inspections will be required.
5.0 Imported Soils	In-situ testing of any soils imported onto site for landscaping purposes will be carried out after placement at a frequency of one sample per 50m ³ or one sample per landscaped area (whichever is the smallest) with comparison of results to assessment criteria for residential end use.	Construction	Yes	Pre import certification verifying the chemical quality of the topsoil and subsoil to be provided to the Environmental Consultant for review prior to Importation.

Table 4 Details of verification visits required on site



FIGURES





Project:	Woodcroft Farm, Lovedean, PO8 9QA			Title	Site Location Plan	
Client:	Grainger PLC			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	 Geo-Environmental	
Ref No:	GE16943	Revision:	0			
Drawn:	FG	Date:	11/05/2018			
Figure:	1	Scale:	Not To Scale			



Project:	Woodcroft Farm, Lovedean, PO8 9QA			Title	Location of Farmyard Area	
Client:	Grainger PLC			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	 Geo-Environmental	
Ref No:	GE16943	Revision:	0			
Drawn:	FG	Date:	25/06/2018			
Figure:	2	Scale:	Not To Scale			



Project: Woodcroft Farm, Lovedean, PO8 9QA		Title Exploratory Hole Locations - Farmyard Area	
Client: Grainger PLC		Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	
Ref No: GE16943	Revision: 0		
Drawn: FG	Date: 11/05/2018		
Figure: 3	Scale: Not To Scale		



Project:	Woodcroft Farm, Lovedean, PO8 9QA			Title	Soil Contamination Exceedances - Farmyard Area	
Client:	Grainger PLC			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net		
Ref No:	GE16943	Revision:	0			
Drawn:	FG	Date:	11/05/2018			
Figure:	4	Scale:	Not To Scale			
				 Geo-Environmental		



Project: Woodcroft Farm, Lovedean, PO8 9QA		Title: Depth of Made Ground - Farmyard Area	
Client: Grainger PLC		Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	
Ref No: GE16943	Revision: 0		
Drawn: FG	Date: 20/06/2018		
Figure: 5	Scale: Not To Scale		





APPENDIX A

Exploratory Hole Logs and In-situ Test Results



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		TrialPit No TP205 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468335.00 - 112129.00 Level: 69.34	
Location: Woodcroft Farm, Lovedean,				Dimensions (m): 1.20 0.60	
Client: Grainger PLC and Linden Homes South				Depth 1.70	
Scale 1:25		Logged FG			

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.25	69.09		Grass over, Light brown sandy, gravelly CLAY, with frequent roots (2-4mm) and rootlets TOPSOIL	
	0.50 0.50 0.50	B D ES					Firm orange and grey mottled slightly sandy CLAY with frequent roots (2-4mm) and rootlets. Sand is medium (large roots (7-10mm) at 0.4m)	1
	1.00	D		1.20	68.14		Firm orange and grey mottled slightly sandy CLAY with frequent rootlets. Sand is medium	
				1.40	67.94		Firm orange and grey mottled slightly sandy CLAY with red bandings of sandy clay and frequent rootlets. Sand is medium	
	1.70	D		1.70	67.64		End of Pit at 1.70m	2
								3
								4
								5

Remarks	
Stability	



Trial Pit Log

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468329.00 - 112033.00
Level: 66.23

Date
23/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions
(m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

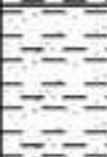
Depth
1.80

0.6

Logged FG

[illegible]

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		TrialPit No TP207 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468244.00 - 112050.00 Level: 64.18	
Location: Woodcroft Farm, Lovedean,				Dimensions (m): 0.60 2.00	
Client: Grainger PLC and Linden Homes South				Depth 2.00	
Scale 1:25		Logged FG			

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20	63.98		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets and occasional flint gravel TOPSOIL	
	0.30	ES						
	0.50	B					Firm orange and grey mottled CLAY with occasional sandy red banding and rootlets (charcoal fragments at 1m and decaying roots)	1
	0.80	D						
				1.20	62.98		Firm red and grey mottled slightly sandy CLAY (charcoal fragments at 1.4m)	
				1.60	62.58		Firm red and grey mottled sandy CLAY	
	2.00	D		2.00	62.18		End of Pit at 2.00m	2
								3
								4
								5

Remarks	
Stability	





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP208
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468227.00 - 112031.00
Level: 63.03

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

2.00

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
2.00

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.15	62.88		Grass over, Dark brown clayey sand with abundant tree roots (2-5mm) and rootlets (large tree root (50mm) at 0.15m) TOPSOIL	
	0.50	D					Firm orange brown sandy CLAY. Sand is fine to medium (large tree root (20mm) at 0.9m)	
	1.00	D		1.10	61.93		Stiff orange slightly sandy CLAY with abundant roots (between 2mm and 8mm). Sand is medium	1
	1.50	D		1.50	61.53		Stiff grey and orange mottled slightly sandy CLAY with occasional roots between 2mm and 6mm (no roots from 1.7m)	
	2.00	D		2.00	61.03		End of Pit at 2.00m	2
								3
								4
								5

Depth (m)	Level (m)	Remarks
		Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP209
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468200.00 - 112025.00
Level: 61.57

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

2.00

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
2.00

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets and occasional flint gravel TOPSOIL	
	0.50	D		0.30	61.27		Firm orange brown slightly gravelly CLAY with occasional cobbles of flint. Gravel is medium sub-angular of flint (roots (10mm) at 0.5m)	
				0.80	60.77		Firm orange brown slightly sandy CLAY with frequent cobbles of flint. Sand is medium	1
				1.50	60.07		Firm orange and grey mottled slightly sandy CLAY. Sand is fine to medium	
	2.00	D		2.00	59.57		End of Pit at 2.00m	2
								3
								4
								5

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP210
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468151.00 - 112030.00
Level: 58.51

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

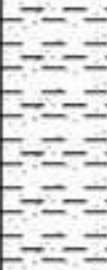
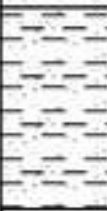
Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.40

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.15	58.36		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL	
	0.50	B					Firm grey and orange mottled slightly sandy CLAY with rootlets. Sand is medium	
	1.00	D		0.90	57.61		Firm grey and orange mottled slightly sandy CLAY. Sand is medium (charcoal fragments at 1.35m)	1
				1.40	57.11		End of Pit at 1.40m	2
								3
								4
								5

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP211
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468148.00 - 112098.00
Level: 58.65

Date
22/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.30

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES		0.10	58.55		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL
	0.30			0.30	58.35		Brown sandy clay with flint cobbles, chalk fragments and occasional brick fragments MADE GROUND
	0.50	D		0.80	57.85		Firm brown slightly sandy CLAY with occasional rootlets. Sand is medium
	1.00	D		1.30	57.35		Firm red brown sandy CLAY. Sand is medium
							End of Pit at 1.30m

Depth (m)	Level (m)

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP212
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468050.00 - 112055.00
Level: 57.68

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.40

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	ES		0.15	57.53		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL
				0.35	57.33		Soft orange brown very sandy CLAY with occasional sub-angular flint gravel. Sand is medium
	0.50 0.50	B D					Firm orange brown CLAY with frequent flint cobbles and chalk fragments
	0.80	D					
	1.10	D		1.10	56.58		Structureless CHALK composed of: medium to coarse sub-angular white GRAVEL. Fragments are weak CIRIA Grade DM
				1.40	56.28		End of Pit at 1.40m

Depth (m)	Level (m)

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP213
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468023.00 - 112009.00
Level: 56.66

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
2.20

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10			0.10	56.56		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets	
	0.20			0.20	56.46		TOPSOIL	
	0.50	B					Brown sandy clay with brick fragments and chalk gravel	
	0.50	D					MADE GROUND	
							Stiff light brown gravelly CLAY	
							MADE GROUND	
	0.80			0.80	55.86		Brown sandy clay with brick, concrete fragments, possible asbestos tiles, and decaying roots	1
	1.00	ES					MADE GROUND	
	1.70			1.70	54.96		Soft light grey CLAY (decaying root (3mm) at 2m)	
	2.00	D						2
	2.20			2.20	54.46		End of Pit at 2.20m	3
								4
								5

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP214
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468056.00 - 112002.00
Level: 57.16

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
2.00

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10			0.10	57.06		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets	
	0.20			0.20	56.96		TOPSOIL	
							Brown clay with bricks and chalk cobbles	
							MADE GROUND	
	0.50	B					Firm light brown and grey mottled CLAY, with frequent flint gravel (decaying root (4mm) at 0.5m)	
	0.50	D					MADE GROUND	
	0.90	ES		0.90	56.26		Dark brown clay with ashy deposits, plastic, brick fragments, chalk gravel, and wood	1
							MADE GROUND	
	1.90			1.90	55.26		Firm light brown and grey mottled CLAY	2
	2.00	D		2.00	55.16		End of Pit at 2.00m	2
								3
								4
								5

Photo	Notes

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

TrialPit No
TP215
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468082.00 - 111995.00
Level: 57.87

Date
22/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Depth
2.90

0.60

Scale
1:25

Logged
FG

Client: Grainger PLC and Linden Homes South

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES					Ashy deposits overlying brown gravelly clay with bricks, concrete, flint cobbles, tarmac and chalk fragments MADE GROUND	
				1.00	56.87		Soft orange brown sandy re-worked CLAY MADE GROUND	1
				1.70	56.17		Structureless CHALK composed of: medium to coarse sub-angular white sandy GRAVEL, sand is medium and fragments are weak CIRIA Grade DM	2
				2.30	55.57		Structureless CHALK composed of: medium to coarse sub-angular white sandy GRAVEL, fragments are weak CIRIA Grade DM	
	2.90 2.90	D D		2.90	54.97		End of Pit at 2.90m	3
								4
								5

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP216
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468060.00 - 111982.00
Level: 56.78

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.00

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10			0.10	56.68		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets
	0.20			0.20	56.58		TOPSOIL
							Brown sandy clay with charcoal and brick fragments
							MADE GROUND
							Firm light brown and grey mottled gravelly CLAY. Gravel is medium, sub angular of flint
	0.50	B					
	0.50	D					
	0.60	ES					
	1.00	D		1.00	55.78		
							End of Pit at 1.00m

Depth	Strike

Remarks

Stability



Trial Pit Log

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468063.00 - 111949.00
Level: 58.26

Date
21/08/2017

Location: Woodcroft Farm, Lovedean.

Dimensions
(m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.00

0.6

Logged FG

	Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth	Type	Results					
		0.05			0.05	58.21		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets	1 -
		0.20	ES					TOPSOIL	
		0.50	D					Firm light brown and grey mottled CLAY, with frequent rootlets	
		1.00	D		1.00	57.26		- - - - - End of Pit at 1.00m	
									2 -
									3 -
									4 -
									5 -

Remarks

Stability



Trial Pit Log

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468068.00 - 111932.00
Level: 58.52

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions
(m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
0.90

0.60

Logged FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.15	ES		0.15	58.37		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL
	0.50 0.50	B D					Firm light brown and grey mottled CLAY
	1.00	D		0.90	57.62		End of Pit at 0.90m

Remarks

Stability



Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP219
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468127.00 - 111929.00
Level: 59.42

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.00

0.60

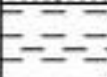
Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20			0.20	59.22		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets and chalk fragments TOPSOIL
	0.50	D					Firm light brown and grey mottled CLAY
	1.00	D		1.00	58.42		
	1.00	ES					
							End of Pit at 1.00m

Notes	Remarks
Stability	



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP220 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468116.00 - 111958.00 Level: 59.41	
Location: Woodcroft Farm, Lovedean,				Dimensions (m): 0.60 1.20	
Client: Grainger PLC and Linden Homes South				Depth 2.00	
Scale 1:25		Logged FG			

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES					Grass over, dark brown gravelly clay with chalk and brick fragments MADE GROUND	
				0.60	58.81		Soft brown and grey mottled CLAY	
	1.00 1.00	D ES		0.80	58.61		Firm brown and grey mottled CLAY, with red sandy banding at 1.5m	1
				2.00	57.41		End of Pit at 2.00m	2
								3
								4
								5

Remarks	
Stability	



Trial Pit Log

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468161.00 - 111926.00
Level: 60.74

Date
22/08/2017

Location: Woodcroft Farm, Lovedean.

Dimensions
(m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.20

0.60

Logged FG

[illegible]



Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP222
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468221.00 - 111986.00
Level: 61.18

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.50

0.60

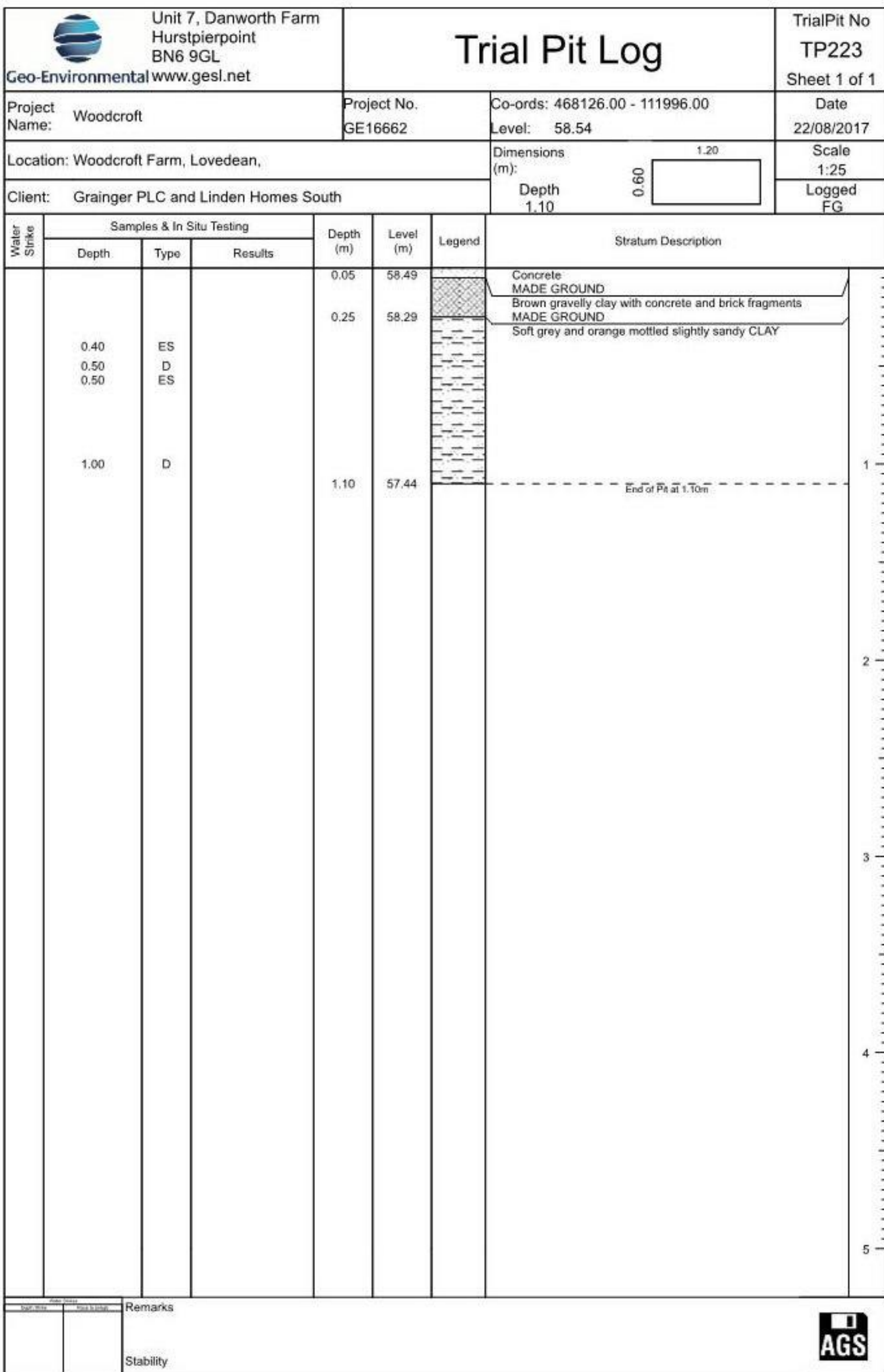
Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.40	ES		0.25	60.93		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL	
				0.50	60.68		Firm orange brown slightly sandy CLAY with occasional flint gravels and roots (1-2mm). Sandy is medium	
							Firm orange brown slightly sandy CLAY with occasional flint gravels. Sandy is medium	
	1.00	D		1.00	60.18		Stiff orange brown slightly sandy, slightly gravelly CLAY. Sand is medium, gravel is medium, sub-angular of flint	1
				1.50	59.68		End of Pit at 1.50m	2
								3
								4
								5

Remarks

Stability







Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP224
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468077.00 - 112011.00
Level: 57.74

Date
22/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
2.20

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES					Ashy deposits overlying brown gravelly clay with bricks, flint cobbles, chalk fragments and tarmac MADE GROUND	
				0.70	57.04		Soft blue grey re-worked CLAY with bricks MADE GROUND	1
				1.60	56.14		Firm grey brown CLAY (Large flint cobble at 1.8m)	2
	2.20 2.20	D D		2.20	55.54		End of Pit at 2.20m	3
								4
								5
Remarks								
Stability								





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP225
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468112.00 - 111991.00
Level: 58.45

Date
23/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
0.60

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.25	ES		0.15	58.30		Chippings over tarmac MADE GROUND	
	0.30	ES					Brown gravelly clay with tarmac, brick fragments, chalk fragments, flint gravel, ash and charcoal (concrete encountered at 0.6m) MADE GROUND	
				0.60	57.85		End of Pit at 0.60m	
								1
								2
								3
								4
								5
Remarks		Concrete encountered at 0.6m, pit terminated						
Stability								





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP226
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468103.00 - 112028.00
Level: 57.24

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.10

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES		0.20	57.04		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL
	0.40	D					Firm orange brown slightly sandy CLAY. Sand is medium
				0.80	56.44		Firm orange brown slightly sandy CLAY with frequent cobbles of flint and occasional charcoal fragments. Sand is medium
				1.10	56.14		End of Pit at 1.10m

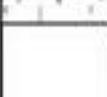
Depth	Width	Area

Remarks

Stability



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP227 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468105.00 - 112061.00 Level: 57.53	
Location: Woodcroft Farm, Lovedean,				Dimensions (m): 1.20 0.60	
Client: Grainger PLC and Linden Homes South				Depth 1.00	
Date 21/08/2017		Scale 1:25		Logged FG	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL	
	0.40	D		0.25	57.28		Firm orange brown slightly sandy, slightly gravelly CLAY. Sand is medium and gravel is fine to medium, sub-angular of flint	
				0.70	56.83		Firm orange brown CLAY	
				0.90	56.63		Structureless CHALK composed of: medium to coarse sub-angular white GRAVEL. Fragments are weak CIRIA Grade DM	
				1.00	56.53		End of Pit at 1.00m	

1

5

1

5

Remarks	
Stability	





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP228
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468169.00 - 112048.00
Level: 60.35

Date
22/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.70

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.15	ES		0.25	60.10		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL
	0.50	D					Soft brown orange sandy CLAY with occasional flint gravel and rootlets. Sand is medium
	1.20	D		1.10	59.25		Yellow fine medium SAND
				1.70	58.65		End of Pit at 1.70m

Depth	Width	Area

Remarks

Stability



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP229 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468030.00 - 112090.00 Level: 58.55	
Location: Woodcroft Farm, Lovedean,				Dimensions (m): 0.60 1.20	
Client: Grainger PLC and Linden Homes South				Depth 1.80	
Scale 1:25		Logged FG			

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
							Grass over, Orange brown sandy CLAY with frequent rootlets TOPSOIL	
	0.60	D		0.60	57.95		Firm orange brown very sandy CLAY with occasional flint cobbles. Sand is medium	
	0.60	ES		0.80	57.75		Firm orange brown CLAY with occasional flint cobbles	1
	1.00	D		1.40	57.15		Firm grey slightly sandy CLAY with frequent cobbles of flint. Sand is medium	
	1.50	D		1.80	56.75		End of Pit at 1.80m	2
								3
								4
								5

Remarks	
Stability	





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP230
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468086.00 - 112103.00
Level: 59.34

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.20

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15			0.15	59.19		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL	
	0.30	ES					Soft orange brown very sandy CLAY. Sand is medium	
	0.50	D						
	0.70			0.70	58.64		Firm grey and orange mottled CLAY with frequent flint cobbles	
	1.10	D						
	1.20			1.20	58.14		End of Pit at 1.20m	
								1
								2
								3
								4
								5

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP231
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468130.00 - 112119.00
Level: 59.64

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.20

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20			0.20	59.44		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL	
	0.40	ES					Soft orange brown very gravelly sandy CLAY. Gravel is medium, sub-angular of flint and sand is medium	
	0.60			0.60	59.04		Firm orange brown slightly sandy CLAY with occasional rootlets. Sand is medium	
	0.80	D						
	1.20			1.20	58.44		End of Pit at 1.20m	
								1
								2
								3
								4
								5
Remarks								
Stability								





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP232
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468210.00 - 112065.00
Level: 62.16

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.30

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL	
				0.30	61.86		Firm orange and grey mottled slightly sandy CLAY. Sand is fine to medium	
	0.80	D		0.70	61.46		Firm orange and grey mottled sandy CLAY. Sand is fine to medium	1
				1.30	60.86		End of Pit at 1.30m	2 3 4 5

Depth	Width	Area

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No
TP233
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468228.00 - 112111.00
Level: 64.08

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.10

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30	63.78		Grass over, Brown sandy, gravelly CLAY with frequent roots and rootlets TOPSOIL	
	0.40 0.40	ES ES					Firm orange brown gravelly CLAY. Gravel is medium to coarse sub-angular of flint	
	0.80	D		0.65	63.43		Stiff grey and orange mottled CLAY with occasional red bands of sandy CLAY	
				1.10	62.98		End of Pit at 1.10m	
								1
								2
								3
								4
								5
Remarks								
Stability								





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

TrialPit No
TP234
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468242.00 - 112136.00
Level: 65.41

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.00

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES		0.20	65.21		Grass over, Brown sandy, gravelly CLAY with frequent roots and rootlets TOPSOIL	
				0.45	64.96		Firm brown very gravelly CLAY. Gravel is medium to coarse sub-angular of flint	
	1.00	D		1.00	64.41		Stiff orange and grey mottled CLAY (Large tree root (70mm) at 0.7m and tree root (4mm) at 1m)	
							End of Pit at 1.00m	1
								2
								3
								4
								5

Depth	Results	Remarks
		Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP235
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468165.00 - 112133.00
Level: 60.77

Date
22/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
2.20

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.25			0.25	60.52		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL	
	0.50 0.50	D ES					Orange brown clayey medium SAND with occasional flint gravel	
	1.00	D						1
				1.80	58.97		Grey and orange fine to medium SAND	2
				2.20	58.57		End of Pit at 2.20m	3
								4
								5
Remarks								
Stability								





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP236
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468115.00 - 112146.00
Level: 60.93

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.70

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES		0.40	60.53		Grass over, Light brown sandy, gravelly CLAY, with frequent rootlets TOPSOIL	
	1.00	D		1.00	59.93		Soft orange brown slightly gravelly sandy CLAY. Sand is medium and gravel is medium, sub-angular of flint	1
				1.70	59.23		Orange slightly clayey medium SAND	2
							End of Pit at 1.70m	3
								4
								5

Depth (m)	Level (m)

Remarks

Stability



Trial Pit Log

Project Name:	Woodcroft
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Project No.
GE16662

Co-ords: 468036.00 - 112164.00
Level: 62.19

Date
21/08/2017

Location: Woodcroft Farm, Lovedean.

Dimensions
(m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.00

0.60

Logged FG

[illegible]



Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP238
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468045.00 - 112137.00
Level: 60.22

Date
21/08/2017

Location: Woodcroft Farm, Lovedean,

Dimensions (m):

1.20

Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.00

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.25			0.25	59.97		Grass over, Orange brown sandy CLAY with frequent rootlets TOPSOIL	
	0.50	D					Stiff orange brown CLAY with occasional cobbles of sub angular flint	
	0.80	ES						
	1.00	D		1.00	59.22		End of Pit at 1.00m	1
								2
								3
								4
								5

Depth	Strike

Remarks

Stability



Trial Pit Log

Project Name: Woodcroft

Project No.
GE16662

Co-ords: 468112.00 - 112015.00
Level: 58.28

Date
23/08/2017

Location: Woodcroft Farm, Lovedean.

Dimensions
(m):

1.20

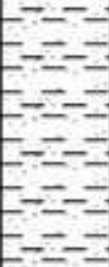
Scale
1:25

Client: Grainger PLC and Linden Homes South

Depth
1.80

0.60

Logged FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	ES					Grass over brown sandy gravelly clay with brick, chalk fragments, concrete, and flint gravel MADE GROUND
	0.50	ES		0.50 0.60	57.78 57.68		Brown sandy clay with tiles of possible asbestos, chalk fragments, concrete and brick MADE GROUND
							Soft brown very sandy CLAY. Sand is medium
	1.50	ES		1.40	56.88		Soft brown very sandy CLAY. Sand is medium
	1.80	D		1.80	56.48		End of Pit at 1.80m

Remarks

Stability

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS201 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468236E - 111994N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean,				Level: 62.76		Scale 1:25	
Client: Grainger PLC and Linden Homes South				Dates: 05/09/2017		Logged By FG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Grass over, brown sandy clay with flint gravel and frequent rootlets TOPSOIL		
		0.25 0.25	D PP	1.3kg/cm2	0.20	62.56			
		0.50 0.50	D PP	0.7kg/cm2					
		0.75 0.75	D PP	0.7kg/cm2	0.80	61.96			
		1.00 1.00	D PP	0.9kg/cm2	1.10	61.66		1	
		1.25 1.25	D PP	1.3kg/cm2					
		1.50 1.50	D PP	1.3kg/cm2					
		1.75 1.75	D PP	1.7kg/cm2					
		2.00 2.00	D PP	1.2kg/cm2	2.00	60.76		2	
		2.25 2.25	D PP	0.5kg/cm2	2.30	60.46			
		2.50	D						
		2.75	D						
		3.00	D		3.00	59.76	----- End of Borehole at 3.00m -----	3	
								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater not encountered	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS202 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468174E - 111973N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean,		Level: 60.57		Scale 1:25		Logged By FG	
Client: Grainger PLC and Linden Homes South		Dates: 05/09/2017					

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	60.27		Grass over brown sandy clay with frequent rootlets and occasional flint gravel TOPSOIL	
		0.50	D						
		0.50	PP	1.6kg/cm2					
		0.75	D						
		0.75	PP	1.7kg/cm2					
								Occasional roots (1-3mm)	
		1.00	D						
		1.00	PP	1.8kg/cm2	1.10	59.47			
		1.25	D						
		1.25	PP	2.0kg/cm2					
		1.50	D						
		1.50	PP	1.8kg/cm2					
		1.75	D						
		1.75	PP	1.7kg/cm2				Large root (5mm)	
		2.00	D						
		2.00	PP	1.6kg/cm2					
		2.25	D						
		2.25	PP	1.5kg/cm2	2.40	58.17			
		2.50	D						
		2.50	PP	0.7kg/cm2					
		2.75	D						
		2.75	PP	0.5kg/cm2	2.80	57.77			
								Yellow/ Orange fine SAND	
		3.00	D		3.00	57.57		----- End of Borehole at 3.00m -----	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater not encountered	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS203 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468173E - 111996N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean,				Level: 60.57		Scale 1:25	
Client: Grainger PLC and Linden Homes South				Dates: 05/09/2017		Logged By FG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15	60.42		Grass over brown sandy clay with frequent rootlets and occasional flint gravel TOPSOIL	
		0.25 0.25	D PP	1.6kg/cm2				Firm orange brown gravelly CLAY with occasional flint cobbles. Gravel is medium sub angular to sub rounded of flint	
		0.50 0.50	D PP	0.9kg/cm2					
		0.75 0.75	D PP	1.1kg/cm2	0.70	59.87		Firm orange, red and grey mottled slightly sandy CLAY. Sand is fine	1
		1.00 1.00	D PP	0.5kg/cm2	1.10	59.47		Firm orange and grey mottled sandy CLAY. Sand is fine	
		1.25 1.25	D PP	1.0kg/cm2				Firm orange and grey mottled sandy CLAY. Sand is fine	
		1.50 1.50	D PP	0.8kg/cm2					
		1.75 1.75	D PP	1.3kg/cm2					
		2.00 2.00	D PP	1.5kg/cm2	1.90	58.67		Firm orange and grey mottled very sandy CLAY. Sand is fine	2
		2.25 2.25	D PP	0.9kg/cm2	2.30	58.27		Yellow/ Orange fine SAND	
		2.50	D						
		2.75	D						
		3.00	D		3.00	57.57		----- End of Borehole at 3.00m -----	3
									4
									5

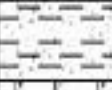
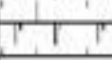
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater not encountered	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS204 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468179E - 112013N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean,				Level: 60.47		Scale 1:25	
Client: Grainger PLC and Linden Homes South				Dates: 05/09/2017		Logged By FG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	60.17		Grass over brown sandy clay with frequent rootlets and occasional flint gravel TOPSOIL	
		0.50 0.50	D PP	0.9kg/cm2				Stiff orange/ brown slightly sandy CLAY with frequent rootlets. Sand is fine	
		0.75 0.75	D PP	1.0kg/cm2					
		1.00 1.00	D PP	1.2kg/cm2	1.10	59.37			1
		1.25 1.25	D PP	1.4kg/cm2				Stiff orange/ brown slightly sandy CLAY with rare rootlets. Sand is fine	
		1.50 1.50	D PP	1.5kg/cm2					
		1.75 1.75	D PP	1.3kg/cm2					
		2.00 2.00	D PP	1.0kg/cm2					2
		2.25 2.25	D PP	1.1kg/cm2	2.30	58.17		Firm orange and grey mottled sandy CLAY. Sand is fine	
		2.50 2.50	D PP	0.9kg/cm2					
		2.75 2.75	D PP	0.7kg/cm2					
		3.00 3.00	D PP	0.8kg/cm2	3.00	57.47		----- End of Borehole at 3.00m -----	3
									4
									5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater not encountered	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS205 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468150E - 112033N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean,				Level: 58.83		Scale 1:25	
Client: Grainger PLC and Linden Homes South				Dates: 05/09/2017		Logged By FG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25	58.58		Grass over brown sandy clay with frequent rootlets and occasional flint gravel TOPSOIL	
		0.50	D					Brown clayey fine SAND	
		0.75	D						
		0.90			0.90	57.93			
		1.00	D					Orange fine SAND	1
		1.25	D						
		1.50	D						
		1.75	D		1.70	57.13		Orange clayey fine SAND	
		2.00	D		2.00	56.83		Stiff grey slightly sandy CLAY. Sand is fine	2
		2.00	PP	1.1kg/cm2					
		2.25	D						
		2.25	PP	1.2kg/cm2					
		2.50	D						
		2.50	PP	1.0kg/cm2	2.60	56.23		Soft brown slightly sandy CLAY. Sand is fine	
		2.75	D		2.80	56.03		Structureless CHALK composed of: medium to coarse sub-angular white sandy GRAVEL, sand is medium and fragments are weak CIRIA Grade DM	
		2.75	PP	0.4kg/cm2					
		3.00	D		3.00	55.83		End of Borehole at 3.00m	3
									4
									5

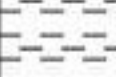
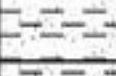
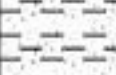
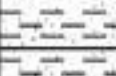
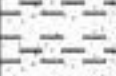
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater not encountered	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS206 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468081E - 111960N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean,				Level: 57.22		Scale 1:25	
Client: Grainger PLC and Linden Homes South				Dates: 05/09/2017		Logged By FG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.35	56.87		Grass over brown sandy clay with frequent rootlets and occasional flint gravel TOPSOIL	
		0.50 0.50	D PP	1.2kg/cm2				Firm brown orange slightly sandy gravelly CLAY with frequent rootlets. Sand is fine, gravel is medium sub angular to sub rounded of flint.	1
		0.75 0.75	D PP	1.6kg/cm2					
		1.00 1.00	D PP	1.5kg/cm2					
		1.25 1.25	D PP	1.1kg/cm2					
		1.50 1.50	D PP	0.8kg/cm2					
		1.75 1.75	D PP	1.3kg/cm2	1.90	55.32			
		2.00 2.00	D PP	1.8kg/cm2				Firm brown very gravelly CLAY. Gravel is medium sub angular to sub rounded of flint.	2
		2.25 2.25	D PP	1.7kg/cm2					
		2.50 2.50	D PP	1.5kg/cm2					
		2.75 2.75	D PP	1.6kg/cm2					
		3.00 3.00	D PP	1.5kg/cm2	3.00	54.22		----- End of Borehole at 3.00m -----	3
									4
									5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater not encountered	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log			Borehole No. WS207 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16662		Co-ords: 468075E - 111938N		Hole Type WLS
Location: Woodcroft Farm, Lovedean,		Level: 58.31		Scale 1:25		
Client: Grainger PLC and Linden Homes South		Dates: 05/09/2017		Logged By FG		

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15	58.16		Grass over brown sandy clay with frequent rootlets and occasional flint gravel TOPSOIL	
		0.25 0.25	D PP	1.0kg/cm2				Firm orange and grey mottled CLAY with frequent rootlets and occasional flint gravel	
		0.50 0.50	D PP	1.0kg/cm2					
		0.75 0.75	D PP	0.7kg/cm2					
		1.00 1.00	D PP	0.6kg/cm2					1
					1.20	57.11		Decaying root (6mm)	
		1.25 1.25	D PP	0.9kg/cm2				Stiff orange and grey mottled slightly sandy CLAY with occasional rootlets. Sand is fine	
					1.40	56.91		Occasional roots (2mm)	
		1.50 1.50	D PP	1.5kg/cm2				Stiff orange and grey mottled slightly sandy CLAY with occasional rootlets and red banding of sandy clay. Sand is fine	
								Occasional roots (2mm)	2
		2.00 2.00	D PP	1.5kg/cm2					
		2.25 2.25	D PP	1.7kg/cm2	2.20	56.11		Stiff orange and grey mottled slightly sandy CLAY with frequent rootlets. Sand is fine	
		2.50 2.50	D PP	1.5kg/cm2					
		2.75 2.75	D PP	1.7kg/cm2	2.80	55.51		Stiff grey CLAY with chalk fragments	
		3.00 3.00	D PP	1.8kg/cm2	3.00	55.31		----- End of Borehole at 3.00m -----	3
									4
									5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater not encountered	



Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP301
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16943

Co-ords: 468021.00 - 112011.00
Level: 56.66

Date
16/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions (m):

2.40

Depth
2.70

0.60

Scale
1:25

Logged
FG

Client: Grainger plc

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.25	ES		0.20	56.46		Grass over dark brown sandy gravelly CLAY with abundant roots and rootlets TOPSOIL	
	0.40	ES		0.45	56.21		Made Ground comprising dark brown soft sandy, gravelly CLAY with brick, brick fragments, tile, slate, wood, and glass. Sand is medium and gravel is fine to medium sub angular to sub rounded of flint. Made Ground comprising Fines 60%, Coarse 30%, Brick 5%, Wood 4%, Glass 0.5%, Slate 0.5% MADE GROUND	
				0.90	55.76		Made Ground comprising light brown firm slightly sandy CLAY with flint gravel, brick and wood/decaying roots. Sand is medium. Made Ground comprising Fines 50%, Coarse 30%, Gravel 10%, Brick 5% and Wood 5% MADE GROUND	1
	1.40	ES		1.30	55.36		Made Ground comprising light brown firm CLAY with brick, wood, rope and flint gravel. Made Ground comprising Fines 60%, Coarse 20%, Brick 5% and Wood 5%. (At 0.95m bgl large concrete slab - 1.1m x 0.2m and 0.2m thick) MADE GROUND	
							Made Ground comprising light grey and black soft CLAY with wood, chalk gravel, brick and plastic. Made Ground comprising Fines 40%, Coarse 20%, Wood 15%, Brick 15% and Plastic 10%. (At 1.4m bgl large decaying tree root - 1.2m x 0.2m) MADE GROUND	2
				2.70	53.96		End of Pit at 2.70m	3
								4
								5
Remarks								
Stability								



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP302 Sheet 1 of 1			
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468063.00 - 112007.00 Level: 57.59			
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 2.40 0.60			
Client: Grainger plc				Depth 2.80 Scale 1:25 Logged FG			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	ES		0.25	57.34		Grass over Made Ground comprising clayey sandy fine to coarse sub angular to sub rounded GRAVEL with tarmac, calk fragments, brick, tile, charcoal and wood. Made Ground comprising Fines 25%, Coarse 70%, Brick 3%, Wood 2%. (At 0.1m bgl large piece of tarmac)
	0.50	ES		0.40	57.19		MADE GROUND
							Made Ground comprising light brown and grey with black and dark grey staining firm CLAY with brick and decaying roots. Made Ground comprising Fines 70%, Coarse 20%, Brick 5%, Wood 5%
							MADE GROUND
	1.30	ES		1.20	56.39		Made Ground comprising dark grey and grey mottled firm CLAY with wood, brick, cement, plastic and chipboard. Made Ground comprising Fines 60%, Coarse 20%, Wood 10%, Brick 5%, Plastic 3% and Cement 2%
	2.70	ES		2.80	54.79		Made Ground comprising brown with occasional black staining soft gravelly sandy CLAY with wood, brick, charcoal and plastic. Sand is medium and gravel is fine to medium sub angular to sub rounded of flint. Made Ground comprising Fines 60%, Coarse 20%, Wood 10%, Brick 5%, Charcoal 3% and Plastic 2%
End of Pit at 2.80m							
Remarks Stability							



Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP303
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16943

Co-ords: 468094.00 - 111975.00
Level: 57.47

Date
16/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions (m):

2.20

Scale
1:25

Client: Grainger plc

Depth
2.40

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10			0.10	57.37		Grass over dark brown silty sandy CLAY with frequent roots and rootlets TOPSOIL	
	0.30	ES		0.35	57.12		Made Ground comprising light brown soft slightly sandy CLAY with brick, glass, flint gravel, concrete, wood and possible asbestos. Sand is medium. Made Ground comprising Fines 70%, Coarse 20%, Gravel 5%, Brick 3%, Concrete 1%, Glass 0.5% and Wood 0.5% MADE GROUND	
	0.70	ES		0.80	56.67		Made Ground comprising light brown firm CLAY with brick and chalk gravel, Fines 80%, Coarse 10%, Gravel 8% and Brick 2%. (Between 0.4m bgl and 0.5m bgl live tree roots) MADE GROUND	
							Stiff light brown and grey mottled CLAY	1
				1.20	56.27		Firm light grey and brown sandy gravelly CLAY. Sand is medium and gravel is fine to medium sub angular to sub rounded of flint. (At 1.3m bgl and 1.5m bgl large flint cobbles)	
				1.40	56.07		Firm brown very gravelly CLAY. Gravel is medium to coarse sub angular of chalk	
	1.90	ES		1.80	55.67		White/light grey structureless very weak weather CHALK in communicated matrix CIRIA Grade DM	2
				2.40	55.07		End of Pit at 2.40m	3
								4
								5

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP304
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16943

Co-ords: 468071.00 - 111965.00
Level: 56.82

Date
16/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions (m):

2.10

Depth
2.40

0.60

Scale
1:25

Logged
FG

Client: Grainger plc

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10			0.10	56.72		Grass over dark brown silty sandy CLAY with abundant roots and rootlets TOPSOIL	
	0.30	ES		0.60	56.22		Made Ground comprising grey and brown mottled with frequent black staining soft sandy CLAY with chalk gravel, brick, wood, plastic occasional glass and charcoal. Sand is medium. Made Ground comprising Fines 50%, Coarse 25%, Gravel 15%, Brick 5%, Wood 3%, Plastic 1.5% Other 0.5% MADE GROUND	
				1.00	55.82		Made Ground comprising light brown and grey mottled with occasional black staining soft CLAY with chalk gravel and brick MADE GROUND	
	1.20	ES		1.20	55.62		Soft light brown gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of flint. (Large flint cobbles at 1m bgl)	1
							Stiff light brown and grey mottled slightly sandy CLAY. Sand is medium. (Large flint cobbles at 2.2m bgl)	
				2.40	54.42		End of Pit at 2.40m	2
								3
								4
								5

Remarks

Stability



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP305 Sheet 1 of 1			
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468037.00 - 111960.00 Level: 57.32			
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 1.80 0.60			
Client: Grainger plc				Depth 1.20 Scale 1:25 Logged FG			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20	57.12		Grass over dark brown silty sandy CLAY with abundant roots and rootlets, and occasional flint gravel TOPSOIL
	0.80	ES		0.90	56.42		Made Ground comprising firm brown and grey mottled slightly sandy CLAY with occasional flint gravel. (At 0.85m large piece of metal) MADE GROUND
	1.10	ES		1.20	56.12		Made Ground comprising light grey with occasional black staining firm slightly sandy CLAY with wood and decaying tree roots. Made Ground comprising Fines 70%, Coarse 20% and Wood/ Tree roots 10% MADE GROUND
End of Pit at 1.20m							
1 2 3 4 5							
Remarks		Rapid groundwater ingress at 1.1m bgl. Pit abandoned due to instability caused by rapid water ingress					
Stability							

Trial Pit Log

Project Name:	Woodcroft
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Project No.	GE16943
-------------	---------

Co-ords: 468024.00 - 112109.00
Level: 59.05

Date
15/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions
(m):

210

Scale
1:25

Client: Grainger plc

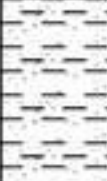
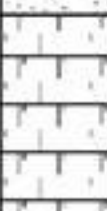
Depth
2.80

0.60

Logged
FG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	ES		0.30	58.75		Grass over soft brown silty sandy CLAY with abundant roots and rootlets TOPSOIL
	0.40	ES					Firm orange/brown slightly sandy CLAY with occasional flint gravel. Sand is fine
	0.80	ES					
					Soft orange/brown very sandy CLAY. Sand is medium		
							
						2.80	56.25
						</	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		TrialPit No TP307 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468040.00 - 112091.00 Level: 58.94	
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 1.90 0.60	
Client: Grainger plc				Depth 2.60	
Scale 1:25		Logged FG			

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.30	ES		0.20	58.74		Grass over soft brown silty sandy CLAY with abundant roots and rootlets TOPSOIL	
				0.70	58.24		Soft orange/brown slightly sandy CLAY with occasional flint gravel. Sand is fine	
	0.80	ES		1.00	57.94		Firm grey and orange/brown mottled CLAY with frequent flint cobbles	1
	1.20	ES		2.10	56.84		Orange and yellow medium SAND	2
				2.60	56.34		White/cream structureless weak, highly weather CHALK in comminuted matrix with frequent sub rounded flint cobbles CIRIA Grade DM/CM	3
End of Pit at 2.60m								4
								5

Remarks							
Stability							



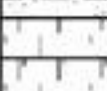
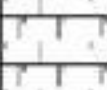
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		TrialPit No TP308 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468023.00 - 112077.00 Level: 58.20	
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 2.00	
Client: Grainger plc				Depth 2.60	
				Scale 1:25 Logged FG	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over soft brown silty sandy CLAY with abundant roots and rootlets TOPSOIL	
	0.30	ES		0.25	57.95		Soft brown very sandy CLAY with occasional flint gravel. Sand is fine	
	0.70	ES		0.80	57.40		Stiff brown/grey gravelly CLAY. Gravel is medium to coarse sub angular to sub rounded of flint	1
				1.70	56.50		White/cream structureless weak, highly weather CHALK in comminuted matrix with frequent sub rounded flint cobbles CIRIA Grade DM/CM	2
				2.60	55.60		End of Pit at 2.60m	3
								4
								5

		Remarks
		Stability

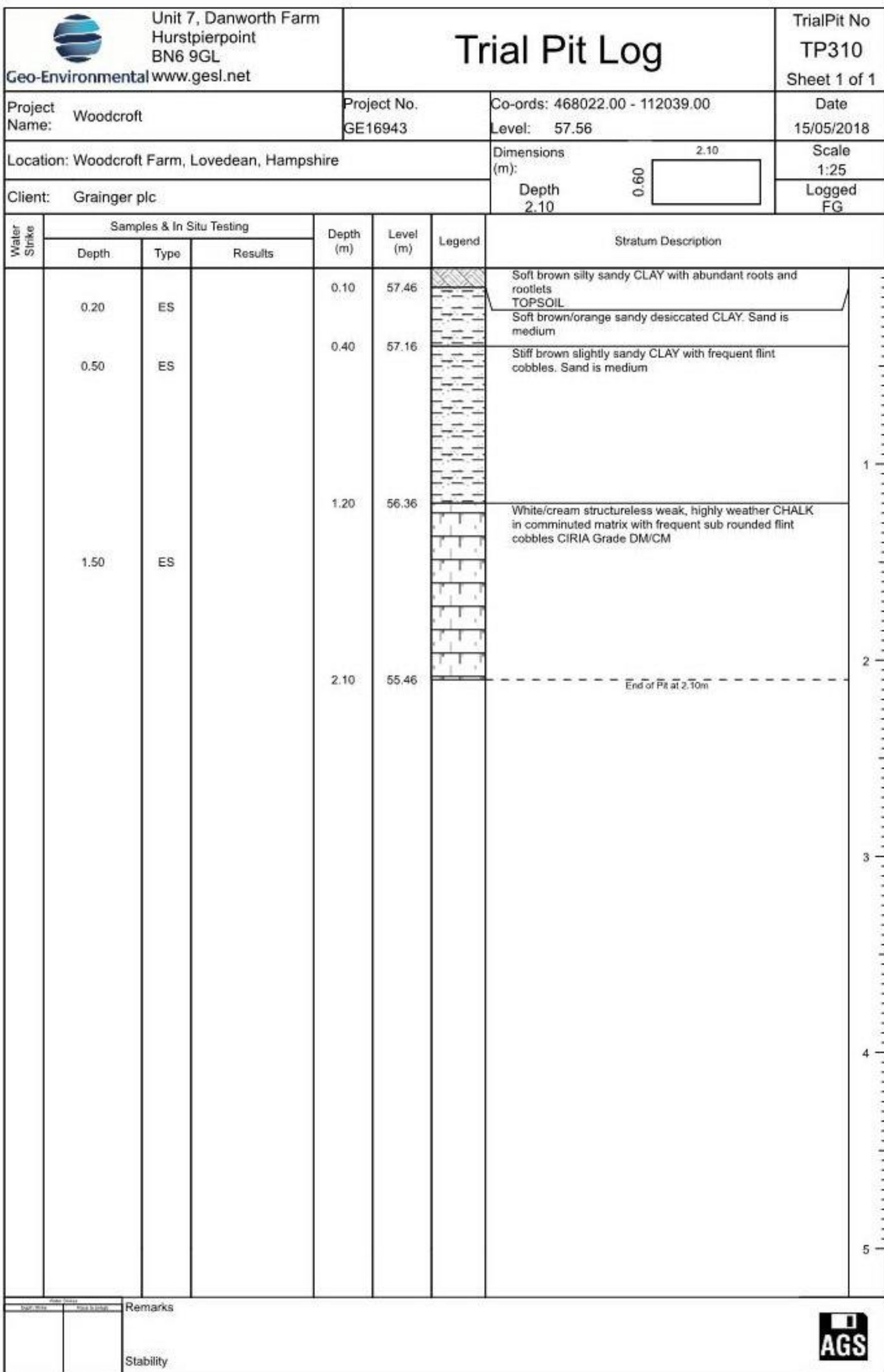


 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP309 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468042.00 - 112072.00 Level: 58.36	
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 	
Client: Grainger plc				Depth 2.10	
Date 15/05/2018		Scale 1:25		Logged FG	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10			0.10	58.26		Soft brown silty sandy CLAY with abundant roots and rootlets
	0.25	ES		0.30	58.06		TOPSOIL
	0.50	ES					Made Ground comprising brown sandy CLAY with flint gravel, flint cobbles and occasional black staining
	0.65	ES					MADE GROUND
							Firm brown/orange slightly sandy CLAY with frequent flint cobbles. (At 0.6-0.7m bgl chalk gravel and chalk fragments. At 0.8m bgl large flint cobbles)
				1.15	57.21		White/cream structureless weak, highly weather CHALK in comminuted matrix with frequent sub rounded flint cobbles
				2.10	56.26		End of Pit at 2.10m

Remarks	
Stability	







Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP311
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16943

Co-ords: 468040.00 - 112038.00
Level: 57.21

Date
15/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions (m):

1.80

Depth
2.00

0.60

Scale
1:25

Logged
FG

Client: Grainger plc

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.10	57.11		Soft brown silty sandy CLAY with abundant roots and rootlets TOPSOIL	
	0.20	ES		0.30	56.91		Firm brown slightly silty sandy CLAY. Sand is fine	
	0.40	ES					Firm brown slightly sandy CLAY with occasional flint gravel. Sand is fine	
	0.80	ES		0.90	56.31		Firm orange/brown slightly sandy, slightly gravelly CLAY with occasional cobbles of flint. Sand is fine and gravel is fine to medium sub angular to sub rounded of flint	1
				1.45	55.76		White/cream structureless weak, highly weather CHALK in comminuted matrix with frequent sub rounded flint cobbles CIRIA Grade DM/CM	
				2.00	55.21		End of Pit at 2.00m	2
								3
								4
								5

Remarks

Stability



Trial Pit Log

TrialPit No
TP312
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16943

Co-ords: 468087.00 - 112016.00
Level: 57.59

Date
17/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions
(m):

210

Scale
1:25

Client: Grainger plc

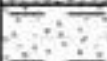
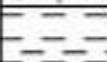
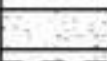
Depth
2.40

0.60

Logged
FG

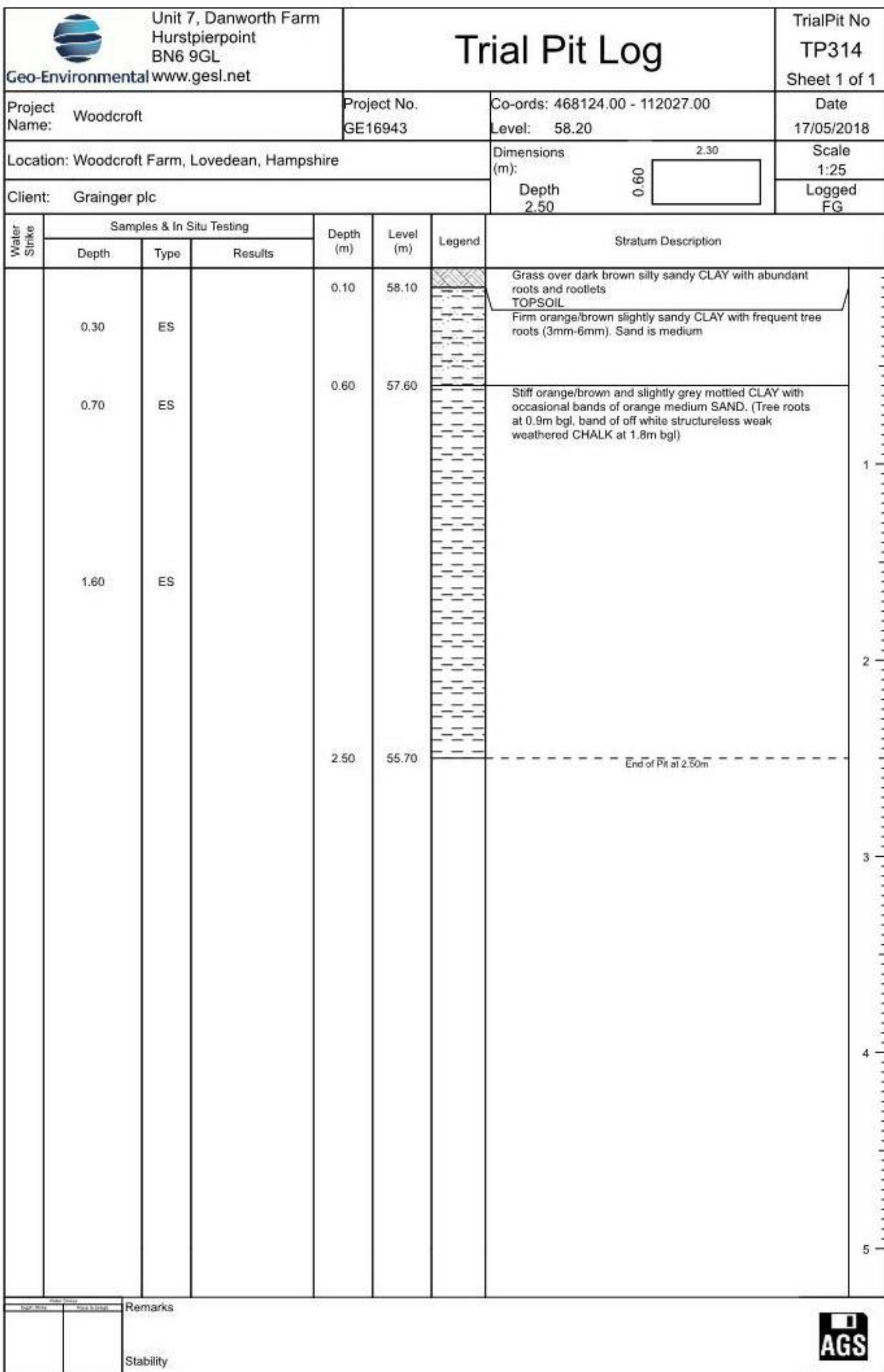
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 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP313 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468113.00 - 112026.00 Level: 58.03	
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 1.80 0.60	
Client: Grainger plc				Depth 2.50	
Scale 1:25		Logged FG			

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10			0.10	57.93		Grass over dark brown silty sandy CLAY with abundant roots and rootlets
	0.25	ES		0.30	57.73		TOPSOIL
	0.50	ES		0.60	57.43		Made Ground comprising white/brown clayey fine to coarse sub angular to sub rounded chalk GRAVEL with large flint cobbles
							MADE GROUND
							Brown very clayey fine to medium sub angular to sub rounded flint GRAVEL
							Firm orange/brown and grey mottled CLAY with occasional bands of orange medium SAND.
	1.55	ES		1.50	56.53		Orange medium SAND
				1.60	56.43		Stiff orange/brown sandy CLAY with occasional flint gravel. Sand is medium
				1.80	56.23		Orange/brown medium SAND with bands of grey firm CLAY
				2.50	55.53	End of Pit at 2.50m	

Remarks	
Stability	





 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP315 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468081.00 - 111991.00 Level: 57.67	
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 2.20 0.60	
Client: Grainger plc				Depth 2.40	
				Scale 1:25	
				Logged FG	

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	ES		0.50	57.17		Loose chippings over brown/grey clayey flint and chalk GRAVEL with tarmac, brick and concrete. Made Ground comprising Fines 30%, Coarse 60%, Brick 5%, Concrete 3% and Tarmac 2% MADE GROUND
	0.60	ES					Made Ground comprising brown and dark grey firm CLAY with brick, concrete, tree roots, flint cobbles and lead pipe. Made Ground comprising Fines 70%, Coarse 20%, Brick 5%, Other 3%, Concrete 2% MADE GROUND
	2.30	ES		2.20	55.47		Firm brown and grey mottled CLAY with occasional bands of orange medium SAND
			2.40	55.27		End of Pit at 2.40m	

Remarks

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP316
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16943

Co-ords: 468111.00 - 111958.00
Level: 59.73

Date
17/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions (m):

2.30

Depth
2.20

0.60

Scale
1:25

Logged
FG

Client: Grainger plc

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	ES					Grass over light brown sandy CLAY with brick, concrete, plastic and glass. Made Ground comprising Fines 40%, Coarse 20%, Brick 20%, Concrete 15% and other 5% MADE GROUND	
	0.90	ES		0.80	58.93		Firm orange/brown and grey mottled slightly sandy desiccated CLAY. Sand is medium	1
	1.90	ES		1.80	57.93		Stiff orange/brown, grey and red mottled CLAY	2
				2.20	57.53		End of Pit at 2.20m	3
								4
								5
Remarks								
Stability								



Trial Pit Log

Project Name:	Woodcroft
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Project No.
GE16943

Co-ords: 468146.00 - 111985.00
Level: 58.97

Date
17/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions
(m):

1.90

Scale
1:25

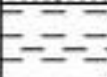
Client: Grainger plc

Depth
2.20

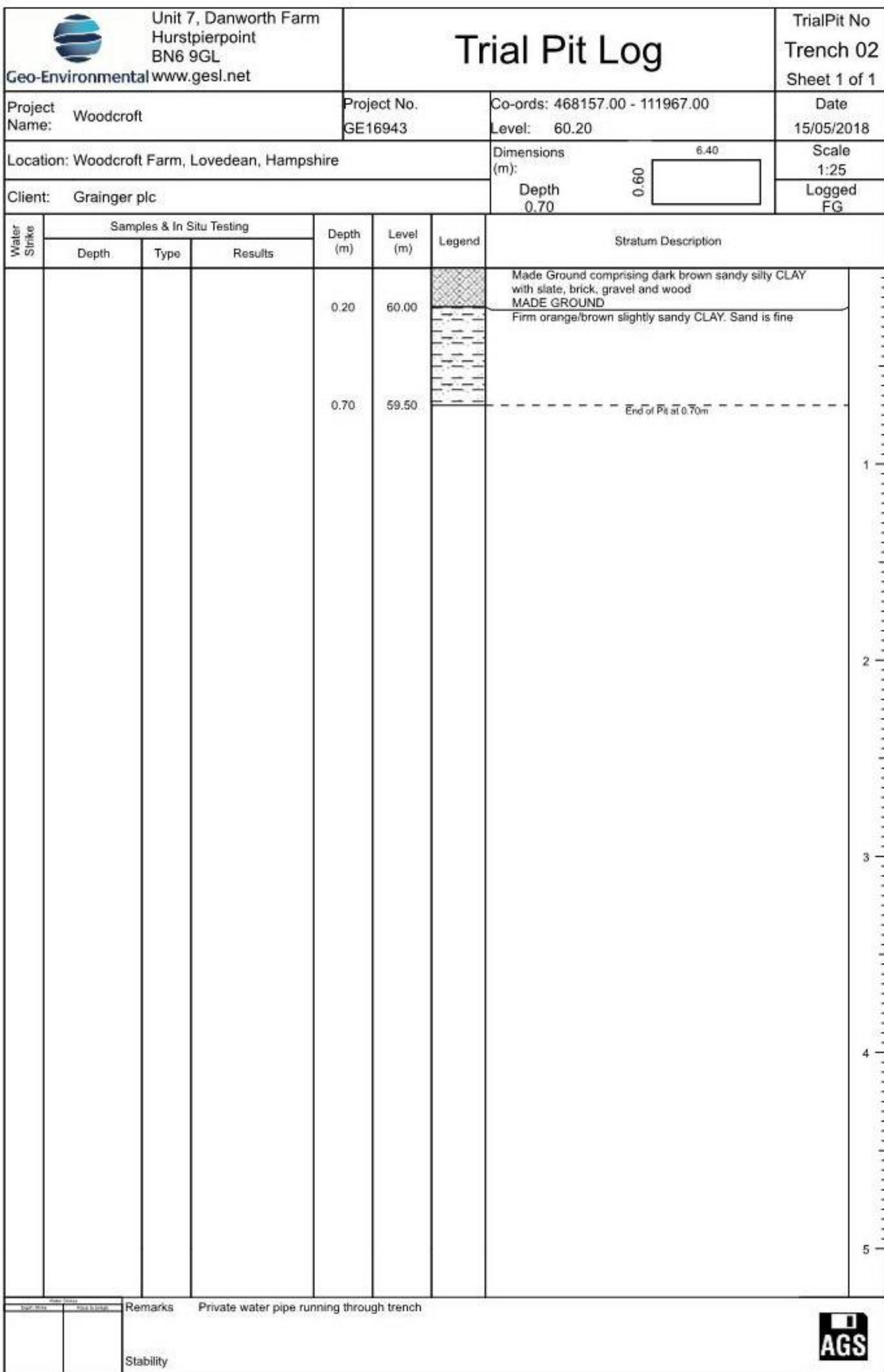
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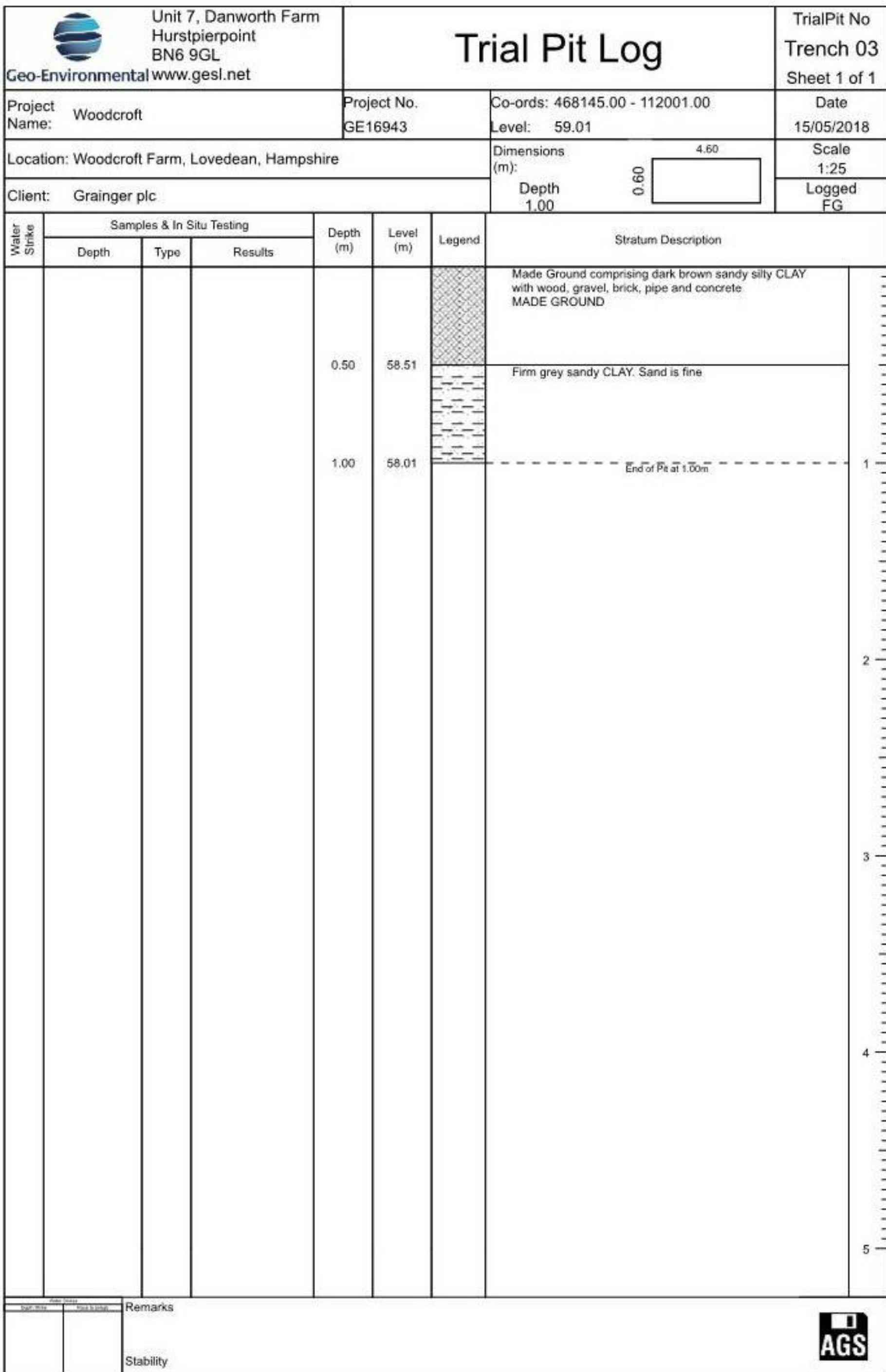
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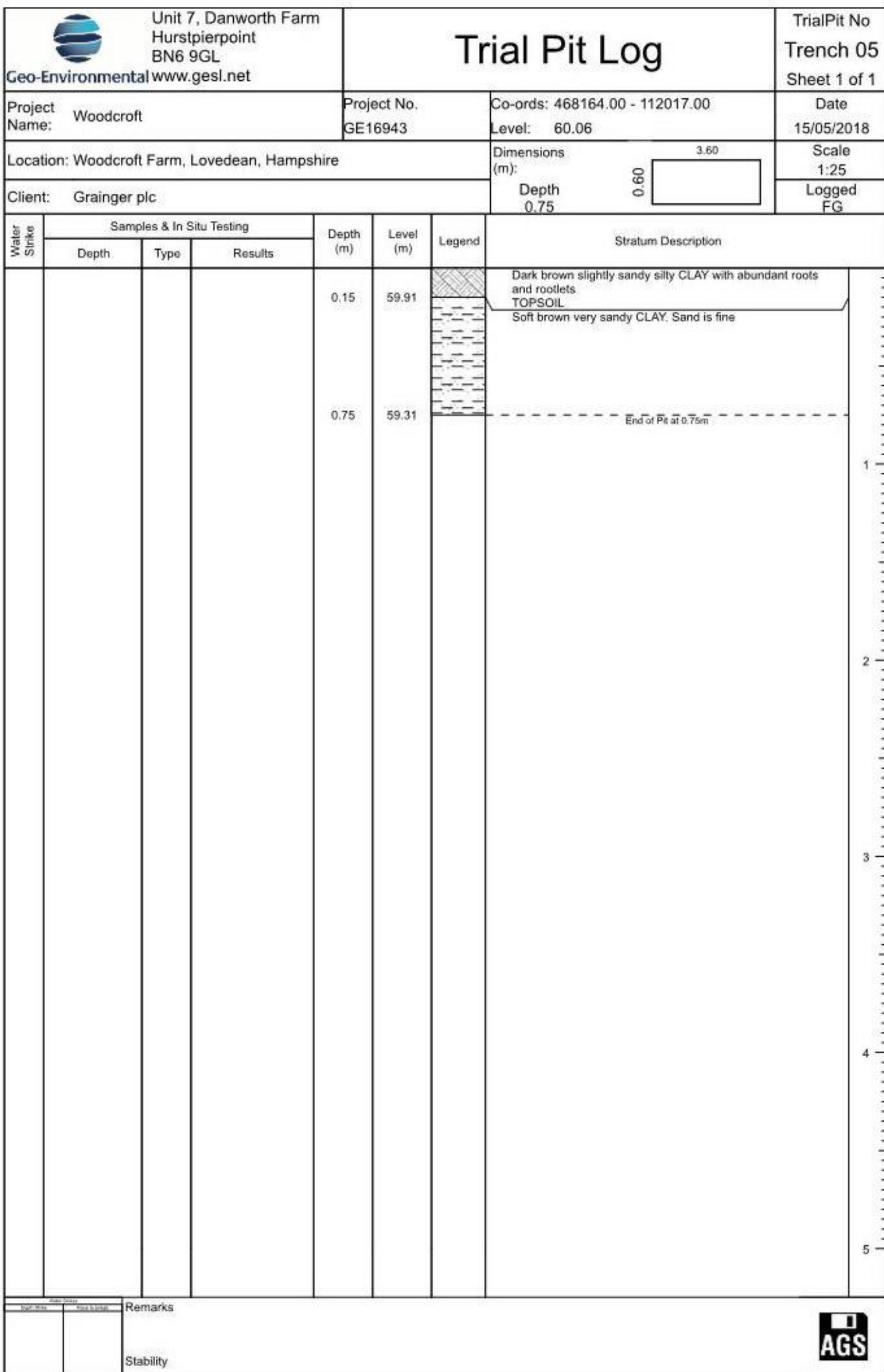
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No TP318 Sheet 1 of 1			
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468116.00 - 111949.00 Level: 59.78			
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 2.40 0.60			
Client: Grainger plc				Depth 1.90 Scale 1:25 Logged FG			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.15	ES		0.15	59.63		Grass over dark brown silty sandy CLAY with abundant roots and rootlets TOPSOIL
	0.70	ES		0.60	59.18		Made Ground comprising dark brown soft very gravelly CLAY with flint and brick. Gravel is fine to coarse of chalk. Made Ground comprising Fines 50%, Coarse 30%, Gravel 15% and Brick 5% MADE GROUND
				0.80	58.98		Firm orange/brown and grey mottled CLAY with frequent flint gravel
	1.80	ES		1.90	57.88		Stiff orange/brown and grey mottled CLAY with occasional flint gravel
End of Pit at 1.90m							1 2 3 4 5
Remarks		Stability					

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No Trench 01 Sheet 1 of 1				
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468158.00 - 111950.00 Level: 60.98				
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 3.40 0.60				
Client: Grainger plc				Depth 1.00 Scale 1:25 Logged FG				
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10	60.88	 Dark brown slightly sandy silty CLAY with abundant roots and rootlets. TOPSOIL  Firm grey and orange mottled slightly sandy CLAY		
				1.00	59.98		End of Pit at 1.00m	1
								2
								3
								4
								5
Photo Taken Depth Measured Time of Day Remarks Stability								





 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log			Trial Pit No Trench 04 Sheet 1 of 1		
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468133.00 - 112020.00 Level: 58.36		Date 15/05/2018	
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 0.60 4.80		Scale 1:25	
Client: Grainger plc				Depth 0.50		Logged FG	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.50	57.86		Firm orange/brown sandy CLAY with occasional flint gravel. Sand is fine ----- End of Pit at 0.50m -----
							1 2 3 4 5
Photo Details Length: Width: Date: Time:			Remarks				
			Stability				





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
Trench 06
Sheet 1 of 1

Project Name: Woodcroft

Project No.
GE16943

Co-ords: 468169.00 - 111997.00
Level: 59.91

Date
15/05/2018

Location: Woodcroft Farm, Lovedean, Hampshire

Dimensions (m):

4.20

Depth
0.70

0.60

Scale
1:25

Logged
FG

Client: Grainger plc

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.15	59.76		Dark brown slightly sandy silty CLAY with abundant roots and rootlets. TOPSOIL	
							Soft light brown sandy CLAY. Sand is fine	
				0.70	59.21		End of Pit at 0.70m	
								1
								2
								3
								4
								5
Remarks								
Stability								



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No Trench 07 Sheet 1 of 1			
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468033.00 - 112020.00 Level: 57.17			
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 0.60 2.80			
Client: Grainger plc				Depth 1.10			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.50	56.67		Grass over Made Ground comprising light brown clayey sandy fine to coarse sub angular to sub rounded chalk and flint GRAVEL with tarmac, flint cobbles, wood, charcoal and glass. Made Ground comprising Fines 30%, Coarse 60%, Tarmac 5%, Wood 3% and Other 2%. Sand is medium MADE GROUND
				1.10	56.07		Firm orange/ brown slightly gravelly desiccated CLAY. Gravel is fine to medium sub angular to sub rounded of flint
End of Pit at 1.10m							
1 2 3 4 5							
Remarks		Stability					

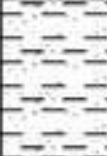
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No Trench 08 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468046.00 - 112019.00 Level: 57.41	
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 0.60 3.80	
Client: Grainger plc				Depth 1.15	
Scale 1:25		Logged FG			

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.70	56.71		Made Ground comprising brown and white clayey sandy fine to coarse sub angular to sub rounded chalk and flint GRAVEL with brick, tile and concrete. Sand is medium. Made Ground comprising Fines 30%, Coarse 63%, Brick 3%, Tile 2% and Concrete 2% MADE GROUND
				1.15	56.26		Soft orange/brown gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of flint (Flint cobbles in base of pit)
End of Pit at 1.15m							

Remarks

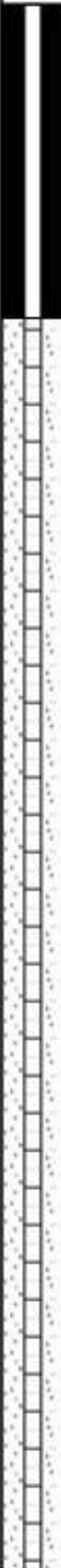
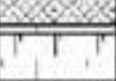
Stability



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No Trench 09 Sheet 1 of 1			
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468068.00 - 112013.00 Level: 57.70			
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 0.60 2.50			
Client: Grainger plc				Depth 1.10			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.70	57.00		Made Ground comprising brown and white clayey sandy fine to coarse sub angular to sub rounded chalk and flint GRAVEL with brick, tarmac and flint cobbles. Sand is medium. Made Ground comprising Fines 30%, Coarse 60%, Brick 5% and Tarmac 5% MADE GROUND
				1.10	56.60		Firm orange/ brown slightly sandy desiccated CLAY. Sand is medium
End of Pit at 1.10m							
1 2 3 4 5							
Remarks							
Stability							

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL Geo-Environmental www.gesl.net		Trial Pit Log		Trial Pit No Trench 10 Sheet 1 of 1			
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468068.00 - 112008.00 Level: 57.60			
Location: Woodcroft Farm, Lovedean, Hampshire				Dimensions (m): 0.60 4.20			
Client: Grainger plc				Depth 1.20			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.50	57.10		Made Ground comprising light brown clayey sandy fine to coarse sub angular to sub rounded flint and chalk GRAVEL with brick, concrete, tree roots, clay pipe. Sand is medium. Made Ground comprising Fines 30% Coarse 60%, Brick 4%, Concrete 4% and Other 2% MADE GROUND
				1.20	56.40		Made Ground comprising dark grey and grey mottled soft CLAY with brick, plastic, roots, wood, chalk fragments, flint gravel and tile. Made Ground comprising Fines 60%, Coarse 20%, Brick 3%, Plastic 2%, Wood/Roots 2%, Other 3% MADE GROUND
End of Pit at 1.20m							
Remarks Stability 							

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log			Borehole No. WS401 Sheet 1 of 2	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468050E - 112012N		Hole Type WLS
Location: Woodcroft Farm, Lovedean, Hampshire				Level: 56.60		Scale 1:25
Client: Grainger plc				Dates: 15/05/2018		Logged By GR

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10	56.50	 Grass over brown slightly fine and medium gravelly clay with rootlets TOPSOIL Brown clay with gravel of flint and red brick MADE GROUND		
		0.60 - 0.80	ES						
					0.90	55.70	 Grey clay with flint gravel ash wood and red brick fragments MADE GROUND	1	
		1.40 - 1.70	ES						
					2.00	54.60	 Grey clay with chalk and flint gravel. Red brick at 3.6-3.7m bgl MADE GROUND	2	
		2.30 - 2.60	ES						
					3.70	52.90	 Brown clay with abundant fine chalk gravel and rare red brick fragments MADE GROUND	4	
					4.80	51.80	 Off white CHALK recovered as silty chalk matrix and fine gravel size weak chalk clasts CIRIA Grade		
					5.00	51.60	Continued on Next Sheet		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						No water encountered





Borehole Log

Borehole No.

WS401

Sheet 2 of 2

Project Name: Woodcroft

Project No.
GE16943

Co-ords: 468050E - 112012N

Hole Type	WLS
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Location: Woodcroft Farm, Lovedean, Hampshire

Level: 56.60

Scale
1:25

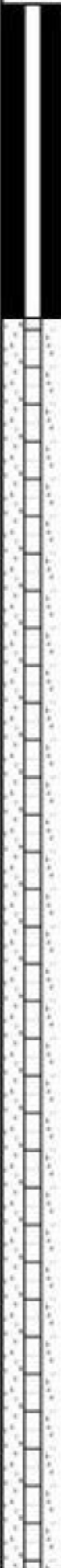
Client: Grainger plc

Dates: 15/05/2018

Logged By
GR

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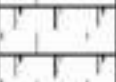
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS402 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468056E - 111983N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean, Hampshire				Level: 56.73		Scale 1:25	
Client: Grainger plc				Dates: 15/05/2018		Logged By GR	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10	56.63	 Grass over brown slightly fine and medium gravelly clay with rootlets TOPSOIL Firm to stiff brown and grey mottled silty clay MADE GROUND	1	
		0.50	ES		0.90	55.83	 Brown and grey clay with some gravel of flint red brick and slate MADE GROUND		
		1.50	ES		1.40	55.33	 Grey clay with pockets of light grey sandy gravel possibly concrete fragments ash charcoal dead roots and wood fragments and abundant concrete fragments at 2.7-2.8m MADE GROUND	2	
		2.50	ES		2.80	53.93	 Brown and grey clay with concrete fragments MADE GROUND		
		3.70 - 4.00	ES		3.70	53.03	 Dark grey to black fibrous material possibly decomposed paper and wood fragments with red brick. Wood at 4.2-4.5m MADE GROUND	4	
					4.50	52.23	 Off white grey and black chalk with ashy or possibly fine organic matter in matrix MADE GROUND		
				5.00	51.73	----- End of Borehole at 5.00m -----		5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						No water encountered



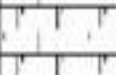
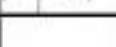
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS403 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468054E - 111977N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean, Hampshire				Level: 56.75		Scale 1:25	
Client: Grainger plc				Dates: 15/05/2018		Logged By GR	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 - 0.50	ES		0.10	56.65	 Grass over brown slightly fine and medium gravelly clay with rootlets TOPSOIL  Brown clay with some fine to medium flint gravel and rare red brick fragments MADE GROUND	1	
		1.50 - 1.60	ES		1.10	55.65	 Grey clay with clinker and red brick fragments and occasional wood fragments MADE GROUND		
		2.40 - 2.60	ES		1.70	55.05	 Brown and grey clay with occasional gravel of flint and chalk and occasional inclusions of possible ash ferruginous fragments and red brick MADE GROUND	2	
					3.90	52.85	 Off white CHALK recovered as structureless mass with some localised orange brown staining CIRIA Grade DM	4	
					5.00	51.75	----- End of Borehole at 5.00m -----	5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						No water encountered



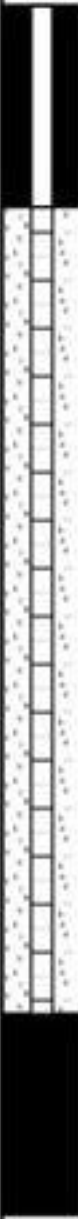
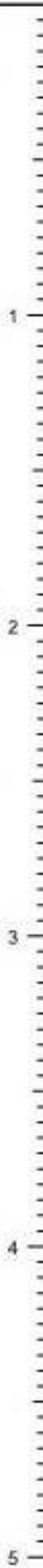
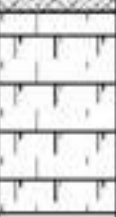
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log			Borehole No. WS404 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468054E - 111963N		Hole Type WLS
Location: Woodcroft Farm, Lovedean, Hampshire				Level: 58.00		Scale 1:25
Client: Grainger plc				Dates: 15/05/2018		Logged By GR

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
1		0.20 - 0.40	ES		0.10	57.90	 Grass over brown slightly fine and medium gravelly clay with rootlets TOPSOIL  Dark grey silty gravelly clay. Gravel of flint and brick MADE GROUND		
					0.60	57.40	 Stiff light grey and orange brown mottled silty CLAY. Becoming very gravelly from 1.7m bgl		
		1.10 - 1.30	ES		1.90	56.10	 White CHALK composed of silt chalk matrix with moderately strong chalk clasts. Unable to penetrate beyond 2.5m bgl CIRIA Grade DM/CM	2	
					2.80	55.20	 End of Borehole at 2.80m	3	
								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						No water encountered

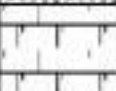
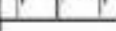


 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS405 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468038E - 111989N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean, Hampshire				Level: 56.56		Scale 1:25	
Client: Grainger plc				Dates: 15/05/2018		Logged By GR	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.20	ES		0.20	56.36		Grass over brown slightly fine and medium gravelly clay with rootlets TOPSOIL	
		0.40 - 0.60	ES					Brown and grey clay with occasional roots flint gravel decomposed plant remains and wood MADE GROUND	
		1.20	ES		1.00	55.56		Grey clay with gravel of flint red brick and concrete MADE GROUND	
					2.50	54.06		off white chalk recovered as structureless mass with some localised orange brown staining and flint CIRIA Grade DM	
					3.00	53.56	End of Borehole at 3.00m		

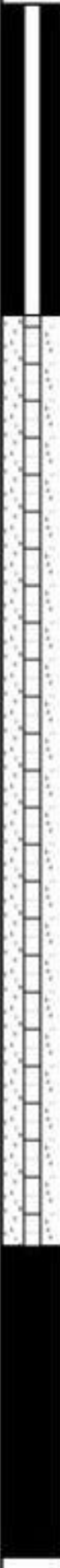
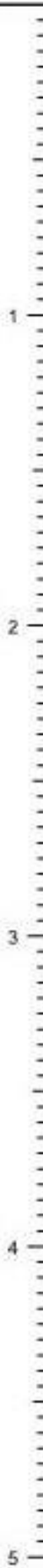
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						No water encountered	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log			Borehole No. WS406 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468060E - 111985N		Hole Type WLS
Location: Woodcroft Farm, Lovedean, Hampshire				Level: 56.79		Scale 1:25
Client: Grainger plc				Dates: 15/05/2018		Logged By GR

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well		0.20 - 0.50	ES		0.10	56.69	 Grass over brown slightly fine and medium gravelly clay with rootlets TOPSOIL Brown and grey mottled silty clay with pockets of sandy gravel of concrete occasional red brick and ash and rare wood MADE GROUND		
		1.60 - 1.90	ES				 Bituminous felt (roofing felt) fragments		
		3.10 - 3.50	ES		3.10	53.69	 Dark grey to black clay with decomposed wood and plant fragments with red brick. MADE GROUND		
					3.70	53.09	 Off white CHALK recovered as structureless mass with some localised orange brown staining CIRIA Grade DM		
					5.00	51.79	 End of Borehole at 5.00m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						No water encountered	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS407 Sheet 1 of 1	
Project Name: Woodcroft		Project No. GE16943		Co-ords: 468073E - 111977N		Hole Type WLS	
Location: Woodcroft Farm, Lovedean, Hampshire				Level: 57.22		Scale 1:25	
Client: Grainger plc				Dates: 15/05/2018		Logged By GR	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10	57.12	 Grass over brown slightly fine and medium gravelly clay with rootlets TOPSOIL Brown clay with some to much gravel of flint and red brick MADE GROUND		
	0.30 - 0.50	ES							
	1.00 - 2.00	ES		1.00	56.22	 Grey silty sand with much ash charcoal and red brick and occasional glass. Poor recovery MADE GROUND	1		
	3.00 - 4.00	ES					2		
								3	
								4	
								5	
					4.00	53.22	 Off white CHALK recovered as structureless silty matrix with weal chalk clasts of fine to medium gravel size CIRIA Grade DM/CM	4	
								5	
					5.00	52.22	----- End of Borehole at 5.00m -----		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						No water encountered





APPENDIX B

Geochemical Laboratory Results and Statistical Assessment



THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 17-13705

Issue: 1

Date of Issue: 31/08/2017

Contact: Fiona Goode

Customer Details: GESL
Unit 7
Danworth Farm
Hurstpierpoint
West Sussex BN6 9GL

Quotation No: Q14-00021

Order No: 2253

Customer Reference: GE16662

Date Received: 24/08/2017

Date Approved: 31/08/2017

Details: Woodcroft

Approved by:

John Wilson, Operations M

Sample Summary

Report No.: 17-13705

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
109920	TP201 0.10	23/08/2017	24/08/2017		
109921	TP201 0.50	23/08/2017	24/08/2017		
109922	TP202 0.10	23/08/2017	24/08/2017	Silty loam	
109923	TP202 0.50	23/08/2017	24/08/2017		
109924	TP203 0.10	23/08/2017	24/08/2017		
109925	TP203 0.50	23/08/2017	24/08/2017	Silty clayey loam	
109926	TP204 0.10	22/08/2017	24/08/2017		
109927	TP204 0.50	22/08/2017	24/08/2017	Silty clayey loam	
109928	TP205 0.10	23/08/2017	24/08/2017		
109929	TP205 0.50	23/08/2017	24/08/2017	Clayey loam	
109930	TP206 0.10	23/08/2017	24/08/2017	Silty loam	
109931	TP206 0.50	23/08/2017	24/08/2017		
109932	TP207 0.30	21/08/2017	24/08/2017	Silty clayey loam	
109933	TP208 0.10	21/08/2017	24/08/2017		
109934	TP209 0.10	21/08/2017	24/08/2017		
109935	TP210 0.10	21/08/2017	24/08/2017		
109936	TP211 0.10	22/08/2017	24/08/2017		
109937	TP212 0.20	21/08/2017	24/08/2017		
109938	TP213 1.00	21/08/2017	24/08/2017	Silty loam	
109939	TP214 0.90	21/08/2017	24/08/2017	Silty loam	
109940	TP215 0.30	22/08/2017	24/08/2017	Sandy silty loam	
109941	TP215 2.90	23/08/2017	24/08/2017	Chalk	
109942	TP216 0.60	21/08/2017	24/08/2017		
109943	TP217 0.20	21/08/2017	24/08/2017	Silty clayey loam	
109944	TP218 0.15	21/08/2017	24/08/2017		
109945	TP219 1.00	21/08/2017	24/08/2017		
109946	TP220 0.20	22/08/2017	24/08/2017	Sandy silty loam	
109947	TP220 1.00	22/08/2017	24/08/2017	Silty clayey loam	
109948	TP221 0.10	22/08/2017	24/08/2017	Silty loam	
109949	TP221 0.50	22/08/2017	24/08/2017		
109950	TP222 0.40	21/08/2017	24/08/2017	Silty clayey loam	
109951	TP223 0.40	22/08/2017	24/08/2017	Clayey loam	
109952	TP223 0.50	22/08/2017	24/08/2017	Clayey loam	
109953	TP224 0.20	22/08/2017	24/08/2017	Sandy silty loam + Chalk	
109954	TP224 2.20	22/08/2017	24/08/2017	Silty loam	
109955	TP225 0.25	23/08/2017	24/08/2017	Sandy silty loam	
109956	TP225 0.30	23/08/2017	24/08/2017	Sandy loam	
109957	TP226 0.10	21/08/2017	24/08/2017	Silty loam	c
109958	TP227 0.10	21/08/2017	24/08/2017		
109959	TP228 0.15	22/08/2017	24/08/2017	Silty loam	
109960	TP229 0.60	21/08/2017	24/08/2017	Loamy sand	
109961	TP230 0.30	21/08/2017	24/08/2017		
109962	TP231 0.40	21/08/2017	24/08/2017	Sandy silty loam	
109963	TP232 0.10	21/08/2017	24/08/2017	Silty loam	
109964	TP233 0.40	21/08/2017	24/08/2017	Silty clayey loam	
109965	TP234 0.30	21/08/2017	24/08/2017	Silty loam	
109966	TP235 0.50	22/08/2017	24/08/2017	Loamy sand	
109967	TP236 0.30	21/08/2017	24/08/2017	Loamy sand	
109968	TP237 0.40	21/08/2017	24/08/2017	Silty loam	
109969	TP238 0.80	21/08/2017	24/08/2017		
109970	TP239 0.20	23/08/2017	24/08/2017	Sandy loam	
109971	TP239 0.50	23/08/2017	24/08/2017		
109972	TP239 1.50	23/08/2017	24/08/2017	Loamy sand	
109973	TP224 0.30	22/08/2017	24/08/2017		

Results Summary

Report No.: 17-13705

ELAB Reference	109922	109925	109927	109929	109930	109932
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP202	TP203	TP204	TP205	TP206	TP207
Sample Depth (m)	0.10	0.50	0.50	0.50	0.10	0.30
Sampling Date	23/08/2017	23/08/2017	22/08/2017	23/08/2017	23/08/2017	21/08/2017

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	9.5	11.1	9.9	12.1	4.5	11.8
Barium	U	mg/kg	10	34.6	48.8	45.9	17.2	16.7	30.1
Beryllium	U	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	34.7	60.8	53.7	30.9	12.4	38.0
Copper	M	mg/kg	5	20.3	29.5	23.9	14.6	8.0	20.3
Lead	M	mg/kg	5	21.0	24.3	18.8	27.0	11.5	15.3
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	18.3	21.5	22.0	8.9	5.4	9.2
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	33.5	86.7	77.1	69.9	23.4	54.1
Zinc	M	mg/kg	5	41.1	52.1	58.4	28.8	17.6	27.1
Anions									
Water Soluble Chloride	M	mg/kg	40	48	54	45	53	< 40	70
Water Soluble Sulphate	M	g/l	0.02	0.06	0.05	0.04	0.04	0.03	0.05
Inorganics									
Elemental Sulphur	N	mg/kg	20	< 20	< 20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.07	0.11	0.04	0.07	0.04	0.05
Water Soluble Boron	N	mg/kg	0.5	0.8	0.5	< 0.5	0.8	< 0.5	< 0.5
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	n/t	n/t	n/t	n/t
pH	M	pH units	0.1	7.7	7.4	7.5	5.7	5.7	7.6
Total Organic Carbon	N	%	0.01	0.50	0.54	0.23	0.19	0.36	0.19
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	0.9	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	1.1	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Total PAH (Including Coronene)	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109922	109925	109927	109929	109930	109932
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP202	TP203	TP204	TP205	TP206	TP207
Sample Depth (m)	0.10	0.50	0.50	0.50	0.10	0.30
Sampling Date	23/08/2017	23/08/2017	22/08/2017	23/08/2017	23/08/2017	21/08/2017

Determinand	Codes	Units	LOD						
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	35.9	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	40.3	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	312	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	M	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	3.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	9.0	< 1.0	3.2	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	14.4	< 1.0	5.3	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	3.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	35.5	< 1.0	8.5	< 1.0	< 1.0	< 1.0
Total Petroleum Hydrocarbons									
Mineral Oil	U	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)									
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109938	109939	109940	109941	109943	109946
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP213	TP214	TP215	TP215	TP217	TP220
Sample Depth (m)	1.00	0.90	0.30	2.90	0.20	0.20
Sampling Date	21/08/2017	21/08/2017	22/08/2017	23/08/2017	21/08/2017	22/08/2017

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	9.0	13.8	10.4	^ 4.7	32.6	25.7
Barium	U	mg/kg	10	61.4	72.5	162	11.5	86.2	373
Beryllium	U	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	2.5	3.0
Cadmium	M	mg/kg	0.5	0.5	< 0.5	0.8	^ 0.6	< 0.5	1.1
Chromium	M	mg/kg	5	18.4	36.4	26.0	^ 8.6	63.2	36.9
Copper	M	mg/kg	5	14.7	20.4	22.0	^ 6.9	37.4	93.0
Lead	M	mg/kg	5	62.6	56.0	44.4	^ < 5.0	24.3	170
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	^ < 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	16.7	19.4	18.0	^ 11.8	19.1	56.2
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	^ < 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	27.7	59.1	32.2	^ 7.8	117	133
Zinc	M	mg/kg	5	72.7	101	121	^ 15.9	30.3	335
Anions									
Water Soluble Chloride	M	mg/kg	40	< 40	50	55	^ < 40	53	< 40
Water Soluble Sulphate	M	g/l	0.02	0.03	0.30	0.16	^ 0.04	0.05	0.03
Inorganics									
Elemental Sulphur	N	mg/kg	20	< 20	1050	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	8	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	^ < 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.07	0.13	0.11	0.04	0.06	0.08
Water Soluble Boron	N	mg/kg	0.5	0.6	1.7	0.6	< 0.5	< 0.5	1.0
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	n/t	n/t	n/t	n/t
pH	M	pH units	0.1	8.4	8.0	10.0	^ 8.8	8.2	8.2
Total Organic Carbon	N	%	0.01	0.49	0.92	0.47	0.02	0.32	4.9
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	^ < 0.1	< 0.1	0.2
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	^ < 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	0.3	^ < 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	0.3	^ < 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	0.4	0.2	2.4	^ < 0.1	< 0.1	0.3
Anthracene	M	mg/kg	0.1	0.1	< 0.1	0.9	^ < 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	1.3	0.6	5.9	^ < 0.1	< 0.1	0.7
Pyrene	M	mg/kg	0.1	1.3	0.6	5.1	^ 0.1	< 0.1	0.8
Benzo(a)anthracene	M	mg/kg	0.1	0.8	0.3	2.9	^ < 0.1	< 0.1	0.4
Chrysene	M	mg/kg	0.1	0.8	0.4	3.0	^ < 0.1	< 0.1	0.5
Benzo (b) fluoranthene	M	mg/kg	0.1	1.1	< 0.1	3.0	^ < 0.1	< 0.1	0.6
Benzo(k)fluoranthene	M	mg/kg	0.1	1.0	< 0.1	2.9	^ < 0.1	< 0.1	0.6
Benzo (a) pyrene	M	mg/kg	0.1	1.0	0.4	3.1	^ 0.2	< 0.1	0.5
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	0.9	0.2	2.2	^ < 0.1	< 0.1	0.4
Dibenzo(a,h)anthracene	M	mg/kg	0.1	0.5	0.2	0.6	^ < 0.1	< 0.1	0.2
Benzo[g,h,i]perylene	M	mg/kg	0.1	0.9	0.3	2.1	^ < 0.1	< 0.1	0.5
Total PAH(16)	M	mg/kg	0.4	10.4	3.2	34.6	^ < 0.4	< 0.4	5.8
Total PAH (Including Coronene)	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

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ELAB Reference	109938	109939	109940	109941	109943	109946
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP213	TP214	TP215	TP215	TP217	TP220
Sample Depth (m)	1.00	0.90	0.30	2.90	0.20	0.20
Sampling Date	21/08/2017	21/08/2017	22/08/2017	23/08/2017	21/08/2017	22/08/2017

Determinand	Codes	Units	LOD						
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	^ < 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	^ < 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	^ < 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	^ < 10.0	< 10.0	< 10.0
Total BTEX	M	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	2.9	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	14.4	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	2.1	< 1.0	18.8	9.2	< 1.0	3.3
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	3.5	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	6.9	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	7.1	< 1.0	28.2	10.9	< 1.0	7.2
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	14.6	< 1.0	< 1.0	1.8
Total (>C5-C40) Ali/Aro	N	mg/kg	1	9.3	< 1.0	65.1	44.4	< 1.0	12.3
Total Petroleum Hydrocarbons									
Mineral Oil	U	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)									
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109947	109948	109950	109951	109952	109953
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP220	TP221	TP222	TP223	TP223	TP224
Sample Depth (m)	1.00	0.10	0.40	0.40	0.50	0.20
Sampling Date	22/08/2017	22/08/2017	21/08/2017	22/08/2017	22/08/2017	22/08/2017

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	11.0	8.6	12.1	9.5	n/t	^ 7.8
Barium	U	mg/kg	10	99.6	42.6	45.7	30.9	n/t	65.4
Beryllium	U	mg/kg	1	1.2	< 1.0	< 1.0	1.0	n/t	< 1.0
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	n/t	^ 0.5
Chromium	M	mg/kg	5	39.5	24.2	42.3	33.0	n/t	^ 19.5
Copper	M	mg/kg	5	21.6	26.3	20.6	19.7	n/t	^ 16.4
Lead	M	mg/kg	5	20.1	26.5	16.9	18.1	n/t	^ 37.9
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	n/t	^ < 0.5
Nickel	M	mg/kg	5	20.6	15.2	17.4	20.4	n/t	^ 16.4
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	^ < 1.0
Vanadium	M	mg/kg	5	74.6	37.3	62.6	41.2	n/t	^ 27.3
Zinc	M	mg/kg	5	39.7	53.8	43.6	41.0	n/t	^ 51.1
Anions									
Water Soluble Chloride	M	mg/kg	40	48	41	49	92	n/t	^ 167
Water Soluble Sulphate	M	g/l	0.02	0.08	0.04	0.04	0.06	n/t	^ 0.09
Inorganics									
Elemental Sulphur	N	mg/kg	20	< 20	< 20	< 20	< 20	n/t	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	n/t	< 0.8
Total Sulphide	N	mg/kg	2	4	< 2	< 2	< 2	n/t	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	^ < 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.07	0.06	0.05	0.06	n/t	0.07
Water Soluble Boron	N	mg/kg	0.5	< 0.5	0.5	< 0.5	0.5	n/t	< 0.5
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	n/t	n/t	< 0.1	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	n/t	n/t	2.82	n/t
pH	M	pH units	0.1	7.3	7.7	7.5	8.3	7.7	^ 8.3
Total Organic Carbon	N	%	0.01	0.29	0.69	0.19	0.15	0.18	0.10
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	n/t	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ < 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ < 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ < 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ < 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ 0.5
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	0.1	< 0.1	< 0.1	n/t	^ 1.0
Pyrene	M	mg/kg	0.1	< 0.1	0.1	< 0.1	< 0.1	n/t	^ 0.9
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ 0.6
Chrysene	M	mg/kg	0.1	< 0.1	0.1	< 0.1	< 0.1	n/t	^ 0.7
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ 0.6
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	0.1	< 0.1	< 0.1	n/t	^ 0.6
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	0.2	< 0.1	n/t	^ 0.6
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	0.2	< 0.1	n/t	^ 0.6
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	0.3	< 0.1	n/t	^ 0.2
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	n/t	^ 0.5
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	0.9	< 0.4	n/t	^ 7.0
Total PAH (Including Coronene)	N	mg/kg	2	n/t	n/t	n/t	n/t	< 2	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109947	109948	109950	109951	109952	109953
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP220	TP221	TP222	TP223	TP223	TP224
Sample Depth (m)	1.00	0.10	0.40	0.40	0.50	0.20
Sampling Date	22/08/2017	22/08/2017	21/08/2017	22/08/2017	22/08/2017	22/08/2017

Determinand	Codes	Units	LOD						
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	n/t	^ < 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	n/t	^ < 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	n/t	^ < 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	n/t	^ < 10.0
Total BTEX	M	mg/kg	0.01	n/t	n/t	n/t	n/t	< 0.01	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	n/t	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	n/t	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	11.3
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	5.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	n/t	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	n/t	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	1.5
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	41.2
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	28.5
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	n/t	87.5
Total Petroleum Hydrocarbons									
Mineral Oil	U	mg/kg	5	n/t	n/t	n/t	n/t	< 5	n/t
PCB (ICES 7 congeners)									
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	n/t	n/t	< 0.03	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109954	109955	109956	109957	109959	109960
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP224	TP225	TP225	TP226	TP228	TP229
Sample Depth (m)	2.20	0.25	0.30	0.10	0.15	0.60
Sampling Date	22/08/2017	23/08/2017	23/08/2017	21/08/2017	22/08/2017	21/08/2017

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	6.6	13.2	n/t	11.5	10.4	38.2
Barium	U	mg/kg	10	63.4	124	n/t	46.0	40.0	51.2
Beryllium	U	mg/kg	1	1.1	< 1.0	n/t	< 1.0	< 1.0	1.8
Cadmium	M	mg/kg	0.5	< 0.5	0.5	n/t	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	28.9	52.8	n/t	21.7	19.5	37.3
Copper	M	mg/kg	5	18.4	59.3	n/t	16.1	12.2	23.7
Lead	M	mg/kg	5	18.5	82.9	n/t	25.9	23.7	18.9
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	n/t	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	30.5	43.4	n/t	24.5	19.1	52.0
Selenium	M	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	1.1
Vanadium	M	mg/kg	5	41.5	32.9	n/t	33.8	33.8	61.2
Zinc	M	mg/kg	5	64.4	230	n/t	64.7	50.3	98.9
Anions									
Water Soluble Chloride	M	mg/kg	40	56	140	n/t	65	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	0.04	0.35	n/t	0.11	0.04	0.03
Inorganics									
Elemental Sulphur	N	mg/kg	20	< 20	< 20	n/t	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	n/t	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	n/t	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	1.0	1.1	n/t	2.4	1.1	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.05	0.77	n/t	0.12	0.07	0.05
Water Soluble Boron	N	mg/kg	0.5	< 0.5	0.7	n/t	0.6	0.7	< 0.5
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	0.2	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	2.63	n/t	n/t	n/t
pH	M	pH units	0.1	7.7	11.1	11.4	9.2	7.4	7.2
Total Organic Carbon	N	%	0.01	0.33	0.41	0.40	1.1	0.69	0.10
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	n/t	c < 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	c < 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	c < 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	c < 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	c < 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	0.4	n/t	c < 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	0.1	n/t	c < 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	0.2	1.2	n/t	c 0.3	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	1.1	n/t	c 0.3	0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	0.8	n/t	c 0.2	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	0.9	n/t	c 0.2	< 0.1	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	0.9	n/t	c 0.3	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	1.0	n/t	c 0.5	< 0.1	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	1.0	n/t	c 0.3	< 0.1	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	0.8	n/t	c 0.3	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	0.3	n/t	c 0.3	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	0.8	n/t	c 0.2	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	9.4	n/t	c 3.0	< 0.4	< 0.4
Total PAH (Including Coronene)	N	mg/kg	2	n/t	n/t	25	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109954	109955	109956	109957	109959	109960
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP224	TP225	TP225	TP226	TP228	TP229
Sample Depth (m)	2.20	0.25	0.30	0.10	0.15	0.60
Sampling Date	22/08/2017	23/08/2017	23/08/2017	21/08/2017	22/08/2017	21/08/2017

Determinand	Codes	Units	LOD						
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	n/t	c < 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	n/t	c < 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	n/t	c < 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	n/t	c < 10.0	< 10.0	< 10.0
Total BTEX	M	mg/kg	0.01	n/t	n/t	< 0.01	n/t	n/t	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	n/t	c < 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	n/t	c < 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	6.4	n/t	c < 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	n/t	c < 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	n/t	c < 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	c < 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	12.3	n/t	c 3.4	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	4.2	n/t	c 1.4	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	22.9	n/t	c 4.9	< 1.0	< 1.0
Total Petroleum Hydrocarbons									
Mineral Oil	U	mg/kg	5	n/t	n/t	11	n/t	n/t	n/t
PCB (ICES 7 congeners)									
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	< 0.03	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109962	109963	109964	109965	109966	109967
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP231	TP232	TP233	TP234	TP235	TP236
Sample Depth (m)	0.40	0.10	0.40	0.30	0.50	0.30
Sampling Date	21/08/2017	21/08/2017	21/08/2017	21/08/2017	22/08/2017	21/08/2017

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	33.1	5.6	n/t	6.9	14.7	30.4
Barium	U	mg/kg	10	31.8	27.5	n/t	30.8	18.9	38.8
Beryllium	U	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	1.5
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	n/t	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	31.6	17.6	n/t	21.3	13.2	41.5
Copper	M	mg/kg	5	17.8	12.8	n/t	12.5	8.9	22.0
Lead	M	mg/kg	5	14.6	17.3	n/t	26.3	12.9	19.6
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	n/t	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	18.9	14.3	n/t	8.2	7.2	30.2
Selenium	M	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	63.1	26.9	n/t	33.7	27.5	84.2
Zinc	M	mg/kg	5	38.5	38.3	n/t	37.5	25.8	71.7
Anions									
Water Soluble Chloride	M	mg/kg	40	42	< 40	n/t	41	44	< 40
Water Soluble Sulphate	M	g/l	0.02	0.03	0.03	n/t	0.03	0.03	< 0.02
Inorganics									
Elemental Sulphur	N	mg/kg	20	< 20	< 20	n/t	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	n/t	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	n/t	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	1.1	1.3	n/t	1.6	1.8	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.06	0.08	n/t	0.07	0.05	0.07
Water Soluble Boron	N	mg/kg	0.5	< 0.5	0.6	n/t	1.0	< 0.5	< 0.5
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	1.81	n/t	n/t	n/t
pH	M	pH units	0.1	6.2	6.6	6.7	6.2	5.9	5.3
Total Organic Carbon	N	%	0.01	0.30	1.4	0.15	1.4	0.14	0.10
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	n/t	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	< 0.1	< 0.1	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	0.3	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	n/t	0.2	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	n/t	0.7	< 0.4	< 0.4
Total PAH (Including Coronene)	N	mg/kg	2	n/t	n/t	< 2	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109962	109963	109964	109965	109966	109967
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP231	TP232	TP233	TP234	TP235	TP236
Sample Depth (m)	0.40	0.10	0.40	0.30	0.50	0.30
Sampling Date	21/08/2017	21/08/2017	21/08/2017	21/08/2017	22/08/2017	21/08/2017

Determinand	Codes	Units	LOD						
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	n/t	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	n/t	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	n/t	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	n/t	< 10.0	< 10.0	< 10.0
Total BTEX	M	mg/kg	0.01	n/t	n/t	< 0.01	n/t	n/t	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	n/t	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	n/t	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	n/t	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	n/t	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	n/t	< 1.0	< 1.0	< 1.0
Total Petroleum Hydrocarbons									
Mineral Oil	U	mg/kg	5	n/t	n/t	< 5	n/t	n/t	n/t
PCB (ICES 7 congeners)									
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	< 0.03	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109968	109970	109972
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	TP237	TP239	TP239
Sample Depth (m)	0.40	0.20	1.50
Sampling Date	21/08/2017	23/08/2017	23/08/2017

Determinand	Codes	Units	LOD			
Metals						
Arsenic	M	mg/kg	1	14.1	4.5	17.5
Barium	U	mg/kg	10	81.7	33.9	42.2
Beryllium	U	mg/kg	1	1.4	< 1.0	1.3
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	40.8	17.4	32.7
Copper	M	mg/kg	5	21.1	13.1	15.9
Lead	M	mg/kg	5	16.2	13.4	20.1
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	28.8	11.3	21.3
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	58.3	18.4	90.2
Zinc	M	mg/kg	5	62.9	31.0	43.6
Anions						
Water Soluble Chloride	M	mg/kg	40	54	126	107
Water Soluble Sulphate	M	g/l	0.02	0.03	0.10	0.04
Inorganics						
Elemental Sulphur	N	mg/kg	20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.04	0.04	0.10
Water Soluble Boron	N	mg/kg	0.5	< 0.5	0.5	< 0.5
Miscellaneous						
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	n/t
pH	M	pH units	0.1	6.6	8.8	7.9
Total Organic Carbon	N	%	0.01	0.16	0.21	0.09
Phenols						
Total Phenols	N	mg/kg	6	< 6	< 6	< 6
Polyaromatic hydrocarbons						
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	0.5	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	0.6	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	0.5	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	0.5	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	0.5	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	0.7	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	0.5	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	0.6	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	0.3	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	0.4	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	5.2	< 0.4
Total PAH (Including Coronene)	N	mg/kg	2	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

ELAB Reference	109968	109970	109972
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	TP237	TP239	TP239
Sample Depth (m)	0.40	0.20	1.50
Sampling Date	21/08/2017	23/08/2017	23/08/2017

Determinand	Codes	Units	LOD			
BTEX						
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Total BTEX	M	mg/kg	0.01	n/t	n/t	n/t
TPH CWG						
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	4.6	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	4.6	< 1.0
Total Petroleum Hydrocarbons						
Mineral Oil	U	mg/kg	5	n/t	n/t	n/t
PCB (ICES 7 congeners)						
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	n/t	n/t

Results Summary

Report No.: 17-13705

WAC Analysis

Elab Ref:	109964					Landfill Waste Acceptance Criteria Limits		
Sample Date:	21/08/2017					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	TP233							
Depth (m)	0.4							
Site:	Woodcroft							
Determinand		Code	Units					
Total Organic Carbon		N	%		0.15	3	5	6
Loss on Ignition		M	%		1.8	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			6.7	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate

Eluate Analysis

			10:1		10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
			mg/l		mg/kg			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	5		45.70	1000	20000	50000
Total Dissolved Solids		N	< 10		< 100	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	9.780		98.00	500	800	1000

Leach Test Information

pH		N	5.7					
Conductivity (uS/cm)		N	28					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			83					
Moisture (%)			21					
Eluent Volume (ml)			952					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ELAB cannot be held responsible for any discrepancies with current legislation

Results Summary

Report No.: 17-13705

WAC Analysis

Elab Ref:	109956					Landfill Waste Acceptance Criteria Limits		
Sample Date:	23/08/2017					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	TP225							
Depth (m)	0.3							
Site:	Woodcroft							
Determinand		Code	Units					
Total Organic Carbon		N	%		0.40	3	5	6
Loss on Ignition		M	%		2.6	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		11	500	--	--
Total (of 17) PAHs		N	mg/kg		25.0	100	--	--
pH		M			11.4	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		0.2	--	To evaluate	To evaluate

Eluate Analysis

			10:1		10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
			mg/l		mg/kg			
Arsenic		N	0.009		0.09	0.5	2	25
Barium		N	0.010		0.10	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.016		0.16	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.003		< 0.05	0.4	10	40
Lead		N	0.007		0.07	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.016		0.16	4	50	200
Chloride		N	7		67.00	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	12		120.00	1000	20000	50000
Total Dissolved Solids		N	< 10		< 100	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	12.300		123.00	500	800	1000

Leach Test Information

pH		N	8.3					
Conductivity (uS/cm)		N	154					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			81					
Moisture (%)			24					
Eluent Volume (ml)			953					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ELAB cannot be held responsible for any discrepancies with current legislation

Results Summary

Report No.: 17-13705

WAC Analysis

Elab Ref:	109952					Landfill Waste Acceptance Criteria Limits		
Sample Date:	22/08/2017					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	TP223							
Depth (m)	0.5							
Site:	Woodcroft							
Determinand		Code	Units					
Total Organic Carbon		N	%		0.18	3	5	6
Loss on Ignition		M	%		2.8	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			7.7	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate

Eluate Analysis

			10:1		10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
			mg/l		mg/kg			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.011		0.11	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.003		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	6		65.00	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	6		58.00	1000	20000	50000
Total Dissolved Solids		N	< 10		< 100	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	54.400		544.00	500	800	1000

Leach Test Information

pH		N	7.7					
Conductivity (uS/cm)		N	117					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			79					
Moisture (%)			27					
Eluent Volume (ml)			931					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ELAB cannot be held responsible for any discrepancies with current legislation

Results Summary

Report No.: 17-13705

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
109922	0.10	TP202	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
109925	0.50	TP203	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
109927	0.50	TP204	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
109929	0.50	TP205	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
109930	0.10	TP206	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
109932	0.30	TP207	Clay, stones	No asbestos detected	n/t	n/t	n/t	n/t
109938	1.00	TP213	Brown sandy soil, stones, concrete, brick, clinker	Chrysotile Crocidolite (asbestos cement)	2.66	Asbestos cement (2.663%)	< 0.001	2.66
109939	0.90	TP214	Brown sandy soil, stones, brick, clinker, wood	No asbestos detected	n/t	n/t	n/t	n/t
109940	0.30	TP215	Brown sandy soil, stones, concrete, brick, clinker	No asbestos detected	n/t	n/t	n/t	n/t
109941	2.90	TP215	Chalk, stones	No asbestos detected	n/t	n/t	n/t	n/t
109943	0.20	TP217	Clay, stones	No asbestos detected	n/t	n/t	n/t	n/t
109946	0.20	TP220	Brown sandy soil, stones, chalk, brick, clinker	No asbestos detected	n/t	n/t	n/t	n/t
109947	1.00	TP220	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
109948	0.10	TP221	Brown sandy soil, stones, chalk, organics	No asbestos detected	n/t	n/t	n/t	n/t
109950	0.40	TP222	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
109951	0.40	TP223	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
109953	0.20	TP224	Brown soil, Stones, Brick	No asbestos detected	n/t	n/t	n/t	n/t
109954	2.20	TP224	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
109955	0.25	TP225	Brown sandy soil, Stones, Brick	Chrysotile (Cement Fragment)	3.54	Cement Fragment (3.543)	< 0.001	3.54
109957	0.10	TP226	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
109959	0.15	TP228	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
109960	0.60	TP229	Brown sandy soil	No asbestos detected	n/t	n/t	n/t	n/t
109962	0.40	TP231	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
109963	0.10	TP232	Brown soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
109965	0.30	TP234	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
109966	0.50	TP235	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
109967	0.30	TP236	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
109968	0.40	TP237	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
109970	0.20	TP239	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
109971	0.50	TP239	Cement fragment	Chrysotile	25.0	Cement Fragment (25)	< 0.001	25.0
109972	1.50	TP239	Sand	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 17-13705

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Sulphide	N	As submitted sample	25/08/2017	109	Colorimetry
Hexavalent chromium	N	As submitted sample	25/08/2017	110	Colorimetry
Acid Soluble Sulphate	U	Air dried sample	29/08/2017	115	Ion Chromatography
Aqua regia extractable metals	M	Air dried sample	25/08/2017	118	ICPMS
Phenols in solids	N	As submitted sample	25/08/2017	121	HPLC
Elemental Sulphur	N	Air dried sample	25/08/2017	122	HPLC
PAH (GC-FID)	M	As submitted sample	29/08/2017	133	GC-FID
Water soluble anions	M	Air dried sample	25/08/2017	172	Ion Chromatography
Water soluble boron	N	Air dried sample	25/08/2017	202	Colorimetry
Total cyanide	M	As submitted sample	25/08/2017	204	Colorimetry
Aliphatic hydrocarbons in soil	N	As submitted sample	29/08/2017	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	29/08/2017	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	29/08/2017	214	GC-FID
Low range Aliphatic hydrocarbons soil	N	As submitted sample	25/08/2017	214	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	25/08/2017	214	GC-MS
Asbestos identification	U	As submitted sample	25/08/2017	260	Microscopy
Leachate					
Arsenic*	N		30/08/2017	101	ICPMS
Cadmium*	N		30/08/2017	101	ICPMS
Chromium*	N		30/08/2017	101	ICPMS
Lead*	N		30/08/2017	101	ICPMS
Nickel*	N		30/08/2017	101	ICPMS
Copper*	N		30/08/2017	101	ICPMS
Zinc*	N		30/08/2017	101	ICPMS
Mercury*	N		30/08/2017	101	ICPMS
Selenium*	N		30/08/2017	101	ICPMS
Antimony	N		30/08/2017	101	ICPMS
Barium*	N		30/08/2017	101	ICPMS
Molybdenum*	N		30/08/2017	101	ICPMS
pH Value*	N		30/08/2017	113	Electrometric
Electrical Conductivity*	N		30/08/2017	136	Probe
Dissolved Organic Carbon	N		30/08/2017	102	TOC analyser
Chloride*	N		30/08/2017	131	Ion Chromatography
Fluoride*	N		30/08/2017	131	Ion Chromatography
Sulphate*	N		30/08/2017	131	Ion Chromatography
Total Dissolved Solids	N		30/08/2017	144	Gravimetric
Phenol index	N		30/08/2017	121	HPLC
WAC Solids analysis					
pH Value**	M	Air dried sample	29/08/2017	113	Electrometric
Total Organic Carbon	N	Air dried sample	29/08/2017	210	IR
Loss on Ignition**	M	Air dried sample	30/08/2017	129	Gravimetric
Acid Neutralization Capacity to pH 7	N	Air dried sample	29/08/2017	NEN 737	Electrometric
Total BTEX**	M	As submitted sample	25/08/2017	181	GCMS
Mineral Oil**	U	As submitted sample	29/08/2017	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	25/08/2017	120	GCMS
Total PAH (17)**	N	As submitted sample	29/08/2017	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 17-13705

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis (dried at < 30°C)

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Deviation Codes

-
- | | |
|---|--|
| a | No date of sampling supplied |
| b | No time of sampling supplied (Waters Only) |
| c | Sample not received in appropriate containers |
| d | Sample not received in cooled condition |
| e | The container has been incorrectly filled |
| f | Sample age exceeds stability time (sampling to receipt) |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 18-17643

Issue: 1

Date of Issue: 30/05/2018

Contact: Fiona Goode

Customer Details: GESL
Unit 7
Danworth Farm
Hurstpierpoint
West Sussex
BN6 9GL

Quotation No: Q14-00021

Order No: PO-0331

Customer Reference: GE16943

Date Received: 21/05/2018

Date Approved: 30/05/2018

Details: Woodcroft, Waterloooville

Approved by:

Mike Varley, Technical Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

Sample Summary

Report No.: 18-17643

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
136637	WS401 0.60 - 0.80	15/05/2018	21/05/2018	Clayey loam	
136638	WS401 1.40 - 1.70	15/05/2018	21/05/2018	Silty loam	
136639	WS401 2.30 - 2.60	15/05/2018	21/05/2018	Silty loam	
136640	WS402 0.50	15/05/2018	21/05/2018	Silty clayey loam	
136641	WS402 1.50	15/05/2018	21/05/2018	Silty loam	
136642	WS402 2.50	15/05/2018	21/05/2018	Silty clayey loam	
136643	WS402 3.70 - 4.00	15/05/2018	21/05/2018	Silty loam	
136644	WS403 0.30 - 0.50	15/05/2018	21/05/2018	Silty clayey loam	
136645	WS403 1.50 - 1.60	15/05/2018	21/05/2018	Silty clayey loam	
136646	WS403 2.40 - 2.60	15/05/2018	21/05/2018	Silty loam	
136647	WS404 0.20 - 0.40	15/05/2018	21/05/2018	Silty loam	
136648	WS404 1.10 - 1.30	15/05/2018	21/05/2018	Clayey loam	
136649	WS405 0.00 - 0.20	15/05/2018	21/05/2018	Silty loam	
136650	WS405 0.40 - 0.60	15/05/2018	21/05/2018	Silty clayey loam	
136651	WS405 1.20	15/05/2018	21/05/2018	Silty clayey loam	
136652	WS406 0.20 - 0.50	15/05/2018	21/05/2018	Silty loam	
136653	WS406 1.60 - 1.90	15/05/2018	21/05/2018	Silty loam	
136654	WS406 3.10 - 3.50	15/05/2018	21/05/2018	Silty loam	
136655	WS407 0.30 - 0.50	15/05/2018	21/05/2018	Sandy silty loam	
136656	WS407 1.00 - 2.00	15/05/2018	21/05/2018	Silty loam	
136657	WS407 3.00 - 4.00	15/05/2018	21/05/2018	Silty loam	
136658	TP301 0.25	16/05/2018	21/05/2018	Silty loam	
136659	TP301 0.40	16/05/2018	21/05/2018	Silty loam	
136660	TP301 1.40	16/05/2018	21/05/2018	Silty loam	
136661	TP302 0.20	16/05/2018	21/05/2018	Silty loam	
136662	TP302 0.50	16/05/2018	21/05/2018	Silty clayey loam	
136663	TP302 1.30	16/05/2018	21/05/2018	Silty loam	
136664	TP302 2.70	16/05/2018	21/05/2018	Silty loam	
136665	TP303 0.30	16/05/2018	21/05/2018	Silty loam	
136666	TP303 0.70	16/05/2018	21/05/2018	Silty clayey loam	
136667	TP303 1.90	16/05/2018	21/05/2018	chalk	
136668	TP304 0.30	16/05/2018	21/05/2018	Silty loam	
136669	TP304 1.20	16/05/2018	21/05/2018	Silty clayey loam	
136670	TP305 0.80	16/05/2018	21/05/2018	Clayey loam	
136671	TP305 1.10	16/05/2018	21/05/2018	Clayey loam	
136672	TP306 0.20	15/05/2018	21/05/2018	Silty loam	
136673	TP306 0.40	15/05/2018	21/05/2018	Silty loam	
136674	TP306 0.80	15/05/2018	21/05/2018	Sandy silty loam	
136675	TP307 0.30	15/05/2018	21/05/2018	Silty loam	
136676	TP307 0.80	15/05/2018	21/05/2018	Silty clayey loam	
136677	TP307 1.20	15/05/2018	21/05/2018	Sand	
136678	TP308 0.10	15/05/2018	21/05/2018	Silty loam	
136679	TP308 0.30	15/05/2018	21/05/2018	Sandy silty loam	
136680	TP308 0.70	15/05/2018	21/05/2018	Silty clayey loam	
136681	TP309 0.25	15/05/2018	21/05/2018	Silty loam	
136682	TP309 0.50	15/05/2018	21/05/2018	Silty loam	
136683	TP309 0.65	15/05/2018	21/05/2018	Silty clayey loam	
136684	TP310 0.20	15/05/2018	21/05/2018	Silty loam	
136685	TP310 0.50	15/05/2018	21/05/2018	Silty loam	
136686	TP310 1.50	15/05/2018	21/05/2018	chalk	
136687	TP311 0.20	15/05/2018	21/05/2018	Silty loam	
136688	TP311 0.40	15/05/2018	21/05/2018	Silty loam	
136689	TP311 0.80	15/05/2018	21/05/2018	Silty loam	
136690	TP312 0.20	17/05/2018	21/05/2018	Silty loam	
136691	TP312 0.90	17/05/2018	21/05/2018	Silty loam	
136692	TP312 1.45	17/05/2018	21/05/2018	Silty clayey loam	
136693	TP313 0.25	17/05/2018	21/05/2018	Silty loam + chalk	
136694	TP313 0.50	17/05/2018	21/05/2018	Sandy silty loam	
136695	TP313 1.55	17/05/2018	21/05/2018	Loamy sand	
136696	TP314 0.30	17/05/2018	21/05/2018	Clayey loam	
136697	TP314 0.70	17/05/2018	21/05/2018	Silty loam	
136698	TP314 1.60	17/05/2018	21/05/2018	Silty clayey loam	
136699	TP315 0.20	17/05/2018	21/05/2018	Silty loam	
136700	TP315 0.60	17/05/2018	21/05/2018	Silty loam	

Sample Summary

Report No.: 18-17643

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
136701	TP315 2.30	17/05/2018	21/05/2018	Clayey loam	
136702	TP316 0.20	17/05/2018	21/05/2018	Sandy silty loam	
136703	TP316 0.90	17/05/2018	21/05/2018	Silty clayey loam	
136704	TP316 1.90	17/05/2018	21/05/2018	Clayey loam	
136705	TP317 0.15	17/05/2018	21/05/2018	Silty loam	
136706	TP317 0.65	17/05/2018	21/05/2018	Clayey loam	
136707	TP317 1.40	17/05/2018	21/05/2018	Sandy loam	
136708	TP318 0.15	17/05/2018	21/05/2018	Silty loam	
136709	TP318 0.70	17/05/2018	21/05/2018	Silty clayey loam	
136710	TP319 1.80	17/05/2018	21/05/2018	Clayey loam	

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136637	136638	136639	136640	136641	136642
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS401	WS401	WS401	WS402	WS402	WS402
Sample Depth (m)	0.60 - 0.80	1.40 - 1.70	2.30 - 2.60	0.50	1.50	2.50
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Barium	U	mg/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Beryllium	U	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Cadmium	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Chromium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Copper	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Lead	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Mercury	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Nickel	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Selenium	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Vanadium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Zinc	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Anions									
Water Soluble Chloride	M	mg/kg	40	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Sulphate	M	g/l	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Inorganics									
Elemental Sulphur	M	mg/kg	20	n/t	n/t	n/t	n/t	n/t	n/t
Hexavalent Chromium	N	mg/kg	0.8	n/t	n/t	n/t	n/t	n/t	n/t
Total Sulphide	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Acid Soluble Sulphate (SO4)	U	%	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Boron	N	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Miscellaneous									
pH	M	pH units	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total Organic Carbon	N	%	0.01	0.51	1.9	2.2	0.47	1.4	0.49
Phenols									
Total Phenols	N	mg/kg	6	n/t	n/t	n/t	n/t	n/t	n/t
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (b) fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (a) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t	n/t	n/t	n/t
BTEX									
Benzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Toluene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Xylenes	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

ELAB Reference	136637	136638	136639	136640	136641	136642
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS401	WS401	WS401	WS402	WS402	WS402
Sample Depth (m)	0.60 - 0.80	1.40 - 1.70	2.30 - 2.60	0.50	1.50	2.50
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

ELAB Reference	136643	136644	136645	136646	136647	136648
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS402	WS403	WS403	WS403	WS404	WS404
Sample Depth (m)	3.70 - 4.00	0.30 - 0.50	1.50 - 1.60	2.40 - 2.60	0.20 - 0.40	1.10 - 1.30
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Barium	U	mg/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Beryllium	U	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Cadmium	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Chromium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Copper	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Lead	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Mercury	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Nickel	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Selenium	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Vanadium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Zinc	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Anions									
Water Soluble Chloride	M	mg/kg	40	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Sulphate	M	g/l	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Inorganics									
Elemental Sulphur	M	mg/kg	20	n/t	n/t	n/t	n/t	n/t	n/t
Hexavalent Chromium	N	mg/kg	0.8	n/t	n/t	n/t	n/t	n/t	n/t
Total Sulphide	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Acid Soluble Sulphate (SO4)	U	%	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Boron	N	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Miscellaneous									
pH	M	pH units	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total Organic Carbon	N	%	0.01	0.68	0.61	0.69	0.19	2.5	0.20
Phenols									
Total Phenols	N	mg/kg	6	n/t	n/t	n/t	n/t	n/t	n/t
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (b) fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (a) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t	n/t	n/t	n/t
BTEX									
Benzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Toluene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Xylenes	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

ELAB Reference	136643	136644	136645	136646	136647	136648
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS402	WS403	WS403	WS403	WS404	WS404
Sample Depth (m)	3.70 - 4.00	0.30 - 0.50	1.50 - 1.60	2.40 - 2.60	0.20 - 0.40	1.10 - 1.30
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136649	136650	136651	136652	136653	136654
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS405	WS405	WS405	WS406	WS406	WS406
Sample Depth (m)	0.00 - 0.20	0.40 - 0.60	1.20	0.20 - 0.50	1.60 - 1.90	3.10 - 3.50
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Barium	U	mg/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Beryllium	U	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Cadmium	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Chromium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Copper	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Lead	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Mercury	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Nickel	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Selenium	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Vanadium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Zinc	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Anions									
Water Soluble Chloride	M	mg/kg	40	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Sulphate	M	g/l	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Inorganics									
Elemental Sulphur	M	mg/kg	20	n/t	n/t	n/t	n/t	n/t	n/t
Hexavalent Chromium	N	mg/kg	0.8	n/t	n/t	n/t	n/t	n/t	n/t
Total Sulphide	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Acid Soluble Sulphate (SO4)	U	%	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Boron	N	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Miscellaneous									
pH	M	pH units	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total Organic Carbon	N	%	0.01	1.6	1.0	0.87	0.98	1.4	3.8
Phenols									
Total Phenols	N	mg/kg	6	n/t	n/t	n/t	n/t	n/t	n/t
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (b) fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (a) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t	n/t	n/t	n/t
BTEX									
Benzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Toluene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Xylenes	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

ELAB Reference	136649	136650	136651	136652	136653	136654
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS405	WS405	WS405	WS406	WS406	WS406
Sample Depth (m)	0.00 - 0.20	0.40 - 0.60	1.20	0.20 - 0.50	1.60 - 1.90	3.10 - 3.50
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136655	136656	136657	136658	136659	136660
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS407	WS407	WS407	TP301	TP301	TP301
Sample Depth (m)	0.30 - 0.50	1.00 - 2.00	3.00 - 4.00	0.25	0.40	1.40
Sampling Date	15/05/2018	15/05/2018	15/05/2018	16/05/2018	16/05/2018	16/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Barium	U	mg/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Beryllium	U	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Cadmium	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Chromium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Copper	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Lead	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Mercury	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Nickel	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Selenium	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Vanadium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Zinc	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Anions									
Water Soluble Chloride	M	mg/kg	40	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Sulphate	M	g/l	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Inorganics									
Elemental Sulphur	M	mg/kg	20	n/t	n/t	n/t	n/t	n/t	n/t
Hexavalent Chromium	N	mg/kg	0.8	n/t	n/t	n/t	n/t	n/t	n/t
Total Sulphide	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Acid Soluble Sulphate (SO4)	U	%	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Boron	N	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Miscellaneous									
pH	M	pH units	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total Organic Carbon	N	%	0.01	0.72	1.2	2.1	1.7	0.80	2.3
Phenols									
Total Phenols	N	mg/kg	6	n/t	n/t	n/t	n/t	n/t	n/t
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (b) fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (a) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t	n/t	n/t	n/t
BTEX									
Benzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Toluene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Xylenes	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

ELAB Reference	136655	136656	136657	136658	136659	136660
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS407	WS407	WS407	TP301	TP301	TP301
Sample Depth (m)	0.30 - 0.50	1.00 - 2.00	3.00 - 4.00	0.25	0.40	1.40
Sampling Date	15/05/2018	15/05/2018	15/05/2018	16/05/2018	16/05/2018	16/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

ELAB Reference	136661	136662	136663	136664	136665	136666
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP302	TP302	TP302	TP302	TP303	TP303
Sample Depth (m)	0.20	0.50	1.30	2.70	0.30	0.70
Sampling Date	16/05/2018	16/05/2018	16/05/2018	16/05/2018	16/05/2018	16/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Barium	U	mg/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Beryllium	U	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Cadmium	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Chromium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Copper	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Lead	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Mercury	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Nickel	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Selenium	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Vanadium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Zinc	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	n/t
Anions									
Water Soluble Chloride	M	mg/kg	40	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Sulphate	M	g/l	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Inorganics									
Elemental Sulphur	M	mg/kg	20	n/t	n/t	n/t	n/t	n/t	n/t
Hexavalent Chromium	N	mg/kg	0.8	n/t	n/t	n/t	n/t	n/t	n/t
Total Sulphide	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	n/t
Total Cyanide	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Acid Soluble Sulphate (SO4)	U	%	0.02	n/t	n/t	n/t	n/t	n/t	n/t
Water Soluble Boron	N	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	n/t
Miscellaneous									
pH	M	pH units	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total Organic Carbon	N	%	0.01	0.48	0.77	0.64	1.3	2.1	0.21
Phenols									
Total Phenols	N	mg/kg	6	n/t	n/t	n/t	n/t	n/t	n/t
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (b) fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo (a) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t	n/t	n/t	n/t
BTEX									
Benzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Toluene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t
Xylenes	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

ELAB Reference	136661	136662	136663	136664	136665	136666
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP302	TP302	TP302	TP302	TP303	TP303
Sample Depth (m)	0.20	0.50	1.30	2.70	0.30	0.70
Sampling Date	16/05/2018	16/05/2018	16/05/2018	16/05/2018	16/05/2018	16/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 18-17643

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ELAB Reference	136667	136668	136669	136670	136671	136672
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP303	TP304	TP304	TP305	TP305	TP306
Sample Depth (m)	1.90	0.30	1.20	0.80	1.10	0.20
Sampling Date	16/05/2018	16/05/2018	16/05/2018	16/05/2018	16/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	9.2
Barium	U	mg/kg	10	n/t	n/t	n/t	n/t	n/t	51.3
Beryllium	U	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
Cadmium	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	< 0.5
Chromium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	23.1
Copper	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	7.9
Lead	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	18.6
Mercury	M	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	< 0.5
Nickel	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	15.7
Selenium	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
Vanadium	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	34.7
Zinc	M	mg/kg	5	n/t	n/t	n/t	n/t	n/t	55.8
Anions									
Water Soluble Chloride	M	mg/kg	40	n/t	n/t	n/t	n/t	n/t	< 40
Water Soluble Sulphate	M	g/l	0.02	n/t	n/t	n/t	n/t	n/t	< 0.02
Inorganics									
Elemental Sulphur	M	mg/kg	20	n/t	n/t	n/t	n/t	n/t	< 20
Hexavalent Chromium	N	mg/kg	0.8	n/t	n/t	n/t	n/t	n/t	< 0.8
Total Sulphide	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	< 2
Total Cyanide	M	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	n/t	n/t	n/t	n/t	n/t	0.07
Water Soluble Boron	N	mg/kg	0.5	n/t	n/t	n/t	n/t	n/t	0.7
Miscellaneous									
pH	M	pH units	0.1	n/t	n/t	n/t	n/t	n/t	6.1
Total Organic Carbon	N	%	0.01	0.05	2.7	0.20	0.74	1.2	0.48
Phenols									
Total Phenols	N	mg/kg	6	n/t	n/t	n/t	n/t	n/t	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	< 0.1
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t	n/t	n/t	< 0.4
BTEX									
Benzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	< 10.0
Toluene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	< 10.0
Ethylbenzene	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	< 10.0
Xylenes	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t	< 10.0

Results Summary

Report No.: 18-17643

ELAB Reference	136667	136668	136669	136670	136671	136672
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP303	TP304	TP304	TP305	TP305	TP306
Sample Depth (m)	1.90	0.30	1.20	0.80	1.10	0.20
Sampling Date	16/05/2018	16/05/2018	16/05/2018	16/05/2018	16/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t	< 1.0

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136673	136674	136675	136676	136677	136678
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP306	TP306	TP307	TP307	TP307	TP308
Sample Depth (m)	0.40	0.80	0.30	0.80	1.20	0.10
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	19.0	30.7	14.6	19.6	76.9	15.6
Barium	U	mg/kg	10	82.6	63.1	52.6	71.7	36.8	35.7
Beryllium	U	mg/kg	1	1.2	2.0	1.6	6.4	2.9	< 1.0
Cadmium	M	mg/kg	0.5	< 0.5	0.6	0.5	2.4	1.4	< 0.5
Chromium	M	mg/kg	5	43.5	39.1	32.0	47.0	37.8	20.4
Copper	M	mg/kg	5	18.2	18.0	11.9	14.6	21.1	7.8
Lead	M	mg/kg	5	17.7	17.2	17.5	16.2	20.4	15.7
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	29.5	27.7	34.2	174	69.3	15.0
Selenium	M	mg/kg	1	< 1.0	1.4	1.1	4.1	1.8	< 1.0
Vanadium	M	mg/kg	5	59.9	80.9	50.9	59.3	188	42.2
Zinc	M	mg/kg	5	58.6	55.8	73.5	91.5	56.6	40.6
Anions									
Water Soluble Chloride	M	mg/kg	40	< 40	< 40	< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.03
Inorganics									
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.06	0.05	0.06	0.06	0.05	0.05
Water Soluble Boron	N	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Miscellaneous									
pH	M	pH units	0.1	6.8	7.0	6.5	7.6	7.4	6.9
Total Organic Carbon	N	%	0.01	0.14	0.11	0.31	0.21	0.05	0.43
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0

Results Summary

Report No.: 18-17643

ELAB Reference	136673	136674	136675	136676	136677	136678
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP306	TP306	TP307	TP307	TP307	TP308
Sample Depth (m)	0.40	0.80	0.30	0.80	1.20	0.10
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136679	136680	136681	136682	136683	136684
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP308	TP308	TP309	TP309	TP309	TP310
Sample Depth (m)	0.30	0.70	0.25	0.50	0.65	0.20
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	95.8	68.0	23.1	65.6	20.9	15.6
Barium	U	mg/kg	10	48.9	65.2	56.4	83.1	17.6	46.7
Beryllium	U	mg/kg	1	1.4	1.8	1.4	5.1	1.2	< 1.0
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	0.5	1.0	< 0.5	< 0.5
Chromium	M	mg/kg	5	43.5	59.2	29.6	62.4	11.9	21.1
Copper	M	mg/kg	5	17.2	22.1	13.3	18.3	< 5.0	10.0
Lead	M	mg/kg	5	23.5	26.2	27.1	22.2	6.3	24.2
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	22.0	80.3	45.2	190	35.3	24.4
Selenium	M	mg/kg	1	1.9	2.0	1.2	1.6	< 1.0	< 1.0
Vanadium	M	mg/kg	5	127	168	51.0	103	16.8	43.8
Zinc	M	mg/kg	5	58.6	71.0	80.7	143	27.6	60.5
Anions									
Water Soluble Chloride	M	mg/kg	40	< 40	< 40	< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	< 0.02	0.02	0.11	0.06	0.03	0.03
Inorganics									
Elemental Sulphur	M	mg/kg	20	< 20	< 20	38	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.05	0.06	0.11	0.07	0.03	0.07
Water Soluble Boron	N	mg/kg	0.5	< 0.5	< 0.5	1.6	< 0.5	< 0.5	0.6
Miscellaneous									
pH	M	pH units	0.1	6.9	7.3	6.6	7.3	8.0	6.7
Total Organic Carbon	N	%	0.01	0.12	0.12	1.7	0.44	0.05	0.03
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	0.3	< 0.1	< 0.1	0.3	< 0.1	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	0.4	< 0.4	< 0.4	0.4	< 0.4	< 0.4
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0

Results Summary

Report No.: 18-17643

ELAB Reference	136679	136680	136681	136682	136683	136684
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP308	TP308	TP309	TP309	TP309	TP310
Sample Depth (m)	0.30	0.70	0.25	0.50	0.65	0.20
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136685	136686	136687	136688	136689	136690
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP310	TP310	TP311	TP311	TP311	TP312
Sample Depth (m)	0.50	1.50	0.20	0.40	0.80	0.20
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	17/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	22.7	^ 4.7	15.3	22.7	27.4	5.0
Barium	U	mg/kg	10	73.8	17.9	51.7	60.6	61.9	120
Beryllium	U	mg/kg	1	1.3	< 1.0	1.0	2.3	2.6	< 1.0
Cadmium	M	mg/kg	0.5	< 0.5	^ 1.0	< 0.5	< 0.5	1.4	0.7
Chromium	M	mg/kg	5	44.2	^ 6.9	23.3	45.9	54.0	11.3
Copper	M	mg/kg	5	19.2	^ < 5.0	11.3	18.1	24.7	9.9
Lead	M	mg/kg	5	21.8	^ < 5.0	27.6	22.1	17.2	16.0
Mercury	M	mg/kg	0.5	< 0.5	^ < 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	32.0	^ 13.9	29.3	66.7	200	14.3
Selenium	M	mg/kg	1	1.0	^ < 1.0	< 1.0	1.1	2.1	< 1.0
Vanadium	M	mg/kg	5	80.9	^ 9.8	46.8	75.9	66.1	16.3
Zinc	M	mg/kg	5	68.7	^ 21.5	64.1	104	97.9	45.8
Anions									
Water Soluble Chloride	M	mg/kg	40	< 40	^ < 40	< 40	< 40	< 40	103
Water Soluble Sulphate	M	g/l	0.02	0.02	^ < 0.02	0.04	0.05	0.02	0.10
Inorganics									
Elemental Sulphur	M	mg/kg	20	< 20	^ < 20	< 20	22	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	^ < 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.08	0.09	0.08	0.07	0.07	0.07
Water Soluble Boron	N	mg/kg	0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5
Miscellaneous									
pH	M	pH units	0.1	6.7	^ 8.6	7.0	7.2	7.3	8.2
Total Organic Carbon	N	%	0.01	0.15	0.03	0.75	0.27	0.22	0.56
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	0.4
Anthracene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	0.2
Fluoranthene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	1.4
Pyrene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	1.4
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	1.3
Chrysene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	1.3
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	1.7
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.2	< 0.1	< 0.1	2.1
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	0.2	< 0.1	1.8
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	1.4
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	0.3
Benzo(g,h,i)perylene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	2.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	^ < 0.4	< 0.4	< 0.4	< 0.4	15.5
BTEX									
Benzene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	^ < 10.0	< 10.0	< 10.0	< 10.0	< 10.0

Results Summary

Report No.: 18-17643

ELAB Reference	136685	136686	136687	136688	136689	136690
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP310	TP310	TP311	TP311	TP311	TP312
Sample Depth (m)	0.50	1.50	0.20	0.40	0.80	0.20
Sampling Date	15/05/2018	15/05/2018	15/05/2018	15/05/2018	15/05/2018	17/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.1
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	135
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	9.3
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.2
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	136
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	17.1
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	304

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136691	136692	136693	136694	136695	136696
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP312	TP312	TP313	TP313	TP313	TP314
Sample Depth (m)	0.90	1.45	0.25	0.50	1.55	0.30
Sampling Date	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	11.2	20.3	^ 5.1	17.1	34.2	11.5
Barium	U	mg/kg	10	66.4	54.9	28.0	19.2	38.9	40.8
Beryllium	U	mg/kg	1	< 1.0	2.9	< 1.0	< 1.0	1.5	< 1.0
Cadmium	M	mg/kg	0.5	0.6	0.7	^ 0.6	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	21.4	39.6	^ 10.2	14.5	20.4	34.0
Copper	M	mg/kg	5	18.5	23.8	^ 8.8	7.9	15.2	13.5
Lead	M	mg/kg	5	61.9	25.3	^ 12.3	14.1	20.5	17.3
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	^ < 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	29.3	93.1	^ 10.7	15.1	26.9	13.7
Selenium	M	mg/kg	1	1.1	1.8	^ < 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	39.2	64.6	^ 17.0	35.1	43.5	54.1
Zinc	M	mg/kg	5	129	136	^ 32.0	28.5	37.6	31.2
Anions									
Water Soluble Chloride	M	mg/kg	40	124	131	^ < 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	0.05	0.04	^ < 0.02	< 0.02	< 0.02	< 0.02
Inorganics									
Elemental Sulphur	M	mg/kg	20	< 20	< 20	^ < 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	1.1	< 1.0	^ 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.09	0.09	0.06	0.03	0.06	0.06
Water Soluble Boron	N	mg/kg	0.5	2.8	0.5	< 0.5	< 0.5	< 0.5	0.8
Miscellaneous									
pH	M	pH units	0.1	8.3	7.8	^ 8.3	8.1	8.1	7.7
Total Organic Carbon	N	%	0.01	2.6	0.42	0.28	0.12	0.08	0.24
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	^ 0.2	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	^ < 0.1	0.2	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	^ < 0.1	0.2	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	^ < 0.1	1.8	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	^ 0.1	0.6	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	0.1	< 0.1	^ 0.6	1.8	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	0.1	< 0.1	^ 0.6	1.5	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	^ 0.9	0.8	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	^ 0.8	0.8	< 0.1	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	0.2	< 0.1	^ 1.1	0.5	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	0.3	0.3	^ 1.5	0.8	< 0.1	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	0.1	< 0.1	^ 1.2	0.7	< 0.1	0.2
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	^ 1.2	0.4	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	^ 0.3	0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	0.1	^ 1.3	0.3	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	0.9	0.4	^ 9.9	10.5	< 0.4	< 0.4
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	^ < 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	^ < 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	^ < 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	^ < 10.0	< 10.0	< 10.0	< 10.0

Results Summary

Report No.: 18-17643

ELAB Reference	136691	136692	136693	136694	136695	136696
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP312	TP312	TP313	TP313	TP313	TP314
Sample Depth (m)	0.90	1.45	0.25	0.50	1.55	0.30
Sampling Date	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	1.7	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	7.1	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	10.3	< 1.0	< 1.0	< 1.0

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136697	136698	136699	136700	136701	136702
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP314	TP314	TP315	TP315	TP315	TP316
Sample Depth (m)	0.70	1.60	0.20	0.60	2.30	0.20
Sampling Date	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	10.6	243	15.5	11.0	8.7	11.1
Barium	U	mg/kg	10	38.3	90.8	359	85.8	305	257
Beryllium	U	mg/kg	1	< 1.0	3.7	< 1.0	< 1.0	2.1	< 1.0
Cadmium	M	mg/kg	0.5	< 0.5	3.5	0.7	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	19.3	37.4	15.5	30.8	59.1	23.7
Copper	M	mg/kg	5	7.8	24.4	30.2	13.3	25.7	23.2
Lead	M	mg/kg	5	14.8	28.5	220	64.6	27.2	146
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	11.9	271	16.1	15.0	25.3	15.5
Selenium	M	mg/kg	1	< 1.0	1.1	< 1.0	< 1.0	1.1	< 1.0
Vanadium	M	mg/kg	5	35.8	69.2	23.7	52.0	101	38.4
Zinc	M	mg/kg	5	36.9	139	91.1	58.2	62.5	107
Anions									
Water Soluble Chloride	M	mg/kg	40	< 40	< 40	< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	< 0.02	0.05	0.03	0.06	< 0.02	0.05
Inorganics									
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20	188	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.05	0.07	0.08	0.09	0.07	0.11
Water Soluble Boron	N	mg/kg	0.5	< 0.5	< 0.5	< 0.5	1.1	0.6	0.7
Miscellaneous									
pH	M	pH units	0.1	7.4	7.5	9.1	7.9	6.2	9.3
Total Organic Carbon	N	%	0.01	0.21	0.11	0.88	1.1	0.35	0.70
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	1.9	< 0.1	< 0.1	0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	0.7	< 0.1	< 0.1	0.3
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	3.6	< 0.1	< 0.1	0.7
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	3.3	< 0.1	< 0.1	0.6
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	2.1	< 0.1	< 0.1	0.4
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	2.3	< 0.1	0.1	0.4
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	3.1	0.3	0.1	0.6
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	2.5	< 0.1	< 0.1	0.4
Benzo (a) pyrene	M	mg/kg	0.1	0.1	0.1	2.7	< 0.1	0.3	0.3
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	2.3	< 0.1	< 0.1	0.3
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	0.5	< 0.1	< 0.1	0.1
Benzo(g,h,i)perylene	M	mg/kg	0.1	< 0.1	< 0.1	3.0	0.1	< 0.1	0.4
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	28.7	0.6	0.6	4.7
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0

Results Summary

Report No.: 18-17643

ELAB Reference	136697	136698	136699	136700	136701	136702
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP314	TP314	TP315	TP315	TP315	TP316
Sample Depth (m)	0.70	1.60	0.20	0.60	2.30	0.20
Sampling Date	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	2.7	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	39.7	< 1.0	< 1.0	8.1
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	9.3	< 1.0	< 1.0	1.4
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	2.3	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	14.8	< 1.0	< 1.0	1.3
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	131	< 1.0	< 1.0	15.1
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	41.1	< 1.0	< 1.0	6.5
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	241	< 1.0	< 1.0	32.4

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136703	136704	136705	136706	136707	136708
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP316	TP316	TP317	TP317	TP317	TP318
Sample Depth (m)	0.90	1.90	0.15	0.65	1.40	0.15
Sampling Date	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	10.1	4.8	16.3	11.4	5.7	9.7
Barium	U	mg/kg	10	75.6	76.8	180	36.7	28.2	169
Beryllium	U	mg/kg	1	< 1.0	1.7	1.4	6.9	1.4	< 1.0
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	0.6	5.2	< 0.5	0.7
Chromium	M	mg/kg	5	35.8	28.4	28.9	35.0	24.1	20.3
Copper	M	mg/kg	5	14.8	11.3	60.8	21.3	17.7	30.0
Lead	M	mg/kg	5	36.7	13.4	165	22.3	15.7	104
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	12.8	20.2	27.2	33.1	26.1	15.5
Selenium	M	mg/kg	1	< 1.0	< 1.0	1.4	1.1	< 1.0	< 1.0
Vanadium	M	mg/kg	5	64.1	47.5	49.0	49.9	39.1	34.5
Zinc	M	mg/kg	5	47.4	27.1	235	59.5	48.0	159
Anions									
Water Soluble Chloride	M	mg/kg	40	< 40	< 40	< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	0.05	0.08	< 0.02	< 0.02	< 0.02	0.03
Inorganics									
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.08	0.07	0.08	0.05	0.06	0.07
Water Soluble Boron	N	mg/kg	0.5	0.8	0.7	1.3	0.7	< 0.5	0.7
Miscellaneous									
pH	M	pH units	0.1	8.1	5.5	7.6	7.9	7.4	8.5
Total Organic Carbon	N	%	0.01	0.60	0.06	2.9	0.32	0.08	1.9
Phenols									
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.2
Benzo (b) fluoranthene	M	mg/kg	0.1	0.1	0.1	0.1	< 0.1	< 0.1	0.4
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.3
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	0.7	< 0.4	< 0.4	2.1
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136703	136704	136705	136706	136707	136708
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP316	TP316	TP317	TP317	TP317	TP318
Sample Depth (m)	0.90	1.90	0.15	0.65	1.40	0.15
Sampling Date	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018	17/05/2018

Determinand	Codes	Units	LOD						
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.7
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.7
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.6
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	7.0

Results Summary

Report No.: 18-17643

2683

ELAB Reference	136709	136710
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	TP318	TP319
Sample Depth (m)	0.70	1.80
Sampling Date	17/05/2018	17/05/2018

Determinand	Codes	Units	LOD		
Metals					
Arsenic	M	mg/kg	1	10.5	17.2
Barium	U	mg/kg	10	35.0	49.9
Beryllium	U	mg/kg	1	< 1.0	1.5
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	34.6	58.1
Copper	M	mg/kg	5	16.1	32.6
Lead	M	mg/kg	5	15.1	27.9
Mercury	M	mg/kg	0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	11.9	15.9
Selenium	M	mg/kg	1	< 1.0	1.2
Vanadium	M	mg/kg	5	55.4	106
Zinc	M	mg/kg	5	37.5	37.5
Anions					
Water Soluble Chloride	M	mg/kg	40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	0.02	0.07
Inorganics					
Elemental Sulphur	M	mg/kg	20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.05	0.07
Water Soluble Boron	N	mg/kg	0.5	< 0.5	0.8
Miscellaneous					
pH	M	pH units	0.1	8.1	7.3
Total Organic Carbon	N	%	0.01	0.13	0.22
Phenols					
Total Phenols	N	mg/kg	6	< 6	< 6
Polyaromatic hydrocarbons					
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4
BTEX					
Benzene	M	ug/kg	10	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0

Results Summary

Report No.: 18-17643

ELAB Reference	136709	136710
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	TP318	TP319
Sample Depth (m)	0.70	1.80
Sampling Date	17/05/2018	17/05/2018

Determinand	Codes	Units	LOD		
TPH CWG					
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0

Results Summary

Report No.: 18-17643

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked R) in this report are solely ELAB's responsibility (Accreditation No.2083). They are subjective comments only which must be verified by the client.

Elab No.	Depth (m)	Client's Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric	Gravimetric Analysis by ACM Type	Free Fibre	Total
136637	0.90 - 0.80	WS401	Brown clay, stones, clinker	No asbestos detected	n/t	n/t	n/t	n/t
136640	0.50	WS402	Brown clay, stones	No asbestos detected	n/t	n/t	n/t	n/t
136645	1.50 - 1.60	WS403	Brown sandy soil, stones, concrete, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
136650	0.40 - 0.60	WS405	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
136651	1.20	WS405	Brown sandy soil, stones, concrete, brick, wood	No asbestos detected	n/t	n/t	n/t	n/t
136653	1.60 - 1.90	WS406	Brown sandy soil, stones, concrete, brick, clinker, glass	No asbestos detected	n/t	n/t	n/t	n/t
136655	0.30 - 0.50	WS407	Brown sandy soil, stones, clinker	No asbestos detected	n/t	n/t	n/t	n/t
136657	3.00 - 4.00	WS407	Brown sandy soil, stones, concrete, brick, clinker, chalk, organics	Chrysotile (asbestos cement)	0.729	Asbestos cement (0.729%)	< 0.001	0.729
136658	0.25	TP301	Brown sandy soil, stones, concrete, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
136659	0.40	TP301	Brown sandy soil, stones, clinker, wood	No asbestos detected	n/t	n/t	n/t	n/t
136660	1.40	TP301	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
136661	0.20	TP302	Brown sandy soil, stones, chalk, clinker, organics	Chrysotile (asbestos cement)	0.147	Asbestos cement (0.147%)	< 0.001	0.147
136662	0.50	TP302	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
136664	2.70	TP302	Brown sandy soil, stones, concrete, clinker	No asbestos detected	n/t	n/t	n/t	n/t
136665	0.70	TP303	Brown sandy soil, stones, concrete, clinker	No asbestos detected	n/t	n/t	n/t	n/t
136669	1.20	TP304	Brown sandy clay, stones, clinker	No asbestos detected	n/t	n/t	n/t	n/t
136670	0.80	TP305	Brown sandy clay, stones, clinker	No asbestos detected	n/t	n/t	n/t	n/t
136672	0.20	TP306	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
136673	0.40	TP306	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
136674	0.60	TP306	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
136675	0.30	TP307	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136676	0.60	TP307	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136677	1.20	TP307	Brown sandy soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136678	0.10	TP308	Brown sandy soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136679	0.30	TP308	Brown sandy soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136680	0.70	TP308	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136681	0.25	TP309	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136682	0.50	TP309	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136683	0.65	TP309	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136684	0.20	TP310	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136685	0.50	TP310	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136686	1.50	TP310	Chalk	No asbestos detected	n/t	n/t	n/t	n/t
136687	0.20	TP311	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136688	0.40	TP311	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136689	0.80	TP311	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
136690	0.20	TP312	Brown chalky soil with stones and brick	No asbestos detected	n/t	n/t	n/t	n/t
136691	0.00	TP312	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136692	1.45	TP312	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136693	0.25	TP313	Brown chalky soil with stones and clinker	No asbestos detected	n/t	n/t	n/t	n/t
136694	0.50	TP313	Brown soil with stones	No asbestos detected	n/t	n/t	n/t	n/t
136695	1.55	TP313	Sand	No asbestos detected	n/t	n/t	n/t	n/t
136696	0.30	TP314	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
136697	0.70	TP314	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
136698	1.60	TP314	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
136699	0.20	TP315	Brown sandy soil, Stones, concrete, brick	Chrysotile (fibre bundle)	< 0.001	Fibre bundle (<0.001)	< 0.001	< 0.001
136700	0.50	TP315	Brown sandy soil	No asbestos detected	n/t	n/t	n/t	n/t
136701	2.30	TP315	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
136702	0.20	TP316	Brown sandy soil, Stones, brick, clinker	No asbestos detected	n/t	n/t	n/t	n/t
136703	0.90	TP316	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
136704	1.90	TP316	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
136705	0.15	TP317	Brown sandy soil, Stones, glass, clinker	No asbestos detected	n/t	n/t	n/t	n/t
136706	0.65	TP317	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
136707	1.40	TP317	Brown sandy soil, stones	No asbestos detected	n/t	n/t	n/t	n/t
136708	0.15	TP318	Brown sandy soil, Stones, brick	No asbestos detected	n/t	n/t	n/t	n/t
136709	0.70	TP318	Brown soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
136710	1.60	TP319	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 18-17643

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Sulphide	N	As submitted sample	23/05/2018	109	Colorimetry
Hexavalent chromium	N	As submitted sample	23/05/2018	110	Colorimetry
pH	M	Air dried sample	24/05/2018	113	Electromeric
Acid Soluble Sulphate	U	Air dried sample	24/05/2018	115	Ion Chromatography
Aqua regia extractable metals	M	Air dried sample	23/05/2018	118	ICPMS
Phenols in solids	N	As submitted sample	23/05/2018	121	HPLC
Elemental Sulphur	M	Air dried sample	23/05/2018	122	HPLC
PAH (GC-FID)	M	As submitted sample	23/05/2018	133	GC-FID
Water soluble anions	M	Air dried sample	23/05/2018	172	Ion Chromatography
Low range Aliphatic hydrocarbons soil	N	As submitted sample	24/05/2018	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	24/05/2018	181	GC-MS
BTEX in solids	M	As submitted sample	24/05/2018	181A	GC-MS
Water soluble boron	N	Air dried sample	23/05/2018	202	Colorimetry
Total cyanide	M	As submitted sample	23/05/2018	204	Colorimetry
Total organic carbon/Total sulphur	N	Air dried sample	24/05/2018	210	IR
Aliphatic hydrocarbons in soil	N	As submitted sample	23/05/2018	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	25/05/2018	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	23/05/2018	214	GC-FID
Asbestos identification	U	Air dried sample	23/05/2018	260	Microscopy

Tests marked N are not UKAS accredited

Report Information

Report No.: 18-17643

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis (dried at < 30°C)

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

CLEA Software Version 1.071

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Report generated 21/06/2018

Report title Woodcroft Farm, Lovedean



Created by FG at GESL

BASIC SETTINGS

Land Use Residential with produce (C4SL)

Building Small terraced house

Receptor Female (res C4SL)

Start age class 1

End age class 6

Exposure Duration 6 years

Soil Sandy loam

Exposure Pathways

Direct soil and dust ingestion ☒

Consumption of homegrown produce ☒

Soil attached to homegrown produce ☒

Dermal contact with indoor dust ☒

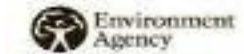
Dermal contact with soil ☒

Inhalation of indoor dust ☒

Inhalation of soil dust ☒

Inhalation of indoor vapour ☒

Inhalation of outdoor vapour ☒



Land Use Residential with produce (C4SL)

Receptor Female (res C4SL)

Age Class	Exposure Frequencies (days yr ⁻¹)						Occupation Periods (hr day ⁻¹)		Soil to skin adherence factors (mg cm ²)		Direct soil ingestion rate (g day ⁻¹)	Max exposed skin factor					
	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with indoor dust	Dermal contact with soil	Inhalation of dust and vapour, indoor	Inhalation of dust and vapour, outdoor	Indoors	Outdoors	Indoor	Outdoor		Body weight (kg)	Body height (m)	Inhalation rate (m ³ day ⁻¹)	Indoor (m ² m ⁻²)	Outdoor (m ² m ⁻²)	Total skin area (m ²)
1	180	180	180	170	365	365	23.0	1.0	0.06	0.10	0.10	5.60	0.7	5.4	0.32	0.26	3.43E-01
2	365	365	365	170	365	365	23.0	1.0	0.06	0.10	0.10	9.80	0.8	8.0	0.33	0.26	4.84E-01
3	365	365	365	170	365	365	23.0	1.0	0.06	0.10	0.10	12.70	0.9	8.9	0.32	0.25	5.82E-01
4	365	365	365	170	365	365	23.0	1.0	0.06	0.10	0.10	15.10	0.9	10.1	0.35	0.28	6.36E-01
5	365	365	365	170	365	365	19.0	1.0	0.06	0.10	0.10	16.90	1.0	10.1	0.35	0.28	7.04E-01
6	365	365	365	170	365	365	19.0	1.0	0.06	0.10	0.10	19.70	1.1	10.1	0.33	0.26	7.94E-01
7	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	22.10	1.2	12.0	0.22	0.15	8.73E-01
8	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	25.30	1.2	12.0	0.22	0.15	9.36E-01
9	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	27.50	1.3	12.0	0.22	0.15	1.01E+00
10	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	31.40	1.3	12.0	0.22	0.15	1.08E+00
11	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	35.70	1.4	12.0	0.22	0.14	1.19E+00
12	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	41.30	1.4	15.2	0.22	0.14	1.29E+00
13	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	47.20	1.5	15.2	0.22	0.14	1.42E+00
14	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	51.20	1.6	15.2	0.22	0.14	1.52E+00
15	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	56.70	1.6	15.2	0.21	0.14	1.60E+00
16	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	59.00	1.6	15.2	0.21	0.14	1.63E+00
17	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.00	1.6	15.7	0.33	0.27	1.78E+00
18	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.90	1.6	13.6	0.33	0.27	1.80E+00

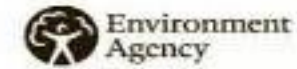
Consumption Rates



Age Class	Consumption rates (g FW kg ⁻¹ bodyweight day ⁻¹) by Produce Group											
	MEAN RATES						90TH PERCENTILE RATES					
	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit
1	3.47E+00	5.22E+00	9.22E+00	8.90E-01	1.07E+00	1.87E+00	7.12E+00	1.07E+01	1.60E+01	1.83E+00	2.23E+00	3.82E+00
2	3.34E+00	1.61E+00	3.14E+00	1.93E+00	2.60E-01	5.84E+00	5.87E+00	2.83E+00	6.60E+00	3.39E+00	4.60E-01	1.03E+01
3	3.34E+00	1.61E+00	3.14E+00	1.93E+00	2.60E-01	5.84E+00	5.87E+00	2.83E+00	6.60E+00	3.39E+00	4.60E-01	1.03E+01
4	3.34E+00	1.61E+00	3.14E+00	1.93E+00	2.60E-01	5.84E+00	5.87E+00	2.83E+00	6.60E+00	3.39E+00	4.60E-01	1.03E+01
5	2.54E+00	1.20E+00	2.65E+00	1.25E+00	1.10E-01	2.89E+00	4.53E+00	2.14E+00	4.95E+00	2.24E+00	1.90E-01	5.16E+00
6	2.54E+00	1.20E+00	2.65E+00	1.25E+00	1.10E-01	2.89E+00	4.53E+00	2.14E+00	4.95E+00	2.24E+00	1.90E-01	5.16E+00
7	2.54E+00	1.20E+00	2.65E+00	1.25E+00	1.10E-01	2.89E+00	4.53E+00	2.14E+00	4.95E+00	2.24E+00	1.90E-01	5.16E+00
8	2.54E+00	1.20E+00	2.65E+00	1.25E+00	1.10E-01	2.89E+00	4.53E+00	2.14E+00	4.95E+00	2.24E+00	1.90E-01	5.16E+00
9	2.54E+00	1.20E+00	2.65E+00	1.25E+00	1.10E-01	2.89E+00	4.53E+00	2.14E+00	4.95E+00	2.24E+00	1.90E-01	5.16E+00
10	2.54E+00	1.20E+00	2.65E+00	1.25E+00	1.10E-01	2.89E+00	4.53E+00	2.14E+00	4.95E+00	2.24E+00	1.90E-01	5.16E+00
11	2.54E+00	1.20E+00	2.65E+00	1.25E+00	1.10E-01	2.89E+00	4.53E+00	2.14E+00	4.95E+00	2.24E+00	1.90E-01	5.16E+00
12	1.03E+00	4.90E-01	1.60E+00	5.10E-01	4.00E-02	1.18E+00	1.87E+00	8.90E-01	3.05E+00	9.30E-01	8.00E-02	2.13E+00
13	1.03E+00	4.90E-01	1.60E+00	5.10E-01	4.00E-02	1.18E+00	1.87E+00	8.90E-01	3.05E+00	9.30E-01	8.00E-02	2.13E+00
14	1.03E+00	4.90E-01	1.60E+00	5.10E-01	4.00E-02	1.18E+00	1.87E+00	8.90E-01	3.05E+00	9.30E-01	8.00E-02	2.13E+00
15	1.03E+00	4.90E-01	1.60E+00	5.10E-01	4.00E-02	1.18E+00	1.87E+00	8.90E-01	3.05E+00	9.30E-01	8.00E-02	2.13E+00
16	1.03E+00	4.90E-01	1.60E+00	5.10E-01	4.00E-02	1.18E+00	1.87E+00	8.90E-01	3.05E+00	9.30E-01	8.00E-02	2.13E+00
17	1.26E+00	6.00E-01	1.18E+00	6.90E-01	9.00E-02	1.27E+00	2.36E+00	1.12E+00	2.35E+00	1.29E+00	1.80E-01	2.38E+00
18	1.35E+00	6.40E-01	1.25E+00	7.40E-01	1.00E-01	1.36E+00	2.34E+00	1.12E+00	2.36E+00	1.28E+00	1.80E-01	2.37E+00

Top 2 applied? Yes

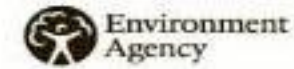
Where top 2 method is applied, two produce categories use 90th percentile rates, while the remainder use the mean. Produce categories vary on a chemical-by-chemical basis. Where top 2 method is not used, all produce categories for all chemicals assume 90th percentile rates.

Building Small terraced house**Soil** Sandy loam

Building footprint (m ²)	2.80E+01	Porosity, Total (cm ³ cm ⁻³)	5.30E-01
Living space air exchange rate (hr ⁻¹)	5.00E-01	Porosity, Air-Filled (cm ³ cm ⁻³)	2.00E-01
Living space height (above ground, m)	4.80E+00	Porosity, Water-Filled (cm ³ cm ⁻³)	3.30E-01
Living space height (below ground, m)	0.00E+00	Residual soil water content (cm ³ cm ⁻³)	1.20E-01
Pressure difference (soil to enclosed space, Pa)	3.10E+00	Saturated hydraulic conductivity (cm s ⁻¹)	3.56E-03
Foundation thickness (m)	1.50E-01	van Genuchten shape parameter <i>m</i> (dimensionless)	3.20E-01
Floor crack area (cm ²)	4.23E+02	Bulk density (g cm ⁻³)	1.21E+00
Dust loading factor (µg m ⁻³)	5.00E+01	Threshold value of wind speed at 10m (m s ⁻¹)	7.20E+00
		Empirical function (<i>F_a</i>) for dust model (dimensionless)	1.22E+00
		Ambient soil temperature (K)	2.83E+02
		Soil pH	7.40E+00
		Soil Organic Matter content (%)	8.60E-01
		Fraction of organic carbon (g g ⁻¹)	4.99E-03
		Effective total fluid saturation (unitless)	5.12E-01
		Intrinsic soil permeability (cm ²)	4.75E-08
		Relative soil air permeability (unitless)	6.42E-01
		Effective air permeability (cm ²)	3.05E-08

Soil - Vapour Model

Depth to top of source (no building) (cm)	0
Depth to top of source (beneath building) (cm)	65
Default soil gas ingress rate?	Yes
Soil gas ingress rate ($\text{cm}^3 \text{s}^{-1}$)	2.50E+01
Building ventilation rate ($\text{cm}^3 \text{s}^{-1}$)	1.87E+04
Averaging time surface emissions (yr)	6
Finite vapour source model?	No
Thickness of contaminated layer (cm)	200

Air Dispersion Model

Mean annual windspeed at 10m (m s^{-1})	5.00
Air dispersion factor at height of 0.8m *	2400.00
Air dispersion factor at height of 1.6m *	0.00
Fraction of site cover ($\text{m}^2 \text{m}^{-2}$)	0.75
* Air dispersion factor in $\text{g m}^{-2} \text{s}^{-1}$ per kg m^{-3}	

Soil - Plant Model

	Dry weight conversion factor	Homegrown fraction		Soil loading factor	Preparation correction factor
	g DW g^{-1} FW	Average	High		
		dimensionless		g g^{-1} DW	dimensionless
Green vegetables	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	0.103	0.06	0.40	1.00E-03	1.00E+00
Tuber vegetables	0.210	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	0.058	0.06	0.40	1.00E-03	6.00E-01
Shrub fruit	0.166	0.09	0.60	1.00E-03	6.00E-01
Tree fruit	0.157	0.04	0.27	1.00E-03	6.00E-01

Gardener type Average

CLEA Software Version 1.071

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Report generated 21-Jun-18

Report title Woodcroft Farm, Lovedean

Created by FG at GESL

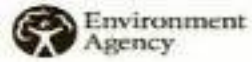


RESULTS

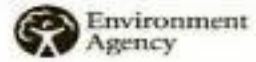
[illegible]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Client ref: Granger PLC
Project ref: GE16943
Site ref: Woodcroft Farm - Farnleyard
Data description:
Contaminant(s): Metals
Test scenario: Planning
Date: 11 June 2016
User details: EG

Client/ident ref: Granger PLC Project ref: GE16943 Site ref: Woodcroft Farm - Farmyard Data description: Contaminant(s): Metals Test scenario: Planning Date: 11 June 2015 User details: FG														
	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Hexavalent Chromium (mg/kg)	Total Cyanide (mg/kg)
Critical concentration, C_c	38.03	1330	1.72	11	910	2400	200	40	180	250	410	3700	8	2
Notes														
Full dataset size	31	31	31	31	31	31	31	31	31	31	31	31	0	0
Outliers present?	Yes	No	Yes	Yes	#REF!	Yes	Yes	No	Yes	Yes	Yes	Yes		
Number of outliers temporarily excluded	0													
Number removed by filter	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Sample size, n	31	31	31	31	29	31	31	31	31	31	31	31	0	0
Sample mean, $\bar{x}$	19.383871	101.974194	1.26451613	0.67903226	#REF!	29.4935484	48.2741935	0.25	31.3064516	0.67096774	49.5	82.5322581	No Data	No Data
Standard deviation, s	41.998842	98.3591276	1.34723133	1.02970661	#REF!	33.5433246	55.1896184	0	47.3983821	0.34272783	28.1208464	73.7256101		
Number of non-detects	0	0	17	17	0	0	1	31	0	24	0	0	0	0
Set non-detect values to:	Detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit
Distribution	Non-normal	Non-normal	Non-normal	Non-normal	#REF!	Non-normal	Non-normal	Single value	Non-normal	Non-normal	Non-normal	Non-normal		
Statistical approach	Auto: Chebyshev	Auto: Chebyshev	Auto: Chebyshev	Auto: Chebyshev	#REF!	Auto: Chebyshev	Auto: Chebyshev	Auto: Chebyshev	Auto: Chebyshev	Auto: Chebyshev	Auto: Chebyshev	Auto: Chebyshev	Auto	Auto

Test scenario:	Planning: is true mean lower than critical concentration ($\mu < C_c$)				Evidence level required:		95%	Use Normal distribution to test for outliers						
t statistic, t_x (or k_x)	-2.471907503	-69.51422293	-1.882398967	-55.80688317	#REF!	-393.4738584	-15.30674722	N/A	-17.46664345	-4050.459805	-71.37690762	-273.1914722		
Upper confidence limit (on true mean concentration, μ)	52.2639816	178.977721	2.31923843	1.48517037	#REF!	55.753992	91.4811171	0.25	68.4137615	0.93928297	71.5152865	140.250664		
Evidence level	86%	100%	78%	100%	#REF!	100%	100%	100%	100%	100%	100%	100%		
Base decision on:	evidence level	evidence level	evidence level	evidence level	lower bound	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level		
Result	$\mu \geq C_c$	$\mu < C_c$	$\mu \geq C_c$	$\mu < C_c$	#REF!	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$		
Select dataset	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Back to data	Go to outlier test	Go to normality test	Show individual summary
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Test Results

Arsenic (mg/kg)

Client/client ref: Grainger PLC Site ref: Woodcroft Farm - Farmyard

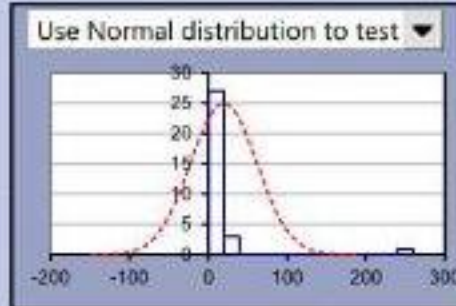
Date: 11-Jun-2018

Project ref: GE16943

Data description:

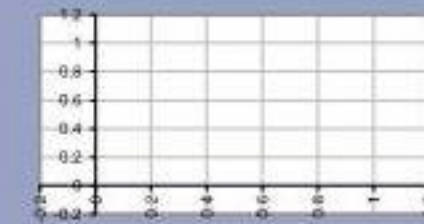
User details: FG

Datase	Arsenic (mg/kg) ▼
Sample mean (mg/kg) $\bar{x}$	19.384
Sample standard deviation, s	41.999
Sample size, n	31
Critical concentration, Cc (mg/kg)	38.03



Outliers & non-detects

Outliers present?	Yes
Significance level	5% ▼
Outliers excluded	0
Non-detects	0

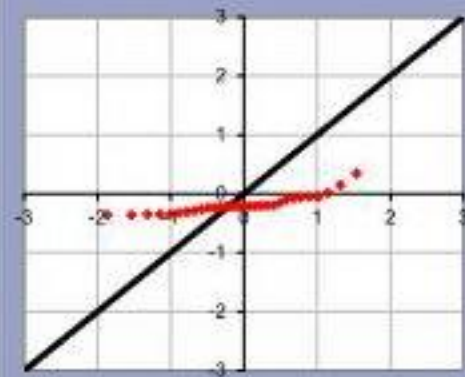


Normality test

Significance level 5% ▼

Non-normal distribution

Use: Auto: Chebychev ▼

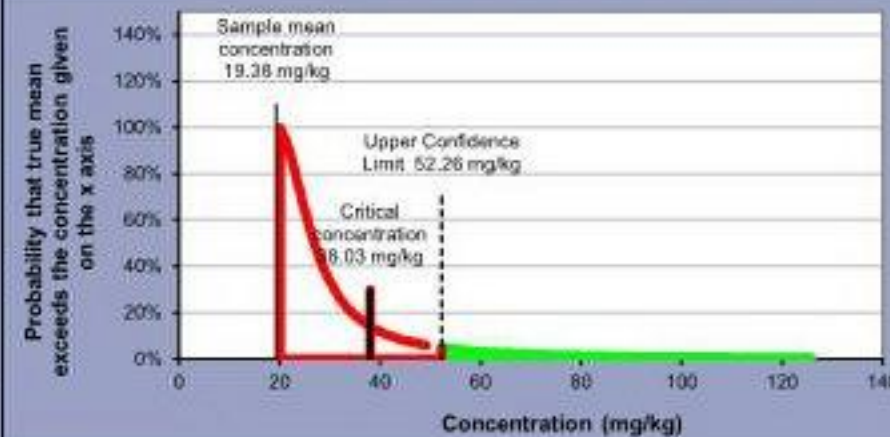


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)? ▼

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

86%

Base decision on: evidence level ▼

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? No

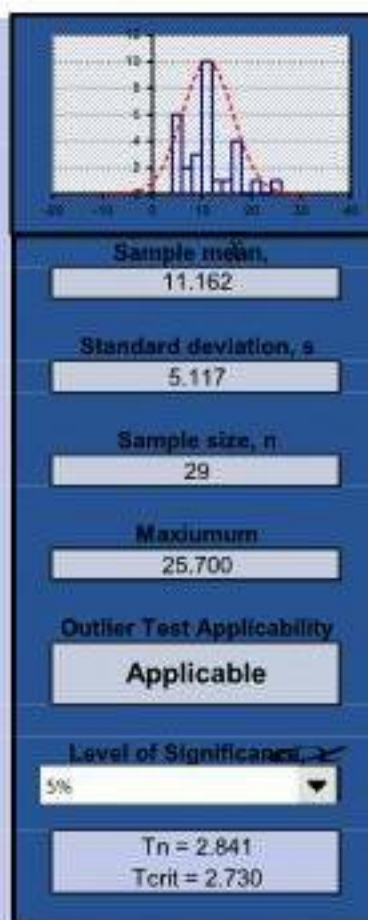
Not enough evidence

Back to data

Back to summary

Go to outlier test

Go to normality test

[illegible]

The screenshot shows a software interface for outlier detection. At the top left, a small table titled 'Outliers?' has a red row labeled 'Yes' and '(2 selected)'. To its right is a scatter plot with a grid, showing data points and two outliers. Below these, a 'Dataset' dropdown menu is set to 'Arsenic (mg/kg) O/T 29/31'. Underneath, a 'Us' dropdown menu is set to 'Normal', followed by the text 'distribution to test for outliers'. At the bottom, there are four large, 3D-style buttons: 'Exclude identified outliers', 'Show individual summary', 'Back to summary', and 'Back to data'.

Outliers?
Yes
(2 selected)

Dataset: Arsenic (mg/kg) O/T 29/31

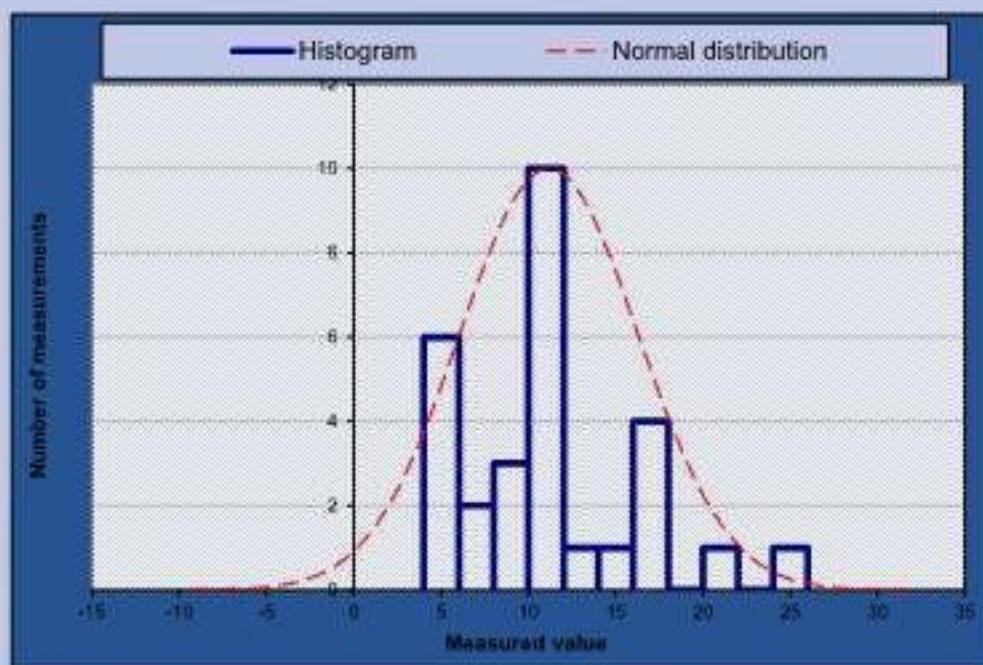
Us: Normal distribution to test for outliers

Exclude identified outliers

Show individual summary

Back to summary

Back to data



Test Results

Arsenic (mg/kg) O/T:29/31

Client/client ref: Grainger PLC Site ref: Woodcroft Farm - Farmyard

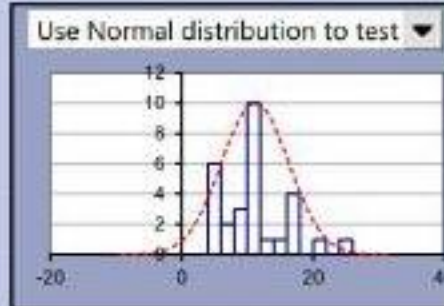
Date: 11-Jun-2018

Project ref: GE16943

Data description:

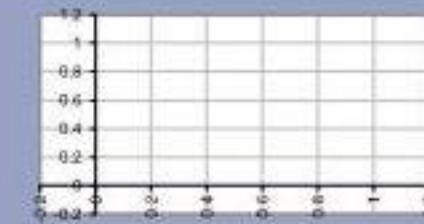
User details: FG

Datase	Arsenic (mg/kg) O/T:29/31
Sample mean (mg/kg) $\bar{x}$	11.162
Sample standard deviation, s	5.1167
Sample size, n	29
Critical concentration, Cc (mg/kg)	38.03



Outliers & non-detects

Outliers present?	Yes
Significance level	5%
Outliers excluded	2
Non-detects	#NAME?

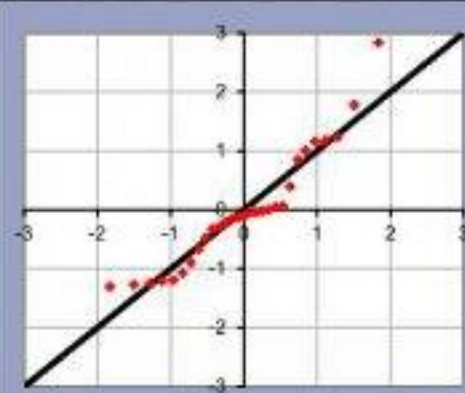


Normality test

Significance level 5%

Non-normal distribution

Use: Auto: Chebychev

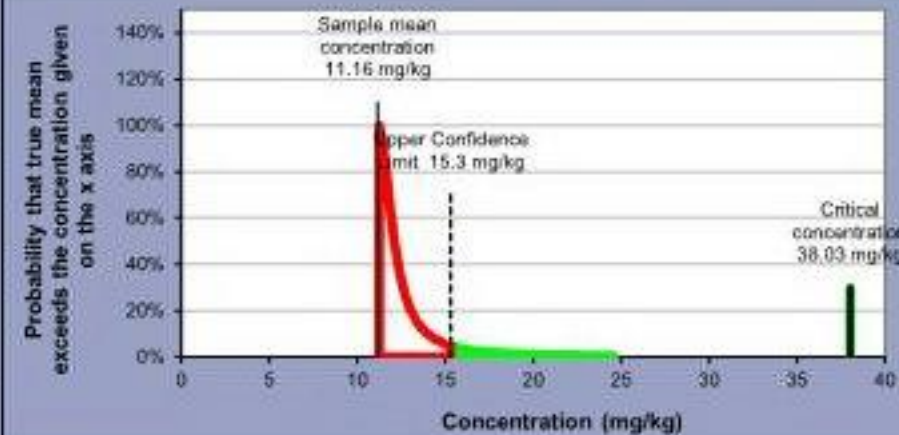


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)?

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

100%

Base decision on: evidence level

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? Yes

$\mu < C_c$ (re this dataset)

Back to data

Back to summary

Go to outlier test

Go to normality test

Test Results

Beryllium (mg/kg)

Client/client ref: Grainger PLC Site ref: Woodcroft Farm - Farmyard

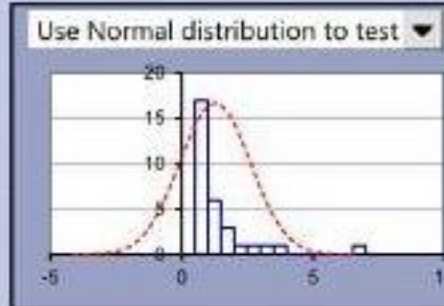
Date: 11-Jun-2018

Project ref: GE16943

Data description:

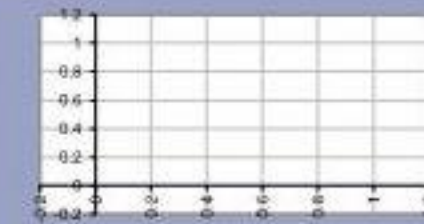
User details: FG

Datase	Beryllium (mg/kg)
Sample mean (mg/kg) $\bar{y}$	1.2645
Sample standard deviation, s	1.3472
Sample size, n	31
Critical concentration, Cc (mg/kg)	1.72



Outliers & non-detects

Outliers present?	Yes
Significance level	5%
Outliers excluded	0
Non-detects	#NAME?

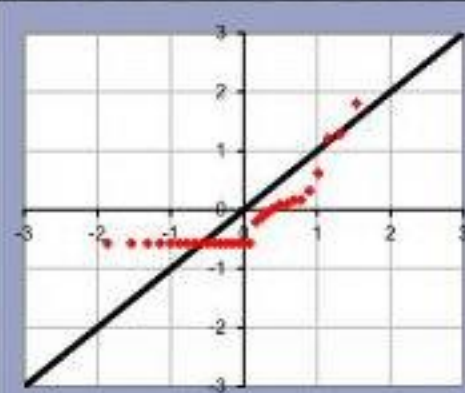


Normality test

Significance level 5%

Non-normal distribution

Use: Auto: Chebychev

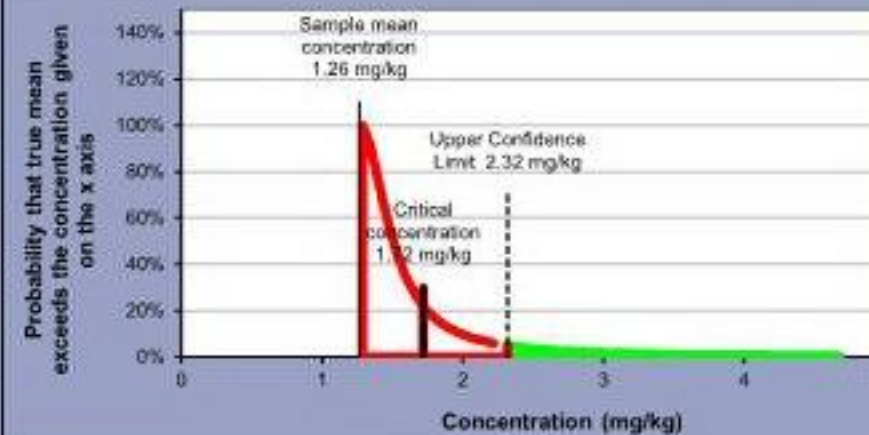


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)?

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

78%

Base decision on: evidence level

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? No

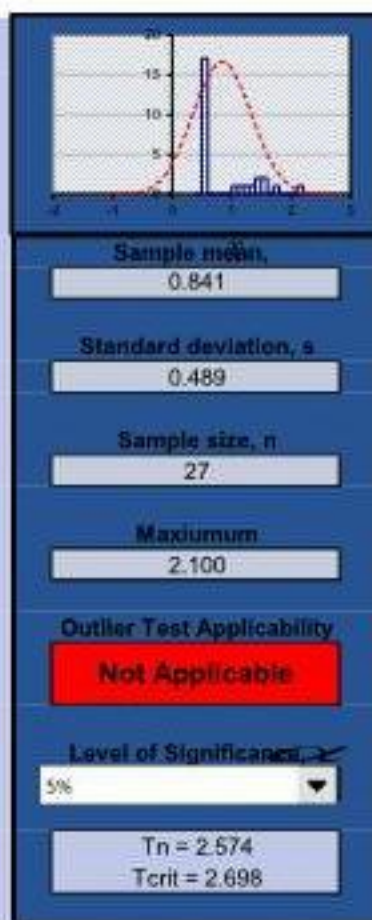
Not enough evidence

Back to data

Back to summary

Go to outlier test

Go to normality test

[illegible]

Outliers?

No
(4 selected)

Dataset Beryllium (mg/kg): O/T:27/31

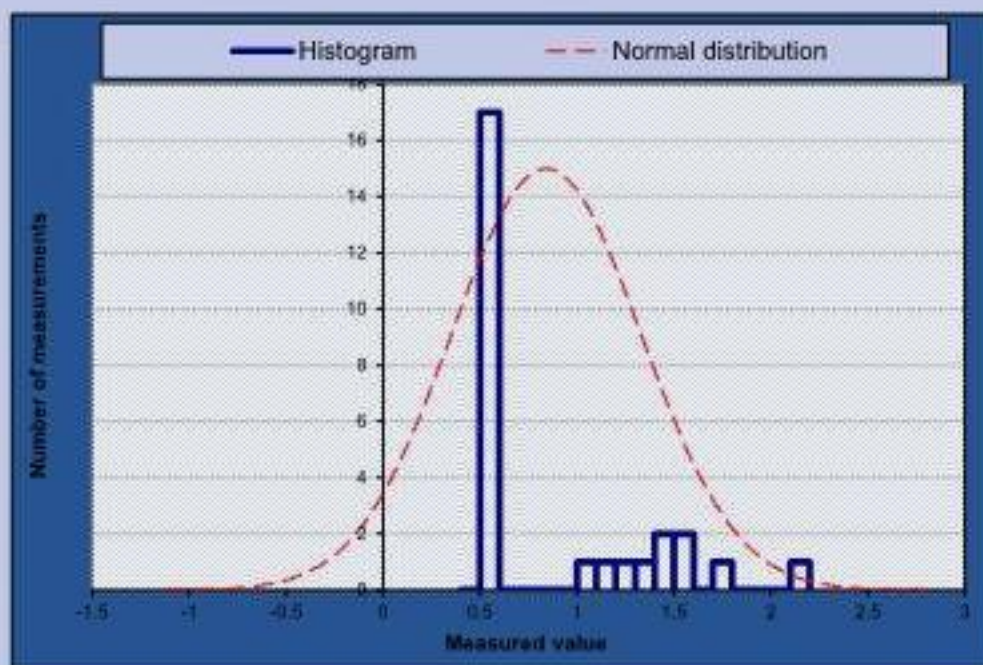
U.S. Normal distribution to test for outliers

Exclude identified outliers

Show individual summary

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Back to data



Test Results

Beryllium (mg/kg) O/T:27/31

Client/client ref: Grainger PLC

Project ref: GE16943

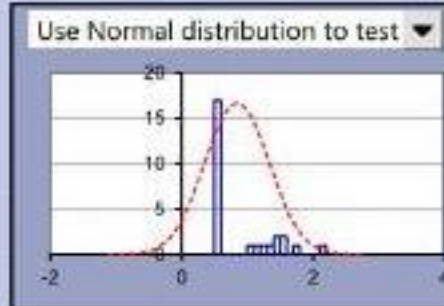
Site ref: Woodcroft Farm - Farmyard

Data description:

Date: 11-Jun-2018

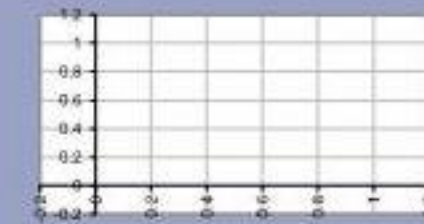
User details: FG

Dataset	Beryllium (mg/kg) O/T:27/31
Sample mean (mg/kg) $\bar{x}$	0.8407
Sample standard deviation, s	0.4893
Sample size, n	27
Critical concentration, Cc (mg/kg)	1.72



Outliers & non-detects

Outliers present?	No
Significance level	5%
Outliers excluded	4
Non-detects	#NAME?

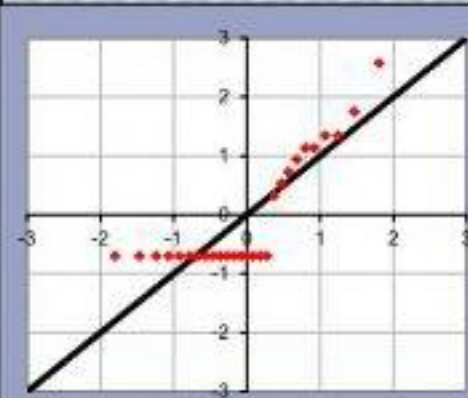


Normality test

Significance level 5%

Non-normal distribution

Use: Auto: Chebychev

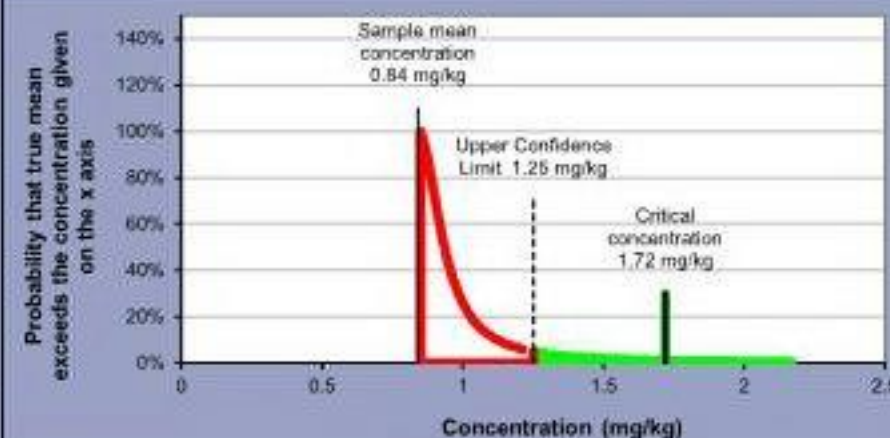


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)?

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

99%

Base decision on: evidence level

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? Yes

$\mu < C_c$ (re this dataset)

Back to data

Back to summary

Go to outlier test

Go to normality test

Test Results

Nickel (mg/kg)

Client/client ref: Grainger PLC Site ref: Woodcroft Farm - Farmyard

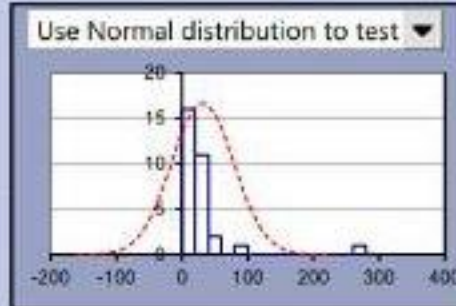
Project ref: GE16943

Data description:

Date: 11-Jun-2018

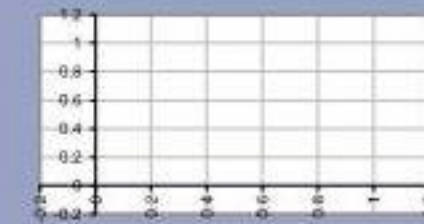
User details: FG

Datase	Nickel (mg/kg)
Sample mean (mg/kg)	31.306
Sample standard deviation, s	47.398
Sample size, n	31
Critical concentration, Cc (mg/kg)	180



Outliers & non-detects

Outliers present?	Yes
Significance level	5%
Outliers excluded	0
Non-detects	0

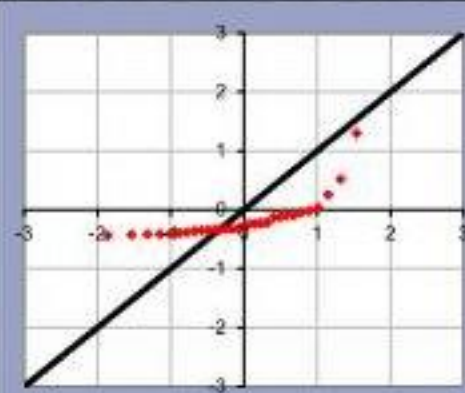


Normality test

Significance level 5%

Non-normal distribution

Use: Auto: Chebychev

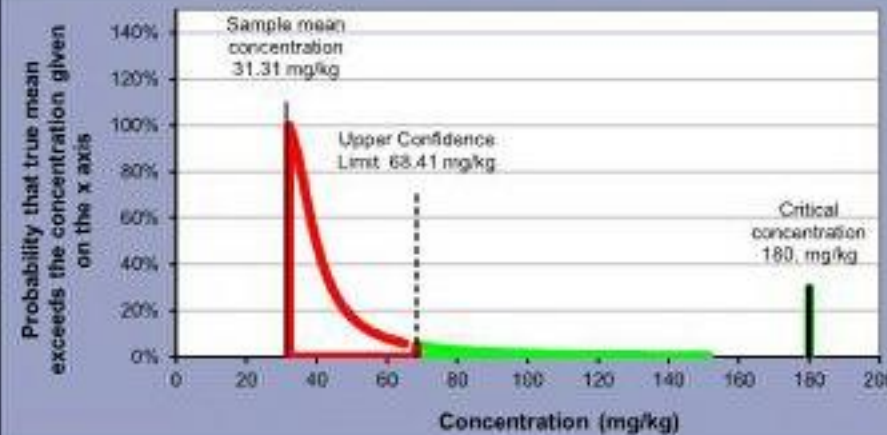


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)?

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

100%

Base decision on: evidence level

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? Yes

$\mu < C_c$ (re this dataset)

Back to data

Back to summary

Go to outlier test

Go to normality test

Test Results

Lead (mg/kg)

Client/client ref: Grainger PLC

Site ref: Woodcroft Farm - Farmyard

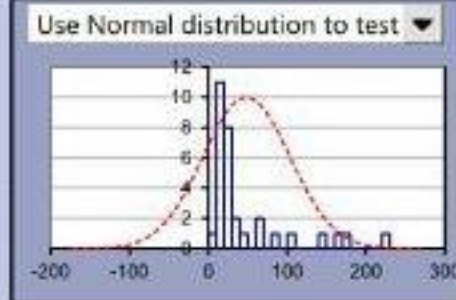
Date: 11-Jun-2018

Project ref: GE16943

Data description:

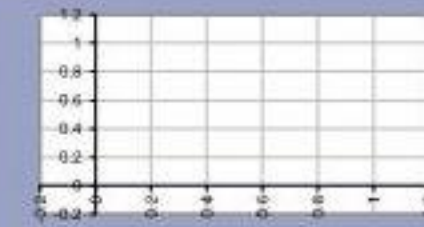
User details: FG

Datase	Lead (mg/kg)
Sample mean (mg/kg) $\bar{y}$	48.274
Sample standard deviation, s	55.19
Sample size, n	31
Critical concentration, Cc (mg/kg)	200



Outliers & non-detects

Outliers present?	Yes
Significance level	5%
Outliers excluded	0
Non-detects	#NAME?

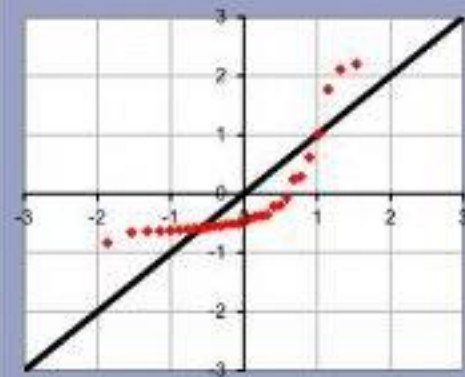


Normality test

Significance level 5%

Non-normal distribution

Use: Auto: Chebychev

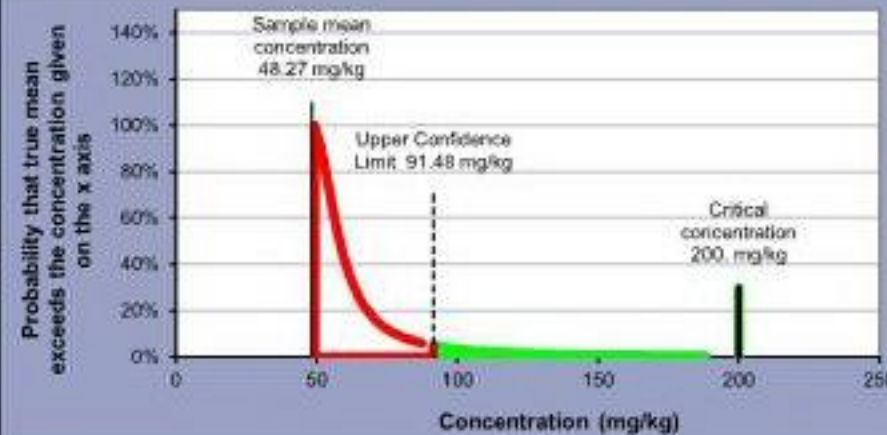


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)?

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

100%

Base decision on: evidence level

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? Yes

$\mu < C_c$ (re this dataset)

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Go to outlier test

Go to normality test

Client/client ref: Granger PLC
 Project ref: GE16943
 Site ref: Woodcroft Farm, Lovelace, PO2 9QA -
 Farmyard
 Data description:
 Contaminant(s): PAH
 Test scenario: Planning
 Date: 16 June 2016
 Test data: 60

Critical concentration, C_c	0.39	320				
Notes						
Full dataset size	31	31	0	0	0	0
Outliers present?	Yes	Yes				
Number of outliers temporarily excluded	0					
Number removed by filter	0	0	0	0	0	0
Sample size, n	31	31	0	0	0	0
Sample mean, $\bar{x}$	0.12741935	0.3983871	No Data	No Data	No Data	No Data
Standard deviation, s	0.14366553	0.72508435				
Number of non-detects	21	17	0	0	0	0
Set non-detect values to:	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit
Distribution	Non-normal	Non-normal				
Statistical approach	Auto: Chebyshev	Auto: Chebyshev	Auto	Auto	Auto	Auto

Test scenario:					
t statistic, t_0 (or k_0)	-10.17632513	-2454.15099			
Upper confidence limit (on true mean concentration, μ)	0.23989242	0.96604212			
Evidence level	99%	100%			
Base decision on:	evidence level	evidence level			
Result	$\mu < C_c$	$\mu < C_c$			
Select dataset	●	○	○	○	○

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Test Results

Benzo (a) pyrene (mg/kg)

Client/client ref: Grainger PLC

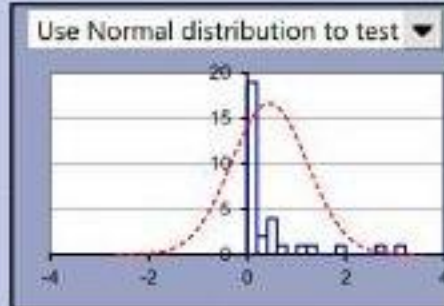
Site ref: Woodcroft Farm, Lovedean, PO8 9QA - F Date: 18-Jun-2018

Project ref: GE16943

Data description:

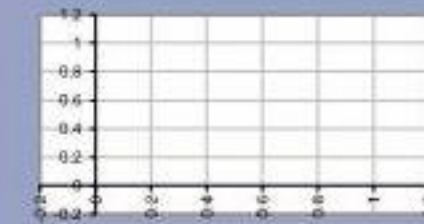
User details: FG

Datase	Benzo (a) pyrene (mg/kg)
Sample mean (mg/kg)	0.4435
Sample standard deviation, s	0.7707
Sample size, n	31
Critical concentration, Cc (mg/kg)	3.93



Outliers & non-detects

Outliers present?	Yes
Significance level	5%
Outliers excluded	0
Non-detects	#NAME?

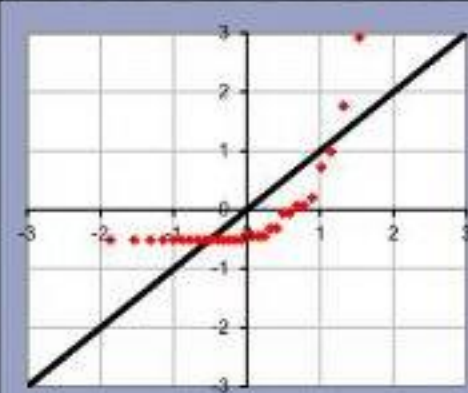


Normality test

Significance level 5%

Non-normal distribution

Use: Auto: Chebychev

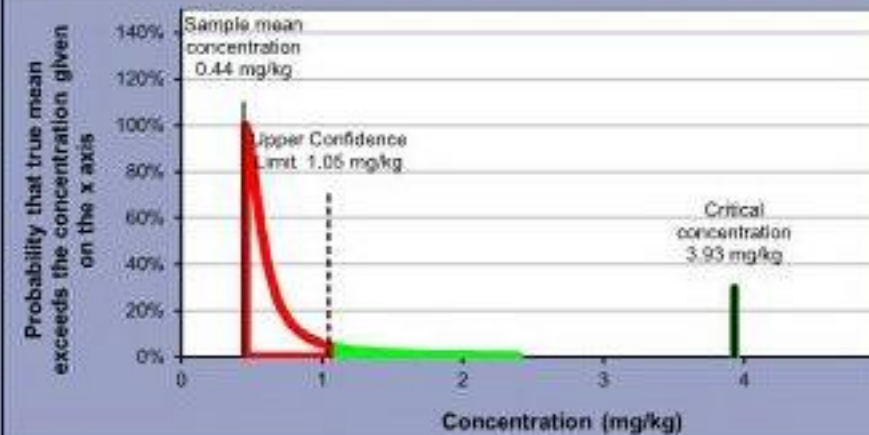


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)?

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

100%

Base decision on: evidence level

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? Yes

$\mu < C_c$ (re this dataset)

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Back to summary

Go to outlier test

Go to normality test

Outliers?

No
(17 selected)

Dataset Benzol (a) pyrene (mg/kg): O/T:14/31 ▼

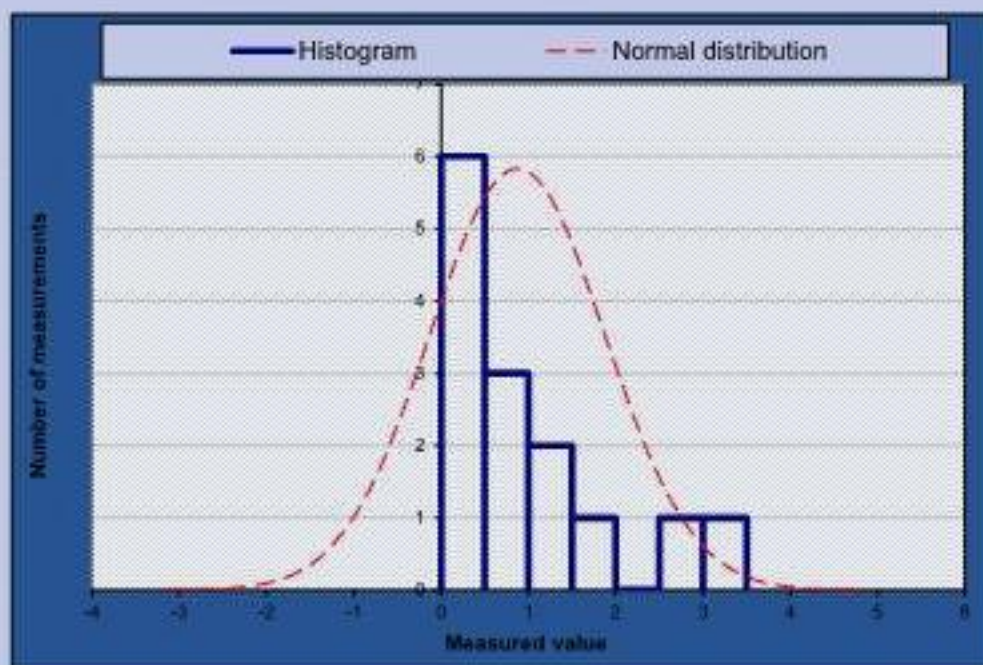
Use: Normal ▼ distribution to test for outliers

Exclude identified outliers

Show individual summary

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Test Results

Benzo (a) pyrene (mg/kg)

O/T:14/31

Client/client ref: Grainger PLC

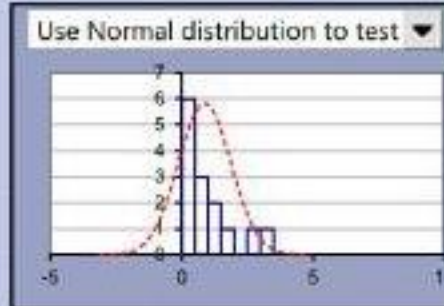
Project ref: GE16943

Site ref: Woodcroft Farm, Lovedean, PO8 9QA - F Date: 18-Jun-2018

Data description:

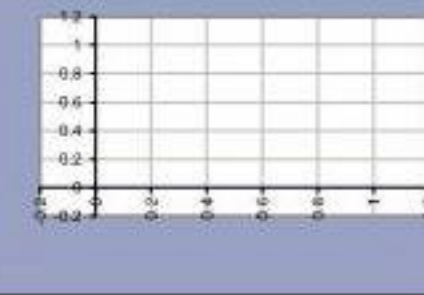
User details: FG

Datase	Benzo (a) pyrene (mg/kg) O/T:14/31
Sample mean (mg/kg)	0.8714
Sample standard deviation, s	1.0007
Sample size, n	14
Critical concentration, Cc (mg/kg)	3.93



Outliers & non-detects

Outliers present?	No
Significance level	5%
Outliers excluded	17
Non-detects	#NAME?

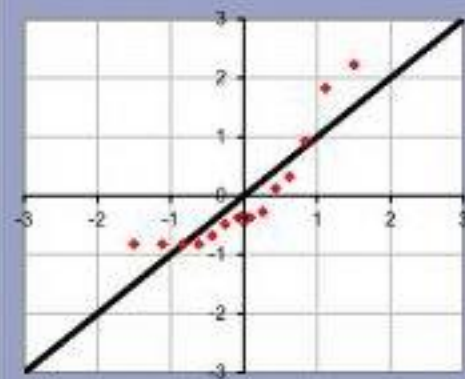


Normality test

Significance level 5%

Non-normal distribution

Use: Auto: Chebychev

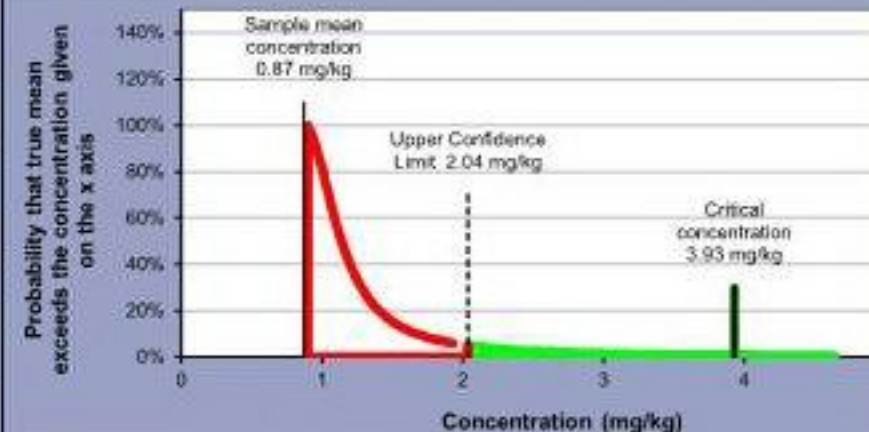


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)?

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

99%

Base decision on: evidence level

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? Yes

$\mu < C_c$ (re this dataset)

Back to data

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Go to outlier test

Go to normality test

Test Results

Benzo (b) fluoranthene (mg/kg)

Client/client ref: Grainger PLC

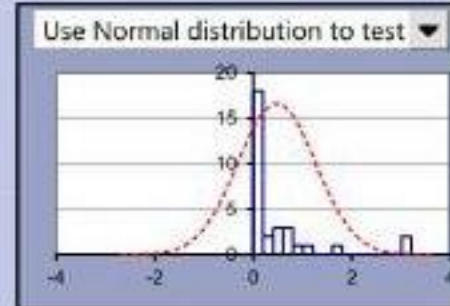
Site ref: Woodcroft Farm, Lovedean, PO8 9QA - F Date: 18-Jun-2018

Project ref: GE16943

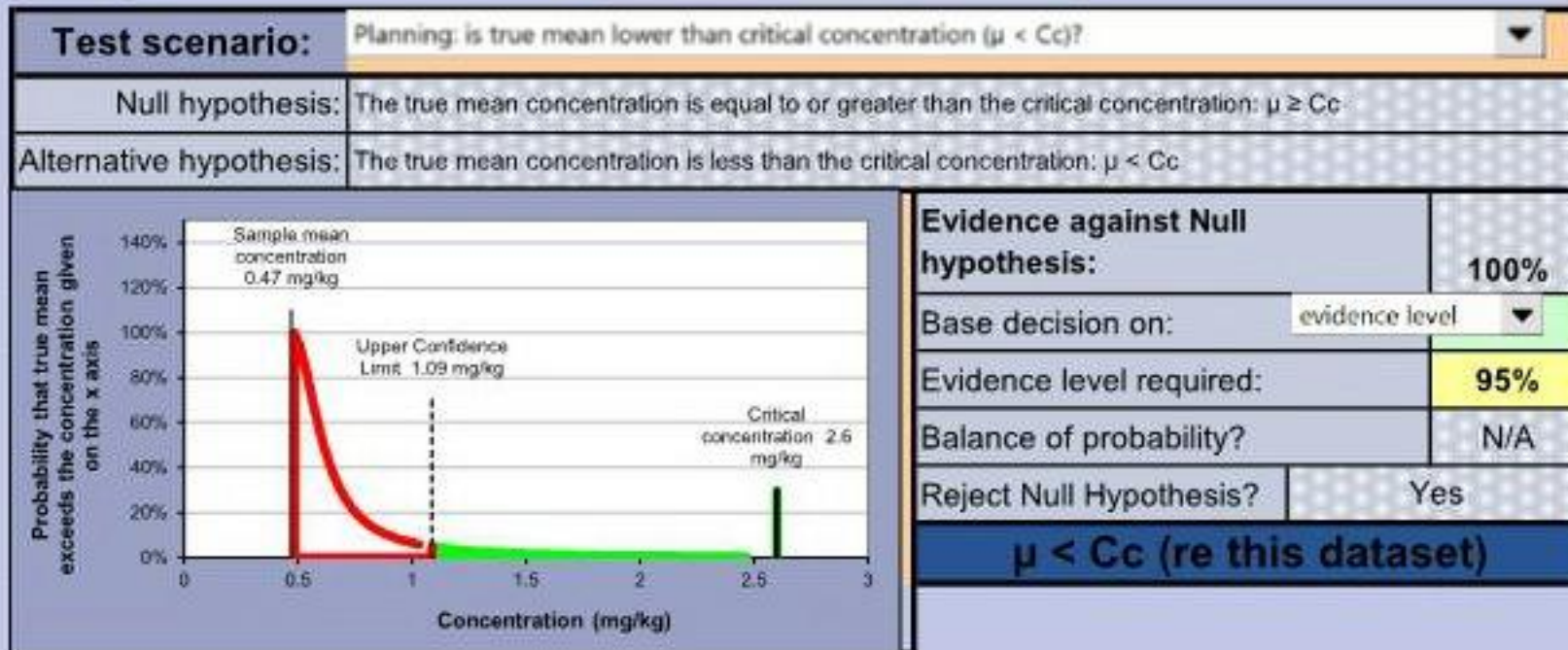
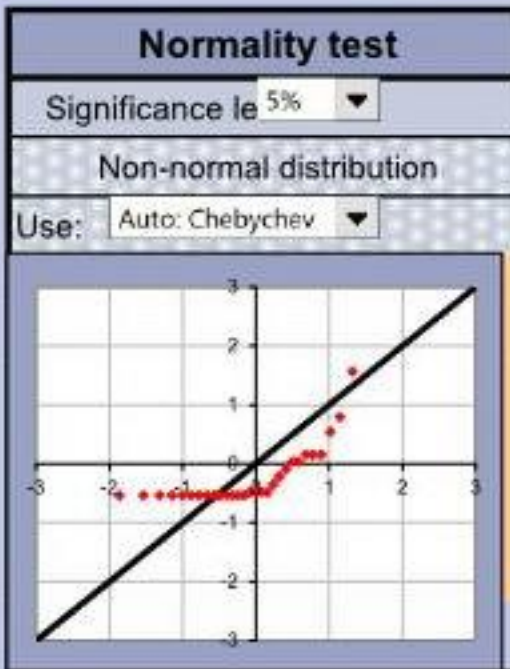
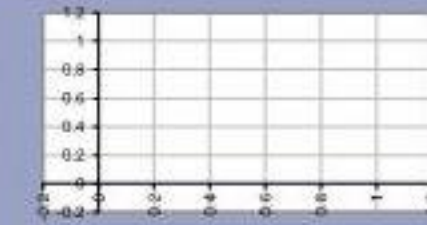
Data description:

User details: FG

Datase	Benzo (b) fluoranthene (mg/kg)
Sample mean (mg/kg)	0.471
Sample standard deviation, s	0.7872
Sample size, n	31
Critical concentration, Cc (mg/kg)	2.6



Outliers & non-detects	
Outliers present?	Yes
Significance level	5%
Outliers excluded	0
Non-detects	#NAME?

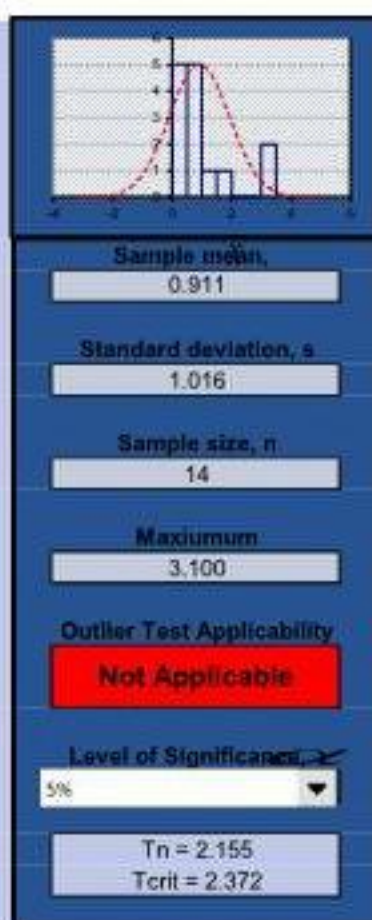


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Go to outlier test

Go to normality test

[illegible]

Outliers?

No

(17 selected)

Dataset: Benz[a]fluoranthene (mg/kg) O/T:14/31

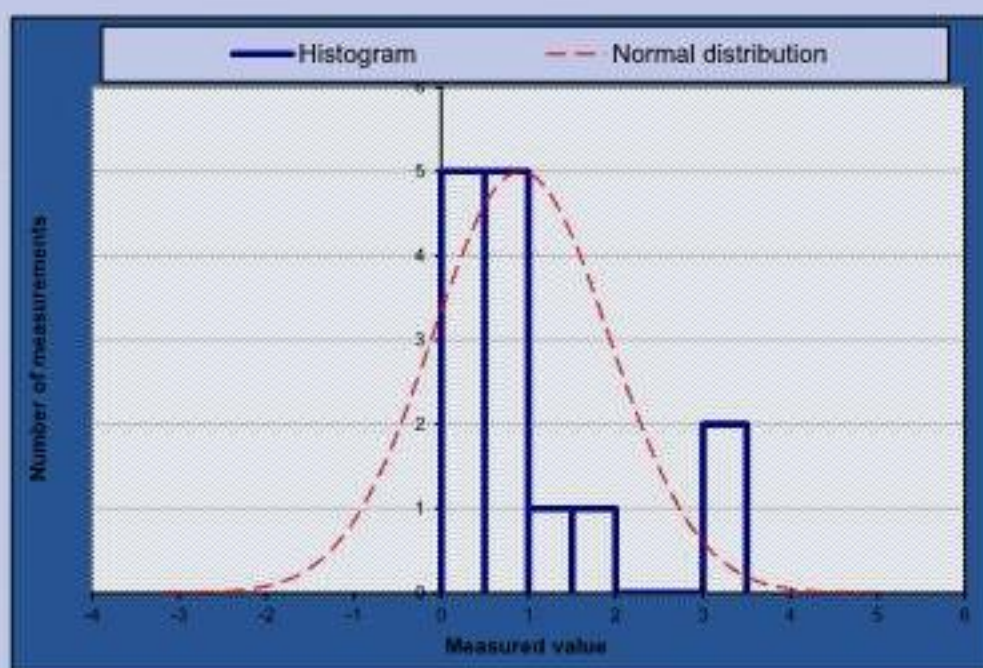
Us: Normal distribution to test for outliers

Exclude identified outliers

Show individual summary

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Test Results

Client/client ref: Grainger PLC Site ref: Woodcroft Farm, Lovedean, PO8 9QA - F Date: 18-Jun-2018

Benzo (b) fluoranthene (mg/kg)

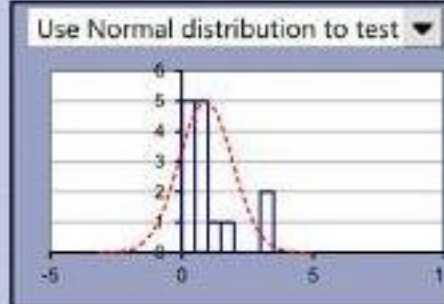
Project ref: GE16943

Data description:

User details: FG

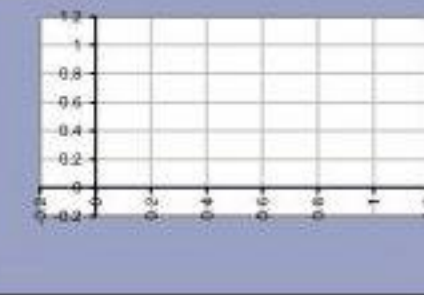
O/T:14/31

Datase	Benzo (b) fluoranthene (mg/kg) O/1 ▼
Sample mean (mg/kg) $\bar{y}$	0.9107
Sample standard deviation, s	1.0159
Sample size, n	14
Critical concentration, Cc (mg/kg)	2.6



Outliers & non-detects

Outliers present?	No
Significance level	5% ▼
Outliers excluded	17
Non-detects	#NAME?

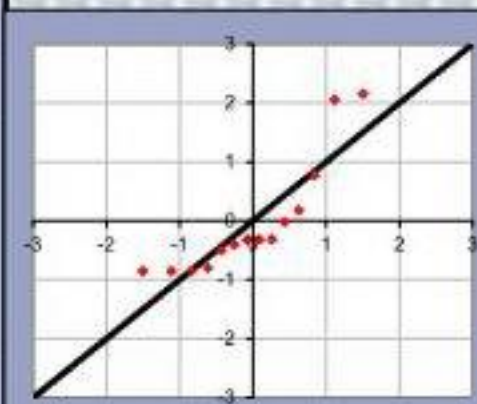


Normality test

Significance level 5% ▼

Non-normal distribution

Use: Auto: Chebychev ▼

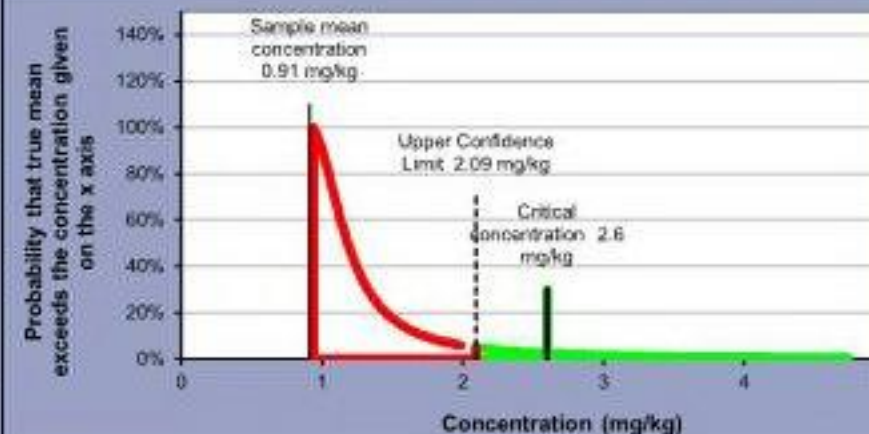


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)? ▼

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

97%

Base decision on: evidence level ▼

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? Yes

$\mu < C_c$ (re this dataset)

Back to data

Back to summary

Go to outlier test

Go to normality test

Test Results

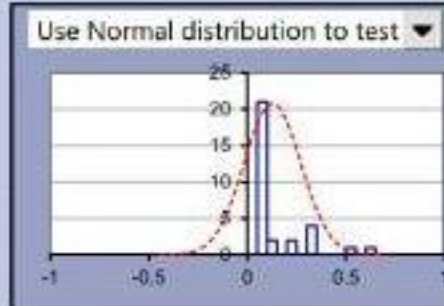
Client/client ref: Grainger PLC Site ref: Woodcroft Farm, Lovedean, PO8 9QA - F Date: 18-Jun-2018

Dibenzo(a,h)anthracene (mg/kg) Project ref: GE16943

Data description:

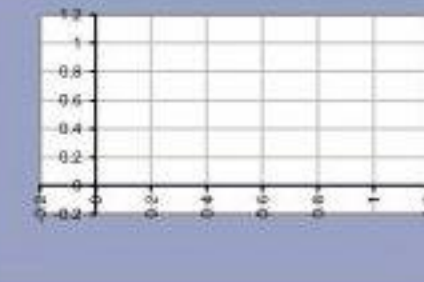
User details: FG

Datase	Dibenzo(a,h)anthracene (mg/kg) ▼
Sample mean (mg/kg) $\bar{y}$	0.1274
Sample standard deviation, s	0.1437
Sample size, n	31
Critical concentration, Cc (mg/kg)	0.39



Outliers & non-detects

Outliers present?	Yes
Significance level	5% ▼
Outliers excluded	0
Non-detects	#NAME?

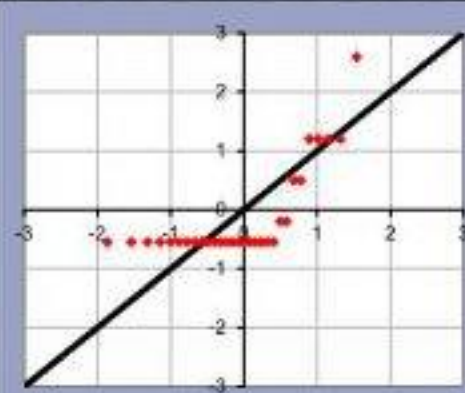


Normality test

Significance level 5% ▼

Non-normal distribution

Use: Auto: Chebychev ▼

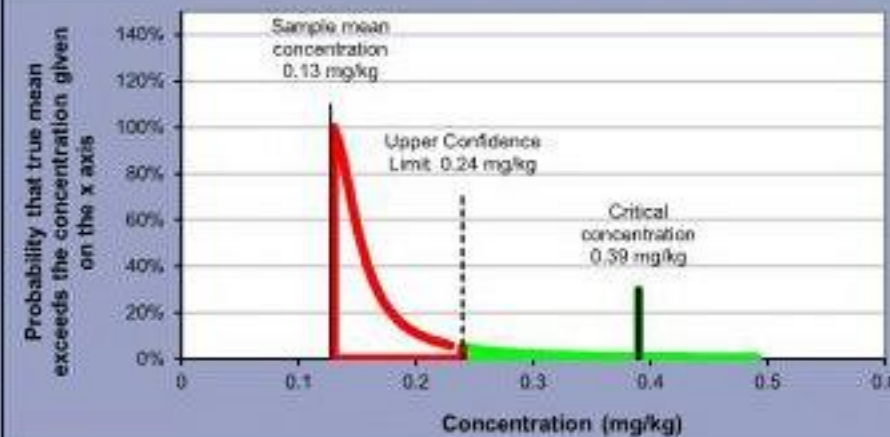


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)? ▼

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

99%

Base decision on: evidence level ▼

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? Yes

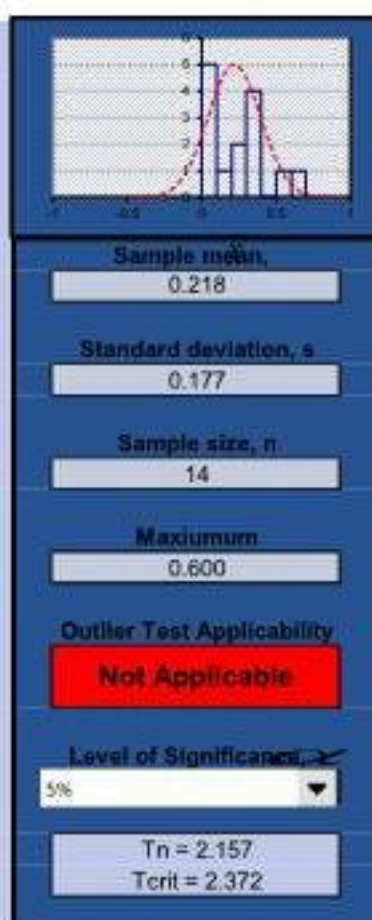
$\mu < C_c$ (re this dataset)

Back to data

Back to summary

Go to outlier test

Go to normality test

[illegible]

Outliers?

No

(17 selected)

Dataset: Dibenzo(a,h)anthracene (mg/kg) O/T:14/31

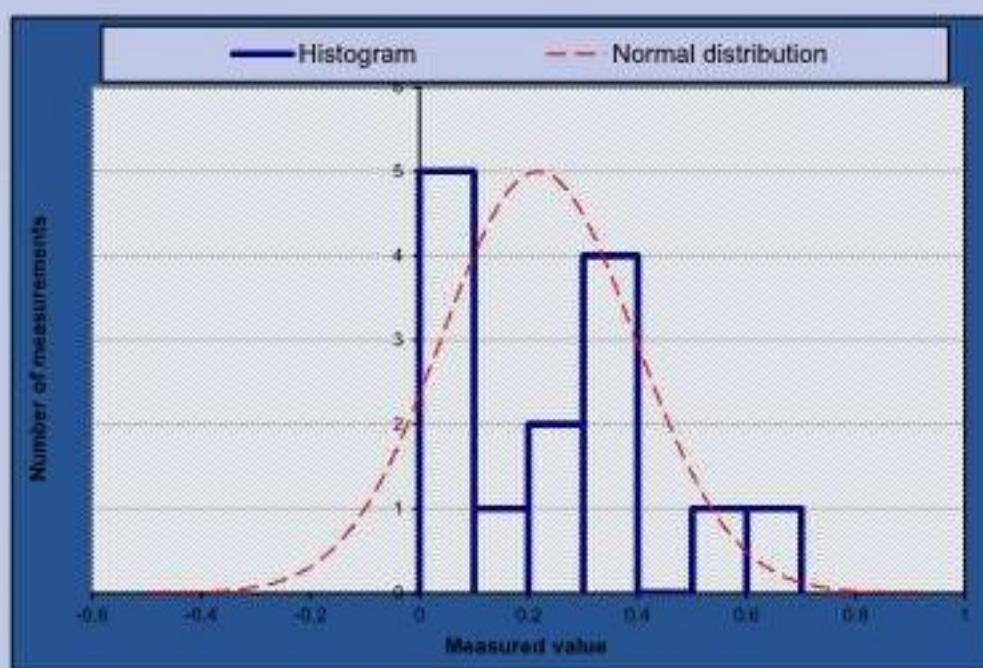
Us: Normal distribution to test for outliers

Exclude identified outliers

Show individual summary

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Test Results

Client/client ref: Grainger PLC Site ref: Woodcroft Farm, Lovedean, PO8 9QA - F Date: 18-Jun-2018

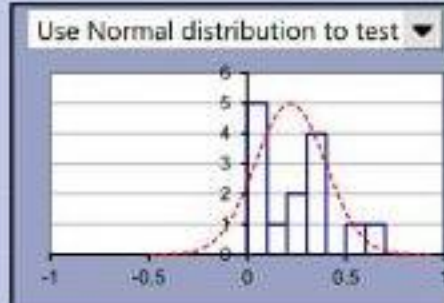
Dibenzo(a,h)anthracene (mg/kg) Project ref: GE16943

Data description:

User details: FG

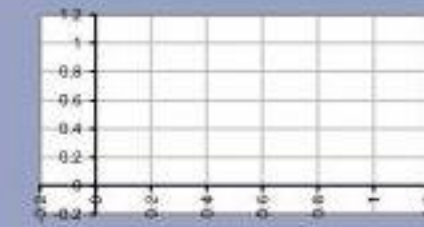
O/T:14/31

Datase	Dibenzo(a,h)anthracene (mg/kg) O/ ▼
Sample mean (mg/kg) $\bar{x}$	0.2179
Sample standard deviation, s	0.1772
Sample size, n	14
Critical concentration, Cc (mg/kg)	0.39



Outliers & non-detects

Outliers present?	No
Significance level	5% ▼
Outliers excluded	17
Non-detects	21

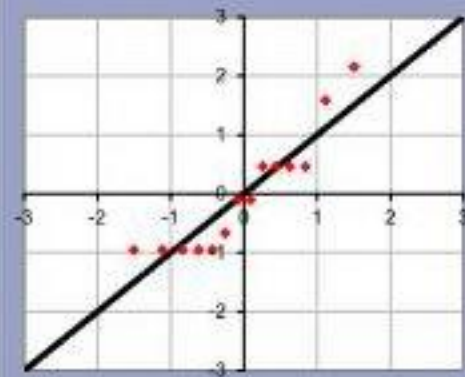


Normality test

Significance level 5% ▼

Non-normal distribution

Use: Auto: Chebychev ▼

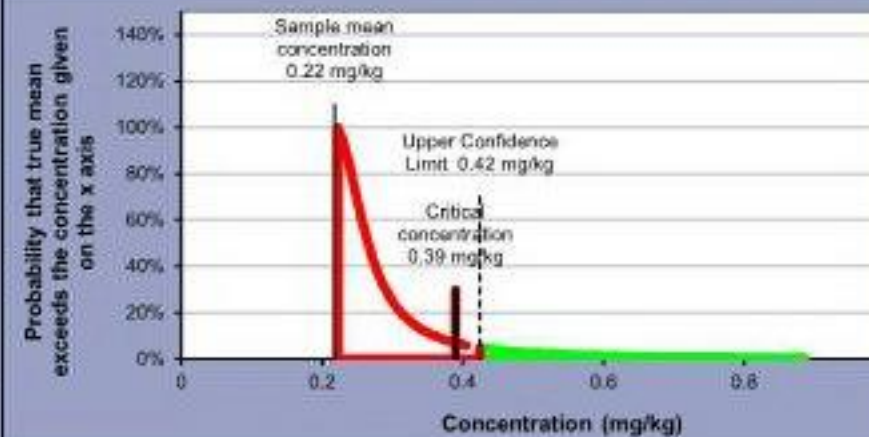


Test scenario:

Planning: is true mean lower than critical concentration ($\mu < C_c$)? ▼

Null hypothesis: The true mean concentration is equal to or greater than the critical concentration: $\mu \geq C_c$

Alternative hypothesis: The true mean concentration is less than the critical concentration: $\mu < C_c$



Evidence against Null hypothesis:

93%

Base decision on: evidence level ▼

Evidence level required: 95%

Balance of probability? N/A

Reject Null Hypothesis? No

Not enough evidence

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Geo-Environmental

APPENDIX C

Site Photographs



Photos – 22/11/2017



Plate 1 View north east across the former farmyard and stable area



Plate 2 View of demolished former stables, with stockpiled wastes and possible ACM materials



Plate 3 View of partially covered stockpiled demolition waste including possible ACM's



Plate 4 View of former garage building associated with the farmhouse with possible asbestos sheeting stacked adjacent to building

Photos – 15/05/2018



Plate 5 View north of former farmyard area



Plate 6 View north east of former farmyard area



Plate 7 View of stockpiled crushed concrete material, stored in north western side of the farmyard area



Plate 8 View north west of crushed concrete stockpile



Plate 9 View south east towards farmhouse of former farmyard area



Plate 10 View north east across former farmyard area



Plate 11 View west towards horse arena area



Plate 12 View north across north edge of the former farmyard area



APPENDIX D

Imported Soils Criteria





Geo-Environmental

IMPORTED SOIL SPECIFICATION

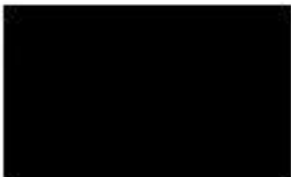
for the site at

**WOODCROFT FARM, WOODCROFT LANE,
LOVEDEAN, HAMPSHIRE, PO8 9QA**

on behalf of

GRAINGER PLC



Report:	IMPORTED SOIL SPECIFICATION
Site:	WOODCROFT FARM, WOODCROFT LANE, LOVEDEAN, HAMPSHIRE, PO8 9QA
Client:	GRAINGER PLC
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AMENDMENT RECORD

Revision ref.	Date	Reasons for amendment	Author's initials
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1.0 Introduction

This document sets out the requirements for imported subsoil and Topsoil materials for any project undergoing redevelopment or other works where capping work is required.

Within the specification reference has been made to topsoil and subsoil. Topsoil relates to the top layer of natural soil that can support healthy vegetation growth. Subsoil relates to the layer of soil immediately below the topsoil to the depth of the underlying broken rock or geological parent material.

The specification considers the chemical, nutritional and physical properties of soils that are to be imported onto site in order to ensure materials used are suitable for their intended use and do not introduce any new hazard or pollutant linkage on to the site.

Where there is any discrepancy between this specification and BS3882:2015 or BS8601:2013, the latter documents shall take precedence unless otherwise formally confirmed by the relevant regulator.

2.0 Chemical Composition

The chemical criteria listed below are based on the published Category 4 Screening Levels (C4SLs) by DEFRA and/or the relevant Suitable for Use Levels (S4ULs) published by LQM, for a residential end use with plant uptake. From time to time these values may change in line with regulatory or UK policy changes. Such changes will require revision and re-issue of this document.

Where C4SLs or S4ULs are published for a range of Soil Organic Matter (SOM) values, these ranges and their respective SOM values have been presented and would be considered when assessing compliance with this Specification.

2.1 Method of Analysis

Samples should be analysed using UKAS or MCERTS accredited laboratories. For TPH analysis sample preparation must not include air drying.

2.1.1 Poly Aromatic Hydrocarbon (PAH)

The PAH analysis must include the EPA priority 16.

2.1.2 Total Petroleum Hydrocarbons (TPH)

The analysis for TPH should be undertaken on the 'as received' sample and not be subject to any pre-treatment and shall include aliphatic and aromatic carbon banding split.

2.2 Topsoil (0-300mm depth)

Tables 1, 1a, 1b and 1c provide a list of the maximum acceptable concentrations for a range of determinants for imported topsoil.



Determinant	Maximum concentration (mg/kg)
Inorganic	SOM 6%
Arsenic (total)	37
Boron (water soluble)	290
Cadmium (total)	11
Chromium (total)	130
Copper (total)	2400
Cyanide (total)	250
Lead (total)	200
Mercury (total inorganic)	40
Nickel (total)	180
pH	5.5 – 7.8
Selenium (total)	250
Sulphate (total)	2000
Zinc (total)	3700
Asbestos	Absent
Organic	
Phenols (total)	110
Poly Aromatic Hydrocarbon (speciated)	See Table 1a
Total Petroleum Hydrocarbon (speciated)	See Table 1b

Table 1 Chemical Specification for Topsoil

Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Acenaphthene	210	510	1100
Acenaphthylene	170	420	920
Anthracene	2400	5400	11000
Benz(a)anthracene	7.2	11	13
Benzo(a)pyrene	2.2	2.7	3.0
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(ghi)perylene	320	340	350
Benzo(k)fluoranthene	77	93	100
Chrysene	15	22	27
Dibenz(ah)anthracene	0.24	0.28	0.30
Fluoranthene	280	560	890
Fluorene	170	400	860
Indeno(1,2,3CD)pyrene	27	36	41
Naphthalene	2.3	5.6	13.0
Phenanthrene	95	220	440
Pyrene	620	1200	2000

Table 1a Topsoil Specification for Speciated PAH

Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Aliphatic			
EC 5-6	42	78	160
EC >6-8	100	230	530
EC >8-10	27	65	150
EC >10-12	130	330	760



Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
EC >12-16	1100	2400	4300
EC >16-35	65000	92000	110000
EC >35-44	65000	92000	110000
Aromatic			
EC 5-7 (benzene)	70	140	300
EC >7-8 (toluene)	130	290	660
EC >8-10	34	83	190
EC >10-12	74	180	380
EC >12-16	140	330	660
EC >16-21	260	540	930
EC >21-35	1100	1500	1700
EC >35-44	1100	1500	1700
Aliphatic and Aromatic			
EC >44-70	1600	1800	1900

Table 1b Topsoil Specification for Speciated TPH

Determinant	Phytotoxicity GAC (mg/kg)		
	pH <6.0	pH 6.0-7.0	pH >7.0
Zinc	200	200	300
Copper	100	135	200
Nickel	60	75	110

Table 1c Topsoil Specification for phytotoxicity

2.3 Subsoil (300-1000mm depth)

Tables 2, 2a, 2b and 2c provide a list of the maximum acceptable concentrations for a range of determinants for imported subsoil.

Determinant	Maximum concentration (mg/kg)
Inorganic	SOM 6%
Arsenic (total)	37
Boron (water soluble)	290
Cadmium (total)	11
Chromium (total)	130
Copper (total)	2400
Cyanide (total)	250
Lead (total)	200
Mercury (total inorganic)	40
Nickel (total)	180
pH	5.5 – 7.8
Selenium (total)	250
Sulphate (total)	2000
Zinc (total)	3700
Asbestos	Absent
Organic	
Phenols (total)	110
Poly Aromatic Hydrocarbon (speciated)	See Table 2a



Determinant	Maximum concentration (mg/kg)
Inorganic	SOM 6%
Total Petroleum Hydrocarbon (speciated)	See Table 2b

Table 2 Chemical Specification for Subsoil

Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Acenaphthene	210	510	1100
Acenaphthylene	170	420	920
Anthracene	2400	5400	11000
Benz(a)anthracene	7.2	11	13
Benzo(a)pyrene	2.2	2.7	3.0
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(ghi)perylene	320	340	350
Benzo(k)fluoranthene	77	93	100
Chrysene	15	22	27
Dibenz(ah)anthracene	0.24	0.28	0.30
Fluoranthene	280	560	890
Fluorene	170	400	860
Indeno(1,2,3CD)pyrene	27	36	41
Naphthalene	2.3	5.6	13.0
Phenanthrene	95	220	440
Pyrene	620	1200	2000

Table 2a Subsoil Specification for Speciated PAH

Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Aliphatic			
EC 5-6	42	78	160
EC >6-8	100	230	530
EC >8-10	27	65	150
EC >10-12	130	330	760
EC >12-16	1100	2400	4300
EC >16-35	65000	92000	110000
EC >35-44	65000	92000	110000
Aromatic			
EC 5-7 (benzene)	70	140	300
EC >7-8 (toluene)	130	290	660
EC >8-10	34	83	190
EC >10-12	74	180	380
EC >12-16	140	330	660
EC >16-21	260	540	930
EC >21-35	1100	1500	1700
EC >35-44	1100	1500	1700
Aliphatic and Aromatic			
EC >44-70	1600	1800	1900

Table 2b Subsoil Specification for Speciated TPH

Determinant	Phytotoxicity GAC (mg/kg)		
	pH <6.0	pH 6.0-7.0	pH >7.0
Zinc	200	200	300
Copper	100	135	200
Nickel	60	75	110

Table 2c Subsoil Specification for phytotoxicity

3.0 Nutritional Composition

The nutritional criteria listed below are based on BS3882:2015 for topsoil and BS8601:2013 for subsoil. In the absence of published criteria, current guidance and best practice has been applied to derive appropriate criteria.

3.1 Topsoil & Subsoil

Table 3 details the minimum acceptable concentrations for imported topsoil and subsoil. The nutrient concentrations set out in Table 3 for Topsoil are based on those set out in BS3882:2015 which states “*Multipurpose topsoil is the grade suited to most situations where topsoil is required; however, there can be situations where specific purpose topsoil is required*”. In the event that an alternative specific Topsoil grade is required, i.e. acidic; calcareous; low fertility; low fertility acidic; or low fertility calcareous, the compliance criteria set out in BS3882:2015 shall be applicable in place of those set out in Table 3 below.

Topsoil/Subsoil	Parameter	Concentration
Topsoil (multipurpose grade only)	Phosphorous	16 – 140 mg/l
	Potassium	121 – 1500 mg/l
	Magnesium	51 – 600 mg/l
	Nitrogen	0.15 % m/m
	Carbon:nitrogen ratio	<20:1
Subsoil	Phosphorous	16 mg/l
	Potassium	121 mg/l
	Magnesium	51 mg/l
	Nitrogen	0.15 %
	Carbon:nitrogen ratio	<20:1

Table 3 Nutritional Specification for Topsoil and Subsoil

4.0 Physical Composition

The physical criteria listed below are based on BS3882:2015 Specification for Topsoil. In the absence of published criteria, current guidance and best practice has been applied to derive appropriate criteria.

4.1 Topsoil

Table 4 details the physical suitability requirements for imported topsoil and subsoil. Table 4 sets out acceptability criteria from BS3882:2015 for multipurpose Topsoil. In the event that an alternative specific Topsoil grade is required, i.e. acidic; calcareous; low fertility; low fertility acidic; or low fertility calcareous, the compliance criteria set out in BS3882:2015 shall be applicable in place of those set out in Table 4 below.



Topsoil/Subsoil	Parameter	Specification requirements
Topsoil (multipurpose Topsoil only)	Textural Classification	Sandy clay loam, sandy loam, loamy sand, sandy silt loam (as defined in BS3882:2015, Figure 1)
	Loss on Ignition	3 - 20% (for 5-20% clay soil) 5 - 20% (for 20-35% clay soil)
	Maximum Stone content:	>2mm = 30% >20mm = 10% >50mm = 0%
Subsoil	Textural Classification	Refer to BS8601:2013 Figure 1
	Loss on Ignition	2%
	Maximum Stone content:	>2mm = 40% >20mm = 20% >75mm = 0%

NB: Topsoil and Subsoil must be free from glass, brick fragments, plastic, metal, asbestos and other deleterious materials.

Table 4 Physical Specification for Topsoil & Subsoil

5.0 Source Requirements

5.1 Topsoil and Subsoil

The following will be provided with all soils imported to site:

- A site plan detailing the location and address of the source site, including grid reference.
- Location description of source material, including historic and current site uses.
- Sample analysis results of material at source, including details of laboratory, date of sampling, date samples received by laboratory etc.

5.2 Manufactured soils

Where natural soils are unavailable manufactured soils may be utilised, and the following should be provided:

- Details of the soil manufacturing process, including criteria for received soils, quality control procedure and validation protocol.
- Soils should be tested at a minimum ratio of one sample per 50m³.

6.0 Testing Rates and Compliance

Sampling shall be undertaken in accordance with BS3882:2015 and BS8601:2013.

6.1 Topsoil

Where natural sourcing is proposed, the provenance of the material shall be determined by analysis of the soils at a minimum rate of 3No. samples per source site (up to 250m³) and 1 sample per 250m³ thereafter. Imported soils should be sampled once it has been laid on the site to support the analysis provided by the source supplier.

Where Topsoil is derived from a manufactured source, testing would be undertaken at a rate of 1 sample per 50m³, with a minimum of 3No. tests for any given potential source material (or production batch).

6.2 Subsoil

Where the source of the material is known validation sampling should be undertaken at a minimum rate of 3 samples per source (up to 250m³) and 1 sample per 250m³ thereafter. Imported soils should be sampled once it has been laid on the site to support the analysis provided by the source supplier.

Where subsoil is derived from a manufactured source, testing would be undertaken at a rate of 1 sample per 50m³, with a minimum of 3No. tests for any given potential source material (or production batch)

Where the source of the material is not known the validation sampling should be undertaken in-line with the testing rates as set out for cover systems to ensure the materials are suitable for their intended use. Further guidance on minimum testing under this scenario is presented in Section 6.3 below.

6.3 Cover Systems

Where a cover system/ capping layer is proposed as part of the required remedial measures, sampling frequency will follow the guidance set out by the NHBC in their guidance for clean cover systems (2010) and supplemented within NHBC Technical Extra Guidance Issue 8, November 2012, outlined below:

- Sites with more than 30 plots testing should be conducted at a rate of one plot in four, with a minimum of 10 tests across the site;
- Sites with between 20 – 30 plots testing should be conducted at a rate of one plot in three, with a minimum of 7 tests across the site;
- Sites with between 5 -20 plots testing should be conducted at a rate of one plot in two with a minimum of 5 tests across the site;
- Sites with fewer than 5 plots testing should be conducted in every plot with a minimum of 3 tests across the site.

6.4 Sample failure

In the event that a sample fails to meet the specified criteria for any parameter the Environmental Consultant should be contacted for advice on the suitability of the materials.

Further testing may be required to provide reassurance that the exceedances are not representative of the soil and to provide clarification whether the soil is suitable for importation and/or proposed use.

6.5 Timing

Sampling and analysis undertaken by a manufactured topsoil supplier shall be no earlier than two weeks from the date of import, any results which are older than two weeks will be deemed not to be representative of the soils to be imported and rejected. Results showing consistency of batching may be requested to demonstrate consistency of the physical, chemical and nutritional composition of the material.

Imported soil suppliers and groundwork contractors are required to take reasonably practicable measures to ensure that compliance with this Specification does not hinder formal completion of individual plots or developments.

6.6 General Compliance

All analytical suites shall correspond with the chemical, nutritional and physical compliance criteria (as set out in Tables 1 to 4). The soil supplier shall ensure that the analytical limits of detection are equal or lower than the compliance values presented within this Specification. Where either testing suites or limits of detection do not comply with this Specification, the entire set of results shall be rejected.