
Phase III Site Investigation Report

Zone 3, Toddington Lane,
North Littlehampton, West
Sussex
BN17 7PP

for Persimmon Homes
Limited

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EXECUTIVE SUMMARY

The investigation areas form part of the wider North Littlehampton Strategic Development Site (NLSDS), which is being developed by the Client and others. Thirteen land parcels (namely A2, B6, Phase 4, D1-D2, E1-E6, F1-F2 and two allotment areas) are to be investigated. This report relates to an area of investigation LEAP have termed Stage 1 Zone 3 and comprises land parcels, A2, B6 and Southern Allotments. Together they cover an area approximately 2.08 hectares in size. All sites are generally flat and level, although A2 and the southern allotment areas were characterised by large open excavation pits, assumed to be related to archaeological work. A plastic newt fence extends around the perimeter of the allotment area. A railway line aligned east to west in a cutting (lower by ~2.0 m) forms the southern boundary of A2 / B6 and Toddington Lane, also in a cutting (lower by ~1.5 m), aligned east to west forms the northern boundary to A2/B6. Residential developments form the eastern boundary to B6 and the western boundary to A2. A new by-pass road aligned north to south bisects land parcels A2/B6. The boundaries of the allotment areas are formed by residential properties to the east, playing fields and allotments to the west, the railway line to the north and residential developments to the south.

The proposed development in A2 comprises low-rise residential dwellings, with private and public soft landscaped areas including a playground space; B6 includes low-rise residential dwellings and an apartment block with areas of private and public soft landscaping. Hardstanding includes access roads and parking spaces. The southern allotment area is for allotment use only.

A previous Phase I and Phase II investigation covering the NLSDS site boundaries was completed by others in 2014. A2 and B6 are shown to be undeveloped on historical maps dated 1876 until early 2000's when a nursery is labelled on parcel B6 only. Aerial imagery from 2001-2012 shows that majority of B6 is occupied by greenhouses during this period, some related structures also appear on the western boundary of A2. The southern allotment area appears not to have been developed at all during recent history. The desk study has identified a number of potential sources of contamination associated with the site's former use as a nursery. The site is mapped in an area where 1-3% of properties are affected by radon gas, but not in an area where protection measures are required for new buildings.

The site is mapped as being underlain by River Terrace Deposits over the New Pit Chalk Formation. Ground conditions comprise made ground (in one location only) to 0.60 m depth. Firm becoming stiff silty clays were encountered to depths of up to 3.1m but generally to between 1.7 and 2.0m. The clays were noted to become sandier with depth and were locally soft (BH102). They were underlain by a loose to medium dense gravelly fine to coarse sand with gravel of flint and occasional sandy ironstone. The sand was encountered at the shallowest depth of 1.7mbgl in TPI39 with deeper deposits proven to 6.2mbgl in BH102. The sands are underlain by chalk bedrock mapped as New Pit Chalk Formation. The chalk was only identified within the two deep boreholes at 3.5m bgl in BH101 and 7.0m bgl in BH102. The upper 1.0m – 2.20m of the chalk is highly weathered comprising structureless Chalk

recovered as very silty chalk gravel. The depth of weathering is noted to be greater within BH102 than BH101. Below 5.8m (BH101) and 8.0m (BH102) the chalk comprises structured high-density Chalk which was recovered as angular chalk gravel and cobbles.

Groundwater strikes were identified during the current investigation at depths of between 5.2 and 7.0m bgl whilst groundwater level monitoring was carried out on 6 occasions between 17th January and 18th March 2020 and found groundwater to be at depths of between 5.25 and 5.62m bgl.

The site is mapped as being located in a flood risk zone I by the Environment Agency i.e. land and property have a low probability for flooding.

An allowable bearing capacity of 80kPa is recommended for shallow foundations on the firm to stiff superficial clays. However, foundations will require deepening in the clay soils near trees to NHBC LOW VCP precautions and through any soft/loose soils. Piled foundations may be the preferred option and using the pile design methodology outlined in CIRIA C574, example calculations suggest that a 12m long 300mm diameter cfa pile would have a design compressive resistance of around 360kN whilst a 400mm pile could have around 560kN. The final design must be carried out by the specialist contractor in accordance with their preferred method of formation.

Suspended floor slabs are recommended.

Where a risk of dissolution features has been identified, this must be considered in the pile design. Dissolution features are rarely vertical and may be evident under significant thicknesses of intact chalk. On that basis, care must be taken to not rely on end bearing piles.

The River Terrace Deposits are classified by the BRE as sulphate design class DS-I, and, assuming a mobile groundwater table, the ACEC class is AC-I.

A design CBR value of 0.5% is recommended for a silty clay subgrade.

A geo-environmental risk assessment has been carried out. Contamination testing of the soils did not identify potential contaminants of concern above generic assessment criteria values for the proposed end-uses (residential with home grown produce and allotment land uses). However, further testing is recommended in B6 where shallow made ground is identified.

If it is not possible to undertake further investigation it is recommended that a minimum of 600 mm clean cover (or made ground removal into top of natural soils, whichever is the shallowest) is allowed for in proposed new soft landscaped areas where made ground is present.

As with any redevelopment site, there is always the risk of hitherto undetected contamination, and further investigations should be carried out prior to redevelopment.

Much of the soils on site will be expected to be classified as non-hazardous waste.

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Date :	9 April 2020
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A INTRODUCTION

1 Authority

Leap Environmental Ltd (hereafter referred to as **LEAP**) has been appointed by Persimmon Homes Thames Valley Limited (the Client) to undertake an intrusive Site Investigation of land parcels within a wider development site referred to as North Littlehampton Strategic Development Site (NLSDS), Littlehampton, West Sussex BN17 7PP. The instruction was given in an email dated 14/11/2019 and signed by Martin Edgley of Persimmon Homes Thames Valley.

2 Proposed Development

The investigation areas form part of the wider North Littlehampton Strategic Development Site (NLSDS), which is being developed by the Client and others.

Thirteen land parcels (namely A2, B6, Phase 4, D1-D2, E1-E6, F1-F2 and two allotment areas) are included within our investigation area. Proposed land uses include residential, commercial, educational and allotment uses, as well as associated hard and soft landscaping including access roads, parking and open space recreational and a central wetlands area. We understand that site levels may need to be raised for flood defence purposes, although at time of writing proposed land raise levels are not known. An outline Masterplan for the proposed development is included in Appendix B.

The investigation is to be carried over two stages (as shown on Figure 3), with 'Stage 1' comprising the following land parcels:

- Residential land uses at A2, B6, Phase 4, D1-D2, and E1-2;
- Southern allotment plot; and
- New unadopted 'loop' road through the Stage 1 area, including a road embankment within the central wetlands area.

To assist with reporting the Stage 1 area has been subdivided into 'zones', namely:

- Zone 1 comprising land parcels D1, D2, E1 and E2;
- Zone 2 comprising land parcels Phase 4 and the central wetlands area; and
- Zone 3 comprising land parcels A2, B6 and the southern allotments area.

We understand that within the Stage 1 area only design plans for parcels A2 and B6 have been submitted to the local planning authority, all other land parcels are at outline design stage. A2 includes low-rise residential land use with a playground area and B6 includes low rise residential dwellings and an apartment block. Both land parcels include private garden areas

and publicly accessible soft landscaping. Hardstanding includes access roads and private parking. The southern allotment areas will be allotments only. It is assumed that no permanent structures are proposed for the allotment site.

The 'Stage 2' investigation will be completed from Q2:2020 and comprise the remaining land parcels. This report is for the Zone 3 part of the Stage 1 investigation area only.

3 Previous Studies

The wider NLSDS has been the subject of previous investigations by others. The following site investigation reports have been supplied by the Client and the reader is referred to these earlier reports, which should be read in conjunction with this report.

- Merebrook Consulting "Geo-Environmental Assessment, North Littlehampton West Sussex" GEA-18426-14-69 dated 28.02.2014.
- Idom Merebrook "Gas Risk Assessment, North Littlehampton, West Sussex" L-18426-2.4.2-14-S326-MSG dated 04.07.2014.
- Idom Merebrook "Remediation Strategy, North Littlehampton, West Sussex" RMS-18426C-14-288" dated October 2014.
- Idom Merebrook "Asbestos Survey – Demolition, North Littlehampton" AS-18426b-15-143 dated 25.06.2015.
- Idom Merebrook "Additional Geotechnical Assessment, North Littlehampton West Sussex" GR-18426E-15-167 RevA dated 27.08.15
- CC Ground Investigations Ltd "Factual Report, Proposed Enabling Infrastructure, North Littlehampton" C5300 dated 22.12.16
- Peter Brett Associates LLP "Geotechnical Design Report, Lyminster Bypass (South) Littlehampton" (rev04) 35944/3500 dated December 2019.
- LEAP Environmental Ltd "North Littlehampton Bypass - Factual Letter Report on a Suspected Soft Spot" LP2214 dated 19/03/20

4 Objectives

As listed above the wider NLSDS has been subject to a previous investigation by Merebrook in 2014. However, the sampling density of the 2014 investigation was not compliant with BS 10175:2011+A2:2017 for a preliminary investigation. On the basis of the above, the objectives of this report are to:

- Provide geoenvironmental and geotechnical information to inform detailed design, including:
 - Non-targeted investigation within each land parcel to meet the requirements of BS 10175:2011+A2:2017.

- Targeted investigation in land parcels where previous land contamination was identified.
- Assess the potential health and other environmental risks posed by the site to the proposed development and to other specifically identified receptors;
- Assess the potential for offsite contamination to adversely affect the proposed development; and
- Provide further coverage for geotechnical information, most notably to include deep borehole information on each building of the 13 remaining build phases, and to update the previous ground model and geotechnical recommendations where necessary.

5 Scope of Works

This report describes a two-stage process whereby the site is investigated, and risks are assessed. The terms geotechnical and geoenvironmental are referred to throughout the report.

Geoenvironmental refers principally to the chemical nature of the ground and the degree of soil, water and/or land gas contamination and the impact that contamination may have on current or future development and also on the wider environment.

Geotechnical refers to all other aspects of the ground conditions and the impact they may have on the physical construction of existing or future development, principally foundations, slope stability, drainage, pavement and road design and groundwater control.

5.1 General Site Information

The first part of this report presents a summary of background information relating to the wider development boundaries and Stage 1 Zone 3 investigation area (that being land parcels A2, B6 and the southern allotments area). This is based on a review of previous report, as detailed above and publicly accessible sources of information¹ listed below:

- BGS 'Geology of Britain' online viewer accessed on 04.02.2020.
- BGS Borehole log refs. TQ00SW51 (north-west of the site) and TQ00SW174 (500m west of the site).
- BGS 'Sheet 6: Hydrogeological Map of the South Downs and Adjacent Parts of the Weald (1:100,000) – 1978' online map scan viewer accessed on 04.02.2020.

¹ The report contains British Geological Survey materials ©UKRI 2020 and public sector information licensed under the Open Government Licence v3.0.

- Brimstone Site Investigation 'Stage 2 Detailed UXO Risk Assessment' ref. DRA-I9-1155 dated 09.01.2020.
- Groundsure.io 'Enviro Data' online viewer accessed on 04.02.2020.
- Arun District Council Planning Portal accessed on 04.02.2020.

5.2 Intrusive Investigation Scope

The intrusive investigations have been undertaken with reference to the Client's 'Ground Investigation Brief' (specification document dated September 2019). The results of this and previous investigation reports are used to validate and/or update the conceptual site model. Stage 1 Zone 3 investigations comprised the following work in land parcels A2, B6 and the southern allotments area:

- 2 No. 10-20m cable percussion boreholes with groundwater monitoring wells installed to 6-7m depth in selected borehole;
- 5 No. 3-4m deep machine excavated trial pits;
- 3 No. 0.5-1m hand excavated trial pits, with a shallow gas monitoring well installed in one location;
- *In-situ* geotechnical testing including Standard Penetrometer Tests in the boreholes and trial pits;
- Geotechnical Laboratory Testing including Atterberg Limit Tests, Particle Size Distribution, Natural Moisture Content, Oedometer Consolidation, BRE SD 1 Suite, Quick Undrained Triaxial, Intact Dry Density and Sulphate Tests; and
- Chemical Laboratory tests including 10 No. LEAP standard soil suite tests and selected soil samples tested for pesticides.

The intrusive works were completed by contractors who have been scrutinised and are on LEAP's approved contractor list. The cable percussive boreholes by RM Foster Drilling Services, the machine excavated trial pits were carried out by T M Coates and supervised by LEAP.

The geo-environmental laboratory testing has been carried out by The Environmental Laboratory Ltd at its laboratories in East Sussex.

The geotechnical laboratory testing has been carried out by Geolabs Ltd at its laboratories in Watford.

The final stage in the geoenvironmental assessment comprises a quantitative risk assessment and update of the Conceptual Site Model. The risk assessment has been carried out in

accordance with UK industry standards and in particular in accordance with CLRII² and BS10175:2011+A2:2017.

The final stage of the geotechnical assessment is the provision of preliminary soil parameters for use in geotechnical design, and broad recommendations for appropriate foundation options. It is intended that the Geotechnical Information section of this report will fulfil the general requirements of the Ground Investigation Report as set out in Section 6 of Eurocode7³.

6 Limitations

This report has been prepared by Leap Environmental Ltd on the basis of information received from a variety of sources which Leap Environmental Ltd believes to be accurate. Nevertheless, Leap Environmental Ltd cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

Leap Environmental Ltd has used all reasonable skill, care and diligence in the design and execution of this report, taking into account the manpower and resources devoted to it in agreement with the Client. Although every reasonable effort has been made to obtain all relevant information, all potential contamination, environmental constraints or liabilities associated with the site may not necessarily have been revealed.

The conclusions reached in this report are necessarily restricted to those which can be determined from the information consulted and may be subject to amendment in the light of additional information becoming available. These conclusions may not be appropriate for alternative schemes.

This report is confidential to the Client, and Leap Environmental Ltd accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Leap Environmental Ltd beforehand. Any such party relies upon the report at their own risk.

Full details of the limitations are provided in Appendix A.

² Environment Agency, 2004. Model Procedures for the management of land contamination. Contaminated Land Report 11.

³ BS EN 1997 Eurocode 7- Geotechnical Design- Part 1:General rules (2004) Part 2: Ground Investigation and Testing (2007)

B GENERAL INFORMATION

7 Environmental Setting

7.1 Site Location and Description

The site is located at land off Toddington Lane, North Littlehampton, West Sussex, BN17 7PP as shown in Figure 1, Appendix B.

The approximate National Grid Reference of the site is TQ 03895 04003. The NLSDS site lies at an estimated elevation range of 1.3 to 8.0 m Above Ordnance Datum (m AOD).

The NLSDS is approximately 79 hectares (ha) in size, land parcels within the Stage 1 Zone 3 investigation area cover ~2.08 ha. A site layout is shown in Figure 2, Appendix B and investigation stages and zones are shown in Figure 3, Appendix B.

A walkover survey was carried out in November 2019 and photographs are included within Appendix E.

A general description of the NLSDS boundaries and a more detailed description of the Stage 1 land parcels is provided below.

North Littlehampton Strategic Development Site NLSDS (79 ha)

At the time of the walk over, the wider strategic land area was characterised by recently developed residential properties and land undergoing development to the west of the central wetlands area and undeveloped former nursery land to the east. The northern boundaries comprised low-lying flood plains of the Black Ditch River. The southern boundary of the NLSDS was largely characterised by Toddington Lane in a partial cutting relative to surrounding land and aligned east to west. Residential properties bound the site to the west and undeveloped open fields to the east. Three reservoirs associated with the former land use as a nursery were present along the eastern site boundary (within the Stage 2 investigation area). Broadly, the topography of the NLSDS was characterised by flat open land, sloping gently to the north with lower lying channels associated with the central wetlands area, land east of the reservoirs and the flood plains of the Black Ditch. The Black Ditch floodplains, which bound site to the north (aligned east to west) are demarcated by a drop in levels (of ~1.0-1.5 m) from the former nursery areas down to the flood plains along the full northern extent of the site.

During the walkover none of the historical monitoring wells installed by Merebrook could be located, with the exception of MWS12, which was located and then subsequently lost during clearance work by others in the central wetlands area.

7.2 Stage 1 Zone 3 Investigation Area

The Stage 1 investigation area is split across three Zones. Zone 1 includes Development Areas D1, D2, E1 and E2; Zone 2 entails Phase 4 and the Wetlands; and Zone 3, the subject of this report, consists of A2, B6 and the Southern Allotments. Zones 1 and 2 are located in the north east of the wider development whilst Zone 3 is located in the south west of the development. A plan showing the Zone locations is presented as Figure 3 of Appendix B.

7.2.1 Zone 3

Land Parcel A2 (0.96 ha)

At the time of the walkover the A2 parcel comprised a rectangular undeveloped parcel of land, characterised by shallow archaeological (assumed) excavations present across the northern and eastern parts of A2. Excluding the excavations, the local topography was reasonably flat (7.8-8.0 m AOD). Overburden (presumed to be from the archaeological works) was stockpiled within the southern site boundaries and extended east towards B6. Bare ground and standing water were present in the excavated areas, beyond this, the land was grass covered and partially vegetated with scrub plants. The northern boundary was secured by heras fencing. A buffer zone of trees and scrub vegetation approximately 10 m wide extended beyond the heras fencing and sloped downwards to Toddington Lane, which was in a partial cutting (lower than A2 by ~1.5 m) aligned east to west along its route. The southern boundary was formed by a railway line in a cutting (lower by ~2 m than surrounding land) aligned east to west. The western boundary was formed by trees and shrubs, beyond which were rear gardens to residential properties. A temporary earth bund formed the eastern boundary and land to be developed for the Lyminster By-pass road and beyond which was land parcel B6.

Land Parcel B6 (0.31 ha)

B6 comprised a rectangular parcel of undeveloped land bound by Toddington Lane to the north, residential properties to the east and to the south by the railway track. The western boundary was formed by the Lyminster Bypass route, beyond which was parcel A2. The site was generally level at ~7.5 m AOD, although the northern boundary sloped towards Toddington Lane, which was in a partial cutting (lower than B6 by ~1.0 m) aligned east to west along its route. Compacted gravel surfacing was present in the central areas of the site. A row of mature conifers was present within the northern boundary, along the western boundary and several large mature trees were present within the southern boundaries. At the time of the walkover and investigation the land was occupied by a contractor working on the Persimmon development. Construction plant, waste skip, welfare compound and construction materials were present. Some fly-tipped waste (plastic sheeting, timber fragments and brick rubble) was present in land immediately south of the conifer trees. A temporary haul road used by the contractor extended from the site entrance in the northwest, down the western site boundary. This limited safe access / working areas during the following site

investigation. The archaeological stockpiles from A2 extended onto the southwestern portion of B6.

Southern Allotments (0.81 ha)

The proposed allotment area was a rectangular parcel of land south of the railway tracks, west of residential properties and east of an existing allotment garden. Access was via an area of scrub land between residential properties off Holly Drive to the east. The land sloped gently downwards from north to south (0.3°). A large open pit was present in the northern part of the site and numerous grass covered earth mounds were present across the remainder of the site. The open pit was assumed to be associated with archaeological works, but the mounds did not appear to be related to this. A plastic newt barrier fence was present around the site perimeter. This was in a poor condition in some places. Some fly tipped waste (plastic bags, metal waste) was present around an earth mound south of the assumed archaeological pit in the north.

7.3 Background Information

A summary of the geology and hydrogeology for the Stage 1 area is provided in Table 1, below.

Table 1: Summary of Environmental Setting

Information	Details
Geology	The underlying superficial geology varies across the site and can easily be categorised according to Zone and proposed development area. Zone 1 is shown on the British Geological Survey (BGS) web viewer as being underlain by Made Ground over Raised Beach Deposits which in turn are underlain by the New Pit Chalk Formation to the South and the undifferentiated Lewes Nodular, Seaford, Newhaven, Culver and Portsdown Chalk Formation to the north. On and beyond the Zones northern boundary the superficial deposits are shown as Raised Marine Deposits. An area of Made Ground is also shown adjacent to the north western boundary of Zone 2, with the actual Zone shown to be underlain by Raised Marine Deposits overlying Raised Beach Deposits. Raised Beach Deposits are shown to outcrop along the Zones south western boundary only. Underlying this the southern half of the Zone is underlain by the New Pit Chalk Formation to the south and the undifferentiated Lewes Nodular, Seaford, Newhaven, Culver and Portsdown Chalk Formation to the north. Zone 3 is underlain by the River Terrace Deposits overlying the New Pit Chalk Formation. Made Ground shown across Zone 1 and 2 is described on the BGS lexicon as “an area where the pre-existing land surface is raised by artificial deposits”. These materials have likely been used to bring site levels up out of the flood plain. Raised Marine deposits are shown to the north and east of the site whilst the Raised Beach deposits are shown across the central, south eastern and south western parts of the site. The River Terrace Deposits are shown to outcrop along the southern boundary only. Superficial deposits of the two channels and the flood plains of the Black Ditch are mapped as Raised Marine Deposits (RMD). Topographical maps highlight the geological

	succession, with the RTDs being at the highest elevations and the RMD being at the lowest levels. Raised Beach Deposits can comprise sands and gravels and Raised Marine Deposits clay, silt, sand and gravel and are likely to contain organic content including plants and shells. River Terrace Deposits are those of a braided river system and generally comprise a sheet of variably graded sand and gravel, with local lenses of silts/clays and peats. The Chalk is a very fine grained white limestone consisting predominantly of the disaggregated skeletal remains of tiny planktonic algae, and is composed of almost pure calcium carbonate. Layers of flint are common. Flint is composed of silica derived from the dissolved skeletons of siliceous sponges and microfossils. The White Chalk Subgroup is a Major Aquifer in SE England. Chalk is particularly affected by weathering and the effects of dissolution. The top surface of the chalk is usually irregular and may include deep drift filled solution pipes for example. Chalk is also susceptible to frost action.
BGS Boreholes	Three BGS boreholes are mapped within the NLSDS boundaries. Only one borehole is recorded within the Stage 1 area. TQ00SW51 is located in parcel D2 (Zone 1) and records superficial deposits to ~2.43 m bgl; over chalk and marl to ~3.96 m bgl; over hard chalk, with very hard layers to 45.72 m bgl. Groundwater is recorded at 5.18 m bgl.
Hydrogeology	The superficial deposits mapped beneath the Stage 1 area are classified as a Secondary A aquifer with underlying chalk bedrock associated as a Principal aquifer. The BGS hydrogeological map for the area shows groundwater flow in the Chalk Aquifer is in a southerly direction. The site is not located within a Groundwater Source Protection Zone. However, the Stage 1 investigation area is located within a medium vulnerability zone due to presence of a Chalk aquifer beneath the site. There is one groundwater abstraction licence recorded by Merebrook within the NLSDS boundaries and recorded as being located in the western part of the site used as a water supply for crop growing.
Surface Water	The Black Ditch River forms the northern boundary of the NLSDS and flows towards the River Arun approximately 2 km to the west. Nineteen secondary / tertiary watercourses (surface water ditches) are identified predominantly in the northern floodplains. Three reservoirs (related to the former use as a nursery) are present in the Stage 2 investigation area, along the eastern boundary of the NLSDS. There are two surface water abstraction licenses from Black Ditch located on the site (details unknown) with two additional abstraction licenses within 1km of the site. The Zone 1 and 3 are not located within an area susceptible to flooding. However, according to the EA flood mapping Zone 2 is located in a Flood Zone 3 i.e. land and property have a high probability of flooding. The flood plains of the Black Ditch that bound Zone 1 to the north are located in a flood Zone 3. The Environmental Agency indicated that the site is located within a groundwater flooding zone with a very high susceptibility to groundwater flooding.
Solution Features	Solution features generally occur where preferential weathering of the chalk occurs along discontinuities or joints. They are more common along geological boundaries, where

	surface water runoff from impermeable soils meets the more permeable underlying chalk. They are generally infilled with loose/soft soils and can be visible at ground level due to surface depressions, although this may be masked by overlying superficial deposits. They may lie dormant for many years, and are generally reactivated by the introduction of water from, for example, a leaking drain, soakaway etc.
UXO	A Detailed UXO desk study was commissioned for the site that identified the majority of the land parcels as Low to Moderate Risk, with the exception of parts of E1/E2 (Zone 1), which were identified as moderate risk. The assessment was made on the basis that an important radar station (RAF Poling) ~700 m northeast of the site was targeted. A radius of 900 m from the centre of RAF Poling was deemed as moderate risk and that encompassed northern parts of the site. The desk study recommended that UXO awareness briefing was provided for all intrusive works; and in moderate risk areas that an EOD engineer should be present during site investigations and to include non-intrusive and intrusive magnetometer surveys, prior to construction phase open excavations and at pile positions.

8 Site Usage

Records of historical land uses, and potential on and off-site sources of contamination are recorded in the previous Merebrook report. Pertinent information is summarised below.

8.1 Current Land Use

The current site layout is shown in Figure 2, Appendix B.

A summary of existing uses of the land parcels within the Stage 1 Zone 3 area are described in S7.2.1, above.

8.2 Historical Land Uses

Prior to development works the NLSDS was predominantly occupied by soft fruit growing nurseries and associated infrastructure, including cold storage / commercial uses (horticultural supplier) within the central wetlands area. Demolition works occurred across the wider site area from 2015-2017. A summary of historical⁴ land uses within the Stage 1 Zone 3 area is summarised below:

8.2.1 Zone 3

- A2/B6 and Southern Allotments – Shown to be undeveloped on historical maps dated 1876 until early 2000's when a nursery is labelled on parcel B6 only. Aerial imagery from 2001-2012 shows that majority of B6 is occupied by greenhouses during this

⁴ Based on information contained within Merebrook Consulting Geo-Environmental Assessment Report Ref. GEA-18426-14-69 and available historical aerial imagery

period, some related structures also appear on the western boundary of A2. A residential type property is also shown in the central section of B6. A topographical map dated 2014 shows a small pond immediately south of the structure. From 2018 the structures appear to be demolished. The railway line aligned east to west (bisecting the southern allotments and A2/B6) is present from the earliest maps until current period.

- The southern allotment area appears not to have been developed at any time on available historical mapping. A paddock is illustrated in the northern section of the allotment area on the topographical survey map dated 2014.

8.3 Waste Planning and Landfill Records

8.3.1 Recorded Landfill and Waste Management Sites

With reference to online sources⁵ there is one authorised landfill site within the NLSDS boundaries and two historical landfill record within 250m of the NLSDS boundaries.

The authorised landfill site is located within the Stage 2 investigation area, specifically parcel F2. It is named as Tulley's Nurseries (license number TUL001) and located ~160 m southeast of E2. It is mapped to be rectangular in shape with approximate dimensions of 80 m by 330 m and is recorded as having received non-biodegradable waste. It has been anecdotally described to LEAP that inert wastes were disposed of in the area, including agricultural grade 2 soils.

The closest historical landfill record is named as Norway Farm and located adjacent to the southeast boundary of the Northern Allotment in the Stage 2 investigation area. It is recorded as having received waste from 1950-1960.

A second historical landfill site is named as Fargro (reference WD27/255, WD13/5/36) is located ~210m north of land parcel E1 (Zone 1) and has received waste between 1979 to 1980.

A household waste recycling facility is located to the immediate west of the NLSDS site on Mill Lane.

8.4 Radon

With reference to the Public Health England Radon Affected Area maps for the United Kingdom⁶ the Stage 1 Zone 3 is located in an area with a maximum radon potential of 1 – 3 % of the houses above the action level for radon.

⁵ <https://groundsure.io/>

⁶ <https://www.ukradon.org/information/ukmaps>

The updated BRE 211 guidance⁷ does not map the subject site within an area that should be subject to radon protection measures for new buildings.

9 Previous Investigations

The site has been the subject of several reports undertaken by Merebrook and are summarised below.

9.1 Merebrook Consulting Ltd Geo-Environmental Assessment Report Ref. GEA-18426-14-69

Merebrook undertook a combined Phase I and Phase II site investigation across the NLSDS area in 2014, prior to the demolition of existing structures.

The desk study section identified a number of potential sources of contamination within the wider NLSDS boundaries that included use of pesticides and herbicides, kerosene fuel use and storage; electrical sub-stations; boiler rooms; above and under-ground storage tanks (ASTs/USTs); composting areas; garages; chemical storage; Japanese knotweed contamination; hoppers and silos. Vehicle repair, industrial repair and chimney were also noted within the wider site boundaries. Historical records relevant to the Stage 1 Zone 3 land parcels are summarised in S8.2, above.

Merebrook also recorded two pollution incidents in the 'northern' portion of the site, but the exact locations are not provided. These incidents are related to historical diesel spills and have been reported by Mererook as '*classified as having a minor impact and unlikely to have impacted the surface water.*'

The Merebrook's intrusive investigation comprised the following:

- 6 No. cable percussion boreholes to 15 m bgl and installation of groundwater monitoring wells within the Chalk Aquifer;
- 35 No. shallow window sample boreholes to a depth of 3 m bgl;
- 11 No. shallow hand window sample probe holes to a depth of 2 m bgl;
- 18 No. shallow land gas monitoring well installations;
- 25 No. machine-dug trial pits to a depth of 3 m bgl;
- Three hand dug trial pits to a maximum depth of 1.3 m bgl; and
- Eight machine-dug soakage pits to a maximum depth of 3 m bgl.

⁷ Radon – Guidance on protective measures for new buildings, Building Research Establishment, BR211 – 2015 edition

Overall, this is approximately 1.1 exploratory hole per hectare or if equated to a non-targeted strategy it would be approximately equivalent to a 95 m grid spacing, which does not meet the requirements of BS10175:2011+A2:2017 for a preliminary investigation.

A summary of the ground conditions encountered by Merebrook relevant to the Stage 1 Zone 3 development parcels is summarised in Table 2, below.

Table 2: Summary of Ground Conditions Encountered in Zone 3 during Merebrooks Site Investigation

Land parcel/ Zone	No. exploratory positions	Ground Conditions Encountered	Groundwater Strikes (m bgl)
A2 /3	Three MTP23-25	Grass over firm SILT/CLAY to depths between 1.80-2.20 m over SAND with frequent gravels to 3.00 m. No made ground recorded. Five soil samples sent for geo-environmental laboratory analysis. No Potential Contaminant of Concern (PCoC) detected above current Generic Assessment Criteria (GAC), where published.	Not recorded on logs
B6 /3	0	Not previously investigated by Merebrook.	-
Southern Allotments /3	Three MWS30-32	Grass over soft to firm sandy clayey SILT between 1.00 to 3.00 m over firm sandy CLAY to depths between 1.60 m to 2.10 m over clayey sand or gravelly SAND (in MWS32 only) to 3.0 m depths. Three soil samples analysed. No PCoC detected above GAC, where published.	Not recorded on logs

Based on the above summary, ground contamination was not identified in the southern allotments or A2.

No groundwater or land gas monitoring wells were installed in the Zone 3 area during the Merebrook 2014 site investigation.

9.2 Idom Merebrook Gas Risk Assessment Report Ref. 18426-2.4.2-14-S326-MSG

No ground gas monitoring was reported for the Zone 3 area.

9.3 Idom Merebrook Asbestos Survey - Demolition report Ref. AS-18426b-15-143

Merebrook were commissioned to undertake an Asbestos Demolition Survey to establish presence of any ACMs, prior to demolition of the derelict glasshouses and other unused buildings on site. The report was limited to the western part of the NLSDS and D1/D2/E1/E2. The asbestos demolition survey did not report on buildings within Zone 2 or Zone 3 areas.

9.4 Idom Merebrook Remediation Strategy report Ref. RMS-18426C-14-288

Following the initial site investigation and subsequent gas risk assessment and asbestos survey, Idom Merebrook were commissioned to develop a remediation strategy for the NLSDS

Due to the infrequent nature of contamination and minor level of concentration exceedances, it was considered that site clearance, incidental homogenisation of topsoil and usable subsoil and routine need for provision of soil cover for amenity purposes in gardens and landscapes areas, would suffice the need for specific remedial works to remove or isolate contamination, subject to appropriate soil segregation, management and confirmatory testing.

No specific remediation measures were detailed for Zone 3.

9.5 Idom Merebrook “Additional Geotechnical Assessment, North Littlehampton West Sussex” GR-18426E-15-167 RevA dated 27.08.15

Merebrook were commissioned to undertake further ground investigation along the route of the proposed Lyminster Bypass. Eight cable percussive boreholes and four CPTs were undertaken in land adjacent to the A2/B6 land parcels. An incomplete log record has been made available to Leap for review. No laboratory test results are available for the boreholes relevant to A2/B6 land parcels. The report recommended piling for a new bridge embankment in land adjacent to A2/B6 land parcels.

9.6 CC Ground Investigations Ltd “Factual Report, Proposed Enabling Infrastructure, North Littlehampton” C5300 dated 22.12.16

CC Ground Investigations Ltd undertook further investigation along the proposed Lyminster Bypass route. Four cable percussive boreholes, one trial pit and one windowless sampler borehole were drilled in land adjacent to A2/B6 parcels. No logs or laboratory test results are available for the exploratory holes relevant to A2/B6 land parcels.

9.7 Peter Brett Associates LLP “*Geotechnical Design Report, Lyminster Bypass (South) Littlehampton*” (rev04) 35944/3500 dated December 2019.

This report has not been reviewed in detail as it relates to geotechnical design specifically for the new road, which is not part of this Phase of investigation or reporting. However, we note that the PBA report designed the bridge embankment using pad foundations rather than a piled solution as recommended by Merebrook.

PBA report on a review of the Natural Cavities Database which is maintained by them, which reports that there are no records of natural cavities within 2.5km of the site and conclude that there is a low potential of solution features on site.

9.8 LEAP Environmental Ltd “North Littlehampton Bypass -Factual Letter Report on a Suspected Soft Spot” LP2214 dated 19/03/20

A suspected soft spot within the new by-pass road was investigated by Leap in March 2020. The suspected soft spot was located approximately 95 m north of Zone 3 area. Soft / very loose ground was encountered to a maximum depth of 7.5 m in one of 14No. dynamic penetrometer tests.

C CONCEPTUAL SITE MODEL

10 Environmental Risk Assessment

10.1 Conceptual Site Model (CSM)

A risk-based approach is used to assess contaminated or potentially contaminated land within the UK. For a potential risk to exist, there must be a contaminant linkage in place, i.e. there must be a source of contamination, a potential receptor, and a pathway linking the two.

The sections below present the updated CSM based on the findings of the previous ground investigation and the walkover survey. We note that the ‘driver’ for this investigation is to increase sampling density to that provided in guidance (BSI0175:2011+A2:2017) and to investigate potential data gaps i.e. areas which were not well characterised previously.

10.2 Sources

10.2.1 Onsite Sources

Based on a review of the available site information, site walkover with reference the previous reports by Merebrook, the following potential contaminants of concern are proposed:

Table 3: Sources of contamination in the Zone 3 investigation area

Source	Potential Contaminants of Concern
A2/B6/Southern Allotments – Zone 3	
Made ground associated with former nursery buildings / post demolition materials	Heavy metals, PAHS, asbestos. Land gases
Chemical use	Herbicide / pesticide use
Nursery heating systems	Localised kerosene contamination

10.2.2 Offsite Sources (relative to Stage 1 Zone 3 investigation area)

The following potential off-site sources of contamination are highlighted:

Table 4: Offsite sources of contamination (relative to the Stage 1 area)

Source	Distance from Site (m)	Contaminants of Concern
Railway track adjacent to A2/B6/southern allotments	5 m south of A2/B6	Heavy metals, hydrocarbons, asbestos.
	5 m north of Allotments	
Made ground surrounding the site in former nursery area	1-100	Land gas

10.3 Receptors

Potential receptors are those which may be impacted by any of the contaminants of concern identified above, and include the following:-

- Future residents
- Construction workers
- Groundwater – Secondary A Aquifer (River Terrace Deposits), Principal Aquifer (Chalk bedrock)
- Surface Water – Central wetlands area, surface water feature in Stage 2 area (pond in east of NLSDS), Black Ditch and associated flood plains / drainage ditches to the north of the site
- Ecological Receptors
- Material construction of buildings and infrastructure
- Neighbouring properties

10.4 Pathways and Potential Contaminant Linkages

The development will include private gardens, public open space and allotments. All potential contaminant linkages involving resident humans and soil contaminants will be active i.e. direct ingestion of soil, ingestion of soil attached to plants as well as via plant uptake, inhalation of indoor and outdoor vapour and of dust tracked back into the house and finally ingestion of water carried by plastic water pipes through contaminated ground. Ground workers are at risk as a result from all of the above, except for those involving edible plants.

Previous laboratory analysis by Merebrook in 2014 did not identify potential contaminants of concern above soil screening criteria in the Zone 3 area, although land parcel B6 was not previously investigated.

The site is underlain by a Secondary A (River Terrace Deposits) and Principal (Chalk Bedrock) Aquifers of high leaching potential. The near surface geology encountered previously comprised mostly silty clays and sand Zone 3 (A2/B6 area). Merebrook reported low soil permeability with infiltration rates of 1.4×10^{-6} m/s near A2/B6 i.e. low to moderate permeability.

On the basis of the low to moderate permeability of the superficial deposits and the low concentrations of potential contaminants of concern previously identified in soils, the risk posed to the principal aquifer is considered to be low.

Where superficial contamination is present, there is the potential for run-off and contaminant migration to impact surface water receptors, namely the Black Ditch to the north of the site.

10.5 Qualitative Risk Assessment of Contaminant Linkages

Risk levels within the preliminary CSM are determined on a qualitative basis following review of the available desk-based information. The significance of particular contaminant linkages is dependant both upon the severity and likelihood of the risk.

The potential contaminant linkages are summarised in the table appended in Appendix C and given a qualitative risk classification in accordance with current guidance. The details of the risk assessment methodology are presented in Appendix C.

10.6 Conclusions

We note although the previous investigations did not identify significant land contamination the sampling density from the 2014 site investigation was not adequate in regards to the guidance (BS10175:2011+A2:2017) and data gaps are likely to be present.

Consequently, contaminants potentially presenting a low to moderate risk to future residents and construction workers include hydrocarbons, PAHs, herbicides and pesticides and asbestos.

Previous investigations did not identify made ground in land parcel A2 or in the southern allotment area, as such the risk from land gas is considered to be low, with the exception of B6, which has not been investigated.

11 Geotechnical Risk Register

The preliminary geotechnical risk register for the proposed development is summarised in the table in Appendix D. Details of the risk assessment methodology are presented in Appendix D

11.1 Conclusions

We highlight the following geotechnical hazards:-

- Where there is the presence of Made Ground/soft-loose reworked soils across site this will likely require foundation deepening;
- Presence of shrinkable soils and trees
- Chalk bedrock is present under whole site, the risk of dissolution features and natural cavities is possible and cannot be discounted. Presence of overlying superficial strata of variable thickness may be caused by infilling of such features; and

- The site was previously used as a commercial nursery and so there is a potential that previously unidentified contaminants may be present which will require remediation which could affect ground conditions on site.
- The site is underlain by silty sandy clays which are likely to be susceptible to frost heave.

On the basis of the initial review and preliminary risk assessment, the site is given a Geotechnical Classification of **Geotechnical Category I** in accordance with EN1997-1 §2.1(14)-(21).

D PHASE II - INTRUSIVE INVESTIGATION

12 Investigation Rationale

A total of 12 trial holes were excavated across the Zone 3 area. These included 5 No. machine excavated trial pits to a depth of around 3m; 2No. cable percussion boreholes to depths of between 10.80 and 12.50 m; and 3 No. hand excavated trial pits to depths between 0.80 and 1.0 m.

The trial holes were located to give general coverage, taking into consideration the proposed development and the potential geoenvironmental and geotechnical risks/hazards highlighted by the CSM in accordance with BS10175. The trial hole spacing was consistent with the recommended density of 25 to 50m for an exploratory investigation after BS10175 Section 7.7.

The investigation rationale for the trial holes / test locations is summarised below:

Table 5 Rationale for Investigation Locations

Trial Hole/Test Location	Rationale	Proposed Depth (m bGL)	Notes
LBHI01-LBHI02	Provide Information on ground conditions and geotechnical parameters for foundation design, location of groundwater well and provide samples for geotechnical testing within A2/B6, only	25	Some boreholes were terminated below target depth, due to hard stratum encountered, generally from below 10 m.
LPTPI35-139	Provide Information on ground conditions and geotechnical parameters for pile design and provide samples for contamination and geotechnical testing within A2/B6	3	We note that access to western half of B6 was limited during the investigation because it was being used as an active site for a works contractor.
Bulk Sample (BS) 1 to 2	Provide geoenvironmental information on chemical composition of earth mounds in A2/B6	0.5	
LHPI40-HPI42	Provide environmental samples.	0.8-1	LHPI40-142, were hand-dug, due to the presence of the newt fence limiting vehicle access to the allotment area.

The site investigation locations are shown on Figure 4, Appendix B.

13 Site Work

13.1 Date and Weather Conditions

The intrusive investigations were undertaken between 04/12/2019 and 23/12/2019. At the time of the investigations, the weather was generally overcast, windy and rainy. December rainfall was 116% of the average (based on values between 1981 and 2010), and in November rainfall was 97% of the average.

13.2 Site Work Methods

13.2.1 Borehole Drilling

Boreholes were drilled using a cable percussion rig. The boreholes were excavated at 200mm diameter, reducing to 150mm to allow for clean drilling and to achieve target depth.

13.2.2 Trial Pitting

Trial pits were dug by a backhoe excavator. The trial pits had a target depth of 3m bgl and were typically 0.75m wide by 2m long. Spoil was placed on plastic sheeting to prevent cross-contamination and was replaced in reverse order. Trial pits were left mounded to allow for future settlement.

13.2.3 Hand Pitting

Hand pits were excavated using hand tools at 100mm diameter. Spoil was placed on plastic sheeting to prevent cross contamination and was reinstated in reverse order.

13.2.4 Soil Logging and Sampling

Soil samples were recovered from the boreholes and trial pits for field screening, logging and sampling.

Boreholes were logged in general accordance with the requirements of BS 5930:2015⁸ and BS EN ISO 14688⁹. Borehole logs are presented in Appendix F.

Visual and olfactory evidence of contamination was noted if encountered. These observations were used to aid scheduling of samples for chemical laboratory analyses and are included on the borehole logs in Appendix F.

⁸ BS5930:2015 Code of Practice for Ground Investigation

⁹ BS EN ISO 14688 Parts 1-2 (2018) Geotechnical Investigation and Testing. Identification and classification of soil

Samples were collected with a clean sampling trowel or by hand (using dedicated nitrile gloves for each sampling location). Samples were placed into laboratory supplied sampling containers, specific to the type of analyses required.

All sample containers were sealed and labelled with a unique location identity, depth and date of sampling.

13.2.5 Monitoring Well Installation

One groundwater monitoring wells was installed within the Zone 3 area, although in total three groundwater wells were installed across the Stage 1 investigation areas to target the Chalk Aquifer. The monitoring wells were constructed of 50mm diameter HDPE pipe. The response zone within the cable percussive boreholes were typically targeted to intercept the groundwater surface and was surrounded by washed filter gravel. The plain zone was surrounded with bentonite to provide a seal.

Land gas monitoring wells were not installed within the Zone 3 area, as a potential land gas source was not identified.

Table 6: Stage 1 borehole installation details

Borehole	Zone	Type G-gas W-water	Plain Well Screen (mbgl) and ID (mm)	Slotted Well Screen (mbgl)	Bentonite Seal (mbgl)
LBHI01	3	W	GL - 4	4 - 7	GL - 4
LBHI04	I	W	GL - 3	3 - 6	GL - 3
LBHI06	I	W	GL - 3	3 - 6	GL - 3

13.3 Field Tests

13.3.1 Standard Penetration Tests

Standard penetration tests were undertaken in the boreholes at 1m centres until 5.0m, there after taken every 1.5m and where feasible, alternating with UT100 samples in cohesive soils, in accordance with BS EN ISO 22476-3;2005. Uncorrected blow counts, 'N values', are recorded on the borehole logs in Appendix F.

13.4 Groundwater Monitoring

13.4.1 Groundwater level monitoring

6No. rounds of groundwater monitoring have been undertaken to date. The visits were completed between 17/01/2020 and 18/03/2020. Groundwater monitoring wells were inspected for the presence of water using an electronic dip meter. Field monitoring records are provided in Appendix I.

13.5 Laboratory Analysis

13.5.1 Chemical Soil Analysis

Selected samples of soil have been subjected to laboratory testing. Sampling techniques and storage have been undertaken as per BS 10175:2011+A2:2017 Code of Practice for Investigation of Potentially Contaminated Sites. The laboratory testing has been carried out by The Environmental Laboratory Ltd at its laboratories in East Sussex. Where available, the tests procedures are UKAS and MCERTS accredited.

The following analyses were completed on selected samples:-

- LEAP standard Soil suite (metals, speciated PAHs, asbestos)
- Organochloride Pesticide suite
- Asbestos Quantification

The full laboratory test results are presented in Appendix G.

13.5.2 Geotechnical Laboratory Testing

Selected samples of the soils have been classified by laboratory analysis for geotechnical design purposes. The laboratory testing has been carried out by Geolabs Ltd at its laboratories in Watford, in accordance with BS1377¹⁰ and BS EN ISO17892¹¹. The sampling technique, type, storage and transport and the number of laboratory tests have been undertaken where possible in accordance with BS EN 1997-2:2007 and BS EN ISO 22475¹². Conventional U100 sampling techniques have been used to collect undisturbed samples. As such, these samples are not suitable for shear strength testing in accordance with Eurocode specification and the results should be used for guidance only.

The following laboratory tests have been undertaken:-

Table 7 Geotechnical Laboratory Testing – Zone 3

Test	Number of tests	
	River Terrace Deposits	Chalk Bedrock
Moisture Content	6	7
Atterberg Limit Test	6	
Particle Size Distribution Test	4 (1)	

¹⁰ BS1377 Parts 1-9:1990 Methods of test for Soils for Civil Engineering Purposes

¹¹ BS EN ISO 17892 Parts 1-12 Geotechnical Investigation and Testing. Laboratory testing of soil

¹² BS EN ISO 22475 Parts 1-3 Geotechnical Investigation and Testing. Sampling methods and groundwater measurements

Saturated Moisture Content		7
BRE SDI Suite (Sulphate Determination and pH)	3 (I)	(I)

Values in parenthesis taken from previous reports

14 Ground Conditions

14.1 Zone 3

Table 8: Summary of soils encountered within Zone 3.

Depth From m	Depth To m	Soil Type	Description
GL	0.30 / 0.50	TOPSOIL/ SUBSOIL	Brown to dark brown silty sandy clayey TOPSOIL with frequent rootlet and occasional fine to coarse flint gravel. Brick fragments noted in TPI36
GL	0.60	MADE GROUND	Grey to dark brown clayey gravelly MADE GROUND comprising fine to coarse sub-angular to sub-rounded flint, brick cobbles and plastic fragments. (BH102 [B6] only)
GL / 0.60	1.7 / 3.1	CLAY	Soft to stiff dark brown to reddish brown occasionally sandy, variable slightly to very silty, gravelly CLAY. Gravel comprises fine to coarse sub-angular to sub-rounded flint. (River Terrace Deposits)
1.7 / 3.1	3.5 / 7.0	SAND	Loose to medium dense orangish brown to reddish brown clayey gravelly SAND. Gravel is fine to coarse sub-angular to sub-rounded flint. Gravel and cobbles of ironstone and sandstone noted in TPI37 and I38 only [A2]. (River Terrace Deposits)
3.5 / 7.0	5.8 / 8.0	CHALK	Off white to cream weathered structureless high density CHALK recovered as silty chalk gravel. (Weathered Chalk)
5.8 / 8.0	12.5*	CHALK	Off white structured high-density CHALK recovered as sandy silty chalk gravel, (New Pit Chalk Formation)

The topsoil encountered at this section of the site typically comprised a silty clay with rootlets, occasionally containing gravel of flint. Topsoil was not encountered within TPI39 or BH101 due to these trial holes being undertaken within previous shallow archaeological excavations. Made ground was only encountered in BH102 (Land Parcel B6) from ground level to 0.6mbgl and comprised flint gravel with occasional fragments of brick and plastic. Historical maps show a property was once present to the south of this location.

Firm becoming stiff silty clays were encountered to depths of up to 3.1m but generally to between 1.7 and 2.0m.

The thickness of the clay was somewhat variable with the greatest thicknesses encountered along the southern margin of areas A2 and B6 and the northern section of the southern allotments area. The clays were generally firm to stiff, however, SPT N values in the southern allotments indicate <3.0m of soft silt/clay in this area of the site. The clays were noted to become sandier with depth and were underlain by a loose to medium dense gravelly fine to coarse sand with gravel of flint and occasional sandy ironstone. The sand was encountered at the shallowest depth of 1.7mbgl in TPI39 [A2] with deeper deposits proven to 6.2mbgl in BH102 [B6]. SPT N values within the sands in BH101 [A2], BH102 and MWS32 [Allotments] indicate loose material. The N values recorded within BH102 decrease with depth this reduction in N values with increased proximity to chalk rock head may be indicative of a collapsed/inactive solution feature.

The sands are underlain by chalk bedrock mapped as New Pit Chalk Formation. The chalk was only identified within the two deep boreholes at 3.5m bgl in BH101 [A2] and 7.0m bgl in BH102 [B6]. The upper 1.0m – 2.20m of the chalk is highly weathered comprising structureless Chalk recovered as very silty chalk gravel. The depth of weathering is noted to be greater within BH102 than BH101. Below 5.8m (BH101) and 8.0m (BH102) the chalk comprises structured high-density Chalk which was recovered as angular chalk gravel and cobbles.

Groundwater strikes were identified at depths of between 5.2 and 7.0m bgl whilst groundwater level monitoring found groundwater to be at depths of between 5.25 and 5.62m bgl.

15 Strata Encountered

15.1 Zone 3

15.1.1 River Terrace Deposits - Clay

Underlying the Made Ground, where found, the River Terrace Deposits were encountered across the whole of Zone 3 and were generally recovered as firm becoming stiff silty sandy clays with variable proportions of gravel. Locally the shallow clays were recorded as soft (BH102 – [B6]) The results of the geotechnical laboratory testing are summarised below.

Table 9: Summary of Geotechnical Test Results for Clay

Test	Range
SPT 'N' value	3-31
Shear Strength (kPa)	48-63
Moisture Content (%)	18.4 - 28

Liquid Limit (%)	25 - 36
Plastic Limit (%)	14 - 19
Plasticity Index (%)	10 - 19
Sulphate Content (g/l)	0.089 (0.04)
pH	7.3 – 8.2 (8.2)

Results in parenthesis taken from previous reports

SPT blow counts within all clay soils ranged between 3 and 31 indicating presence of soft to stiff properties. A slight correlation of becoming stiff with depth is observed.

The clay samples tested returned plasticity index values ranging from 8 to 19%, indicating clays of low to intermediate plasticity and a LOW NHBC Volume Change Potential (VCP).

15.1.2 River Terrace Deposits – Sands

Underlying the clay soils granular sand deposits with variable proportions of clay and gravel were found. The results of the geotechnical laboratory testing are summarised in below.

Sandy soils within parcels A2, B6 and Southern Allotments were encountered from 1.7 m bgl to 6.2 m bgl generally comprising loose to medium dense gravelly medium sand. Black stained ironstones have been encountered within the sand soils in BH102 and TPI38.

Table 10: Summary of Particle Size Distribution tests for Sand/Gravel

Silts & Clays (%)	Sand (%)	Gravel (%)	Cobbles (%)
6-41	23-76	4-21	15

Table 11: Summary of Geotechnical Test Results for Sand/Gravel

Test	Range
SPT 'N value'	7-21 (1-17)
Angle of shearing resistance	29°

SPT blow counts within the granular soils ranged between 7 and 21 indicating the presence of loose to medium dense sands.

15.1.3 Structureless Chalk

Structureless weathered chalk was identified from a depth of 3.5 to 7.0m bgl.

The results of the geotechnical laboratory testing completed on chalk samples are summarised in sections below.

Table 12: Summary of Geotechnical Test Results for Structureless Chalk

Test	Range
SPT 'N' value	12-25
Saturated Moisture Content (%)	14-15

Dry Density (Mg/m ³)	1.91-1.96
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A general correlation of SPT N values increasing with depth is observed, as illustrated by the SPT vs depth graph in Appendix B.

The laboratory testing on the intact chalk fragments classifies it as being high to very high density.

15.1.4 Structured Chalk

From a depth of 5.8m within BH101 and 8.0m bgl within BH102 the chalk became structured.

Table 13: Summary of Geotechnical Test Results for Structured Chalk

Test	Range
SPT 'N' value	30-50
Saturated Moisture Content (%)	11-22
Dry Density (Mg/m ³)	1.69-2.07
Sulphate Content (g/l)	(0.03-0.04)
pH	(6.7-7.5)

Results in parenthesis taken from previous reports

A general correlation of SPT N values increasing with depth is observed, as illustrated by the SPT vs depth graph in Appendix B.

The laboratory testing on the intact chalk classifies it as being medium to very high density.

E GEOTECHNICAL APPRAISAL

The foregoing geotechnical appraisal does not constitute a Geotechnical Design Report in accordance with BSEN1997. The following recommendations are for preliminary design purposes only.

For the detailed design, the short-term and long-term design situations must be considered. Where relevant, the following limit states should be considered:-

- Loss of equilibrium of the structure or the ground, considered as a rigid body, in which the strengths of structural material and the ground are significant in providing resistance (EQU)
- Internal failure or excessive deformation of the structure or structural elements in which the strength of structural materials is significant in providing resistance (STR)
- Failure or excessive deformation of the ground, in which the strength of soil or rock is significant in providing resistance (GEO)
- Loss of equilibrium of the structure or the ground due to uplift by water pressure or other vertical actions (UPL)
- Hydraulic heave, internal erosion and piping in the ground caused by hydraulic gradients (HYD)

The following factors should also be considered.

- Overall stability and ground movements
- Nature and size of the proposed construction including the design life
- Conditions with regards to the surroundings (e.g. neighbouring structures, traffic, utilities, vegetation, contamination etc.)
- Ground and groundwater conditions
- Influence of the environment.

16 Swelling and Shrinkage

Based on the laboratory test results in Section 15, an overall classification of NHBC LOW Volume Change Potential (VCP) is recommended for the clay soils.

Foundations will therefore require deepening in accordance with NHBC Chapter 4.2 where clay soils are encountered near trees. Foundation depths should be calculated based on the mature height of the tree, however, the existing height is relevant for trees which are to be removed. Deepening may be terminated where the sand deposits are encountered at depth.

In this regard, it is noted that there are mature trees on the boundaries of both the A2 and B6 areas.

17 Sulphates

4 No. samples of the River Terrace Deposits and a single sample of chalk were tested for sulphate content and pH. In accordance with the BRE¹³ methodology and the number of samples tested, the site has been classified on the highest measured sulphate content.

Based on the results detailed in Section 15 and the above, the soils are classified by the BRE as sulphate design class DS-I, and, assuming a mobile groundwater table, the ACEC class is AC-I.

18 Groundwater

The groundwater monitoring results/observations are given in Section 15.1. On the basis of these results, groundwater at about 5.2m below ground level should be anticipated.

Shallow seepages from more granular seems within the clay should also be anticipated, however, should this occur, pumping from sumps should suffice to maintain dry working conditions.

19 Bearing Capacity and Foundations

19.1 Shallow Foundations

Areas of soft ground have been identified around the location of BH102 located on the B6 development area and beyond to the north on the proposed bypass.

All loads should be transferred beneath any topsoil, made ground, loose, soft, low strength, desiccated or disturbed soils and transferred onto the firm becoming stiff clays at depth. For low rise housing, based on local experience and BS8103¹⁴ Table 8, an allowable bearing capacity of 80kPa is recommended for shallow foundations. However, foundations will require deepening in the clay soils near trees to NHBC LOW VCP precautions.

Allowance should be made for nominal reinforcement, due to the propensity for foundations to span different soil types.

¹³ Building Research Establishment Special Digest 1: 2005. Concrete in aggressive ground. Part 1: Assessing the aggressive chemical environment.

BS8103-1:2011 Structural design of low-rise buildings. Code of practice for stability, site investigations, foundations, precast concrete floors and ground floor slabs for housing

19.1.1 Construction Supervision

Foundation excavations should be inspected by a suitably qualified engineer prior to pouring concrete to ensure competent soils, in this case the firm clays are encountered at formation level.

The site is situated within an area at risk of solution features. Where solution features can be positively identified, in accordance with CIRIA C574, consideration may be given to the following treatment methods:

- Excavation and replacement with compacted suitable material
- Bridging
- Ground stabilisation by grouting
- Ground treatment by grouting
- Piling
- Control of drainage

Where solution features are prevalent, the chalk is often overlain by a significant thickness of superficial soils. In these cases, CIRIA C574 suggested that foundations may be designed to bridge over voids (assuming diameter <5m). This may be achieved by the following:-

- Cruciform shaped, reinforced foundations, designed to extend at least 1m beyond the proposed building corner in each direction and with a minimum span of 5m (as per CIRIA C574)
- Proposed footprints should be kept as square as possible. Long terraces and linked buildings should be avoided.
- Foundation trenches should be inspected to ensure competent soils are encountered at founding level, and probing of the foundations is recommended to locate any soft areas (SPT N value should be >10 blow counts/300mm).

Whilst there are local pockets of loose superficial soils, which may be the result of historic solutioning, there is no consistent evidence that solution features are **prevalent** in the subject area of the site. As such, nominal reinforcement with deepening through loose soils should be acceptable, subject to findings during groundworks.

19.2 Piling

Given the presence of shrinkable clay soils and local areas of loose soils, piled foundations may be preferable. For the ground conditions encountered on site, driven, bored or continuous flight augered (cfa) piles may be considered. However, given the proximity of adjacent buildings surrounding the site, driven piles may be excluded due to the vibrations induced

during installation and the effect these may have on existing buildings. Therefore, conventional bored or cfa piles may be more suitable.

If trees are to be removed, consideration of the effects of swelling of the clay soils and the potential for uplift should be considered. Allowance should be made for reinforcement of the upper half of the piles if uplift forces are anticipated.

Discussions should be held with the specialist piling contractors to assess the technical and financial merits of their various systems for the ground conditions encountered, and the depth and size of pile required, with an adequate safety margin.

The final pile design will be determined by the selected piling contractor as the method of pile formation will affect the bearing capacity. For the purpose of preliminary design, the following soil model may be adopted:

Table 14: Soil model for preliminary pile design

Depth to base (m)	Soil Type	Characteristic Shear Strength (kPa) / angle of shearing resistance (°)
3.0	Clay	40
7.0	Sand	29°
8.0	High density structureless Chalk	
12.5	High density structured chalk	

Adopting the above model, and using the pile design methodology outlined in CIRIA C574, example calculations suggest that a 12m long 300mm diameter cfa pile would have a design compressive resistance of around 360kN whilst a 400mm pile could have around 560kN. The final design must be carried out by the specialist contractor in accordance with their preferred method of formation.

Where a risk of dissolution features has been identified, this must be considered in the pile design. Dissolution features are rarely vertical and may be evident under significant thicknesses of intact chalk. On that basis, care must be taken to not rely on end bearing piles.

The construction of piles can also have a destabilising effect on loosely infilled solution features if encountered, due to disturbance from both vibrations and the use of flush, and this in turn may affect the shaft integrity of cfa and cast-in place piles. Where cfa piles are to be adopted, and a risk of dissolution features has been identified on site, CIRIA PR86¹⁵ recommends that a CPT is undertaken at each pile location.

¹⁵ CIRIA PR86 Shaft Friction of CFA piles in chalk 2003

20 Floor Slabs

With reference to NHBC Standard 5.2, suspended floor slabs are recommended:-

- Where the depth of fill exceeds 600mm
- Where foundations are deepened below 1.5m in accordance with NHBC Standards Chapter 4.2
- Where desiccated soils are encountered
- Where vibratory ground improvement techniques have been used
- Where foundations have been piled.

Suspended floor slabs are therefore recommended on site.

21 Roads

Insitu CBR testing has not been carried as part of these works, however, extensive Dynamic Cone Penetrometer (DCP) CBR testing has been carried out by Idom Merebrook for the adjacent Lyminster South Bypass located in the centre of the wider development area¹⁶. Where tests were carried out at a depth of 0.5mbgl on the silty clay subgrade. Results from the testing ranged between 0.41 and 0.46%. Given the high silt content at formation, allowance should also be made for a frost susceptible subgrade.

21.1 Recommendations

Based on the results of the testing carried out by others, a design CBR value of 0.5% is recommended for a silty clay subgrade with allowance for a frost susceptible subgrade.

Further confirmatory testing may be required if the proposed roads are to be adopted.

22 Excavations

Excavations in the shallow clay soils should be stable in the short term. However, groundwater seepages should be anticipated along the more granular horizons should be anticipated. Excavations will therefore be unstable in the long term and should be backfilled as soon as possible. Allowance should be made for light pumping.

Appropriate Health and Safety precautions must be adhered to where man entry into excavations is required. Even stiff clay soils at shallow depth can collapse, particularly following

¹⁶ Additional Geotechnical Assessment, North Littlehampton for Persimmon Homes, ref GR-18426E-15-167 Rev-A dated August 2015

wet weather. Alternative foundation methods may need to be adopted where trench footings cannot be safely or satisfactorily constructed.

23 Filling

The preliminary recommendations contained within this report assume that ground levels are to remain at a similar level across the site for the proposed development, and that no significant changes in level are proposed. In the event that ground levels are to be raised, this may induce significant settlement, particularly across the areas of soft ground such as around BH102 [Parcel B6], which could adversely affect foundation design, drainage etc. Where significant changes in ground levels are proposed then further investigation will be required to assess the impact of such earthworks on the above recommendations.

24 Settlement

Based on the allowable bearing capacity given in Section 19.1, settlements should be within typical tolerable limits for the low rise development proposed.

If soft clays are encountered at formation level or below, significant settlement should be anticipated and serviceable limit state analyses will be required. For Geotechnical Category 2 and 3 structures, detailed settlement analyses are usually required.

At this stage it is assumed that ground levels will remain at the current level for the proposed development. If significant level raises are proposed, this may induce significant settlement in the natural soils and detailed settlement analyses will be required.

Where foundations are stepped or span different soil types, differential settlement should be anticipated and allowance should be made for nominal reinforcement.

25 Heave and Uplift

In accordance with NHBC Standards Chapter 4.2, precautions against heave should be used where foundations are within the influence of trees and the resulting foundation depth is greater than 1.5m. Compressible material must be provided against the inside faces of all external wall foundations greater than 1.5m in depth. For pier and beam foundations, additional voids are required below ring beams.

For piled foundations, the effect of uplift induced by heave must be included in the pile design. Piles should be reinforced for the length of pile governed by the heave design, and allowance should be made for the inclusion of void former or similar on the underside of ground beams.

26 Solution Features

The site is situated within an area at potential risk of solution features. The PBA database search found no natural cavities within 2.5km of the site and therefore the site was reported by them to have a low risk from solution features. However, localised soft/loose soils have been found on site (BH102) which extend to the top of the chalk and resemble areas of potential dissolution, possibly relating to inactive or collapsed former features.

This report provides recommendations for precautions for the design and construction of foundations taking account of the current level of risk of solution features and swallow holes. The precautions recommended within this report, if designed and constructed correctly, will minimise the risk to the proposed foundations and structures.

However, the risk of swallow holes opening within the wider site, away from structures, remains the same. As such the potential for swallow holes to occur on site cannot be discounted or designed against and the reputational (and possibly financial) impact of any such occurrence should not be underestimated. It is essential that **all efforts to minimise surface water migration into the ground are adhered to**. In particular, the design of water supply and sewer pipes should take into account the potential for relatively large settlements to occur where ground levels are raised and be designed accordingly. Where possible, ground level raises should be avoided.

F GEO-ENVIRONMENTAL APPRAISAL

27 Conceptual Site Model

The conceptual site model identified a number of potential contaminant linkages.

On-site sources of contamination likely to impact the site include residual hydrocarbons from possible historical fuel storage, heavy metal, PAH and asbestos within made ground and pesticide / herbicide contamination in near surface soils.

However, following the investigation a thin made ground layer was only identified in one location BHI02, which indicates that land gas risks are low from made ground soils. No visual or olfactory signs of significant ground contamination were identified in the locations investigated.

These sources are considered to pose a low to moderate risk to human receptors and a low to moderate risk to controlled waters.

A number of off-site potential contamination sources have been identified, which have the potential to cause contaminant migration onto the Zone 3 area. The risk to human receptors from these off site sources is considered to be low.

28 Testing Strategy

28.1 Soil Sampling

Trial hole locations were generally spread evenly across the site to provide even, non-targeted coverage. The trial hole spacing was consistent with the recommended density of 25 to 50m for an exploratory investigation after BS10175 Section 7.7.

Selected samples have been tested for the presence of the identified contaminants of concern (heavy metals, PAH compounds, organochloride pesticides and asbestos).

28.2 Groundwater monitoring

Monitoring wells have been located to allow determination of the groundwater regime within the Chalk Aquifer beneath the site, including groundwater flow direction.

Groundwater levels were monitored on six occasions.

29 Assessment Criteria

29.1 Human Health Assessment Criteria

The generic quantitative risk assessment (GQRA) for human health compares the analytical results from the current investigation to Generic Assessment Criteria (GAC). These were selected using the following rationale and assumptions.

Defra and the EA have published a limited number of Soil Guideline Values (SGVs)¹⁷ that represent minimal chronic risk to human health. CL:AIRE has published a limited number of Category Four Screening Levels (C4SLs)¹⁸ which represent a low but still strongly precautionary level of chronic risk to human health. Both the SGVs and C4SLs have both been derived for a Soil Organic Matter (SOM) content of 6%, which is not always representative of the low SOM that are encountered within Made Ground on brownfield sites.

LQM responded to the demand for a more comprehensive set of screening values for a wider range of SOM and produced Suitable for Use Levels (S4ULs)¹⁹ which are a hybrid of SGVs and C4SLs. The S4ULs have been endorsed by the Chartered Institute of Environmental Health (CIEH).

LEAP uses C4SLs where they are available as generic assessment criteria to quantitatively assess the potential chronic risks to human health. Where C4SLs are not available, the S4ULs are used. It is noted that S4ULs are not equivalent to C4SLs in all their exposure assumptions but are generally more conservative in their assumptions. For benzene and benzo(a)pyrene, LEAP has calculated equivalent C4SLs for 1% and 2.5% SOM. This does not affect the inorganic contaminants.

In accordance with current Public Health England (PHE) guidance²⁰, the assessment of PAHs has been carried out using a surrogate marker approach, whereby the assessment of risk from benzo(a)pyrene also captures potential risks from other carcinogenic PAHs that may be present. The alternative S4ULs for PAHs using the Toxic Equivalent Factor (TEF) approach have not been used because this approach is likely to under predict the true carcinogenicity

¹⁷ Environment Agency Science Report SC050021 series.

¹⁸ CL:AIRE Final Project Report. SPI010 – Development of Category 4 Screening Levels for assessment of land affected by contamination. CL:AIRE, December 2013

¹⁹ The LQM/CIEH S4ULs for Human Health Risk Assessment, Nathaniel P et al, 2015. Copyright Land Quality Management Ltd, reproduced with permission: Publication Number S4UL3509

²⁰ HPA Contaminated Land Information Sheet. Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs). Public Health England, 2017.

of PAHs and is not advocated by PHE. The threshold PAHs have been assessed similarly, by using naphthalene as a marker compound due to its high volatility relative to other PAHs.

Total phenols have been assessed against the S4UL for phenol and total chromium has been assessed against the S4UL for trivalent chromium.

Theoretical soil saturations have not been considered in the evaluation of organic compounds and as such, some of the S4ULs for the less sensitive exposure scenarios are lower than their more sensitive equivalents.

Sets of GACs have been generated for SOMs of 1%, 2.5% and 6%. In this case, a 1% SOM was considered to be appropriate to maintain conservatism.

For some contaminants of concern, direct contact will be the dominant pathway for exposure. In order to support with development options, human exposure to all unsaturated soils, irrespective of depth, was assumed possible for the purpose of this assessment. This will maximise the information available to the design team on the suitability of all unsaturated material and can support with their materials management options. Soil screening results are provided in Appendix H.

29.1.1 Statistical Assessment

In assessing soil test results and comparing them to any threshold or screening value, an assessment must first be made as to how accurately the test results reflect the true mean of the contaminant level within the ground. In this assessment for each parameter the test data have been subjected to statistical assessment based on the methodology set out in *CIEH report 2008: Guidance on comparing Soil Contamination Data with a Critical Concentration*. The Upper Confidence Level or U₉₅ value is thereby calculated as being the level at which we would be 95% confident that the true mean is **less** than this value. For the purposes of this assessment, a conservative approach has been adopted in the statistics. All non-detect values have been treated as being equal to half the limit of detection.

It should be noted that for the purposes of these assessments, no statistical outliers have been excluded. The CIEH guidance document that accompanies the statistics calculator states:

outliers should be excluded from a dataset ONLY where they:

- *are obviously and demonstrably the result of an error that can be identified and explained,*
or
- *clearly indicate that more than one soil population exists within the dataset and this can be justified by (or informs the further development of) the conceptual model*

30 Analytical Test Results – Soils

Soil samples were sent for laboratory analyses of a standard suite of potential contaminants of concern (PCoC) including arsenic, cadmium, chromium VI, copper, lead, mercury, nickel and zinc), speciated PAH and asbestos. Selected samples were sent for pesticide testing.

30.1 Parcels A2 and B6

Seven soil samples including two soil samples from the stockpiles along the southern boundaries of A2 and B6 were collected by LEAP and were subject to the standard laboratory test suite.

No PCoC were detected at concentrations above the generic assessment criteria for residential with home grown produce.

One shallow sample was tested for organochloride pesticides and no pesticides were detected above analytical limits of detection. Asbestos was also not detected in any soil sample tested.

Merebrook tested five soil samples from land parcel A2 only for a range of PCoC including heavy metals PHC, and PAHs. The results have been compared by LEAP against GACs for residential with home grown produce. No soil sample tested was found to contain PCoC at concentrations above the GACs for residential with home grown produce.

30.2 Southern Allotment Area

Three soil samples were subject to the standard suite of laboratory tests by LEAP. One soil sample was also analysed for organochloride pesticides.

Heavy metals and speciated PAHs were not detected at concentrations above generic assessment criteria for an allotment land use.

The soil sample tested for organochloride pesticides did not record pesticides above analytical limits of detection. Asbestos was also not detected in any soil sample tested.

Merebrook tested two soil samples from the Southern Allotment Area for a range of PCoC including heavy metals PHC, PAHs and asbestos. The results have been compared by LEAP against GACs for an allotment land use. No soil sample tested was found to contain PCoC at concentrations above the GACs for an allotment land use.

31 Risk Assessment

31.1 Human Health

31.1.1 A2/B6

The works to date have not identified significant contamination in soils samples tested with respect to identified human health receptors.

We note that it was not possible to test a made ground sample from BH102 (parcel B6), due to laboratory closures during the 2019 Christmas period. A thin made ground layer was only recorded by Leap in BH102, below a layer of pea shingle. It is postulated that the potential extent of made ground is up to 550 m² or ~165- 330 m³ in volume, assuming the made ground layer is between 0.30-0.60 m thick. However, access to this part of the site was also limited during the investigation phase due to the western half of the site being used as a haul road and other areas being occupied by construction machinery and materials. Some further chemical testing is likely to be required to confirm the chemical composition of this made ground soil. In the absence of further testing allowance should be made for the removal and appropriate disposal of made ground soil where present in proposed soft landscaped areas (gardens / communal open spaces).

31.1.2 Southern Allotments

The works to date have not identified significant contamination in soils samples tested with respect to identified human health receptors.

31.2 Controlled Waters

31.2.1 Groundwater

The site is located above a secondary aquifer (River Terrace Deposits) and the Principal Aquifer, the Chalk. The site is not situated within a potable water supply Source Protection Zone. The nearest groundwater source protection zone is located ~1.93 km to the south east of the site.

Specific groundwater laboratory testing has not been carried out as part of this investigation. Previous laboratory testing of the chalk aquifer by Mererook did not identify potential contaminants of concern at concentrations above screening criteria, with the exception of a marginally elevated concentration of nickel at 0.028 mg/l (against UKDWS of 0.02 mg/l) in MBH1, located in the Stage 2 investigation area.

Concentrations of potential contaminants of concern recorded in on site soils are generally low and the mean average concentrations in soil samples tested by LEAP are analogous to normal background concentrations in the UK i.e. in general site soils do not appear to pose an additional burden to controlled waters receptors than that which may be expected from normal UK soils.

Table 15: Normal background concentrations vs mean average concentrations

PCoC	Normal background concentrations (mg/kg)	Mean average concentration (mg/kg)	
		Southern Allotments	Parcel A2/B6
Arsenic	32	10 (14)	12 (17)
Cadmium	1	0.5 (0.4)	0.5 (0.25)
Copper	62	19 (15)	20.8 (18)
Mercury	0.5	0.5 (0.3)	0.5 (0.3)
Nickel	42	17.6 (14)	21.3 (-)
Lead	180	28.3 (25)	20.9 (15.5)
Benzo(a)pyrene	0.5	0.1 (0.1)	0.1 (0.1)

Results in parenthesis taken from previous reports

On the basis of the low concentrations of PCoC previously reported in the Chalk aquifer by Merebrook and the low levels of PCoC in site soils identified by LEAP the risk to the Principal Aquifer is assessed as Low.

31.2.2 Surface Water

The closest surface water feature are the surface drains within the central wetlands area and flood plains associated with the Black Ditch along the northern boundary. The low concentrations of PCoC in onsite soils are unlikely to pose a significant risk to surface water receptors.

32 Waste Disposal

It is anticipated that the proposed development will generate waste soils and materials will need to be removed from site as part of the construction process.

Where soils are to be disposed off-site, it is the duty of the waste producer, in this case Persimmon Homes Thames Valley, to ensure that all waste is disposed of appropriately and that any that is sent to landfill is sent to an appropriately licensed one. All waste sent to landfill must be classified and must be pre-treated. There are various forms of pre-treatment that are acceptable. In this case it could include “reduction in volume”, which could be achieved by segregating the Made Ground and re-using part of it on site.

Where made ground soil is to be re-used on site then it is recommended that this is carried out under the CL:AIRE Definition of Waste Industry Code of Practice (DoWCoP) for re-use of soils²¹.

Laboratory test results from this investigation and the previous Merebrook investigation have been preliminarily screened using the online tool HazWasteOnline®. All the samples have been preliminarily assessed as non-hazardous waste. Preliminary classification results are provided in Appendix J.

Further testing and inspection of soils will be required to confirm waste classification of material leaving the site.

It is strongly advised that detailed discussions be held with remediation/groundworks contractors and that receiving landfill sites are identified in advance of commencing any waste removal.

33 Recommendations for further works

We recommend that limited further investigation is undertaken in parcel B6 to confirm the chemical composition of made ground in soil around BH102 and in previously inaccessible area in B6.

This will likely comprise the collection of three to four shallow soil samples (<0.50 m) for laboratory testing to include the standard chemical test suite. This can be undertaken as part of the Stage 2 investigations.

If it is not possible to undertake further investigation it is recommended that a minimum of 600 mm clean cover (or made ground removal to natural soils, whichever is the shallowest) is allowed for in proposed new soft landscaped areas where made ground is present.

34 Recommendations for remediation

Following the limited further investigation in B6 a remediation method statement may be required. This method statement should be submitted to the appropriate regulatory authorities. It is advised that the local authority is advised of the intended build programme in order that they can phase the sign off of planning conditions as required.

²¹ The Definition of Waste: Development Industry Code of Practice. Version 2 2011. CL:AIRE

Provision should also be made for dealing with further localised hotspots of contamination which may come to light during construction. Any such soils should be inspected by the validation engineers and appropriate remedial action taken as necessary.

APPENDIX A – Limitations

Limitations

LIMITATIONS

This report is confidential to the Client, and Leap Environmental Ltd accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Leap Environmental Ltd beforehand. Any such party relies upon the report at their own risk. Unless explicitly agreed otherwise in writing, this report has been prepared under LEAP's standard terms and conditions, as included in the quotation for this works.

This report has been prepared by Leap Environmental Ltd on the basis of information received from a variety of sources which Leap Environmental Ltd believes to be accurate. Nevertheless, Leap Environmental Ltd cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

Leap Environmental Ltd has used all reasonable skill, care and diligence in the design and execution of this report, taking into account the manpower and resources devoted to it in agreement with the Client. Although every reasonable effort has been made to obtain all relevant information, all potential contamination, environmental constraints or liabilities associated with the site may not necessarily have been revealed. LEAP cannot be held responsible for any disclosures or changes in regulation that are provided post production of this report, and will not automatically update the report.

The conclusions reached in this report are necessarily restricted to those which can be determined from the information consulted, and may be subject to amendment in the light of additional information becoming available. These conclusions may not be appropriate for alternative schemes.

The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development and site usage, timescales or client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an overall assessment of ground conditions on site. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7²², although this is subject to the restrictions imposed on the investigation as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and

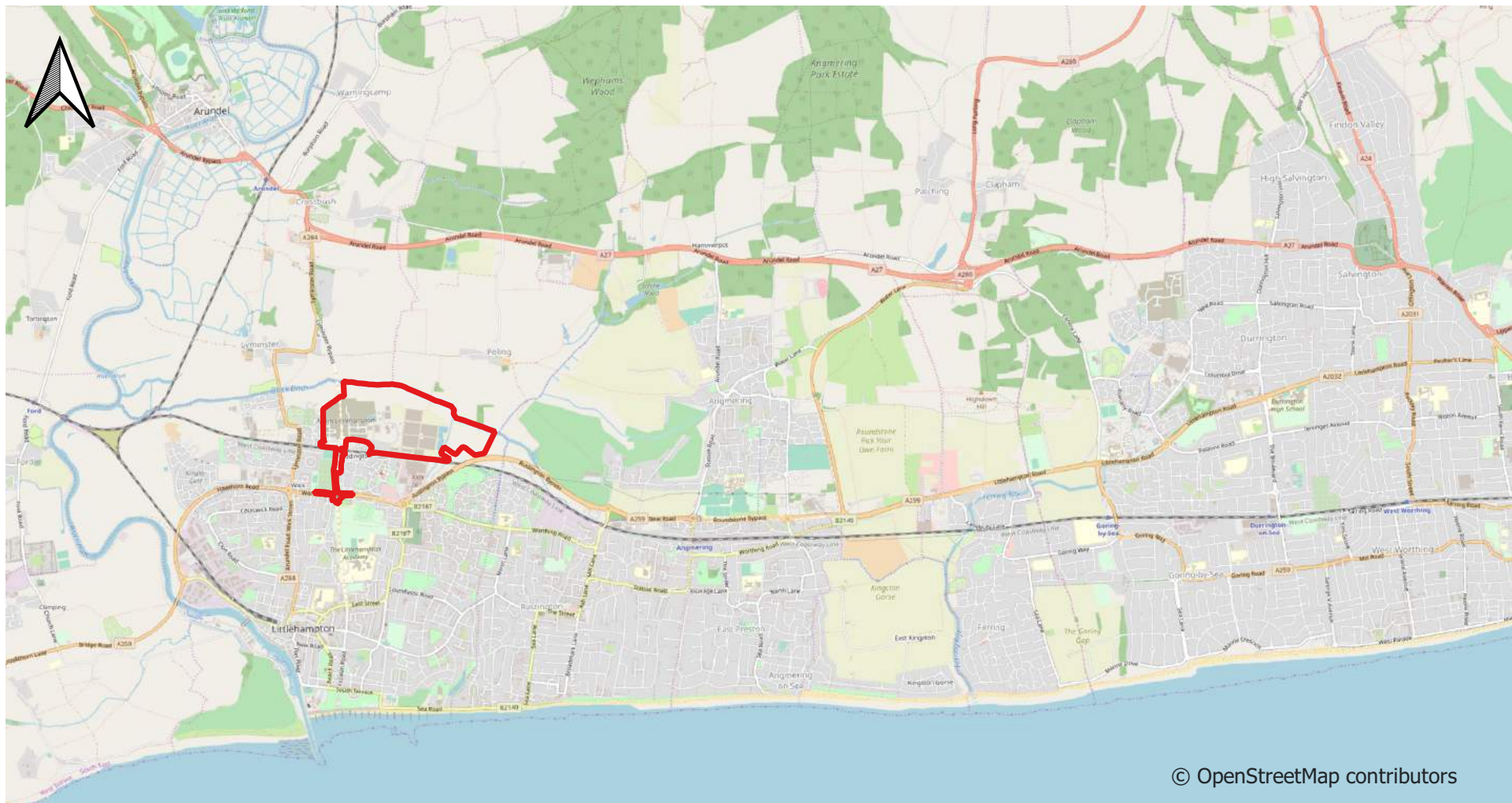
²² BS EN 1997 Eurocode 7- Geotechnical Design - Part 1: General Rules (2004) and Part 2: Ground Investigation and Testing (2007)

structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this report will not meet the requirements of a Geotechnical Design Report (GDR), and should therefore be used for preliminary guidance only.

The presence of asbestos may be noted during the site walkover survey, intrusive investigations and/or from the results of contamination testing. However, this report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

APPENDIX B – Figures

Figures



Site Location



Client:	Persimmon Homes	Title:	Site Location	Project ID:	LP2128
Project:	Toddington Lane North Littlehampton	Date:	March 2020	Figure No	1

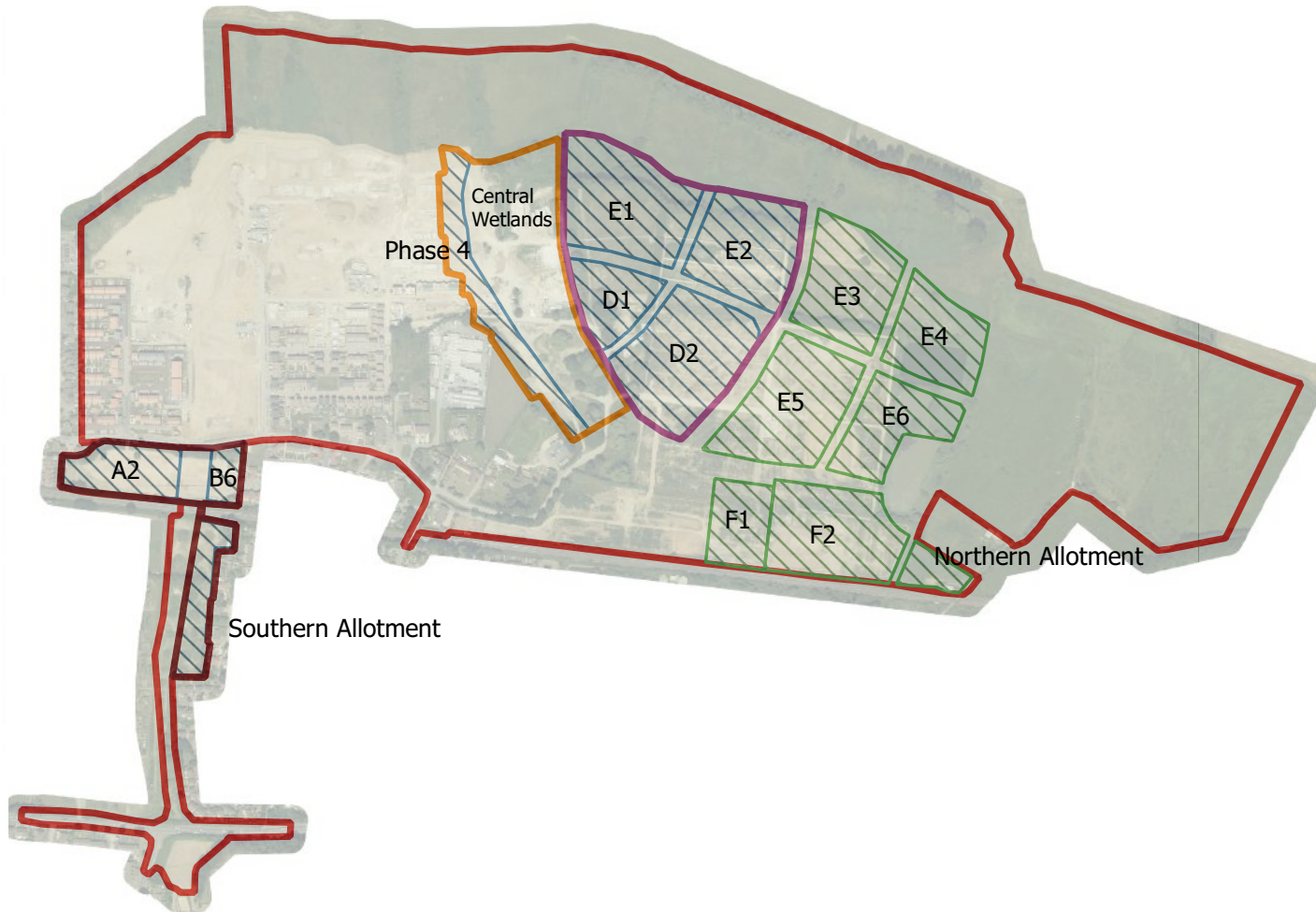


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0 100 200 m



Client:	Persimmon Homes	Title:	Existing Site Layout	Project ID:	LP2128
Project:	Toddington Lane North Littlehampton	Date:	March 2020	Figure No	2



Key

- Site boundary
- Stage 1 SI
- Zone1
- Zone2
- Zone3
- Stage 2 SI



Client:	Persimmon Homes	Title:	Land Parcels and SI Stages	Project ID:	LP2128
Project:	Toddington Lane North Littlehampton	Date:	March 2020	Figure No	3



- Site boundary
- Zone3

⊕ Leap BH (with the exception of BHX)

⊠ Leap TP

⊠ Leap HP

Merebrook

● Merebrook WS

● Merebrook BH

● Merebrook TP



Client:	Persimmon Homes	Title:	Zone 3 Exploratory Holes	Project ID:	LP2128
Project:	Toddington Lane North Littlehampton	Date:	March 2020	Figure No	4



Key:

- Red Line Boundary
- Land within Persimmon ownership - outside of red line boundary
- Area excluded from red line boundary

PERSIMMON
Together, we create a better place to live

Toddington and Littlehampton

Masterplan

PERSIMMON



SPT N Value - Zone 3

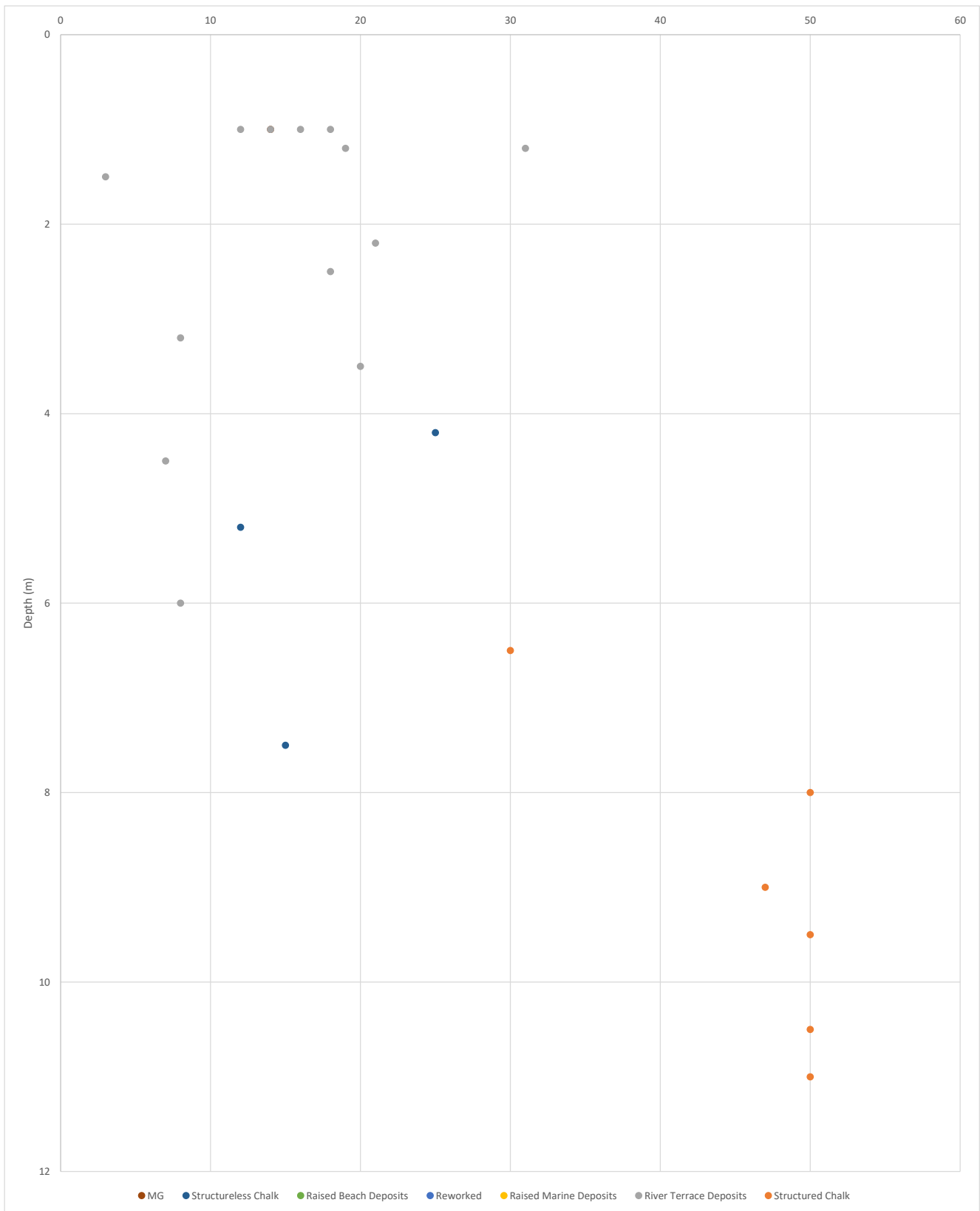
Borehole No.

Project ID: **LP2128**Project Title: **North Littlehampton**

Final Depth:

Client: **Persimmon Homes Thames Valley**Location: **North Littlehampton, West Sussex, BN17 7PP**

Date Drilled:

Date Reported: **09/04/2020**

Data Status:

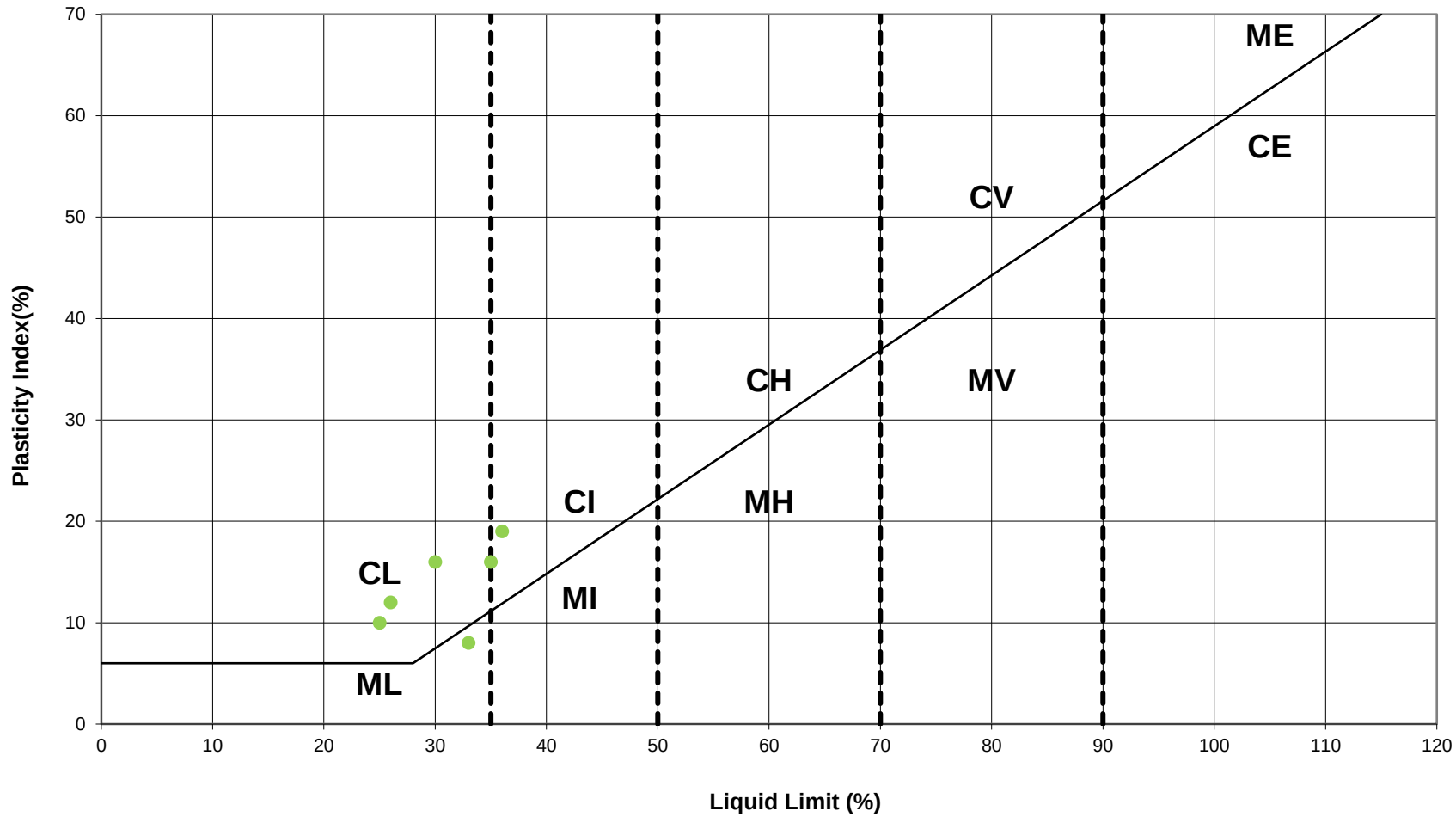
A Line Plot -

Project ID: **LP2128**

Project Title: **North Littlehampton**

Client: **Persimmon Homes**

Location: **Zone 3**



Date Reported: **09/04/2020**

APPENDIX C – Qualitative Risk Assessment Model Geoenvironmental

Qualitative Risk
Assessment Model
Geoenvironmental

Qualitative Risk Assessment of Pollutant Linkages

LP2128 - Zone 3 North Littlehampton

Contaminant	Receptor	Route ¹	Pathway ¹	Likelihood of Occurrence ²	Severity of Consequence ²	Risk Classification ³	Notes
Polyaromatic Hydrocarbons and Petroleum Hydrocarbons	Future Residents	1	Ingestion of soil	Low likelihood	Medium	Moderate/low risk	Previous investigations in Zone 3 area did not identify PHC/PAHs at concentrations above GAC. Unlikely to be present on site. However, land parcel B6 has not been investigated
		2	Ingestion of household dust	Low likelihood	Mild	Low risk	
		3	Ingestion of contaminated vegetables	Low likelihood	Medium	Moderate/low risk	
		4	Ingestion of soil attached to vegetables	Low likelihood	Medium	Moderate/low risk	
		5	Dermal contact with soil	Low likelihood	Medium	Moderate/low risk	
		6	Dermal contact with household dust	Low likelihood	Mild	Low risk	
		7	Inhalation of fugitive soil dust	Low likelihood	Mild	Low risk	
		8	Inhalation of fugitive household dust	Low likelihood	Mild	Low risk	
		9	Inhalation of vapours outside	Low likelihood	Minor	Very low risk	
		10	Inhalation of vapours inside	Low likelihood	Mild	Low risk	
	Construction workers	1	Ingestion of soil	Low likelihood	Medium	Moderate/low risk	Previous investigations in Zone 3 area did not identify PHC/PAHs at concentrations above GAC. Appropriate PPE prevents majority of dermal contact. Significant soil vapour risk not anticipated
		5	Dermal contact with soil	Low likelihood	Medium	Moderate/low risk	
		7	Inhalation of fugitive soil dust	Low likelihood	Medium	Moderate/low risk	
		9	Inhalation of vapours outside	Unlikely	Medium	Low risk	
	Groundwater		Intergranular flow of free product	Low likelihood	Minor	Very low risk	No free product identified. Vertical and horizontal migration through soils limited by generally low permeability of shallow clays. Previous investigations did not record elevated PCoC in chalk aquifer.
			Rainwater infiltration and leaching of contaminated soils	Low likelihood	Minor	Very low risk	
	Surface water		Rainwater infiltration and leaching, intergranular flow via groundwater to controlled waters	Unlikely	Minor	Very low risk	No free product identified. Surface water migration considered unlikely to pose an impact due to low concentrations of PCoC previously identified and distance to receptors
			Surface water run-off	Unlikely	Minor	Very low risk	

Contaminant	Receptor	Route ¹	Pathway ¹	Likelihood of Occurrence ²	Severity of Consequence ²	Risk Classification ³	Notes
	Material construction of buildings and infrastructure		Contact of building materials, including water supply pipes with contaminated soils and/or contaminated groundwater	Unlikely	Mild	Very low risk	
Heavy metals	Future Residents	1	Ingestion of soil	Low likelihood	Medium	Moderate/low risk	Low concentrations previously identified across Zone 3, although land parcel B6 not investigated
		2	Ingestion of household dust	Low likelihood	Mild	Low risk	
		3	Ingestion of contaminated vegetables	Unlikely	Medium	Low risk	
		4	Ingestion of soil attached to vegetables	Unlikely	Medium	Low risk	
		5	Dermal contact with soil	Low likelihood	Medium	Moderate/low risk	
		6	Dermal contact with household dust	Low likelihood	Mild	Low risk	
		7	Inhalation of fugitive soil dust	Low likelihood	Mild	Low risk	
		8	Inhalation of fugitive household dust	Low likelihood	Mild	Low risk	
	Construction workers	1	Ingestion of soil	Low likelihood	Medium	Moderate/low risk	Low concentrations previously identified across Zone 3, although land parcel B6 not investigated
		5	Dermal contact with soil	Likely	Mild	Moderate/low risk	
		7	Inhalation of fugitive soil dust	Low likelihood	Medium	Moderate/low risk	
	Groundwater						Low concentrations of metal PCoC previous identified in Zone 3 area.. Vertical and horizontal migration through soils limited by generally low permability of shallow clays.. Previous investigations did not record elevated PCoC in
			Rainwater infiltration and leaching of contaminated soils	Low likelihood	Minor	Very low risk	
	Surface water		Rainwater infiltration and leaching, intergranular flow via groundwater to controlled waters	Unlikely	Minor	Very low risk	
			Surface water run-off	Unlikely	Minor	Very low risk	

Contaminant	Receptor	Route ¹	Pathway ¹	Likelihood of Occurrence ²	Severity of Consequence ²	Risk Classification ³	Notes
	Material construction of buildings and infrastructure		Contact of building materials, including water supply pipes with contaminated soils and/or contaminated groundwater	Unlikely	Minor	Very low risk	
Herbicides and Pesticides	Future Residents	1	Ingestion of soil	Unlikely	Minor	Very low risk	Not detected during previous site investigations however cannot be fully discounted due to historical agricultural use and low sampling density relative to the large extent of site area..
		2	Ingestion of household dust	Unlikely	Minor	Very low risk	
		3	Ingestion of contaminated vegetables	Unlikely	Mild	Very low risk	
		4	Ingestion of soil attached to vegetables	Unlikely	Mild	Very low risk	
		5	Dermal contact with soil	Unlikely	Minor	Very low risk	
		6	Dermal contact with household dust	Unlikely	Minor	Very low risk	
		7	Inhalation of fugitive soil dust	Unlikely	Minor	Very low risk	
		8	Inhalation of fugitive household dust	Unlikely	Minor	Very low risk	
	Construction workers	1	Ingestion of soil	Unlikely	Minor	Very low risk	
		5	Dermal contact with soil	Unlikely	Minor	Very low risk	
		7	Inhalation of fugitive soil dust	Unlikely	Minor	Very low risk	
	Groundwater		Intergranular flow of free product	Unlikely	Minor	Very low risk	
			Rainwater infiltration and leaching of contaminated soils	Unlikely	Minor	Very low risk	
	Surface water		Rainwater infiltration and leaching, intergranular flow via groundwater to controlled waters	Unlikely	Minor	Very low risk	

Contaminant	Receptor	Route ¹	Pathway ¹	Likelihood of Occurrence ²	Severity of Consequence ²	Risk Classification ³	Notes
			Surface water run-off	Unlikely	Minor	Very low risk	
	Material construction of buildings and infrastructure		Contact of building materials, including water supply pipes with contaminated soils and/or contaminated groundwater	Unlikely	Minor	Very low risk	
Asbestos	Future Residents	7	Inhalation of fugative soil dust	Low likelihood	Severe	Moderate risk	No ACMs previously identified in Zone 3 area. However can not be discounted, especially in B6, where a property was recently demolished
		8	Inhalation of fugative household dust	Low likelihood	Severe	Moderate risk	
	Construction workers						
		7	Inhalation of fugative soil dust	Low likelihood	Severe	Moderate risk	
Hazardous Gas/Vapours in soil	Future residents	9	Inhalation of vapours outside	Low likelihood	Minor	Very low risk	No evidence from previous investigations for significant thicknesses of made ground on site that could be a potential land gas source. Only low Concentrations of PHC / PAHs previously identified
	Current users	9	Inhalation of vapours outside	Low likelihood	Minor	Very low risk	
	Construction workers	9	Inhalation of vapours outside	Unlikely	Minor	Very low risk	
	Future residents	10	Inhalation of vapours inside	Low likelihood	Mild	Low risk	
	Current users	10	Inhalation of vapours inside	Unlikely	Minor	Very low risk	
	Construction workers	10	Inhalation of vapours inside	Low likelihood	Mild	Low risk	

Notes to table:

1. Classification of human exposure pathways (routes) from The CLEA model, Research and Development Publication CLR10.
2. Classification of Probability and Consequence from CIRIA C552 Contaminated land risk assessment, a guide to good practice 2001
3. Risk Classification from DETR Guidelines for Environmental Risk Assessment and Management, 2000

APPENDIX D – Qualitative Risk Assessment Model - Geotechnical

Qualitative Risk
Assessment Model -
Geotechnical

Geotechnical risk is the risk to building and construction work created by the site ground conditions. The Preliminary Geotechnical Risk Register has been compiled to provide an assessment of the likely risks that may impact on the proposed development based on the results of the desk study, and should be used to specify the type and extent of the intrusive investigation and testing undertaken, and to identify potential mitigation measures to control the risk to an acceptable level.

The inclusion of a risk in the register does not indicate that the risk is present, rather the likelihood of mitigation measures being required due to that risk, based on the available data. Equally, a risk classified as low indicates that mitigation measures are unlikely to be required for the hazard identified based on the available data.

The risk register should be developed and refined throughout the design process such that it will enable the management of geotechnical risk.

The Geotechnical Risk Register has been developed in accordance with the guidance presented in ICE/DETR Document "Managing Geotechnical Risk" (2002). The degree of risk (R) is determined by assessing the likelihood of a hazard (L) occurring and the effect of the hazard (E) on the project ($R=L \times E$). The effect may be measured in one or more aspect e.g. increased cost, delays in the program, health and safety etc. The scale of the likelihood, effect and risk are determined as follows:-

Likelihood of Occurrence			x	Effect of Hazard			=	Degree of Risk		
Scale	Likelihood	Chance		Scale	Effect	Increase in cost or time		Degree of Risk	Risk Level	Action required
4	Probable	>1 in 2		4	Very High	>10%		1-4	Trivial	None
3	Likely	1 in 10 to 1 in 2		3	High	4-10%		5-8	Significant	Consider cost effective solutions or improvements at no extra cost
2	Unlikely	1 in 100 to 1 in 10		2	Low	1-4%		9-12	Substantial	Work must not start until risk has been reduced. Additional resource required
1	Negligible	<1 in 100		1	Very Low	<1%		13-16	Intolerable	Work must not start until risk has been reduced. If risk can not be reduced, project should not proceed.

Hazard	Effect	Likelihood of Occurrence	Effect of Hazard	Risk Classification	Notes
Made Ground	Deepened foundations	Negligible	Low	Trivial	No historic development noted on Zone 3
	Unstable excavations	Negligible	High	Trivial	
Compressible Ground	Bearing capacity failure	Unlikely	High	Significant	Potential variable ground conditions are likely in the underlying shallow geology and may lead to compressible ground
	Excessive settlement	Unlikely	High	Significant	
High Groundwater Table	Unstable excavations/ running sands	Unlikely	High	Significant	Groundwater previously recorded at approximately 7.0m bgl shallow groundwater not considered to be an issue in this Zone
	Dewatering	Unlikely	High	Significant	
	Contamination	Unlikely	High	Significant	
Deep Excavations	Deepened foundations				Deep excavations for foundation are unlikely to be required in Zone 3.
		Unlikely	High	Significant	
Shrinkable soils	Deepened foundations	Likely	Low	Significant	Previous investigation encountered NHBC Low to medium volume change potential in shallow clays. It is understood that the current trees will be removed and so heave is likely.
	Heave	Likely	Low	Significant	
Frost Susceptible soils	Road Design	Likely	High	Substantial	Site is underlain by silty sandy clays and is likely to be subject to frost heave.
Aggressive ground conditions for Concrete	Concrete design				Site is not underlain by strata known to contain high concentrations of sulphate containing minerals. Testing will be required to confirm
		Unlikely	High	Significant	
Slope Stability/Retaining Structure	Local stability	Unlikely	Very low	Trivial	Site is generally low lying and level.
	Global stability	Unlikely	Very low	Trivial	
Mining	Suitability for development	Negligible	High	Trivial	No history of mining activity in area.
Ground dissolution/ Natural cavities	Remedial measures				Site underlain by chalk which is at potential risk from dissolution. Although previous PBA report for site has classified site as at low risk from dissolution
		Unlikely	High	Significant	
Landfill	Land gas	Negligible	High	Trivial	No potential sources of ground gas production identified near Zone 3 - low risk here.
Contaminated land	Remedial measures				Zone 3 has remained undeveloped
		Unlikely	High	Significant	
Archaeological remains	Remedial measures	Unlikely	High	Significant	No archaeological limitations on project.
UXO	UXO supervision				UXO desk study identified a moderate risk of unexploded bombs in the northern section of the site, located in vicinity of land parcels E1-E4 with a low risk for Zone 3
		Unlikely	Very high	Significant	

APPENDIX E – Site Photographs

Site Photographs



Plate 1: Sample location TP136.



Plate 2: Sample location TP135.



Plate 3: Sample location TP137.



Plate 4: Sample location TP139.



Plate 5: Sample location TP138.



Plate 6: Stockpiled overburden from archaeological excavation in parcel B6.

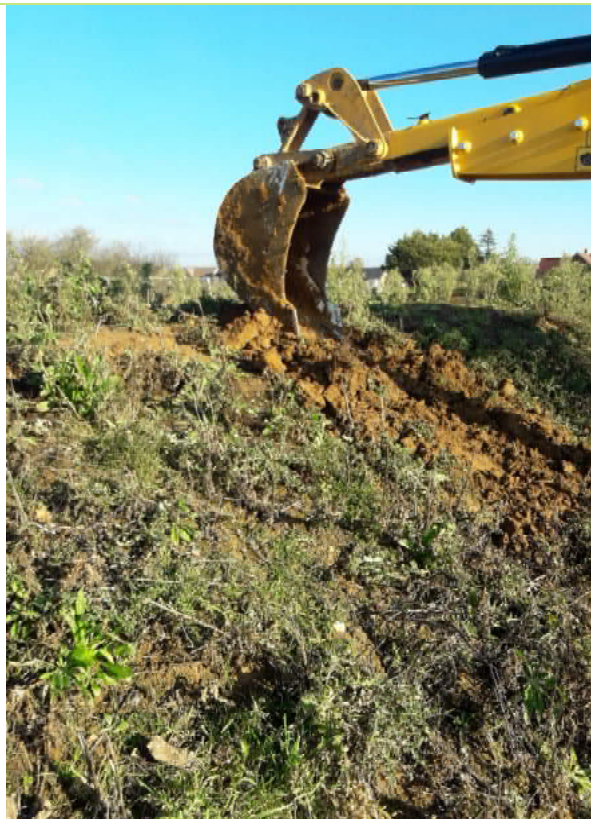


Plate 7: Excavation at sample location BS1.



Plate 8: Sample location BS1.



Plate 9: Land parcel A2 facing SW



Plate 10: Land parcel A2 facing NW



Plate 11: Land parcel B6 facing N



Plate 12: Land parcel B6 facing S

APPENDIX F – Trial Hole and Borehole Logs

**Trial Hole and
Borehole Logs**

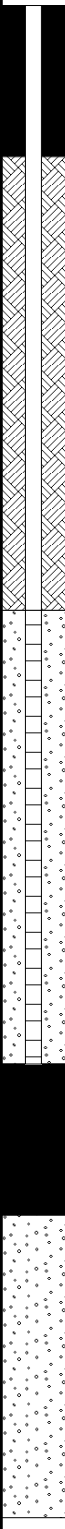
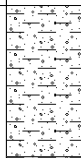
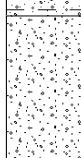
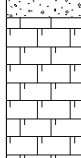
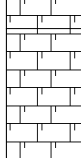
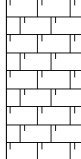
Borehole Log

Borehole No.

BH101

Sheet 1 of 2

Project Name:	North Littlehampton	Project No.	LP2128	Co-ords:	503034 - 103887	Hole Type	CP
Location:	Land near Wick, North Littlehampton, West Sussex, BN17 7PP	Level:	7.24	Scale	1:50	Logged By	OA
Client:	Persimmon Homes Thames Valley	Dates:	20/12/2019 - 23/12/2019				

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.00	D	N=19 (0,1/2,4,6,7)	1.00	6.24		Brown to dark brown sandy gravelly CLAY with gravel of subangular to subrounded fine to coarse flint.	1
		1.20						Firm brown to reddish brown very sandy gravelly CLAY.	
		1.50	B						
		2.20		N=21 (2,4/5,5,5,6)	2.00	5.24		Loose brown to reddish brown gravelly SAND with gravel of sub angular to subrounded fine to coarse flint.	2
		3.20	B	N=8 (1,2/2,2,2,2)					
		3.20			3.50	3.74		Off white to cream weathered structureless high density CHALK recovered as silty chalk gravel.	
		4.00	B	N=25 (5,7/6,7,5,7)					4
		4.20							
		5.00	D	N=12 (1,2/3,3,3,3)	4.80	2.44		Yellowish off white locally darkly stained structureless high density CHALK recovered as silty chalk gravel.	
		5.20							
		6.00	D	N=30 (1,3/7,6,7,10)	5.80	1.44		Off white Structured high density CHALK recovered as silty chalk gravel.	6
		6.50							
		7.50	B						
		8.00		N=50 (6,10/50 for 145mm)					8
		9.50		N=50 (9,6/50 for 297mm)					
		10.00	B						

Continued on next sheet

Remarks

Groundwater struck at 5.2m. A groundwater monitoring well was installed. The installation comprised a raised steel cover over plain pipe from ground level to 4.0mbgl over slotted pipe from 4.0m to 7.0mbgl. The excavation was reinstated with gravel from 12.5m to 8.0mbgl, bentonite from 8.0m to 7.0m, gravel from 7.0m to 4.0m arisings from 4.0m to 1.0m and bentonite from 1.0m to ground level.





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Borehole Log

Borehole No.

BH101

Sheet 2 of 2

Project Name: North Littlehampton

Project No.
LP2128

Co-ords: 503034 - 103887

Hole Type
CP

Location: Land near Wick, North Littlehampton, West Sussex,
BN17 7PP

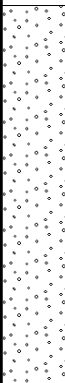
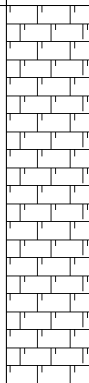
Level: 7.24

Scale
1:50

Client: Persimmon Homes Thames Valley

Dates: 20/12/2019 - 23/12/2019

Logged By
OA

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50	D	N=50 (25 for 79mm/50 for 85mm)	12.50	-5.26			11
		11.00							
		12.00	D						12
								End of borehole at 12.50 m	13
									14
									15
									16
									17
									18
									19
									20

Remarks

Groundwater struck at 5.2m. A groundwater monitoring well was installed. The installation comprised a raised steel cover over plain pipe from ground level to 4.0mbgl over slotted pipe from 4.0m to 7.0mbgl. The excavation was reinstated with gravel from 12.5m to 8.0mbgl, bentonite from 8.0m to 7.0m, gravel from 7.0m to 4.0m arisings from 4.0m to 1.0m and bentonite from 1.0m to ground level.



 Leap Environmental Ltd The Atrium, Curtis Road Dorking, Surrey RH4 1XA Tel: 01306 646510 www.leapenvironmental.com				Borehole Log				Borehole No. BH102 Sheet 1 of 2	
Project Name: North Littlehampton				Project No. LP2128		Co-ords: 503176 - 103880		Hole Type CP	
Location: Land near Wick, North Littlehampton, West Sussex, BN17 7PP				Level: 7.64		Scale 1:50			
Client: Persimmon Homes Thames Valley				Dates: 18/12/2019 - 19/12/2019		Logged By OA			

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	7.34	 Grey to dark grey subrounded medium to coarse rounded gravel MADE GROUND with occasional brick cobbles.	1	
					0.60	7.04			 Brown to dark brown clayey gravel MADE GROUND comprising subangular to subrounded fine to coarse flint and occasional coarse plastic fragments.
		1.00	D	N=3 (1,0/0,1,1,1)			 Soft brown to dark brown very gravelly CLAY with gravel of subangular to subrounded fine to coarse flint.	2	
		1.50	B						
		1.50							
		2.00	D	N=18 (1,3/3,4,6,5)	2.10	5.54	 Firm orange to orangish brown gravelly very sandy CLAY with gravel of subangular to subrounded fine to coarse flint.	3	
		2.50							
		3.00	B						
		3.50		N=20 (1,3/4,6,5,5)	3.10	4.54	 Medium dense becoming loose brown to dark brown slightly gravelly medium SAND with occasional gravel of subangular to subrounded fine to coarse flint.	4	
		4.50	B						
		4.50							
				N=7 (1,1/2,2,1,2)	5.00	2.64	 Loose brown to dark brown gravelly medium SAND with gravel of subangular to subrounded fine to coarse flint and cobbles of black stained ironstone.	5	
		6.00	B						
		6.00							
		6.50	B	N=8 (1,2/0,2,3,3)	6.20	1.44	 Light brown gravelly clayey SILT with gravel of subangular to subrounded fine to coarse flint and chalk.	6	
			N=15 (1,2/2,3,4,6)	7.00	0.64	 Off white to brownish cream structureless high density silty clayey CHALK.	7		
	7.50								
			N=47 (7,8/10,12,13,12)	8.00	-0.36	 Off white structured medium to high density CHALK recovered as silty gravel.	8		
	8.50	D							
	9.00								
								9	
								10	
		10.00	B				Continued on next sheet		

Remarks Borehole was terminated due to slow progress through high density chalk. Groundwater was struck at 7.2m. The borehole was reinstated with gravel from 10.8mbgl to 7.0m bentonite from 7.0m to 6.0m and arisings from 6.0m to ground level.		
---	--	---



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Borehole Log

Borehole No.

BH102

Sheet 2 of 2

Project Name: North Littlehampton

Project No.
LP2128

Co-ords: 503176 - 103880

Hole Type
CP

Location: Land near Wick, North Littlehampton, West Sussex,
BN17 7PP

Level: 7.64

Scale
1:50

Client: Persimmon Homes Thames Valley

Dates: 18/12/2019 - 19/12/2019

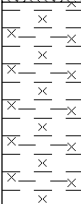
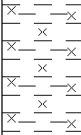
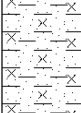
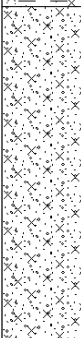
Logged By
OA

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50		N=50 (25 for 125mm/50 for 115mm)	10.80	-3.16		End of borehole at 10.80 m	11
									12
									13
									14
									15
									16
									17
									18
									19
									20

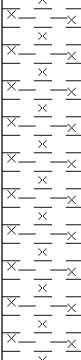
Remarks

Borehole was terminated due to slow progress through high density chalk. Groundwater was struck at 7.2m. The borehole was reinstated with gravel from 10.8mbgl to 7.0m bentonite from 7.0m to 6.0m and arisings from 6.0m to ground level.



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Project Name: North Littlehampton				Project No. LP2128		Co-ords: 503181 - 103852 Level: 7.39		Date 04/12/2019	
Location: Land near Wick, North Littlehampton, West Sussex, BN17 7PP						Dimensions (m):		Scale 1:25	
Client: Persimmon Homes Thames Valley						Depth 3.20		Logged OA	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.20	ES	N=14	0.30	7.08		Brown silty clayey TOPSOIL with frequent rootlets, occasional subangular to subrounded coarse flint, rare brick cobbles and frequent rootlets.		
	0.60	ES					Firm to stiff brown slightly orange silty CLAY.		
	1.00	D			Hand Pen at 1m = 113.3kPa				
	1.70	D			Hand Pen at 1.4m = 96.6kPa				
	2.30	B			Firm brown to orange silty sandy CLAY.				
				2.10	5.28		Medium dense orange brown silty gravelly clayey SAND with gravel of subangular to subrounded fine to coarse flint.		
				3.20	4.18	End of pit at 3.20 m			
Remarks: Trial pit remained dry and stable.									
Stability: Stable									



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Project Name: North Littlehampton				Project No. LP2128		Co-ords: 502972 - 103889 Level: 7.40		Date 04/12/2019	
Location: Land near Wick, North Littlehampton, West Sussex, BN17 7PP						Dimensions (m):		Scale 1:25	
Client: Persimmon Homes Thames Valley						Depth 3.00		Logged OA	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.20	ES	N=16	0.30	7.10		Grass over reddish dark brown silty clayey TOPSOIL with frequent rootlets.		
	0.40	ES		0.50	6.90		Dark brown silty clayey SUBSOIL.		
	1.20	D		1.80	5.60		Firm dark brown occasionally orange grey mottled silty CLAY.		
							Hand Pen at 1.4m = 133.3kPa		
							Medium dense orange brown silty clayey medium SAND with occasional subangular to subrounded fine flint and pockets of clay.		
							Gravel content increases including weakly cemented sandstone with laminations and flint size range increases from fine to coarse below 2.5m.		
							End of pit at 3.00 m		
	2.50	D		3.00	4.40				
	Remarks: Trial pit remained dry and stable.								
Stability: Stable									





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Trial Pit Log

Trialpit No

TP138

Sheet 1 of 1

Project Name: North Littlehampton

Project No.
LP2128

Co-ords: 503050 - 103860
Level: 7.67

Date
04/12/2019

Location: Land near Wick, North Littlehampton, West Sussex, BN17 7PP

Dimensions (m):



Scale
1:25

Client: Persimmon Homes Thames Valley

Depth
3.20

Logged
OA

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES	N=18				Grass over brown to dark brown silty clayey TOPSOIL with occasional medium subangular to angular flint.	
	0.40	ES		0.30	7.37		Brown to dark brown silty clayey SUBSOIL.	
				0.60	7.07		Firm brown to dark brown sandy silty CLAY	
	1.00	D					Hand Pen at 1.0m = 120kPa	1
							Becoming orange and sandier below 1.5m.	
	2.00	B		1.80	5.87		Loose to medium dense orangish brown silty gravelly medium SAND with gravel of subangular to subrounded fine to coarse and cobbles of flint and occasional cobbles of black ironstone.	2
				3.20	4.47		End of pit at 3.20 m	3
								4
								5

Remarks: Trial pit remained dry and stable.

Stability: Stable



 Leap Environmental Ltd The Atrium, Curtis Road Dorking, Surrey RH4 1XA Tel: 01306 646510 www.leapenvironmental.com				Trial Pit Log				Trialpit No TP139 Sheet 1 of 1	
Project Name: North Littlehampton				Project No. LP2128		Co-ords: 503095 - 103893 Level: 7.45		Date 04/12/2019	
Location: Land near Wick, North Littlehampton, West Sussex, BN17 7PP						Dimensions (m):		Scale 1:25	
Client: Persimmon Homes Thames Valley						Depth 3.20		Logged ADC	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.15	ES	N=31	0.30	7.15		Reworked brown to light brown gravelly silty CLAY with gravel of subangular to subrounded fine to coarse and cobbles of chalk and fine to medium flint.		
	0.35	ES							
	1.00	D		1.70	5.75		Medium dense mottled orangish brown grey gravelly medium SAND with gravel of sub angular to sub rounded fine to coarse and rare cobbles of flint.		
									
									
									
									
									
	2.00	B		2.60	4.85		Medium dense mottled orangish brown gravelly medium SAND with gravel of subrounded to subangular fine to coarse and occasional cobbles of flint and occasional pockets of clay. <i>Encountered mottled brown orange and grey colouration and occasional clay pockets below 2.6m.</i>		
									
			3.20	4.25	End of pit at 3.20 m				
Remarks: Trial pit remained dry and stable. Pit moved 1m south of original location due to proximity to service pipe.									
Stability: Stable									





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Borehole Log

Borehole No.

HP140

Sheet 1 of 1

Project Name: North Littlehampton

Project No.
LP2128

Co-ords: 503163 - 103803

Hole Type
HA

Location: Land near Wick, North Littlehampton, West Sussex,
BN17 7PP

Level: 7.28

Scale
1:10

Client: Persimmon Homes Thames Valley

Dates: 04/12/2019 - 04/12/2019

Logged By
OA

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15	ES		0.10	7.18		Grass over brown slightly silty clay TOPSOIL with gravel of subrounded to rounded fine to coarse flint.
		0.60	ES		0.80	6.48		Firm becoming soft orange brown slightly silty CLAY.
								End of borehole at 0.80 m

1

2

Remarks

Borehole remained dry and stable.





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Borehole Log

Borehole No.

HP141

Sheet 1 of 1

Project Name: North Littlehampton

Project No.
LP2128

Co-ords: 503140 - 103743

Hole Type
HA

Location: Land near Wick, North Littlehampton, West Sussex,
BN17 7PP

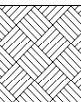
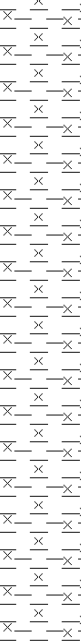
Level: 7.26

Scale
1:10

Client: Persimmon Homes Thames Valley

Dates: 04/12/2019 - 04/12/2019

Logged By
OA

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15	ES		0.14	7.12		Grass over firm brown silty clay TOPSOIL with occasional gravel of subrounded to subangular fine to coarse flint.	
		0.70	ES					Firm becoming soft brown slightly silty CLAY.	
					1.00	6.26		End of borehole at 1.00 m	1
									2

Remarks

Borehole remained dry and stable.





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Borehole Log

Borehole No.

HP142

Sheet 1 of 1

Project Name: North Littlehampton

Project No.
LP2128

Co-ords: 503123 - 103660

Hole Type
HA

Location: Land near Wick, North Littlehampton, West Sussex,
BN17 7PP

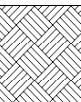
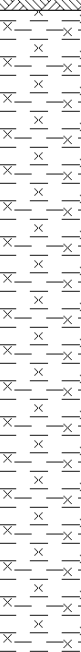
Level: 7.13

Scale
1:10

Client: Persimmon Homes Thames Valley

Dates: 04/12/2019 - 04/12/2019

Logged By
OA

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15	ES		0.14	6.99		Grass over firm brown silty clay TOPSOIL with occasional gravel of subrounded to subangular fine to coarse flint.	
								Firm becoming soft brown slightly silty CLAY.	
		0.80	ES		1.00	6.13		End of borehole at 1.00 m	1
									2

Remarks

Borehole remained dry and stable.



APPENDIX G – Laboratory Test Results

Laboratory Test Results



2683



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 19-26087

Issue: 1

Date of Issue: 12/12/2019

Contact: Martin Weil

Customer Details: Leap Environmental Ltd
The Atrium
Curtis Road
Dorking
Surrey RH4 1X4

Quotation No: Q14-00063

Order No: LPO-1303

Customer Reference: LP2128

Date Received: 05/12/2019

Date Approved: 12/12/2019

Details: North Littlehampton

Approved by: 

Mike Varley, Technical Manager

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

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Sample Summary

Report No.: 19-26087, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
191468	TP135 0.20	04/12/2019	05/12/2019	Silty loam	
191469	TP135 0.40	04/12/2019	05/12/2019		
191470	TP136 0.20	04/12/2019	05/12/2019		
191471	TP136 0.60	04/12/2019	05/12/2019	Silty loam	
191472	TP137 0.20	04/12/2019	05/12/2019	Silty loam	
191473	TP137 0.40	04/12/2019	05/12/2019		
191474	TP138 0.15	04/12/2019	05/12/2019		
191475	TP138 0.40	04/12/2019	05/12/2019	Silty loam	
191476	TP139 0.15	04/12/2019	05/12/2019	Silty loam	
191477	TP139 0.35	04/12/2019	05/12/2019		
191478	TP107 0.20	04/12/2019	05/12/2019	Silty loam	
191479	TP107 0.40	04/12/2019	05/12/2019		
191480	TP101 0.10	04/12/2019	05/12/2019	Silty loam	
191481	TP101 0.60	04/12/2019	05/12/2019		
191482	TP101 1.80	04/12/2019	05/12/2019		
191483	TP101 2.90	04/12/2019	05/12/2019	Silty loam	
191484	TP130 0.10	04/12/2019	05/12/2019	Silty loam	
191485	TP130 0.50	04/12/2019	05/12/2019		
191486	TP132 0.15	04/12/2019	05/12/2019	Silty loam	
191487	TP132 0.50	04/12/2019	05/12/2019		
191488	BS1 0.50	04/12/2019	05/12/2019	Silty loam	
191489	BS2 0.50	04/12/2019	05/12/2019	Silty loam	



Results Summary

2683

Report No.: 19-26087, issue number 1

ELAB Reference	191468	191471	191472	191475	191476
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP135	TP136	TP137	TP138	TP139
Sample Depth (m)	0.20	0.60	0.20	0.40	0.15
Sampling Date	04/12/2019	04/12/2019	04/12/2019	04/12/2019	04/12/2019

Determinand	Codes	Units	LOD					
Soil sample preparation parameters								
Material removed	N	%	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None	None	None	None
Metals								
Arsenic	M	mg/kg	1	10.5	13.4	10.4	12.4	13.1
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	20.0	35.0	22.6	35.5	30.1
Copper	M	mg/kg	5	20.3	21.6	18.9	21.3	21.7
Lead	M	mg/kg	5	36.2	17.1	19.8	15.5	15.8
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	14.8	26.7	15.4	25.3	24.1
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	62.5	64.6	54.8	58.2	61.9
Inorganics								
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Miscellaneous								
pH	M	pH units	0.1	7.4	7.7	7.1	7.4	8.1
Total Organic Carbon	N	%	0.01	1.1	0.38	0.50	0.31	0.37
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	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
Acenaphthene	M	mg/kg	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
Phenanthrene	M	mg/kg	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
Fluoranthene	M	mg/kg	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
Benzo(a)anthracene	M	mg/kg	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
Benzo(b)fluoranthene	M	mg/kg	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
Benzo(a)pyrene	M	mg/kg	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
Dibenzo(a,h)anthracene	M	mg/kg	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
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4

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Page 3 of 12

Results Summary

Report No.: 19-26087, issue number 1

ELAB Reference				191468	191471	191472	191475	191476
Customer Reference								
Sample ID								
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP135	TP136	TP137	TP138	TP139
Sample Depth (m)				0.20	0.60	0.20	0.40	0.15
Sampling Date				04/12/2019	04/12/2019	04/12/2019	04/12/2019	04/12/2019
Determinand	Codes	Units	LOD					
BTEX								
Benzene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Toluene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Xylenes	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
MTBE	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	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
>C8-C10 Aliphatic	N	mg/kg	1	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
>C12-C16 Aliphatic	N	mg/kg	1	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
>C21-C35 Aliphatic	N	mg/kg	1	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
>C5-C7 Aromatic	N	mg/kg	0.01	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
>C8-C10 Aromatic	N	mg/kg	1	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
>C12-C16 Aromatic	N	mg/kg	1	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
>C21-C35 Aromatic	N	mg/kg	1	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
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
beta_HCH	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
gamma-HCH	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
delta-HCH	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Heptachlor	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Aldrin	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
trans-Chlordane	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
p,p-DDE	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Dieldrin	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Endrin	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
p,p-DDD	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Endosulfan II	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Endrin aldehyde	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
p,p-DDT	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Methoxychlor	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t
Endrin ketone	N	ug/kg	10	n/t	n/t	< 10	n/t	n/t

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Results Summary

2683

Report No.: 19-26087, issue number 1

ELAB Reference	191478	191480	191483	191484	191486
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP107	TP101	TP101	TP130	TP132
Sample Depth (m)	0.20	0.10	2.90	0.10	0.15
Sampling Date	04/12/2019	04/12/2019	04/12/2019	04/12/2019	04/12/2019

Determinand	Codes	Units	LOD					
Soil sample preparation parameters								
Material removed	N	%	0.1	< 0.1	14.3	< 0.1	9.5	< 0.1
Description of Inert material removed	N		0	None	Stones	None	Stones	None
Metals								
Arsenic	M	mg/kg	1	9.6	11.5	28.3	15.1	18.9
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	20.8	23.7	34.8	26.3	23.0
Copper	M	mg/kg	5	17.1	24.3	28.9	17.8	15.6
Lead	M	mg/kg	5	17.5	27.9	33.0	21.2	17.7
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	15.8	18.6	23.9	25.3	17.7
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	59.3	84.8	192	65.5	55.1
Inorganics								
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Miscellaneous								
pH	M	pH units	0.1	7.3	8.8	8.1	8.1	8.1
Total Organic Carbon	N	%	0.01	2.4	0.93	1.6	1.0	1.3
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	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
Acenaphthene	M	mg/kg	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
Phenanthrene	M	mg/kg	0.1	< 0.1	0.2	0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	1.1	0.4	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	1.0	0.4	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	0.6	0.2	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	0.6	0.2	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	0.4	0.2	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	0.6	0.3	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	0.5	0.3	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	0.4	0.2	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	0.5	0.3	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	6.1	3.0	< 0.4	< 0.4

Results Summary

2683

Report No.: 19-26087, issue number 1

ELAB Reference	191478	191480	191483	191484	191486
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP107	TP101	TP101	TP130	TP132
Sample Depth (m)	0.20	0.10	2.90	0.10	0.15
Sampling Date	04/12/2019	04/12/2019	04/12/2019	04/12/2019	04/12/2019

Determinand	Codes	Units	LOD					
BTEX								
Benzene	N	ug/kg	10	n/t	n/t	< 10.0	n/t	n/t
Toluene	N	ug/kg	10	n/t	n/t	< 10.0	n/t	n/t
Ethylbenzene	N	ug/kg	10	n/t	n/t	< 10.0	n/t	n/t
Xylenes	N	ug/kg	10	n/t	n/t	< 10.0	n/t	n/t
MTBE	N	ug/kg	10	n/t	n/t	< 10.0	n/t	n/t
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	3.9	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	7.5	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	4.3	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	15.7	n/t	n/t
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
beta_HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
gamma-HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
delta-HCH	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Heptachlor	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Aldrin	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
trans-Chlordane	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDE	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Dieldrin	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDD	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endosulfan II	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin aldehyde	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDT	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Methoxychlor	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin ketone	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t

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The Environmental Laboratory Ltd. Reg. No. 3882193

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Results Summary

Report No.: 19-26087, issue number 1

ELAB Reference	191488	191489
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	BS1	BS2
Sample Depth (m)	0.15	0.15
Sampling Date	04/12/2019	04/12/2019

Determinand	Codes	Units	LOD		
Soil sample preparation parameters					
Material removed	N	%	0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None
Metals					
Arsenic	M	mg/kg	1	11.1	13.1
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	28.0	36.3
Copper	M	mg/kg	5	20.4	21.4
Lead	M	mg/kg	5	19.5	18.1
Mercury	M	mg/kg	0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	19.7	24.6
Selenium	M	mg/kg	1	< 1.0	< 1.0
Zinc	M	mg/kg	5	69.9	67.0
Inorganics					
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8
Miscellaneous					
pH	M	pH units	0.1	7.8	7.3
Total Organic Carbon	N	%	0.01	0.69	0.46
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	0.2	< 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	0.5	< 0.4

Results Summary

2683

Report No.: 19-26087, issue number 1

ELAB Reference	191488	191489
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	BS1	BS2
Sample Depth (m)	0.15	0.15
Sampling Date	04/12/2019	04/12/2019

Determinand	Codes	Units	LOD		
BTEX					
Benzene	N	ug/kg	10	n/t	n/t
Toluene	N	ug/kg	10	n/t	n/t
Ethylbenzene	N	ug/kg	10	n/t	n/t
Xylenes	N	ug/kg	10	n/t	n/t
MTBE	N	ug/kg	10	n/t	n/t
TPH CWG					
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t
OrganoChlorine Pesticides					
alpha-HCH	M	ug/kg	10	n/t	n/t
beta_HCH	M	ug/kg	10	n/t	n/t
gamma-HCH	M	ug/kg	10	n/t	n/t
delta-HCH	N	ug/kg	10	n/t	n/t
Heptachlor	N	ug/kg	10	n/t	n/t
Aldrin	M	ug/kg	10	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	n/t
trans-Chlordane	N	ug/kg	10	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	n/t
p,p-DDE	M	ug/kg	10	n/t	n/t
Dieldrin	M	ug/kg	10	n/t	n/t
Endrin	N	ug/kg	10	n/t	n/t
p,p-DDD	M	ug/kg	10	n/t	n/t
Endosulfan II	N	ug/kg	10	n/t	n/t
Endrin aldehyde	N	ug/kg	10	n/t	n/t
p,p-DDT	M	ug/kg	10	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	n/t
Methoxychlor	N	ug/kg	10	n/t	n/t
Endrin ketone	N	ug/kg	10	n/t	n/t

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Results Summary

2683

Report No.: 19-26087, issue number 1

ELAB Reference	191483
Customer Reference	
Sample ID	
Sample Type	SOIL
Sample Location	TP101
Sample Depth (m)	2.90
Sampling Date	04/12/2019

Determinand	Codes	Units	LOD	
VOC				
Heptane	N	ug/kg	10	< 10.0
Octane	N	ug/kg	10	< 10.0
Nonane	N	ug/kg	10	< 10.0
Benzene	N	ug/kg	10	< 10.0
Toluene	N	ug/kg	10	< 10.0
Ethylbenzene	N	ug/kg	10	< 10.0
m+p-xylene	N	ug/kg	10	< 10.0
o-xylene	N	ug/kg	10	< 10.0
cis-1,2-dichloroethane	N	ug/kg	10	< 10.0
1,1-Dichloroethane	N	ug/kg	10	< 10.0
Chloroform	N	ug/kg	10	< 10.0
Tetrachloromethane	N	ug/kg	10	< 10.0
1,1,1-Trichloroethane	N	ug/kg	10	< 10.0
Trichloroethylene	N	ug/kg	10	< 10.0
Tetrachloroethylene	N	ug/kg	10	< 10.0
1,1,1,2-Tetrachloroethane	N	ug/kg	10	< 10.0
1,1,2,2-Tetrachloroetha	N	ug/kg	10	< 10.0
Chlorobenzene	N	ug/kg	10	< 10.0
Bromobenzene	N	ug/kg	10	< 10.0
Bromodichloromethane	N	ug/kg	10	< 10.0
Methylethylbenzene	N	ug/kg	10	< 10.0
1,1-Dichloro-1-propene	N	ug/kg	10	< 10.0
Trans - 1-2 -dichloroethylene	N	ug/kg	10	< 10.0
2,2-Dichloropropane	N	ug/kg	10	< 10.0
Bromochloromethane	N	ug/kg	10	< 10.0
1,2-Dichloroethane	N	ug/kg	10	< 10.0
Dibromomethane	N	ug/kg	10	< 10.0
1,2-Dichloropropane	N	ug/kg	10	< 10.0
cis-1,3-Dichloro-1-propene	N	ug/kg	10	< 10.0
trans-1,3-Dichloro-1-propene	N	ug/kg	10	< 10.0
1,1,2-Trichloroethane	N	ug/kg	10	< 10.0
Dibromochloromethane	N	ug/kg	10	< 10.0
1,3-Dichloropropane	N	ug/kg	10	< 10.0
1,2-dibromoethane	N	ug/kg	10	< 10.0
Styrene	N	ug/kg	10	< 10.0
Propylbenzene	N	ug/kg	10	< 10.0
2-Chlorotoluene	N	ug/kg	10	< 10.0
1,2,4-Trimethylbenzene	N	ug/kg	10	< 10.0
4-Chlorotoluene	N	ug/kg	10	< 10.0
t-butylbenzene	N	ug/kg	10	< 10.0
1,3,5-Trimethylbenzene	N	ug/kg	10	< 10.0
1-methylpropylbenzene	N	ug/kg	10	< 10.0
p-cymene	N	ug/kg	10	< 10.0
1,3-Dichlorobenzene	N	ug/kg	10	< 10.0
Butylbenzene	N	ug/kg	10	< 10.0
1,2-Dibromo-3-chloropropane	N	ug/kg	10	< 10.0
Hexachlorobutadiene	N	ug/kg	10	< 10.0
1-2-3 - Trichlorobenzene	N	ug/kg	10	< 10.0
Naphthalene	N	ug/kg	10	< 10.0
1-2-4 - Trichlorobenzene	N	ug/kg	10	< 10.0
1,4-Dichlorobenzene	N	ug/kg	10	< 10.0
1,2-Dichlorobenzene	N	ug/kg	10	< 10.0
Bromoform	N	ug/kg	10	< 10.0

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Results Summary

Report No.: 19-26087, issue number 1

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 (%)
191468	0.20	TP135	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191471	0.60	TP136	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191472	0.20	TP137	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191475	0.40	TP138	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191476	0.15	TP139	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191478	0.20	TP107	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191480	0.10	TP101	Brown Soil, Stones, Chalk, Clinker,	No asbestos detected	n/t	n/t	n/t	n/t
191483	2.90	TP101	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191484	0.10	TP130	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191486	0.15	TP132	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191488	0.15	BS1	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
191489	0.15	BS2	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 19-26087, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	09/12/2019	110	Colorimetry
pH	M	Air dried sample	11/12/2019	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	09/12/2019	118	ICPMS
PAH (GC-FID)	M	As submitted sample	09/12/2019	133	GC-FID
Organochlorine Pesticides in solids	M	As submitted sample	09/12/2019	173	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	09/12/2019	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	09/12/2019	181	GC-MS
VOC in solids	N	As submitted sample	09/12/2019	181	GC-MS
BTEX in solids	N	As submitted sample	09/12/2019	181A	GC-MS
Total organic carbon/Total sulphur	N	Air dried sample	10/12/2019	210	IR
Aliphatic hydrocarbons in soil	N	As submitted sample	09/12/2019	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	10/12/2019	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	09/12/2019	214	GC-FID
Asbestos identification	U	Air dried sample	09/12/2019	PMAN	Microscopy

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Report Information

Report No.: 19-26087, issue number 1

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), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

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

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: 19-26125

Issue: 1

Date of Issue: 13/12/2019

Contact: Martin Weil

Customer Details: Leap Environmental Ltd
The Atrium
Curtis Road
Dorking
Surrey RH4 1X4

Quotation No: Q14-00063

Order No: LPO-1330

Customer Reference: LP2128

Date Received: 06/12/2019

Date Approved: 13/12/2019

Details: North Littlehampton

Approved by: 

Mike Varley, Technical Manager

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

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Sample Summary

Report No.: 19-26125, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
191688	TP131 0.15	05/12/2019	09/12/2019	Silty loam	
191689	TP131 0.35	05/12/2019	09/12/2019		
191690	TP127 0.15	05/12/2019	09/12/2019	Silty loam	
191691	TP127 0.40	05/12/2019	09/12/2019		
191692	TP129 0.15	05/12/2019	09/12/2019	Silty loam	
191693	TP129 1.00	05/12/2019	09/12/2019		
191694	TP128 0.15	05/12/2019	09/12/2019		
191695	TP128 0.25	05/12/2019	09/12/2019	Silty loam + chalk	
191696	TP120 0.15	05/12/2019	09/12/2019	Silty loam	
191697	TP120 0.45	05/12/2019	09/12/2019		
191698	TP119 0.15	05/12/2019	09/12/2019	Silty loam	
191699	TP119 0.35	05/12/2019	09/12/2019	Sandy silty loam	
191700	TP118 0.10	05/12/2019	09/12/2019	Silty loam	
191701	TP118 0.65	05/12/2019	09/12/2019		
191702	TP104 0.10	05/12/2019	09/12/2019	Silty loam	
191703	TP104 0.60	05/12/2019	09/12/2019		
191704	TP106 0.15	05/12/2019	09/12/2019		
191705	TP106 0.40	05/12/2019	09/12/2019	Sandy silty loam	
191706	BS3 0.40	05/12/2019	09/12/2019	Silty loam + chalk	

Results Summary

Report No.: 19-26125, issue number 1

ELAB Reference	191688	191690	191692
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	TP131	TP127	TP129
Sample Depth (m)	0.15	0.15	0.15
Sampling Date	05/12/2019	05/12/2019	05/12/2019

Determinand	Codes	Units	LOD			
Soil sample preparation parameters						
Material removed	N	%	0.1	8.3	0.4	< 0.1
Description of Inert material removed	N		0	Stones	Stones	None
Metals						
Arsenic	M	mg/kg	1	12.6	21.0	20.3
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	27.3	28.4	22.3
Copper	M	mg/kg	5	19.7	19.3	15.5
Lead	M	mg/kg	5	32.1	27.2	23.0
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	20.3	18.6	16.1
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	57.0	72.8	64.0
Inorganics						
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8
Miscellaneous						
pH	M	pH units	0.1	8.2	7.1	7.2
Total Organic Carbon	N	%	0.01	1.1	1.9	3.3
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	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	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
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4
Organochlorine Pesticides						
alpha-HCH	M	ug/kg	10	< 10	n/t	< 10
beta_HCH	M	ug/kg	10	< 10	n/t	< 10
gamma-HCH	M	ug/kg	10	< 10	n/t	< 10
delta-HCH	N	ug/kg	10	< 10	n/t	< 10
Heptachlor	N	ug/kg	10	< 10	n/t	< 10
Aldrin	M	ug/kg	10	< 10	n/t	< 10
Heptachlor expoxide	N	ug/kg	10	< 10	n/t	< 10
trans-Chlordane	N	ug/kg	10	< 10	n/t	< 10
alpha cis-Chlordane	N	ug/kg	10	< 10	n/t	< 10
p,p-DDD	M	ug/kg	10	< 10	n/t	< 10
Dieldrin	M	ug/kg	10	< 10	n/t	< 10
Endrin	N	ug/kg	10	< 10	n/t	< 10
p,p-DDD	M	ug/kg	10	< 10	n/t	< 10
Endosulfan II	N	ug/kg	10	< 10	n/t	< 10
Endrin aldehyde	N	ug/kg	10	< 10	n/t	< 10
p,p-DDT	M	ug/kg	10	< 10	n/t	< 10
Endosulphan sulphate	M	ug/kg	10	< 10	n/t	< 10
Methoxychlor	N	ug/kg	10	< 10	n/t	< 10
Endrin ketone	N	ug/kg	10	< 10	n/t	< 10

Results Summary

Report No.: 19-26125, issue number 1

ELAB Reference				191695	191696	191698	191699	191700	191702	191705	191706
Customer Reference											
Sample ID											
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				TP128	TP120	TP119	TP119	TP118	TP104	TP106	BS3
Sample Depth (m)				0.25	0.15	0.15	0.35	0.10	0.10	0.40	0.40
Sampling Date				05/12/2019	05/12/2019	05/12/2019	05/12/2019	05/12/2019	05/12/2019	05/12/2019	05/12/2019
Determinand	Codes	Units	LOD								
Soil sample preparation parameters											
Material removed	N	%	0.1	< 0.1	< 0.1	0.7	29.9	< 0.1	1.3	12.5	< 0.1
Description of Inert material removed	N		0	None	None	Stones	Stones	None	Stones	Stones	None
Metals											
Arsenic	M	mg/kg	1	^ 13.2	7.9	11.1	7.3	10.1	10.2	12.3	^ 7.2
Cadmium	M	mg/kg	0.5	^ < 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	^ < 0.5
Chromium	M	mg/kg	5	^ 18.4	16.9	24.8	22.4	23.8	23.3	35.4	^ 12.0
Copper	M	mg/kg	5	^ 14.6	12.6	21.4	13.3	12.1	14.9	15.4	^ 11.3
Lead	M	mg/kg	5	^ 17.3	13.6	20.8	12.4	19.6	18.9	16.7	^ 7.0
Mercury	M	mg/kg	0.5	^ < 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	^ < 0.5
Nickel	M	mg/kg	5	^ 14.3	12.8	18.2	31.2	16.4	17.4	21.8	^ 15.6
Selenium	M	mg/kg	1	^ < 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	^ < 1.0
Zinc	M	mg/kg	5	^ 44.7	41.1	81.6	41.1	58.6	48.2	49.6	^ 28.1
Inorganics											
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Miscellaneous											
pH	M	pH units	0.1	^ 8.4	8.1	7.7	8.2	8.1	7.2	8.2	^ 8.5
Total Organic Carbon	N	%	0.01	0.51	0.43	0.81	0.15	0.81	0.71	0.17	0.16
Polyaromatic hydrocarbons											
Naphthalene	M	mg/kg	0.1	^ < 0.1	< 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	< 0.1	^ < 0.1
Acenaphthene	M	mg/kg	0.1	^ < 0.1	< 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	< 0.1	^ < 0.1
Phenanthrene	M	mg/kg	0.1	^ < 0.1	< 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	< 0.1	^ < 0.1
Fluoranthene	M	mg/kg	0.1	^ < 0.1	< 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	< 0.1	^ < 0.1
Benzo(a)anthracene	M	mg/kg	0.1	^ < 0.1	< 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	< 0.1	^ < 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	^ < 0.1	< 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	< 0.1	^ < 0.1
Benzo(a)pyrene	M	mg/kg	0.1	^ < 0.1	< 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	< 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	< 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	< 0.1	^ < 0.1
Total PAH(16)	M	mg/kg	0.4	^ < 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	^ < 0.4
OrganoChlorine Pesticides											
alpha-HCH	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
beta_HCH	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
gamma-HCH	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
delta-HCH	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Heptachlor	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Aldrin	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
trans-Chlordane	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
p,p-DDE	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dieldrin	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Endrin	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
p,p-DDD	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Endosulfan II	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Endrin aldehyde	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
p,p-DDT	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	^ < 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Methoxychlor	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Endrin ketone	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 19-26125, issue number 1

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 (%)
191688	0.15	TP131	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191690	0.15	TP127	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191692	0.15	TP129	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191695	0.25	TP128	Brown Soil,Chalk	No asbestos detected	n/t	n/t	n/t	n/t
191696	0.15	TP120	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191698	0.15	TP119	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191699	0.35	TP119	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191700	0.10	TP118	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
191702	0.10	TP104	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191705	0.40	TP106	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191706	0.40	BS3	Brown Chalky Soil	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 19-26125, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	10/12/2019	110	Colorimetry
pH	M	Air dried sample	11/12/2019	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	10/12/2019	118	ICPMS
PAH (GC-FID)	M	As submitted sample	10/12/2019	133	GC-FID
Organochlorine Pesticides in solids	M	As submitted sample	10/12/2019	173	GC-MS
Total organic carbon/Total sulphur	N	Air dried sample	12/12/2019	210	IR
Asbestos identification	U	Air dried sample	11/12/2019	PMAN	Microscopy

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Report Information

Report No.: 19-26125, issue number 1

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), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

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

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



2683



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 19-26161

Issue: 1

Date of Issue: 16/12/2019

Contact: Martin Weil

Customer Details: Leap Environmental Ltd
The Atrium
Curtis Road
Dorking
Surrey RH4 1X4

Quotation No: Q14-00063

Order No: Not Supplied

Customer Reference: LP2128

Date Received: 09/12/2019

Date Approved: 16/12/2019

Details: North Littlehampton

Approved by: 

Mike Varley, Technical Manager

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

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Sample Summary

Report No.: 19-26161, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
191896	HP101 0.30	06/12/2019	10/12/2019	Silty loam	
191897	HP101 0.80	06/12/2019	10/12/2019		
191898	TP121 0.15	06/12/2019	10/12/2019	Sandy silty loam	
191899	TP121 0.40	06/12/2019	10/12/2019		
191900	TP122 0.15	06/12/2019	10/12/2019		
191901	TP122 0.40	06/12/2019	10/12/2019	Sandy silty loam	
191902	TP124 0.15	06/12/2019	10/12/2019	Silty loam	
191903	TP125 0.15	06/12/2019	10/12/2019	Silty loam	
191904	TP125 0.40	06/12/2019	10/12/2019		
191905	TP126 0.15	06/12/2019	10/12/2019	Silty loam	c
191906	TP126 0.70	06/12/2019	10/12/2019		
191907	TP133 0.15	06/12/2019	10/12/2019	Silty loam	
191908	TP133 0.80	06/12/2019	10/12/2019	Silty loam	
191909	TP133 1.20	06/12/2019	10/12/2019		
191910	TP134 0.10	06/12/2019	10/12/2019	Silty loam	
191911	TP134 0.60	06/12/2019	10/12/2019		
191912	WS101 0.15	06/12/2019	10/12/2019	Loamy sand	
191913	WS101 0.60	06/12/2019	10/12/2019		
191914	WS102 0.30	06/12/2019	10/12/2019	Chalk	
191915	WS103 0.20	06/12/2019	10/12/2019		
191916	WS103 1.00	06/12/2019	10/12/2019	Silty clayey loam + Chalk	
191917	WS104 0.25	06/12/2019	10/12/2019	Sandy loam	
191918	WS104 0.35	06/12/2019	10/12/2019		
191919	TP126 2.50	06/12/2019	10/12/2019		



Results Summary

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Report No.: 19-26161, issue number 1

ELAB Reference	191896	191898	191901	191902	191903
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	HP101	TP121	TP122	TP124	TP125
Sample Depth (m)	0.30	0.15	0.40	0.15	0.15
Sampling Date	06/12/2019	06/12/2019	06/12/2019	06/12/2019	06/12/2019
Determinand	Codes	Units	LOD		
Soil sample preparation parameters					
Material removed	N	%	0.1	30.7	17.0
Description of Inert material removed	N		0	Stones	Stones
Metals					
Arsenic	M	mg/kg	1	18.5	11.3
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	26.3	23.9
Copper	M	mg/kg	5	20.6	31.5
Lead	M	mg/kg	5	31.8	18.9
Mercury	M	mg/kg	0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	18.1	18.8
Selenium	M	mg/kg	1	< 1.0	< 1.0
Zinc	M	mg/kg	5	72.0	129
Inorganics					
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8
Miscellaneous					
pH	M	pH units	0.1	7.9	8.3
Total Organic Carbon	N	%	0.01	3.5	0.58
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	0.4	< 0.1
Pyrene	M	mg/kg	0.1	0.3	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	0.4	< 0.1
Chrysene	M	mg/kg	0.1	0.4	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	0.2	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	0.5	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	0.2	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	0.2	< 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	0.3	< 0.1
Total PAH(16)	M	mg/kg	0.4	3.2	< 0.4

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Results Summary

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Report No.: 19-26161, issue number 1

ELAB Reference	191896	191898	191901	191902	191903
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	HP101	TP121	TP122	TP124	TP125
Sample Depth (m)	0.30	0.15	0.40	0.15	0.15
Sampling Date	06/12/2019	06/12/2019	06/12/2019	06/12/2019	06/12/2019

Determinand	Codes	Units	LOD					
BTEX								
Benzene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Toluene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Xylenes	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
MTBE	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	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
>C8-C10 Aliphatic	N	mg/kg	1	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
>C12-C16 Aliphatic	N	mg/kg	1	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
>C21-C35 Aliphatic	N	mg/kg	1	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
>C5-C7 Aromatic	N	mg/kg	0.01	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
>C8-C10 Aromatic	N	mg/kg	1	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
>C12-C16 Aromatic	N	mg/kg	1	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
>C21-C35 Aromatic	N	mg/kg	1	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
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t

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Results Summary

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Report No.: 19-26161, issue number 1

ELAB Reference	191905	191907	191908	191910	191912
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP126	TP133	TP133	TP134	WS101
Sample Depth (m)	0.15	0.15	0.80	0.10	0.15
Sampling Date	06/12/2019	06/12/2019	06/12/2019	06/12/2019	06/12/2019

Determinand	Codes	Units	LOD					
Soil sample preparation parameters								
Material removed	N	%	0.1	4.1	< 0.1	20.2	19.0	32.4
Description of Inert material removed	N		0	Stones	None	Stones	Stones	Stones
Metals								
Arsenic	M	mg/kg	1	20.6	14.3	16.4	21.1	12.6
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6
Chromium	M	mg/kg	5	30.0	29.5	25.8	30.4	24.4
Copper	M	mg/kg	5	19.6	23.5	23.6	21.4	26.1
Lead	M	mg/kg	5	22.6	22.5	43.8	23.6	32.6
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	20.3	18.8	18.8	22.7	16.7
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	64.7	66.9	91.1	74.7	143
Inorganics								
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Miscellaneous								
pH	M	pH units	0.1	7.8	7.9	8.5	7.2	10.7
Total Organic Carbon	N	%	0.01	2.2	1.3	0.85	4.1	0.55
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.1
Fluorene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.1
Phenanthrene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	1.2
Anthracene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.3
Fluoranthene	M	mg/kg	0.1	c < 0.1	< 0.1	0.1	0.1	2.0
Pyrene	M	mg/kg	0.1	c < 0.1	< 0.1	0.1	< 0.1	1.5
Benzo(a)anthracene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	0.2	0.9
Chrysene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	0.2	1.0
Benzo(b)fluoranthene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.9
Benzo(k)fluoranthene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.9
Benzo(a)pyrene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.9
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.9
Dibenzo(a,h)anthracene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.2
Benzo[g,h,i]perylene	M	mg/kg	0.1	c < 0.1	< 0.1	< 0.1	< 0.1	0.9
Total PAH(16)	M	mg/kg	0.4	c < 0.4	< 0.4	0.9	0.9	12.0

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Results Summary

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Report No.: 19-26161, issue number 1

ELAB Reference	191905	191907	191908	191910	191912
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP126	TP133	TP133	TP134	WS101
Sample Depth (m)	0.15	0.15	0.80	0.10	0.15
Sampling Date	06/12/2019	06/12/2019	06/12/2019	06/12/2019	06/12/2019

Determinand	Codes	Units	LOD					
BTEX								
Benzene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Toluene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Ethylbenzene	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Xylenes	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
MTBE	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	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
>C8-C10 Aliphatic	N	mg/kg	1	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
>C12-C16 Aliphatic	N	mg/kg	1	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
>C21-C35 Aliphatic	N	mg/kg	1	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
>C5-C7 Aromatic	N	mg/kg	0.01	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
>C8-C10 Aromatic	N	mg/kg	1	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
>C12-C16 Aromatic	N	mg/kg	1	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
>C21-C35 Aromatic	N	mg/kg	1	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
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	n/t	n/t

Results Summary

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Report No.: 19-26161, issue number 1

ELAB Reference	191914	191916	191917
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	WS102	WS103	WS104
Sample Depth (m)	0.30	1.00	0.25
Sampling Date	06/12/2019	06/12/2019	06/12/2019

Determinand	Codes	Units	LOD			
Soil sample preparation parameters						
Material removed	N	%	0.1	< 0.1	< 0.1	8.3
Description of Inert material removed	N		0	None	None	Stones
Metals						
Arsenic	M	mg/kg	1	^ 3.3	^ 18.2	9.3
Cadmium	M	mg/kg	0.5	^ < 0.5	^ < 0.5	0.6
Chromium	M	mg/kg	5	^ 6.5	^ 39.7	20.5
Copper	M	mg/kg	5	^ 12.7	^ 18.6	255
Lead	M	mg/kg	5	^ 6.7	^ 18.0	906
Mercury	M	mg/kg	0.5	^ < 0.5	^ < 0.5	< 0.5
Nickel	M	mg/kg	5	^ 5.9	^ 24.3	10.2
Selenium	M	mg/kg	1	^ < 1.0	^ < 1.0	< 1.0
Zinc	M	mg/kg	5	^ 26.3	^ 66.5	437
Inorganics						
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8
Miscellaneous						
pH	M	pH units	0.1	^ 8.8	^ 8.3	8.5
Total Organic Carbon	N	%	0.01	3.3	0.38	2.4
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	^ < 0.1	0.2
Pyrene	M	mg/kg	0.1	^ < 0.1	^ < 0.1	0.1
Benzo(a)anthracene	M	mg/kg	0.1	^ < 0.1	^ < 0.1	< 0.1
Chrysene	M	mg/kg	0.1	^ < 0.1	^ < 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	^ < 0.1	^ < 0.1	0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	^ < 0.1	^ < 0.1	0.2
Benzo(a)pyrene	M	mg/kg	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
Dibenzo(a,h)anthracene	M	mg/kg	0.1	^ < 0.1	^ < 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	^ < 0.1	^ < 0.1	0.1
Total PAH(16)	M	mg/kg	0.4	^ < 0.4	^ < 0.4	1.1

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Results Summary

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Report No.: 19-26161, issue number 1

ELAB Reference	191914	191916	191917
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	WS102	WS103	WS104
Sample Depth (m)	0.30	1.00	0.25
Sampling Date	06/12/2019	06/12/2019	06/12/2019

Determinand	Codes	Units	LOD			
BTEX						
Benzene	N	ug/kg	10	n/t	< 10.0	n/t
Toluene	N	ug/kg	10	n/t	< 10.0	n/t
Ethylbenzene	N	ug/kg	10	n/t	< 10.0	n/t
Xylenes	N	ug/kg	10	n/t	< 10.0	n/t
MTBE	N	ug/kg	10	n/t	< 10.0	n/t
TPH CWG						
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	< 0.01	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	< 0.01	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	< 1.0	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	< 1.0	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	< 1.0	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	< 1.0	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	< 1.0	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	< 1.0	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	< 0.01	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	< 0.01	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	< 1.0	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	< 1.0	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	< 1.0	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	< 1.0	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	< 1.0	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	< 1.0	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	< 1.0	n/t

Results Summary

Report No.: 19-26161, issue number 1

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 (%)
191896	0.30	HP101	Brown soil, stones, plant-material	No asbestos detected	n/t	n/t	n/t	n/t
191898	0.15	TP121	Brown soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191901	0.40	TP122	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191902	0.15	TP124	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191903	0.15	TP125	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191905	0.15	TP126	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191907	0.15	TP133	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
191908	0.80	TP133	Brown Soil With Chalk	No asbestos detected	n/t	n/t	n/t	n/t
191910	0.10	TP134	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
191912	0.15	WS101	Brown Soil,Stones,Plastic,Glass	No asbestos detected	n/t	n/t	n/t	n/t
191914	0.30	WS102	Chalk	No asbestos detected	n/t	n/t	n/t	n/t
191916	1.00	WS103	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
191917	0.25	WS104	Brown Soil,Metal,Brick,Stones	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 19-26161, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	12/12/2019	110	Colorimetry
pH	M	Air dried sample	13/12/2019	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	12/12/2019	118	ICPMS
PAH (GC-FID)	M	As submitted sample	12/12/2019	133	GC-FID
Low range Aliphatic hydrocarbons soil	N	As submitted sample	13/12/2019	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	13/12/2019	181	GC-MS
BTEX in solids	N	As submitted sample	13/12/2019	181A	GC-MS
Total organic carbon/Total sulphur	N	Air dried sample	13/12/2019	210	IR
Aliphatic hydrocarbons in soil	N	As submitted sample	12/12/2019	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	13/12/2019	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	12/12/2019	214	GC-FID
Asbestos identification	U	Air dried sample	13/12/2019	PMAN	Microscopy

Tests marked N are not UKAS accredited

Report Information

Report No.: 19-26161, issue number 1

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), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

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

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



2683



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 19-26215

Issue: 1

Date of Issue: 19/12/2019

Contact: Martin Weil

Customer Details: Leap Environmental Ltd
The Atrium
Curtis Road
Dorking
Surrey RH4 1X4

Quotation No: Q14-00063

Order No: LPO1343

Customer Reference: LP2128

Date Received: 12/12/2019

Date Approved: 19/12/2019

Details: North Littlehampton

Approved by: 

Mike Varley, Technical Manager

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

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Sample Summary

Report No.: 19-26215, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
192319	TP111 S 0.15	09/12/2019	12/12/2019	Sandy silty loam	
192320	TP111 S 0.30	09/12/2019	12/12/2019		
192321	TP105 S 0.15	09/12/2019	12/12/2019	Silty loam	
192322	TP105 S 0.40	09/12/2019	12/12/2019		
192323	TP115 S 0.15	09/12/2019	12/12/2019		
192324	TP115 S 0.40	09/12/2019	12/12/2019	Silty loam	
192325	TP114 S 0.20	09/12/2019	12/12/2019	Silty loam	
192326	TP114 S 0.40	09/12/2019	12/12/2019		
192327	TP113 S 0.10	09/12/2019	12/12/2019		
192328	TP113 S 0.50	09/12/2019	12/12/2019	Silty loam	
192329	TP116 S 0.20	09/12/2019	12/12/2019	Silty loam	
192330	TP116 S 0.40	09/12/2019	12/12/2019		
192331	TP117 S 0.15	09/12/2019	12/12/2019		
192332	TP117 S 0.50	09/12/2019	12/12/2019	Loamy sand	
192333	TP109 S 0.15	09/12/2019	12/12/2019	Silty loam	
192334	TP109 S 0.40	09/12/2019	12/12/2019		
192335	TP102 S 0.15	10/12/2019	12/12/2019		
192336	TP102 S 0.40	10/12/2019	12/12/2019	Silty loam	
192337	TP103 S 0.30	10/12/2019	12/12/2019	Loamy sand	
192338	TP103 S 0.60	10/12/2019	12/12/2019		
192339	TP112 S 0.15	10/12/2019	12/12/2019	Silty loam	
192340	TP112 S 0.40	10/12/2019	12/12/2019		
192341	TP110 S 0.15	10/12/2019	12/12/2019		
192342	TP110 S 0.50	10/12/2019	12/12/2019	Silty loam & Chalk	
192343	TP135 S 0.10	10/12/2019	12/12/2019	Silty loam	
192344	TP135 S 0.30	10/12/2019	12/12/2019		
192345	TP135 S 2.50	10/12/2019	12/12/2019		
192346	TP135 S 2.90	10/12/2019	12/12/2019	Silty loam	
192347	TP108 S 0.15	10/12/2019	12/12/2019	Silty loam	
192348	TP108 S 0.40	10/12/2019	12/12/2019		
192349	WS105 S 0.10	09/12/2019	12/12/2019		
192350	WS106 S 0.10	09/12/2019	12/12/2019	Sandy silty loam	
192351	WS106 S 0.50	09/12/2019	12/12/2019	Silty loam	
192352	WS107 S 0.10	09/12/2019	12/12/2019	Silty loam	
192353	WS107 S 0.50	09/12/2019	12/12/2019	Silty loam	
192354	WS107 S 2.10	09/12/2019	12/12/2019	Silty clayey loam	
192355	TP140 S 0.15	09/12/2019	12/12/2019	Silty loam	
192356	TP140 S 0.60	09/12/2019	12/12/2019		
192357	TP141 S 0.15	09/12/2019	12/12/2019	Silty loam	
192358	TP141 S 0.70	09/12/2019	12/12/2019		
192359	TP142 S 0.15	09/12/2019	12/12/2019		
192360	TP142 S 0.80	09/12/2019	12/12/2019	Silty loam	
192361	WS105 S 0.50	09/12/2019	12/12/2019		
192362	TP126 S 0.50	09/12/2019	12/12/2019		
192363	TP113 FRAG 1 0.50	09/12/2019	12/12/2019		
192364	TP126 S 0.15	09/12/2019	12/12/2019		
192365	TP108 S 0.10	09/12/2019	12/12/2019		

Results Summary

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Report No.: 19-26215, issue number 1

ELAB Reference	192319	192321	192324	192325	192328
Customer Reference	S	S	S	S	S
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP111	TP105	TP115	TP114	TP113
Sample Depth (m)	0.15	0.15	0.40	0.20	0.50
Sampling Date	09/12/2019	09/12/2019	09/12/2019	09/12/2019	09/12/2019

Determinand	Codes	Units	LOD					
Soil sample preparation parameters								
Material removed	N	%	0.1	6.1	9.9	6.7	< 0.1	< 0.1
Description of Inert material removed	N		0	Stones	Stones	Stones	None	None
Metals								
Arsenic	M	mg/kg	1	12.7	13.4	18.0	11.9	13.7
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	26.4	27.6	34.2	27.9	25.7
Copper	M	mg/kg	5	19.3	17.5	20.3	20.8	15.3
Lead	M	mg/kg	5	19.9	24.3	17.0	22.7	12.9
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	22.2	21.9	32.1	20.1	29.2
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	66.9	66.4	69.1	81.3	65.9
Inorganics								
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Miscellaneous								
Acid Neutralisation Capacity	N	mol/kg	0.1	< 0.1	n/t	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	3.28	n/t	n/t	n/t	n/t
pH	M	pH units	0.1	7.3	6.9	8.1	7.7	7.7
Total Organic Carbon	N	%	0.01	1.4	1.2	0.23	0.75	0.29
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	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
Acenaphthene	M	mg/kg	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
Phenanthrene	M	mg/kg	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
Fluoranthene	M	mg/kg	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
Benzo(a)anthracene	M	mg/kg	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
Benzo(b)fluoranthene	M	mg/kg	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
Benzo(a)pyrene	M	mg/kg	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
Dibenzo(a,h)anthracene	M	mg/kg	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
Total PAH(16)	M	mg/kg	0.4	0.8	< 0.4	< 0.4	0.8	< 0.4
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	< 2	n/t	n/t	n/t	n/t
BTEX								
Benzene	N	ug/kg	10	< 10.0	n/t	n/t	n/t	n/t
Toluene	N	ug/kg	10	< 10.0	n/t	n/t	n/t	n/t
Ethylbenzene	N	ug/kg	10	< 10.0	n/t	n/t	n/t	n/t
Xylenes	N	ug/kg	10	< 10.0	n/t	n/t	n/t	n/t
MTBE	N	ug/kg	10	< 10.0	n/t	n/t	n/t	n/t
Total BTEX	N	mg/kg	0.01	< 0.01	n/t	n/t	n/t	n/t

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Results Summary

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Report No.: 19-26215, issue number 1

ELAB Reference	192319	192321	192324	192325	192328
Customer Reference	S	S	S	S	S
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP111	TP105	TP115	TP114	TP113
Sample Depth (m)	0.15	0.15	0.40	0.20	0.50
Sampling Date	09/12/2019	09/12/2019	09/12/2019	09/12/2019	09/12/2019

Determinand	Codes	Units	LOD					
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	n/t	n/t	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	n/t	n/t	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	n/t	n/t	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	n/t	n/t	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	2.4	n/t	n/t	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	n/t	n/t	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	2.4	n/t	n/t	n/t	n/t
Total Petroleum Hydrocarbons								
Mineral Oil	M	mg/kg	5	^ < 5	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)								
PCB (Total of 7 Congeners)	M	mg/kg	0.03	< 0.03	n/t	n/t	n/t	n/t
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
beta_HCH	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
gamma-HCH	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
delta-HCH	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Heptachlor	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Aldrin	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
trans-Chlordane	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
p,p-DDE	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Dieldrin	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Endrin	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
p,p-DDD	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Endosulfan II	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Endrin aldehyde	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
p,p-DDT	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Methoxychlor	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t
Endrin ketone	N	ug/kg	10	n/t	< 10	n/t	n/t	n/t

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Results Summary

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ELAB Reference	192329	192332	192333	192336	192337
Customer Reference	S	S	S	S	S
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP116	TP117	TP109	TP102	TP103
Sample Depth (m)	0.20	0.50	0.15	0.40	0.30
Sampling Date	09/12/2019	09/12/2019	09/12/2019	10/12/2019	10/12/2019

Determinand	Codes	Units	LOD					
Soil sample preparation parameters								
Material removed	N	%	0.1	< 0.1	< 0.1	< 0.1	< 0.1	41.1
Description of Inert material removed	N		0	None	None	None	None	Stones
Metals								
Arsenic	M	mg/kg	1	10.8	20.5	12.8	8.5	31.3
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	22.5	24.4	22.9	20.8	30.1
Copper	M	mg/kg	5	16.9	14.6	17.2	10.7	65.6
Lead	M	mg/kg	5	20.8	12.3	18.4	12.0	47.0
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	18.0	38.2	23.8	14.6	49.6
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	63.3	61.8	95.4	50.7	128
Inorganics								
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Miscellaneous								
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	< 0.1	n/t	n/t	< 0.1
Loss On Ignition (450°C)	M	%	0.01	n/t	0.27	n/t	n/t	2.07
pH	M	pH units	0.1	7.3	8.3	7.9	7.3	8.5
Total Organic Carbon	N	%	0.01	0.70	0.05	0.52	0.41	3.2
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	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
Acenaphthene	M	mg/kg	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
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3
Anthracene	M	mg/kg	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	0.9
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.8
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.6
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.6
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5
Dibenzo(a,h)anthracene	M	mg/kg	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	0.4
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4	< 0.4	5.9
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	< 2	n/t	n/t	6
BTEX								
Benzene	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
Toluene	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
Ethylbenzene	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
Xylenes	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
MTBE	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	< 0.01	n/t	n/t	< 0.01

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Results Summary

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Report No.: 19-26215, issue number 1

ELAB Reference	192329	192332	192333	192336	192337
Customer Reference	S	S	S	S	S
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP116	TP117	TP109	TP102	TP103
Sample Depth (m)	0.20	0.50	0.15	0.40	0.30
Sampling Date	09/12/2019	09/12/2019	09/12/2019	10/12/2019	10/12/2019

Determinand	Codes	Units	LOD					
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	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	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	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	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	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	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	n/t	2.9
>C35-C40 Aliphatic	N	mg/kg	1	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	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	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	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	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	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	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	7.4
>C35-C40 Aromatic	N	mg/kg	1	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	10.3
Total Petroleum Hydrocarbons								
Mineral Oil	M	mg/kg	5	n/t	^ < 5	n/t	n/t	^ 29
PCB (ICES 7 congeners)								
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	< 0.03	n/t	n/t	< 0.03
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
beta_HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
gamma-HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
delta-HCH	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Heptachlor	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Aldrin	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
trans-Chlordane	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDE	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Dieldrin	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDD	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endosulfan II	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin aldehyde	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDT	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Methoxychlor	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin ketone	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t

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Results Summary

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Report No.: 19-26215, issue number 1

ELAB Reference	192339	192342	192343	192346	192347
Customer Reference	S	S	S	S	S
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP112	TP110	TP135	TP135	TP108
Sample Depth (m)	0.15	0.50	0.10	2.90	0.15
Sampling Date	10/12/2019	10/12/2019	10/12/2019	10/12/2019	10/12/2019

Determinand	Codes	Units	LOD					
Soil sample preparation parameters								
Material removed	N	%	0.1	< 0.1	< 0.1	9.4	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None	Stones	None	None
Metals								
Arsenic	M	mg/kg	1	13.6	^ 9.2	14.8	21.1	18.1
Cadmium	M	mg/kg	0.5	0.9	^ < 0.5	0.6	0.6	0.6
Chromium	M	mg/kg	5	28.9	^ 19.2	25.8	22.1	25.3
Copper	M	mg/kg	5	17.7	^ 11.8	21.4	16.5	17.7
Lead	M	mg/kg	5	23.1	^ 11.5	27.5	28.7	28.8
Mercury	M	mg/kg	0.5	< 0.5	^ < 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	23.7	^ 18.2	19.5	20.1	21.2
Selenium	M	mg/kg	1	< 1.0	^ < 1.0	1.4	1.5	< 1.0
Zinc	M	mg/kg	5	70.5	^ 46.1	81.8	103	78.5
Inorganics								
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Miscellaneous								
Acid Neutralisation Capacity	N	mol/kg	0.1	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
pH	M	pH units	0.1	7.9	^ 8.0	7.8	7.7	7.7
Total Organic Carbon	N	%	0.01	0.56	0.14	4.8	3.8	1.0
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	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
Acenaphthene	M	mg/kg	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
Phenanthrene	M	mg/kg	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
Fluoranthene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.4	< 0.1	< 0.1
Pyrene	M	mg/kg	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
Chrysene	M	mg/kg	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
Benzo(k)fluoranthene	M	mg/kg	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
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.2	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	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	0.2	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	^ < 0.4	1.1	< 0.4	< 0.4
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t
BTEX								
Benzene	N	ug/kg	10	n/t	n/t	n/t	< 10.0	n/t
Toluene	N	ug/kg	10	n/t	n/t	n/t	< 10.0	n/t
Ethylbenzene	N	ug/kg	10	n/t	n/t	n/t	< 10.0	n/t
Xylenes	N	ug/kg	10	n/t	n/t	n/t	< 10.0	n/t
MTBE	N	ug/kg	10	n/t	n/t	n/t	< 10.0	n/t
Total BTEX	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t

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Results Summary

2683

Report No.: 19-26215, issue number 1

ELAB Reference	192339	192342	192343	192346	192347
Customer Reference	S	S	S	S	S
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	TP112	TP110	TP135	TP135	TP108
Sample Depth (m)	0.15	0.50	0.10	2.90	0.15
Sampling Date	10/12/2019	10/12/2019	10/12/2019	10/12/2019	10/12/2019

Determinand	Codes	Units	LOD					
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	< 0.01	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t	< 0.01	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	< 0.01	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t	< 0.01	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t	4.1	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	n/t	< 1.0	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t	4.1	n/t
Total Petroleum Hydrocarbons								
Mineral Oil	M	mg/kg	5	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
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
beta-HCH	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
gamma-HCH	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
delta-HCH	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Heptachlor	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Aldrin	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Heptachlor expoxide	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
trans-Chlordane	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
alpha cis-Chlordane	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
p,p-DDE	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Dieldrin	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Endrin	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
p,p-DDD	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Endosulfan II	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Endrin aldehyde	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
p,p-DDT	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Endosulphan sulphate	M	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Methoxychlor	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10
Endrin ketone	N	ug/kg	10	< 10	n/t	< 10	n/t	< 10

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The Environmental Laboratory Ltd. Reg. No. 3882193

Results Summary

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Report No.: 19-26215, issue number 1

ELAB Reference	192350	192351	192352	192353	192354
Customer Reference	S	S	S	S	S
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS106	WS106	WS107	WS107	WS107
Sample Depth (m)	0.10	0.50	0.10	0.50	2.10
Sampling Date	09/12/2019	09/12/2019	09/12/2019	09/12/2019	09/12/2019

Determinand	Codes	Units	LOD					
Soil sample preparation parameters								
Material removed	N	%	0.1	64.5	< 0.1	< 0.1	< 0.1	n/t
Description of Inert material removed	N		0	Stones	None	None	None	n/t
Metals								
Arsenic	M	mg/kg	1	n/t	n/t	13.4	n/t	n/t
Cadmium	M	mg/kg	0.5	n/t	n/t	< 0.5	n/t	n/t
Chromium	M	mg/kg	5	n/t	n/t	30.6	n/t	n/t
Copper	M	mg/kg	5	n/t	n/t	19.5	n/t	n/t
Lead	M	mg/kg	5	n/t	n/t	16.6	n/t	n/t
Mercury	M	mg/kg	0.5	n/t	n/t	< 0.5	n/t	n/t
Nickel	M	mg/kg	5	n/t	n/t	27.0	n/t	n/t
Selenium	M	mg/kg	1	n/t	n/t	< 1.0	n/t	n/t
Zinc	M	mg/kg	5	n/t	n/t	106	n/t	n/t
Inorganics								
Hexavalent Chromium	N	mg/kg	0.8	n/t	n/t	< 0.8	n/t	n/t
Miscellaneous								
Acid Neutralisation Capacity	N	mol/kg	0.1	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
pH	M	pH units	0.1	n/t	n/t	8.0	n/t	n/t
Total Organic Carbon	N	%	0.01	0.42	0.65	0.54	0.58	n/t
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	< 0.4	n/t	n/t
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t
BTEX								
Benzene	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
Toluene	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
Ethylbenzene	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
Xylenes	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
MTBE	N	ug/kg	10	n/t	n/t	n/t	n/t	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	n/t	n/t	n/t

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Results Summary

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Report No.: 19-26215, issue number 1

ELAB Reference	192350	192351	192352	192353	192354
Customer Reference	S	S	S	S	S
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS106	WS106	WS107	WS107	WS107
Sample Depth (m)	0.10	0.50	0.10	0.50	2.10
Sampling Date	09/12/2019	09/12/2019	09/12/2019	09/12/2019	09/12/2019

Determinand	Codes	Units	LOD					
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	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	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	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	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	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	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	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	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	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	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	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	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	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	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t	n/t	2.6
>C35-C40 Aromatic	N	mg/kg	1	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	2.6
Total Petroleum Hydrocarbons								
Mineral Oil	M	mg/kg	5	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
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
beta_HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
gamma-HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
delta-HCH	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Heptachlor	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Aldrin	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
trans-Chlordane	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDE	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Dieldrin	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDD	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endosulfan II	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin aldehyde	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDT	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Methoxychlor	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin ketone	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t

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Results Summary

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Report No.: 19-26215, issue number 1

ELAB Reference	192355	192357	192360
Customer Reference	S	S	S
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	TP140	TP141	TP142
Sample Depth (m)	0.15	0.15	0.80
Sampling Date	09/12/2019	09/12/2019	09/12/2019

Determinand	Codes	Units	LOD			
Soil sample preparation parameters						
Material removed	N	%	0.1	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None	None
Metals						
Arsenic	M	mg/kg	1	9.5	10.4	10.0
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	24.2	25.0	28.4
Copper	M	mg/kg	5	17.8	24.8	14.4
Lead	M	mg/kg	5	22.2	49.0	13.8
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	17.7	17.4	17.7
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	56.8	70.0	54.9
Inorganics						
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8
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	7.0	6.2	6.9
Total Organic Carbon	N	%	0.01	0.52	1.6	0.31
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	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	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
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4
Total PAH (Including Coronene GC-FID)	N	mg/kg	2	n/t	n/t	n/t
BTEX						
Benzene	N	ug/kg	10	n/t	n/t	n/t
Toluene	N	ug/kg	10	n/t	n/t	n/t
Ethylbenzene	N	ug/kg	10	n/t	n/t	n/t
Xylenes	N	ug/kg	10	n/t	n/t	n/t
MTBE	N	ug/kg	10	n/t	n/t	n/t
Total BTEX	N	mg/kg	0.01	n/t	n/t	n/t

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Results Summary

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ELAB Reference	192355	192357	192360
Customer Reference	S	S	S
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	TP140	TP141	TP142
Sample Depth (m)	0.15	0.15	0.80
Sampling Date	09/12/2019	09/12/2019	09/12/2019

Determinand	Codes	Units	LOD			
TPH CWG						
>C5-C6 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t
>C6-C8 Aliphatic	N	mg/kg	0.01	n/t	n/t	n/t
>C8-C10 Aliphatic	N	mg/kg	1	n/t	n/t	n/t
>C10-C12 Aliphatic	N	mg/kg	1	n/t	n/t	n/t
>C12-C16 Aliphatic	N	mg/kg	1	n/t	n/t	n/t
>C16-C21 Aliphatic	N	mg/kg	1	n/t	n/t	n/t
>C21-C35 Aliphatic	N	mg/kg	1	n/t	n/t	n/t
>C35-C40 Aliphatic	N	mg/kg	1	n/t	n/t	n/t
>C5-C7 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t
>C7-C8 Aromatic	N	mg/kg	0.01	n/t	n/t	n/t
>C8-C10 Aromatic	N	mg/kg	1	n/t	n/t	n/t
>C10-C12 Aromatic	N	mg/kg	1	n/t	n/t	n/t
>C12-C16 Aromatic	N	mg/kg	1	n/t	n/t	n/t
>C16-C21 Aromatic	N	mg/kg	1	n/t	n/t	n/t
>C21-C35 Aromatic	N	mg/kg	1	n/t	n/t	n/t
>C35-C40 Aromatic	N	mg/kg	1	n/t	n/t	n/t
Total (>C5-C40) Ali/Aro	N	mg/kg	1	n/t	n/t	n/t
Total Petroleum Hydrocarbons						
Mineral Oil	M	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
OrganoChlorine Pesticides						
alpha-HCH	M	ug/kg	10	n/t	< 10	n/t
beta_HCH	M	ug/kg	10	n/t	< 10	n/t
gamma-HCH	M	ug/kg	10	n/t	< 10	n/t
delta-HCH	N	ug/kg	10	n/t	< 10	n/t
Heptachlor	N	ug/kg	10	n/t	< 10	n/t
Aldrin	M	ug/kg	10	n/t	< 10	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	< 10	n/t
trans-Chlordane	N	ug/kg	10	n/t	< 10	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	< 10	n/t
p,p-DDE	M	ug/kg	10	n/t	< 10	n/t
Dieldrin	M	ug/kg	10	n/t	< 10	n/t
Endrin	N	ug/kg	10	n/t	< 10	n/t
p,p-DDD	M	ug/kg	10	n/t	< 10	n/t
Endosulfan II	N	ug/kg	10	n/t	< 10	n/t
Endrin aldehyde	N	ug/kg	10	n/t	< 10	n/t
p,p-DDT	M	ug/kg	10	n/t	< 10	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	< 10	n/t
Methoxychlor	N	ug/kg	10	n/t	< 10	n/t
Endrin ketone	N	ug/kg	10	n/t	< 10	n/t

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Results Summary

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ELAB Reference	192354
Customer Reference	S
Sample ID	
Sample Type	SOIL
Sample Location	WS107
Sample Depth (m)	2.10
Sampling Date	09/12/2019

Determinand	Codes	Units	LOD	
VOC				
Heptane	N	ug/kg	10	< 10.0
Octane	N	ug/kg	10	< 10.0
Nonane	N	ug/kg	10	< 10.0
Benzene	N	ug/kg	10	< 10.0
Toluene	N	ug/kg	10	< 10.0
Ethylbenzene	N	ug/kg	10	< 10.0
m+p-xylene	N	ug/kg	10	< 10.0
o-xylene	N	ug/kg	10	< 10.0
cis-1,2-dichloroethane	N	ug/kg	10	< 10.0
1,1-Dichloroethane	N	ug/kg	10	< 10.0
Chloroform	N	ug/kg	10	< 10.0
Tetrachloromethane	N	ug/kg	10	< 10.0
1,1,1-Trichloroethane	N	ug/kg	10	< 10.0
Trichloroethylene	N	ug/kg	10	< 10.0
Tetrachloroethylene	N	ug/kg	10	< 10.0
1,1,1,2-Tetrachloroethane	N	ug/kg	10	< 10.0
1,1,2,2-Tetrachloroetha	N	ug/kg	10	< 10.0
Chlorobenzene	N	ug/kg	10	< 10.0
Bromobenzene	N	ug/kg	10	< 10.0
Bromodichloromethane	N	ug/kg	10	< 10.0
Methylethylbenzene	N	ug/kg	10	< 10.0
1,1-Dichloro-1-propene	N	ug/kg	10	< 10.0
Trans - 1-2 -dichloroethylene	N	ug/kg	10	< 10.0
2,2-Dichloropropane	N	ug/kg	10	< 10.0
Bromochloromethane	N	ug/kg	10	< 10.0
1,2-Dichloroethane	N	ug/kg	10	< 10.0
Dibromomethane	N	ug/kg	10	< 10.0
1,2-Dichloropropane	N	ug/kg	10	< 10.0
cis-1,3-Dichloro-1-propene	N	ug/kg	10	< 10.0
trans-1,3-Dichloro-1-propene	N	ug/kg	10	< 10.0
1,1,2-Trichloroethane	N	ug/kg	10	< 10.0
Dibromochloromethane	N	ug/kg	10	< 10.0
1,3-Dichloropropane	N	ug/kg	10	< 10.0
1,2-dibromoethane	N	ug/kg	10	< 10.0
Styrene	N	ug/kg	10	< 10.0
Propylbenzene	N	ug/kg	10	< 10.0
2-Chlorotoluene	N	ug/kg	10	< 10.0
1,2,4-Trimethylbenzene	N	ug/kg	10	< 10.0
4-Chlorotoluene	N	ug/kg	10	< 10.0
t-butylbenzene	N	ug/kg	10	< 10.0
1,3,5-Trimethylbenzene	N	ug/kg	10	< 10.0
1-methylpropylbenzene	N	ug/kg	10	< 10.0
p-cymene	N	ug/kg	10	< 10.0
1,3-Dichlorobenzene	N	ug/kg	10	< 10.0
Butylbenzene	N	ug/kg	10	< 10.0
1,2-Dibromo-3-chloropropane	N	ug/kg	10	< 10.0
Hexachlorobutadiene	N	ug/kg	10	< 10.0
1-2-3 - Trichlorobenzene	N	ug/kg	10	< 10.0
Naphthalene	N	ug/kg	10	< 10.0
1-2-4 - Trichlorobenzene	N	ug/kg	10	< 10.0
1,4-Dichlorobenzene	N	ug/kg	10	< 10.0
1,2-Dichlorobenzene	N	ug/kg	10	< 10.0
Bromoform	N	ug/kg	10	< 10.0

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Results Summary

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Report No.: 19-26215, issue number 1

WAC Analysis

Elab Ref:	192337					Landfill Waste Acceptance Criteria Limits*		
Sample Date:	10/12/2019					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	TP103 S							
Depth (m)	0.3							
Site:	North Littlehampton							
Determinand		Code	Units					
Total Organic Carbon		N	%		3.20	3	5	6
Loss on Ignition		M	%		2.1	--	--	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		29	500	--	--
Total (of 17) PAHs		N	mg/kg		6.0	100	--	--
pH		M			8.5	--	>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	0.016	0.16	0.5	2	25
Barium	N	0.036	0.36	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	52.00	800	15000	25000
Fluoride	N	< 5	< 10	10	150	500
Sulphate	N	14	144.00	1000	20000	50000
Total Dissolved Solids	N	94	939.00	4000	60000	100000
Phenol Index	N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon	N	0.990	< 10	500	800	1000

Leach Test Information

pH	N	8.1				
Conductivity (uS/cm)	N	140				
Dry mass of test portion (g)		102.000				
Dry Matter (%)		89				
Moisture (%)		13				
Eluent Volume (ml)		982				

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

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

2683

Report No.: 19-26215, issue number 1

WAC Analysis

Elab Ref:	192332					Landfill Waste Acceptance Criteria Limits*		
Sample Date:	09/12/2019					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	TP117 S							
Depth (m)	0.5							
Site:	North Littlehampton							
Determinand		Code	Units					
Total Organic Carbon		N	%		0.05	3	5	6
Loss on Ignition		M	%		0.3	--	--	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			8.3	--	>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	54.00	800	15000	25000
Fluoride		N	< 5	< 10	10	150	500
Sulphate		N	4	42.80	1000	20000	50000
Total Dissolved Solids		N	82	815.00	4000	60000	100000
Phenol Index		N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon		N	2.640	26.00	500	800	1000

Leach Test Information

pH		N	8.2				
Conductivity (uS/cm)		N	122				
Dry mass of test portion (g)			104.000				
Dry Matter (%)			92				
Moisture (%)			9				
Eluent Volume (ml)			1010				

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

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

2683

Report No.: 19-26215, issue number 1

WAC Analysis

Elab Ref:	192319					Landfill Waste Acceptance Criteria Limits*		
Sample Date:	09/12/2019					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	TP111 S							
Depth (m)	0.15							
Site:	North Littlehampton							
Determinand		Code	Units					
Total Organic Carbon		N	%		1.40	3	5	6
Loss on Ignition		M	%		3.3	--	--	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			7.3	--	>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	0.007	0.07	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	53.00	800	15000	25000
Fluoride		N	< 5	< 10	10	150	500
Sulphate		N	3	28.60	1000	20000	50000
Total Dissolved Solids		N	96	963.00	4000	60000	100000
Phenol Index		N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon		N	7.920	79.00	500	800	1000

Leach Test Information

pH		N	7.9				
Conductivity (uS/cm)		N	144				
Dry mass of test portion (g)			101.000				
Dry Matter (%)			84				
Moisture (%)			19				
Eluent Volume (ml)			956				

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

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 19-26215, issue number 1

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 (%)
192319	0.15	TP111 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192321	0.15	TP105 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192324	0.40	TP115 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192325	0.20	TP114 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192328	0.50	TP113 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192329	0.20	TP116 S	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
192332	0.50	TP117 S	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192333	0.15	TP109 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192336	0.40	TP102 S	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
192337	0.30	TP103 S	Brown Sandy Soil,Stones,Clinker	No asbestos detected	n/t	n/t	n/t	n/t
192339	0.15	TP112 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192342	0.50	TP110 S	Brown Soil With Chalk	No asbestos detected	n/t	n/t	n/t	n/t
192343	0.10	TP135 S	Brown Soil,Stones,Concrete,Root	No asbestos detected	n/t	n/t	n/t	n/t
192346	2.90	TP135 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192347	0.15	TP108 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192352	0.10	WS107 S	Brown Soil,Stones	Chrysotile (Cement)	n/t	n/t	n/t	n/t
192355	0.15	TP140 S	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
192357	0.15	TP141 S	Brown Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
192360	0.80	TP142 S	Brown Soil	No asbestos detected	n/t	n/t	n/t	n/t
192363	0.80	TP113 FRAG 1	Cement	Chrysotile	n/t	n/t	n/t	n/t

Method Summary

Report No.: 19-26215, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	16/12/2019	110	Colorimetry
Aqua regia extractable metals	M	Air dried sample	16/12/2019	118	ICPMS
PAH (GC-FID)	M	As submitted sample	16/12/2019	133	GC-FID
Organochlorine Pesticides in solids	M	As submitted sample	16/12/2019	173	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	16/12/2019	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	16/12/2019	181	GC-MS
VOC in solids	N	As submitted sample	16/12/2019	181	GC-MS
Aliphatic hydrocarbons in soil	N	As submitted sample	16/12/2019	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	17/12/2019	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	16/12/2019	214	GC-FID
Asbestos identification	U	Air dried sample	18/12/2019	PMAN	Microscopy
Leachate					
Arsenic	N		18/12/2019	101	ICPMS
Cadmium	N		18/12/2019	101	ICPMS
Chromium	N		18/12/2019	101	ICPMS
Lead	N		18/12/2019	101	ICPMS
Nickel	N		18/12/2019	101	ICPMS
Copper	N		18/12/2019	101	ICPMS
Zinc	N		18/12/2019	101	ICPMS
Mercury	N		18/12/2019	101	ICPMS
Selenium	N		18/12/2019	101	ICPMS
Antimony	N		18/12/2019	101	ICPMS
Barium	N		18/12/2019	101	ICPMS
Molybdenum	N		18/12/2019	101	ICPMS
pH Value	N		18/12/2019	113	Electrometric
Electrical Conductivity	N		18/12/2019	136	Probe
Dissolved Organic Carbon	N		18/12/2019	102	TOC analyser
Chloride	N		18/12/2019	131	Ion Chromatography
Fluoride	N		18/12/2019	131	Ion Chromatography
Sulphate	N		18/12/2019	131	Ion Chromatography
Total Dissolved Solids	N		18/12/2019	144	Gravimetric
Phenol index	N		18/12/2019	121	HPLC
WAC Solids analysis					
pH Value	M	Air dried sample	18/12/2019	113	Electrometric
Total Organic Carbon	N	Air dried sample	18/12/2019	210	IR
Loss on Ignition	M	Air dried sample	19/12/2019	129	Gravimetric
Acid Neutralization Capacity to pH 7	N	Air dried sample	18/12/2019	NEN 737	Electrometric
Total BTEX	N	As submitted sample	16/12/2019	181	GCMS
Mineral Oil	M	As submitted sample	16/12/2019	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	16/12/2019	120	GCMS
Total PAH (17)	N	As submitted sample	17/12/2019	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 19-26215, issue number 1

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), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

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

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



2683



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 19-26231

Issue: 1

Date of Issue: 19/12/2019

Contact: Martin Weil

Customer Details: Leap Environmental Ltd
The Atrium
Curtis Road
Dorking
Surrey RH4 1X4

Quotation No: Q14-00063

Order No: LPO-1366

Customer Reference: LP2128

Date Received: 13/12/2019

Date Approved: 19/12/2019

Details: North Littlehampton

Approved by: 

Mike Varley, Technical Manager

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

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Sample Summary

Report No.: 19-26231, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
192437	HP102 0.20	12/12/2019	13/12/2019	Silty loam	
192438	HP103 0.30	12/12/2019	13/12/2019	Silty loam	
192439	HP104 0.20	12/12/2019	13/12/2019	Silty clayey loam	

Results Summary

2683

Report No.: 19-26231, issue number 1

ELAB Reference	192437	192438	192439
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	HP102	HP103	HP104
Sample Depth (m)	0.20	0.30	0.20
Sampling Date	12/12/2019	12/12/2019	12/12/2019

Determinand	Codes	Units	LOD			
Soil sample preparation parameters						
Material removed	N	%	0.1	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None	None
Metals						
Arsenic	M	mg/kg	1	12.9	10.6	11.7
Cadmium	M	mg/kg	0.5	0.7	0.6	0.6
Chromium	M	mg/kg	5	28.4	19.8	24.5
Copper	M	mg/kg	5	18.3	28.8	30.3
Lead	M	mg/kg	5	27.9	22.8	36.2
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	21.0	22.5	19.2
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	87.3	85.4	99.6
Inorganics						
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8
Miscellaneous						
pH	M	pH units	0.1	8.5	8.8	9.2
Total Organic Carbon	N	%	0.01	0.58	0.27	0.56
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	0.4	0.2	< 0.1
Pyrene	M	mg/kg	0.1	0.4	0.2	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	0.3	0.1	< 0.1
Chrysene	M	mg/kg	0.1	0.3	0.2	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	0.3	0.3	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	0.5	0.5	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	0.3	0.2	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	0.3	0.3	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	0.2	0.2	< 0.1
Total PAH(16)	M	mg/kg	0.4	3.3	2.3	0.7

Tests marked N are not UKAS accredited.

The Environmental Laboratory Ltd. Reg. No. 3882193

Page 3 of 6



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Tel: +44 (0)1424 718618, Email: info@elab-uk.co.uk, Web: www.elab-uk.co.uk

Results Summary
Report No.: 19-26231, issue number 1

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 (%)
192437	0.20	HP102	Brown Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
192438	0.30	HP103	Brown Soil, Stones, Chalk	No asbestos detected	n/t	n/t	n/t	n/t
192439	0.20	HP104	Brown Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 19-26231, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	17/12/2019	110	Colorimetry
pH	M	Air dried sample	18/12/2019	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	17/12/2019	118	ICPMS
PAH (GC-FID)	M	As submitted sample	17/12/2019	133	GC-FID
Total organic carbon/Total sulphur	N	Air dried sample	19/12/2019	210	IR
Asbestos identification	U	Air dried sample	18/12/2019	PMAN	Microscopy

Tests marked N are not UKAS accredited

Report Information

Report No.: 19-26231, issue number 1

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), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

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

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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Leap Environmental Limited
Southern Coast Regional Office
Victoria Road
Burgess Hill
West Sussex
RH15 9LR

04 February 2020

Report No : GEO/30483/01

Page 1 of 1

For the attention of Mr M Weil

Dear Sirs

Our ref **GEO / 30483**

Your Ref **LP2128**

Project **NORTH LITTLEHAMPTON**

Date samples received 14/01/2020
Date written instructions received 14/01/2020
Date testing commenced 15/01/2020
Date of sample disposal 03/03/2020

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	~	Geotechnical Test Summary
~	4	Water Content
2	~	Geochemical Test Summary
~	3	BRE SD1 Suite B - Natural ground + pyrite
3	4	Saturation Moisture Content
4	4	Liquid & Plastic Limits
5	1	Particle Size Distribution

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

J A Reynolds

J A Reynolds
Laboratory Manager

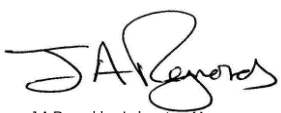


SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression				Chemical Tests			Other tests and comments
Location	Depth (m)	Sample Ref	Type	Description	WC	LL	PL	PI	<425 µm	Bulk	Dry	Condition	Cell Pressure	Deviator Stress	Shear Stress	pH	2:1 W/S SO4	W/S Mg	
					%	%	%	%	%	Mg/m³	Mg/m³		kPa	kPa	kPa		g/L	mg/L	
TP104	1.40		D	Cream mottled light brown clayey CHALK.															Particle Size Distribution
TP125	2.10		D	Brown mottled grey sandy CLAY with some fine to medium gravel.	38.2	57	22	35	94							8.2	< 0.010		
TP133	2.50		B																Saturation Moisture Content
TP135	2.90		B	Dark brown slightly clayey sandy SILT with rare fine to medium gravel.	51.7		NP		97							9.2	0.089		
WS102	4.50		D																Saturation Moisture Content
WS103	2.50		D	Brown mottled grey CLAY with some fine to medium gravel.	56.5	81	28	53	95							9.8	0.14		
WS103	3.50		B	Greyish brown mottled grey CLAY with rare fine to medium gravel.	66.3	89	30	59	97										
WS103	4.80		D																Saturation Moisture Content
WS104	2.30		D																Saturation Moisture Content

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed)

NP=Non Plastic

Checked and Approved by  J A Reynolds - Laboratory Manager 04/02/2020	Project Number: Project Name: GEO / 30483 NORTH LITTLEHAMPTON LP2128	
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Tested by Chemtest Ltd : MCERTS / UKAS No 2183

GEOLABSPage 1 of 1
(Ref 1580834000)

Notes

GEOLABS

J A Reynolds - Laboratory Manager
04/02/2020

LIQUID AND PLASTIC LIMITS

Location TP125
Depth (m) 2.10
Sample Type D

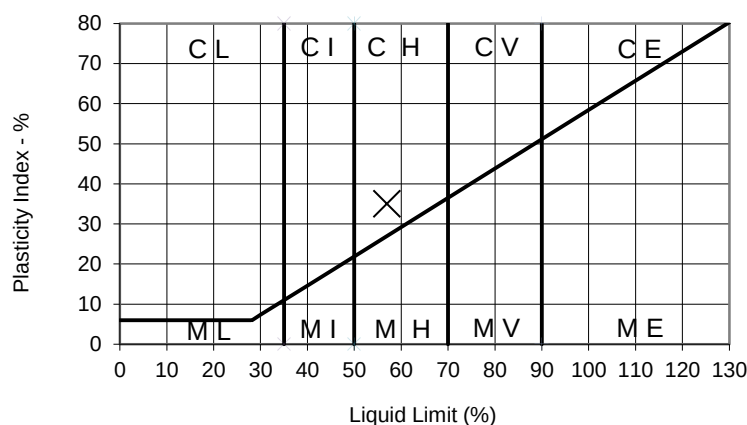
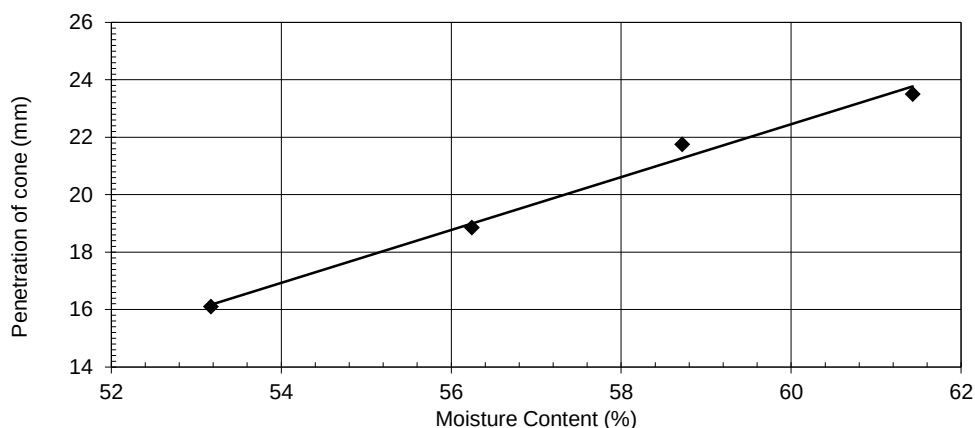
Description:

Brown mottled grey sandy CLAY with some fine to medium gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014) 38.2 %
Estimated percentage passing 425µm sieve : 94 %
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with increasing water content : 57 %
Plastic Limit : 22 %
Plasticity Index : 35 %

Equivalent Water Content of material passing 425µm sieve : 40.4 %
Liquidity Index : 0.53



Processed by BBK
Checked and Approved by

J A Reynolds

J A Reynolds - Laboratory Manager
04/02/2020

Project Number:

GEO / 30483

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

GEOLABS



LIQUID AND PLASTIC LIMITS

Location TP135
Depth (m) 2.90
Sample Type B

Description:

Dark brown slightly clayey sandy SILT with rare fine to medium gravel.

Preparation : Particles >425µm removed by wet sieving and air drying.

Water Content : (BS EN ISO 17892-1:2014) 51.7 %

Measured percentage passing 425µm sieve : 97 %

Liquid Limit - Fall Cone Method (cone angle 30°) : Not Determined

Plastic Limit : Non-Plastic

Equivalent Water Content of material passing 425µm sieve : 53 %

Sample was determined to be Non-Plastic after preparation

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J A Reynolds - Laboratory Manager
04/02/2020

Project Number:

GEO / 30483

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

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LIQUID AND PLASTIC LIMITS

Location	WS103
Depth (m)	2.50
Sample Type	D

Description:

Brown mottled grey CLAY with some fine to medium gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014) 56.5 %

Estimated percentage passing 425 μ m sieve : 95 %

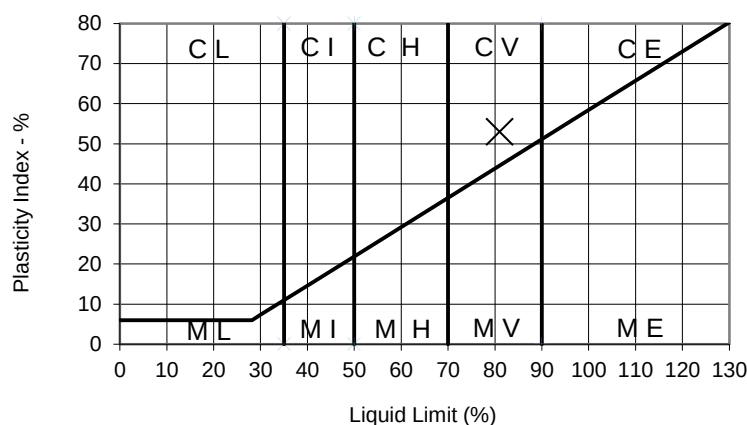
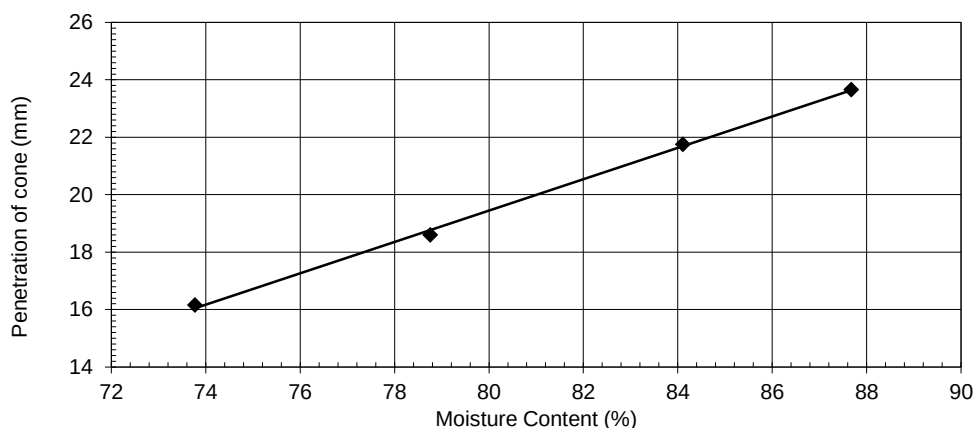
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with increasing water content : 81 %

Plastic Limit : 28 %

Plasticity Index : 53 %

Equivalent Water Content of material passing 425µm sieve : 59.3 %

Liquidity Index : 0.59



Processed by BBK
Checked and Approved by

J A Reynolds

J A Reynolds - Laboratory Manager
04/02/2020

Project Number:

GEO / 30483

Project Name:

NORTH LITTLEHAMPTON
LP2128

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Test Report By GEOLABS Limited Unit D3 HRS Business Park, Granby Avenue, Birmingham, B33 0SJ
Client : Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

Page 1 of 1
(Ref 1580833625)

LIQUID AND PLASTIC LIMITS

Location	WS103
Depth (m)	3.50
Sample Type	B

Description:

Greyish brown mottled grey CLAY with rare fine to medium gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014) 66.3 %

Estimated percentage passing 425µm sieve : 97 %

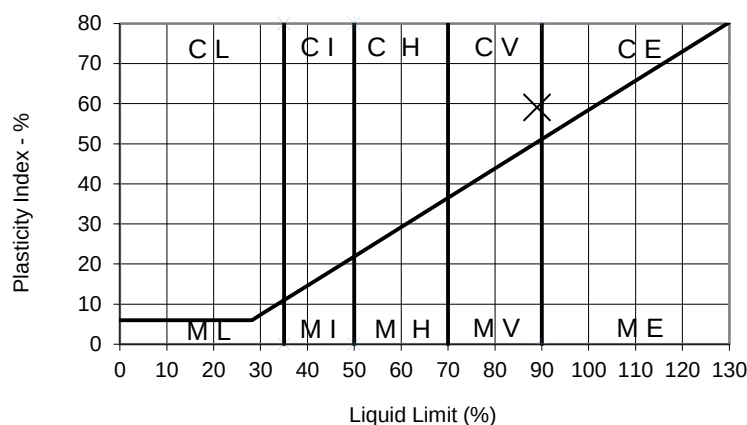
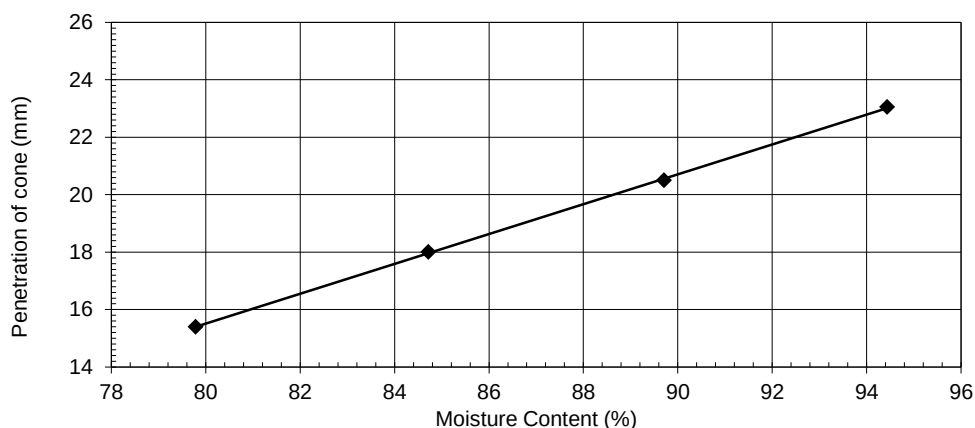
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with increasing water content : 89 %

Plastic Limit : 30 %

Plasticity Index : 59 %

Equivalent Water Content of material passing 425µm sieve : 68.6 %

Liquidity Index : 0.65



Processed by BBK
Checked and Approved by

J A Genovese

J A Reynolds - Laboratory Manager
04/02/2020

Project Number:

GEO / 30483

Project Name:

NORTH LITTLEHAMPTON
LP2128

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PARTICLE SIZE DISTRIBUTION

BH / TP No.
Depth (m)
Sample Type

TP104
1.40
D

Description

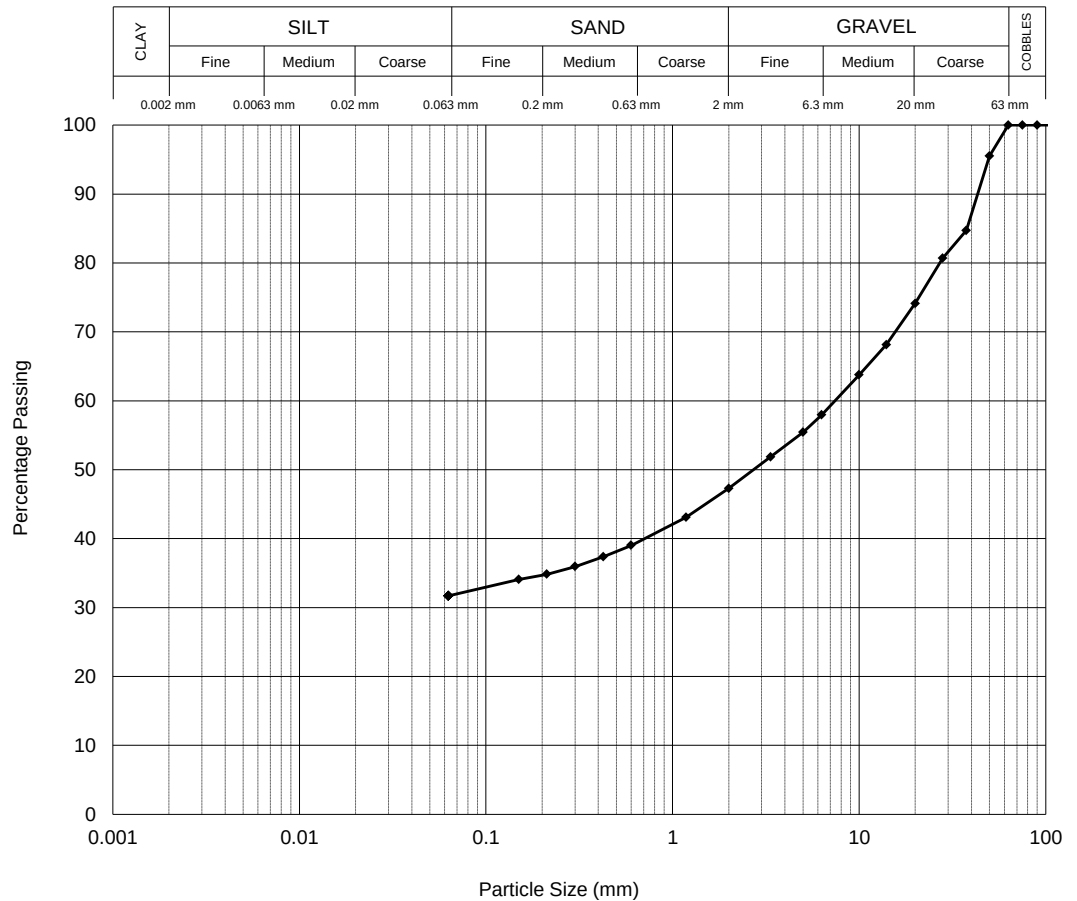
Cream mottled light brown clayey CHALK.

Remarks

Insufficient sample supplied to comply with BS EN ISO 17892-4 : 2016 minimum mass requirements

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	96
37.5 mm	85
28.0 mm	81
20.0 mm	74
14.0 mm	68
10.0 mm	64
6.30 mm	58
5.00 mm	55
3.35 mm	52
2.00 mm	47
1.18 mm	43
600 µm	39
425 µm	37
300 µm	36
212 µm	35
150 µm	34
63 µm	32



Particle Proportions	
Cobbles	0
Gravel	53
Sand	16
Silt & Clay	31

Processed by PK
Checked and Approved by

J A Reynolds

J A Reynolds - Laboratory Manager
04/02/2020

Project Number:

GEO / 30483

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

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Page 1 of 1

Test Report By GEOLABS Limited

Unit D3 HRS Business Park, Granby Avenue, Birmingham, B33 0SJ

Client : Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

(Ref 1580833647)

SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression				Chemical Tests			Other tests and comments
Location	Depth (m)	Sample Ref	Type	Description	WC (%)	LL (%)	PL (%)	PI (%)	<425 µm (%)	Bulk Mg/m³	Dry Mg/m³	Condition	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 (g/L)	W/S Mg (mg/L)	
BH101	1.00		D	Orangish brown mottled grey slightly fine sandy silty CLAY. Gravel is fine to medium.	19.9	26	14	12	84										
BH101	1.50		B	Orangish brown mottled grey slightly fine sandy silty CLAY. Gravel is fine to medium.	18.4	25	15	10	92										
BH101	3.20		B	Brown gravelly clayey SAND.															Particle Size Distribution
BH102	1.00		D	Grey brown mottled brown slightly fine sandy silty CLAY. Gravel is fine to medium.	28.0	35	19	16	93										
BH102	1.50		B																Chemical
BH102	2.00		D	Orangish brown mottled grey slightly fine sandy silty CLAY with rare fine to medium gravel.	18.6	30	14	16	99										
BH102	4.50		B	Yellowish brown slightly clayey gravel and SAND.															Particle Size Distribution
BH102	6.00		B	Yellowish brown sandy CLAY. Gravel is fine to cobbles sized chalk and flint.															Particle Size Distribution
BH102	6.50		B	Yellowish brown and cream gravelly structureless CHALK. Gravel is fine to cobble sized chalk.	24.0	33	25	8.0	61										Particle Size Distribution
BH104	1.00		B	Brown grey and grey slightly fine sandy silty CLAY with rare fine to medium gravel and rootlets.	24.3	36	18	18	98										

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed)

Checked and Approved by  S Burke - Senior Technician 13/02/2020	Project Number: GEO / 30530 Project Name: NORTH LITTLEHAMPTON LP2128	
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SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression				Chemical Tests			Other tests and comments
Location	Depth (m)	Sample Ref	Type	Description	WC (%)	LL (%)	PL (%)	PI (%)	<425 µm (%)	Bulk Mg/m³	Dry Mg/m³	Condition	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 (g/L)	W/S Mg (mg/L)	
BH104	1.20		D	Yellowish brown slightly clayey gravelly SAND.															
BH104	2.00		B	Yellowish brown clayey gravelly SAND.															Particle Size Distribution
BH104	3.00		B	Yellowish brown gravelly clayey SAND.															Particle Size Distribution
BH105	1.00		B	White with pockets of dark grey gravelly structureless CHALK. Gravel is chalk and flint.	36.8	44	31	13	53										
BH105	1.10		D	Dark grey mottled brown grey slightly fine sandy clayey SILT. Gravel is fine to medium with rare fine chalk.	53.1	48	36	12	87										
BH105	2.00		B	Dark grey mottled grey silty CLAY. Gravel is fine to medium with rare shell fragments.	63.9	84	37	47	99										Chemical
BH105	2.20-2.65		U	Soft dark grey silty CLAY.															One Dimensional Consolidation
BH105	2.65		D	Dark grey mottled grey silty CLAY. Gravel is fine to medium with rare shell fragments.	56.2	72	26	46	99										Chemical
BH105	3.00		D	Dark grey mottled grey silty CLAY. Gravel is fine to medium with rare shell fragments.	66.3	74	30	44	99										
BH105	4.00		B	Dark grey mottled grey silty CLAY. Gravel is fine to medium with rare shell fragments.	69.4	76	32	44	99										

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed)

Checked and Approved by  S Burke - Senior Technician 13/02/2020	Project Number:	GEO / 30530 NORTH LITTLEHAMPTON LP2128	
	Project Name:		

SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression				Chemical Tests			Other tests and comments
Location	Depth (m)	Sample Ref	Type	Description	WC (%)	LL (%)	PL (%)	PI (%)	<425 µm (%)	Bulk Mg/m³	Dry Mg/m³	Condition	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 (g/L)	W/S Mg (mg/L)	
BH105	4.20-4.65		U	Soft dark grey silty CLAY with rare fine to medium gravel	43.7					1.79	1.25	Undisturbed	42 84 126	10 17 19	8				
BH105	4.65		D	Dark grey mottled brown grey silty CLAY with rare shell fragments.	41.4	44	24	20	99										One Dimensional Consolidation
BH105	5.50		D	Dark grey mottled brown grey SILT and CLAY with rare shell fragments.	63.0	65	34	31	99										Chemical
BH105	7.50		B	Grey brown slightly fine sandy gravelly silty CLAY. Gravel is fine to medium chalk.	22.3														
BH107	1.00		B	Orangish brown and grey fine sandy silty CLAY with rare fine gravel.	22.1	38	19	19	99										
BH107	2.00		B	White mottled orangish brown fine sandy silty CLAY with fine gravel sized chalk.	25.3	34	21	13	91										
BH107	16.00		D	White structureless CHALK.	21.9														
TP135	1.30		D	Grey brown and brown slightly fine sandy silty CLAY with rare rootlets.	23.8	36	19	17	100										
TP138	1.00		D	Grey brown and brown slightly fine sandy silty CLAY with rare gravel.	20.0	36	17	19	99										Chemical

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed)

Checked and Approved by  S Burke - Senior Technician 13/02/2020	<table style="width: 100%;"> <tr> <td style="width: 30%;">Project Number:</td> <td style="text-align: center;">GEO / 30530</td> </tr> <tr> <td>Project Name:</td> <td style="text-align: center;">NORTH LITTLEHAMPTON LP2128</td> </tr> </table>	Project Number:	GEO / 30530	Project Name:	NORTH LITTLEHAMPTON LP2128	
Project Number:	GEO / 30530					
Project Name:	NORTH LITTLEHAMPTON LP2128					

SATURATION MOISTURE CONTENT OF CHALK

Location	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 %	Bulk Density Mg/m ³	Dry Density Mg/m ³	Saturation Moisture Content %	Porosity %
BH101	4.00		B	White CHALK	13.0	2.16	1.91	15	29
BH101	5.00		D	White CHALK	13.2	2.22	1.96	14	27
BH101	6.00		D	White CHALK	13.8	2.23	1.96	14	27
BH101	10.00		B	White CHALK	17.5	2.13	1.81	18	33
BH101	12.00		D	White CHALK	10.5	2.29	2.07	11	23
BH102	8.50		D	White CHALK	22.0	2.06	1.69	22	37
BH102	10.00		B	White CHALK	17.0	2.16	1.85	17	31
BH104	4.00		B	White CHALK	19.7	2.08	1.74	20	36
BH104	4.50		B	White CHALK	24.4	2.01	1.62	25	40
BH104	7.00		B	White CHALK	19.8	2.09	1.74	20	36
BH104	9.50		D	White CHALK	17.7	2.13	1.81	18	33
BH104	12.50		D	White CHALK	18.3	2.14	1.81	18	33
BH105	8.00		B	White CHALK	12.7	2.23	1.98	13	27
BH105	10.00		D	White CHALK	11.9	2.25	2.01	13	26
BH105	14.50		D	White CHALK	9.2	2.36	2.16	9.3	20

Notes

Checked and Approved by:

*S Burke*S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128****GEOLABS®**

SATURATION MOISTURE CONTENT OF CHALK

[illegible]

Notes

Checked and Approved by:

S Burke

S Burke - Senior Technician
13/02/2020

Project Number:

Project Name:

GEO / 30530

NORTH LITTLEHAMPTON
LP2128



SUMMARY OF CHEMICAL TESTS ON SOIL

Location	Depth m	Sample Ref	Sample Type	pH Value	Total Acid Soluble Sulphate as SO ₄ %	Water Soluble Sulphate as SO ₄ 2:1 Water:Soil Extract g/l	Total Sulphur %	Water Soluble Chloride g/l	Water Soluble Nitrate g/l	Magnesium g/l	Organic Content %	Mass Loss on Ignition %	Carbonate Content %
BH101	1.00		D	8.2	< 0.010	< 0.010	< 0.010	-	-	-	-	-	-
BH102	1.50		B	7.9	0.011	< 0.010	< 0.010	-	-	-	-	-	-
BH105	2.00		B	8.0	0.045	0.019	0.068	-	-	-	-	-	-
BH105	2.65		D	9.3	0.16	0.31	0.32	-	-	-	-	-	-
BH105	5.50		D	9.2	0.14	0.40	1.3	-	-	-	-	-	-
TP138	1.00		D	7.3	0.011	< 0.010	< 0.010	-	-	-	-	-	-

Tested by Chemtest Ltd : MCERTS / UKAS No 2183

Checked and Approved by:



S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

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PARTICLE SIZE DISTRIBUTION

BH / TP No.
Depth (m)
Sample Type

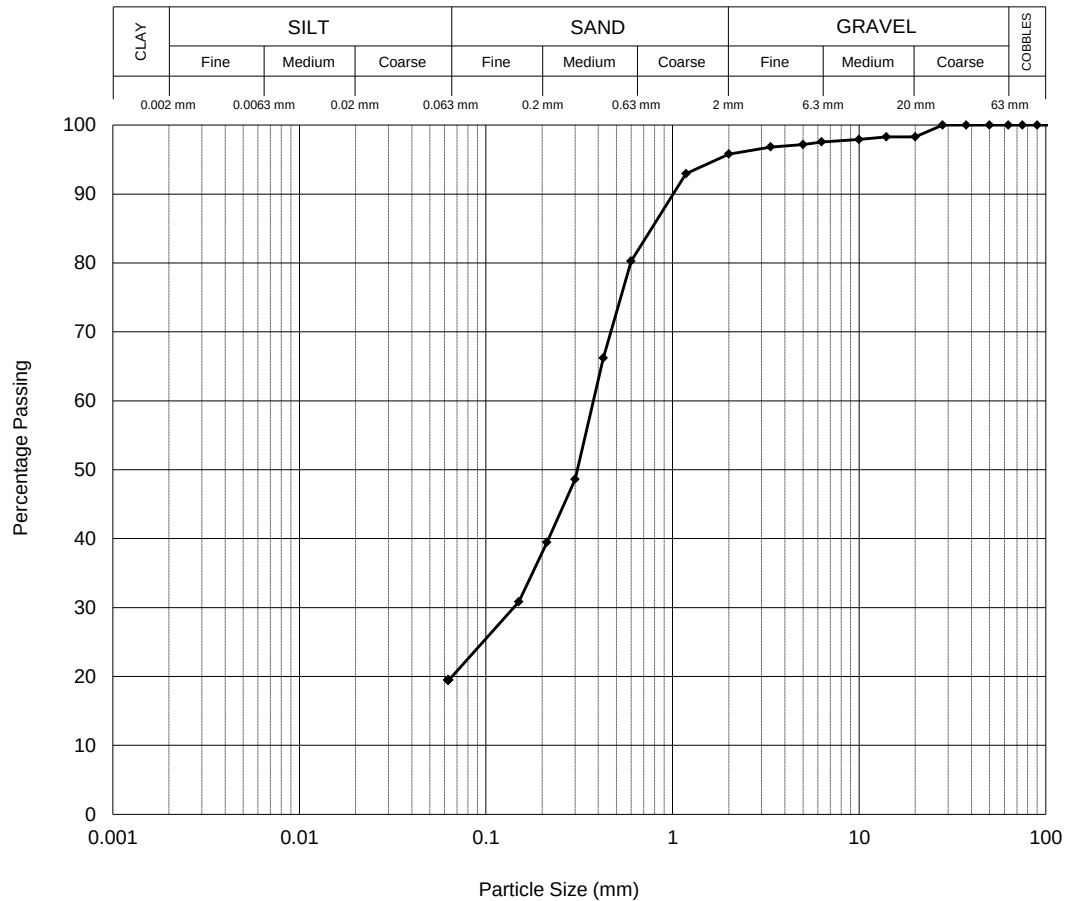
BH101
3.20
B

Description

Brown gravelly clayey SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	98
14.0 mm	98
10.0 mm	98
6.30 mm	98
5.00 mm	97
3.35 mm	97
2.00 mm	96
1.18 mm	93
600 µm	80
425 µm	66
300 µm	49
212 µm	39
150 µm	31
63 µm	19



Particle Proportions	
Cobbles	0
Gravel	4
Sand	76
Silt & Clay	20

Processed by MB
Checked and Approved by

S Burke

S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

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Page 1 of 1

(Ref 1581584682)

Test Report By: GEOLABS Limited

Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client: Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

PARTICLE SIZE DISTRIBUTION

BH / TP No.
Depth (m)
Sample Type

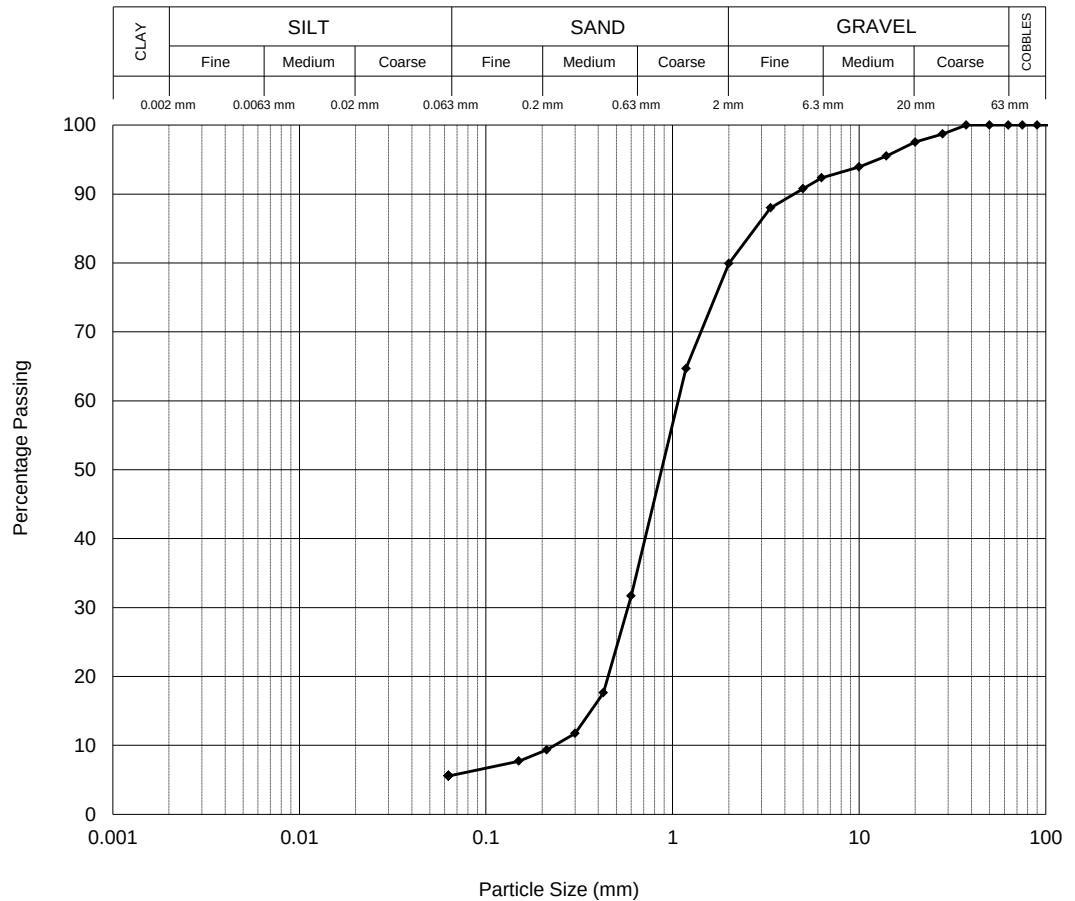
BH102
4.50
B

Description

Yellowish brown slightly clayey gravel and SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	99
20.0 mm	98
14.0 mm	96
10.0 mm	94
6.30 mm	92
5.00 mm	91
3.35 mm	88
2.00 mm	80
1.18 mm	65
600 µm	32
425 µm	18
300 µm	12
212 µm	9
150 µm	8
63 µm	6



Particle Proportions	
Cobbles	0
Gravel	20
Sand	74
Silt & Clay	6

Processed by MB
Checked and Approved by

S Burke

S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

Test Report By: GEOLABS Limited

Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

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PARTICLE SIZE DISTRIBUTION

BH / TP No.
Depth (m)
Sample Type

BH102
6.00
B

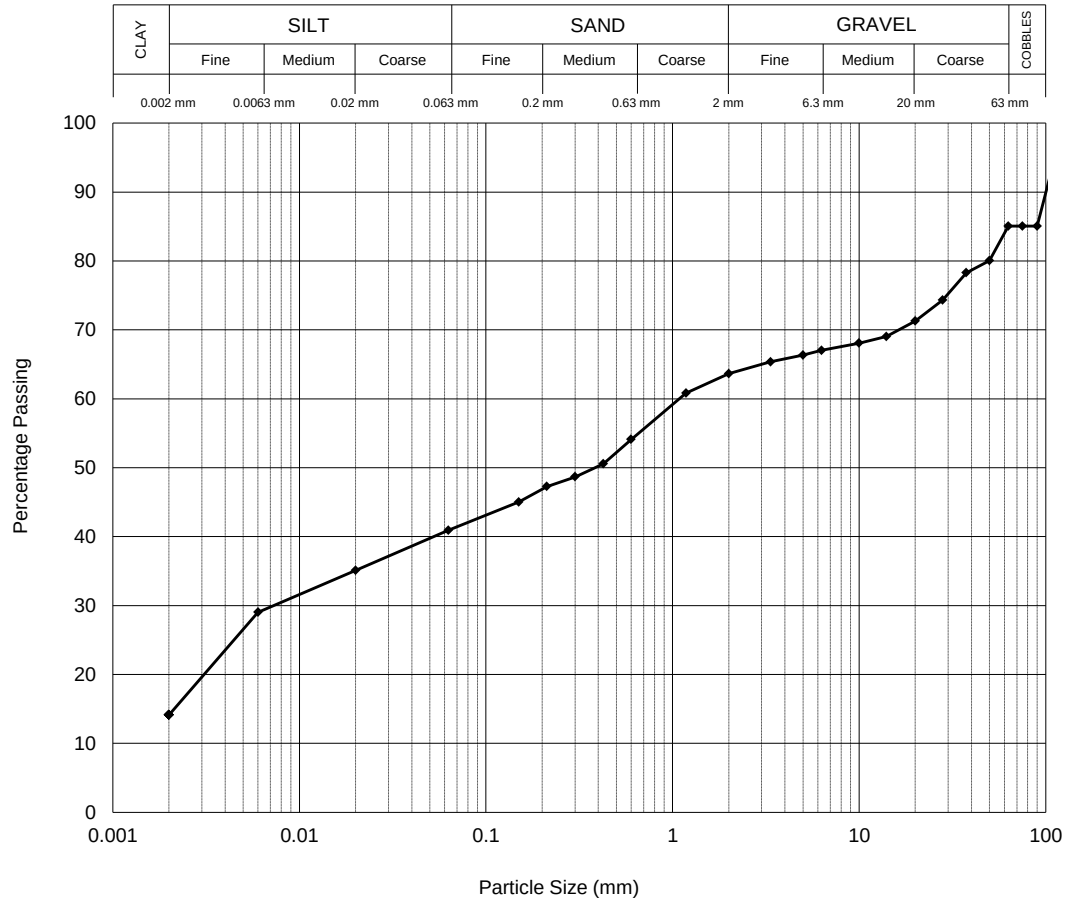
Description

Yellowish brown sandy CLAY. Gravel si fine to cobbles sized chalk and flint.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	85
75.0 mm	85
63.0 mm	85
50.0 mm	80
37.5 mm	78
28.0 mm	74
20.0 mm	71
14.0 mm	69
10.0 mm	68
6.30 mm	67
5.00 mm	66
3.35 mm	65
2.00 mm	64
1.18 mm	61
600 µm	54
425 µm	51
300 µm	49
212 µm	47
150 µm	45
63 µm	41



Sedimentation	
Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	35
6 µm	29
2 µm	14

Particle Proportions	
Cobbles	15
Gravel	21
Sand	23
Silt	27
Clay	14

Particle Density 2.70(A) Mg/m³

Processed by MB
Checked and Approved by

S Burke

S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

Test Report By GEOLABS Limited

Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

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PARTICLE SIZE DISTRIBUTION

BH / TP No.
Depth (m)
Sample Type

BH102
6.50
B

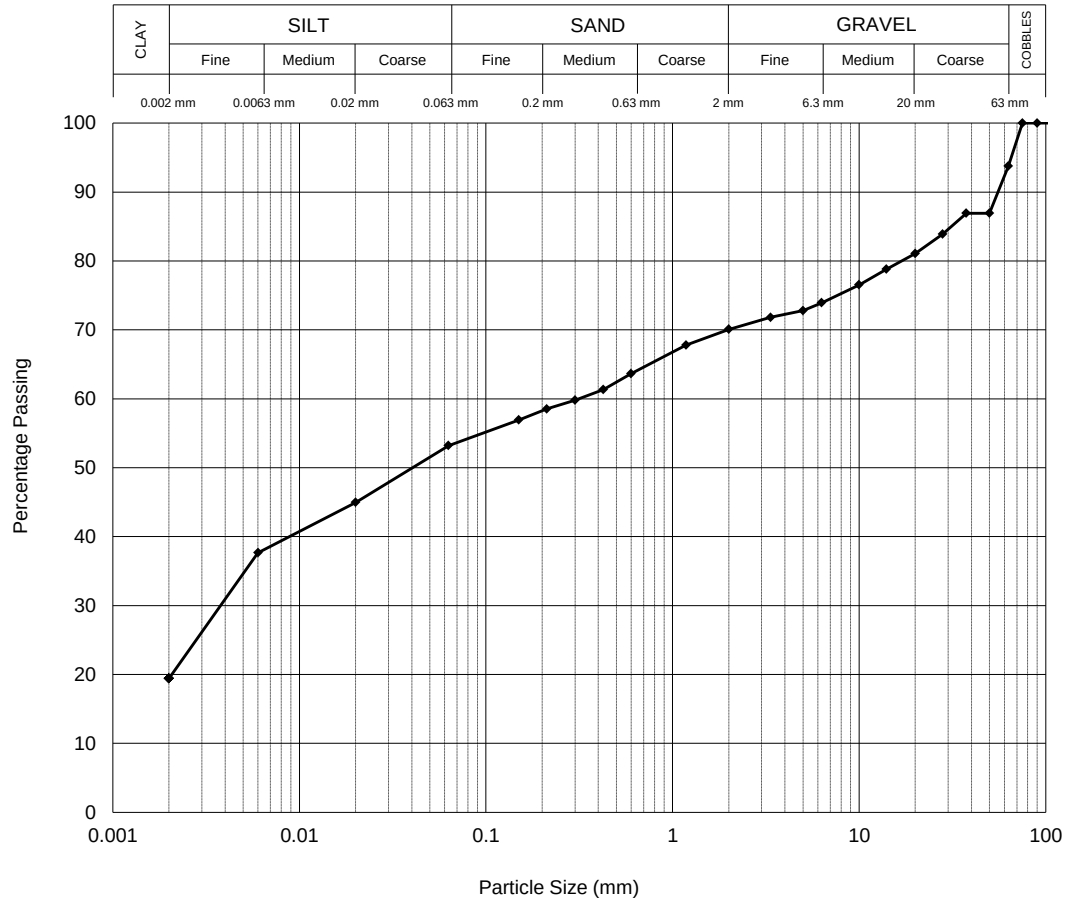
Description

Yellowish brown and cream gravelly structureless CHALK. Gravel is fine to cobble sized chalk.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	94
50.0 mm	87
37.5 mm	87
28.0 mm	84
20.0 mm	81
14.0 mm	79
10.0 mm	77
6.30 mm	74
5.00 mm	73
3.35 mm	72
2.00 mm	70
1.18 mm	68
600 µm	64
425 µm	61
300 µm	60
212 µm	59
150 µm	57
63 µm	53



Sedimentation	
Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	45
6 µm	38
2 µm	19

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	6
Gravel	24
Sand	17
Silt	34
Clay	19

Processed by MB
Checked and Approved by

S Burke

S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

Test Report By: GEOLABS Limited

Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

GEOLABS

PARTICLE SIZE DISTRIBUTION

BH / TP No.
Depth (m)
Sample Type

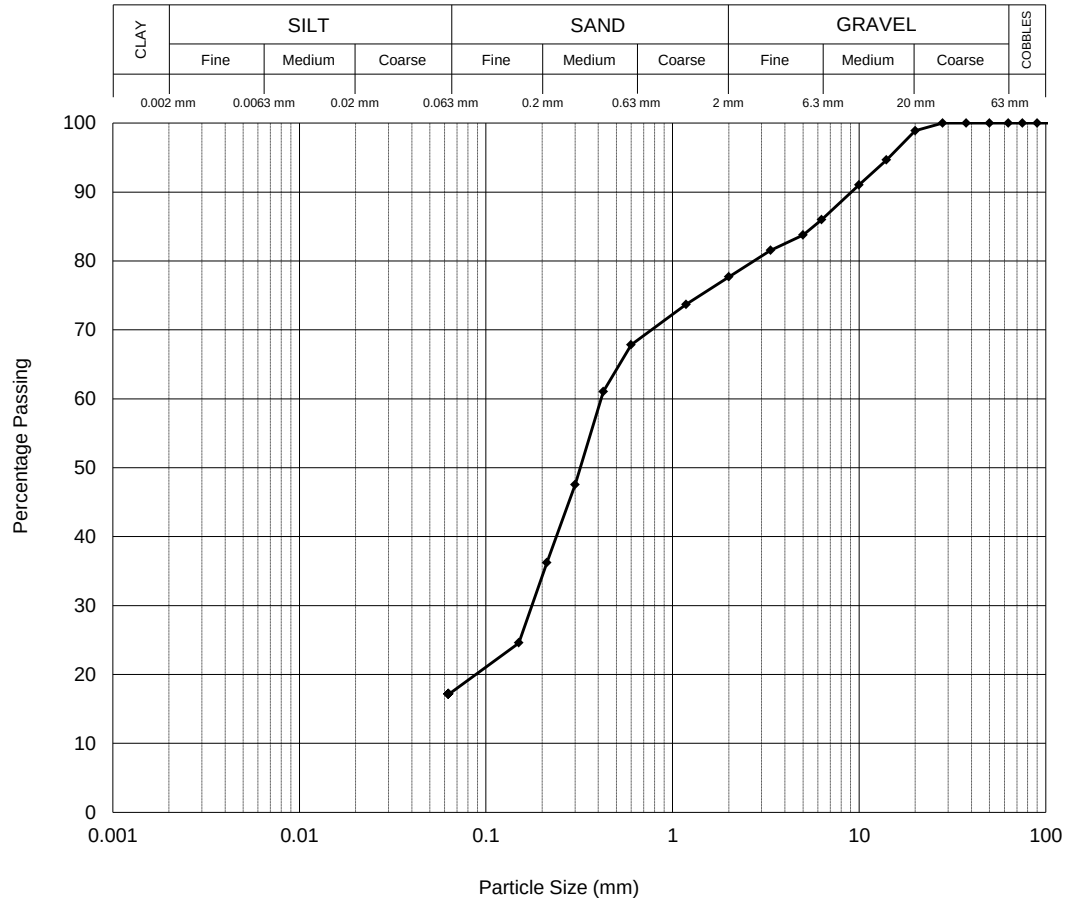
BH104
2.00
B

Description

Yellowish brown clayey gravelly SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	99
14.0 mm	95
10.0 mm	91
6.30 mm	86
5.00 mm	84
3.35 mm	82
2.00 mm	78
1.18 mm	74
600 µm	68
425 µm	61
300 µm	48
212 µm	36
150 µm	25
63 µm	17



Particle Proportions	
Cobbles	0
Gravel	22
Sand	61
Silt & Clay	17

Processed by MB
Checked and Approved by

S Burke

S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

GEOLABS



Page 1 of 1

Test Report By: GEOLABS Limited

Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

(Ref 1581584710)

PARTICLE SIZE DISTRIBUTION

BH / TP No.
Depth (m)
Sample Type

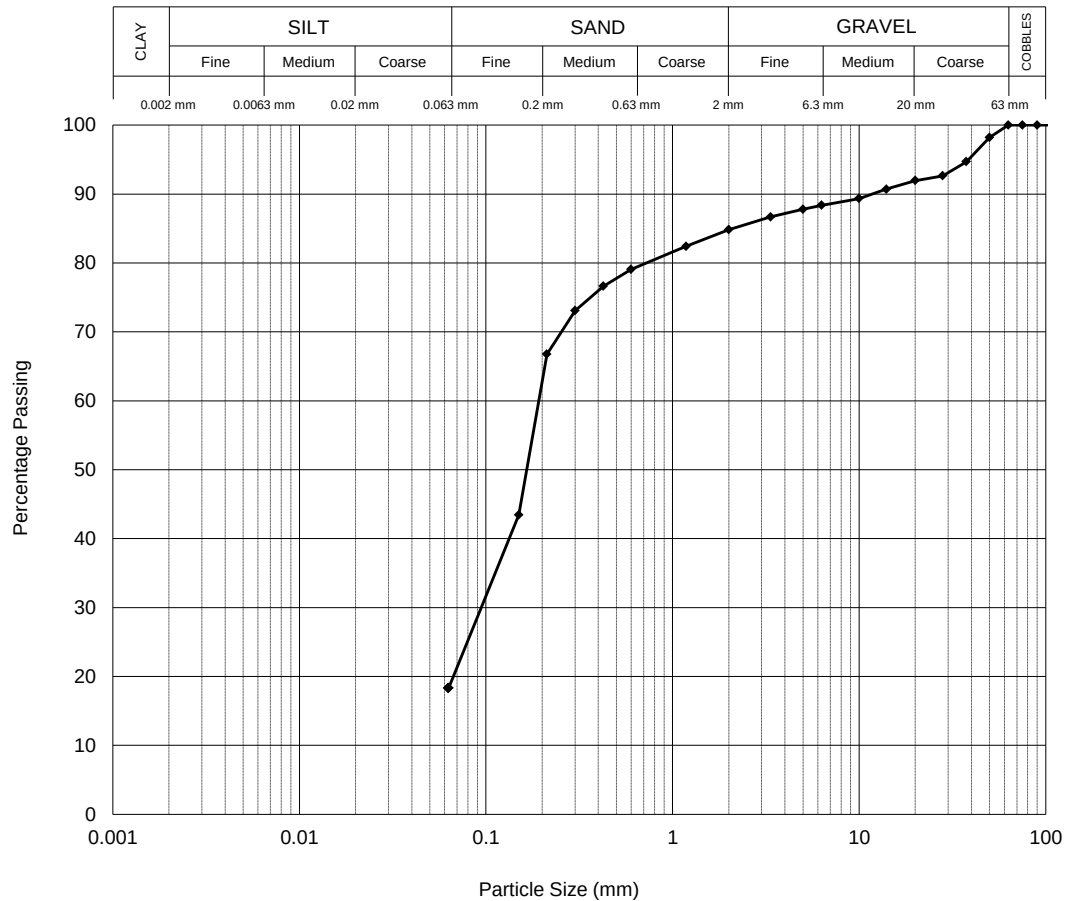
BH104
3.00
B

Description

Yellowish brown gravelly clayey SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	98
37.5 mm	95
28.0 mm	93
20.0 mm	92
14.0 mm	91
10.0 mm	89
6.30 mm	88
5.00 mm	88
3.35 mm	87
2.00 mm	85
1.18 mm	82
600 µm	79
425 µm	77
300 µm	73
212 µm	67
150 µm	43
63 µm	18



Particle Proportions	
Cobbles	0
Gravel	15
Sand	66
Silt & Clay	19

Processed by MB
Checked and Approved by

S Burke

S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

Test Report By: GEOLABS Limited

Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

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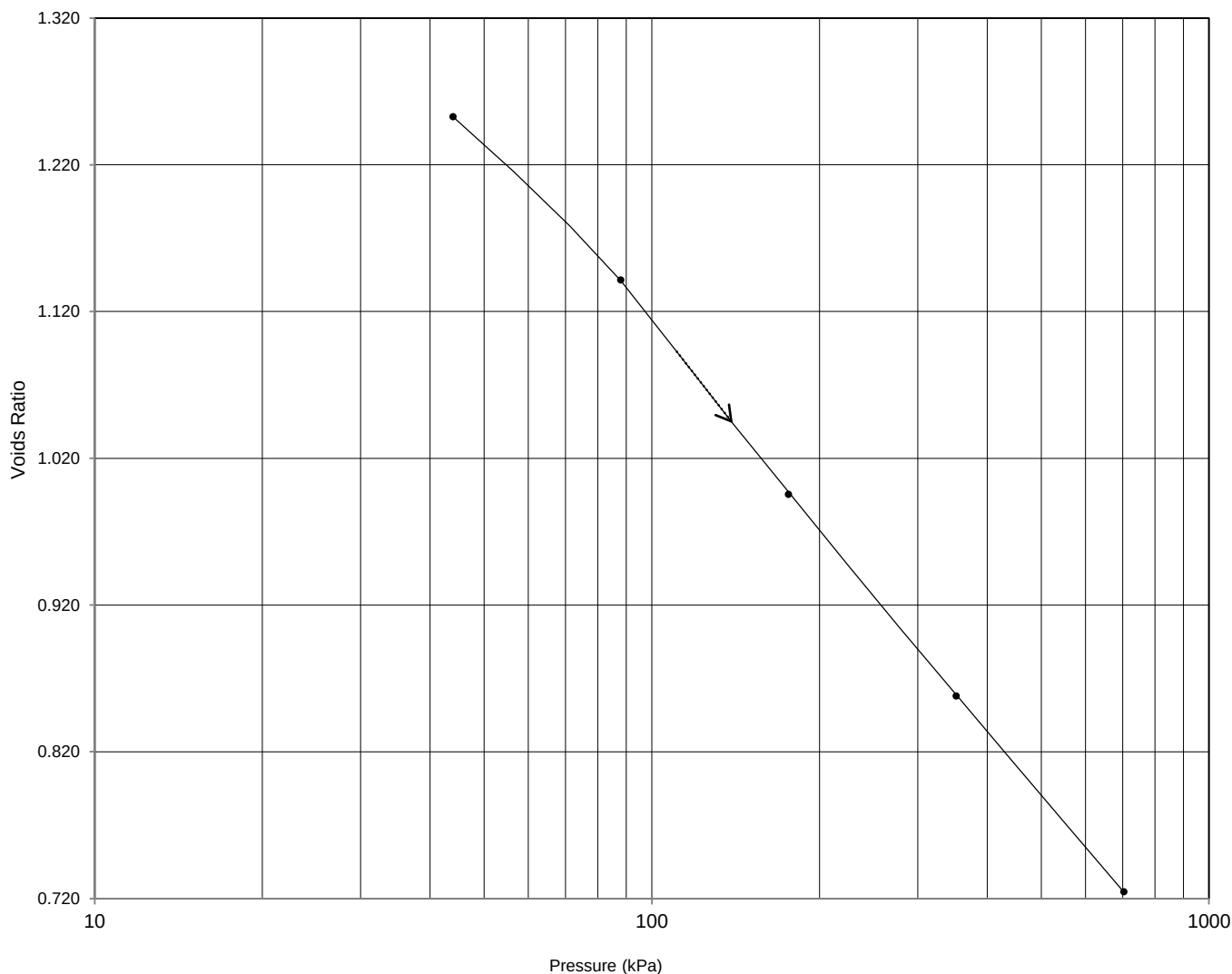


INCREMENTAL LOADING OEDOMETER TEST

Location BH105
 Depth (m) 2.20-2.65
 Sample Type U
 Depth within original (mm) 2.30-2.35
 Orientation within original Vertical
 Specimen preparation Undisturbed

Description:

Soft dark grey silty CLAY.



Initial Conditions:

Height	(mm)	19.06	Water Content	(%)	51.6	(from trimmings)
Diameter	(mm)	76.11	Voids Ratio		1.429	
Area	(mm ²)	4550	Bulk Density	(Mg/m ³)	1.69	
Volume	(cm ³)	86.72	Dry Density	(Mg/m ³)	1.11	
Laboratory Temperature	(°C)	19.3	Particle density	(Mg/m ³)	2.70 (Assumed)	
			Degree of Saturation	(%)	97.6	

Results have been corrected for equipment deformation

Checked and Approved by

J Sturges - Operations Manager
 06/02/2020

Project Number:

GEO / 30530

Project Name:

NORTH LITTLEHAMPTON
LP2128

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INCREMENTAL LOADING OEDOMETER TEST

Location BH105
 Depth (m) 2.20-2.65
 Sample Type U
 Depth within original (mm) 2.30-2.35
 Orientation within original Vertical
 Specimen preparation Undisturbed

Description:

Soft dark grey silty CLAY.

Pressure Range (kPa)	m_v (m ² /MN)	c_v (m ² /year)	Time Fitting		Voids Ratio
			Method	minutes	
0 - 44	1.7	0.80	t50	10.9	1.253
44 - 88	1.1	0.37	t50	20.7	1.141
88 - 176	0.78	0.34	t50	19.9	0.995
176 - 352	0.39	0.35	t50	17.0	0.858
352 - 704	0.20	0.42	t50	12.3	0.724

Checked and Approved by



J Sturges - Operations Manager
06/02/2020

Project Number:

GEO / 30530

Project Name:

NORTH LITTLEHAMPTON
LP2128

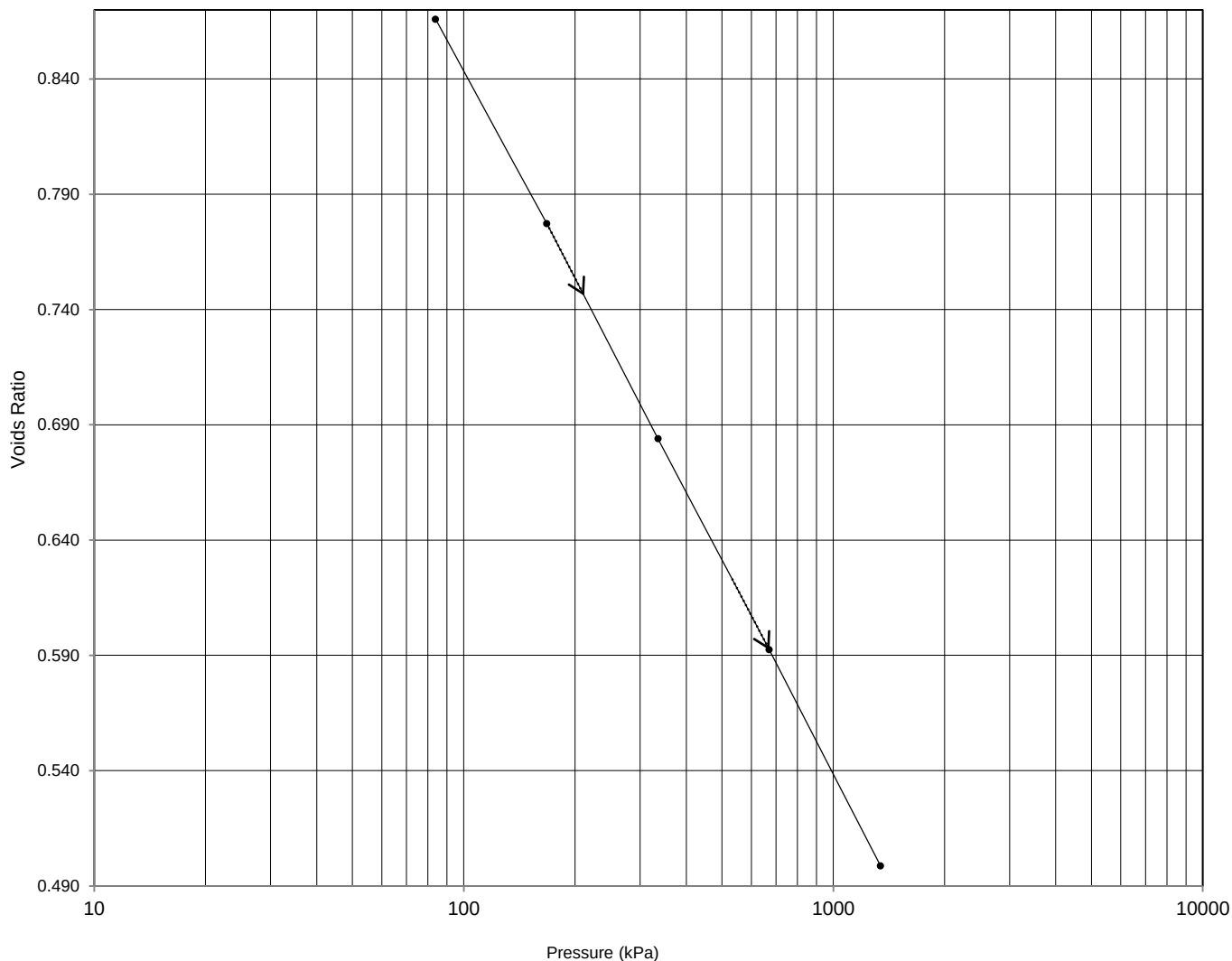
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INCREMENTAL LOADING OEDOMETER TEST

Location BH105
 Depth (m) 4.20-4.65
 Sample Type U
 Orientation within original Vertical
 Specimen preparation Undisturbed

Description:

Soft to very soft grey silty CLAY with rare 3-5mm pockets of organic matter and 4-6mm shell remains.



Initial Conditions:

Height (mm) 19.01
 Diameter (mm) 74.94
 Area (mm²) 4411
 Volume (cm³) 83.85
 Laboratory Temperature (°C) 20.9

Water Content (%)	Initial *	Final	(* from trimmings)
Voids Ratio	49.4	23.8	
Bulk Density (Mg/m ³)	1.279		
Dry Density (Mg/m ³)	1.77		
Particle density (Mg/m ³)	1.18		
Degree of Saturation (%)	2.70 (Assumed)	100.0	

Results have been corrected for equipment deformation

Checked and Approved by

S Burke

S Burke - Senior Technician
 12/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
 LP2128**

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INCREMENTAL LOADING OEDOMETER TEST

Location BH105
 Depth (m) 4.20-4.65
 Sample Type U
 Orientation within original Vertical
 Specimen preparation Undisturbed

Description:

Soft to very soft grey silty CLAY with rare 3-5mm pockets of organic matter and 4-6mm shell remains.

Pressure Range (kPa)	m_v (m ² /MN)	c_v (m ² /year)	Time Fitting		Voids Ratio
			Method	minutes	
0 - 84	2.2	0.44	t50	17.6	0.866
84 - 168	0.57	0.35	t50	17.0	0.777
168 - 336	0.31	0.47	t50	11.5	0.684
336 - 672	0.16	0.56	t50	8.74	0.592
672 - 1344	0.088	0.51	t50	8.39	0.499

Checked and Approved by



S Burke - Senior Technician
 12/02/2020

Project Number:

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**NORTH LITTLEHAMPTON
 LP2128**

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UNCONSOLIDATED UNDRAINED MULTISTAGE TRIAXIAL COMPRESSION

Location BH105
Depth (m) 4.20-4.65
Sample Type U

Description:

Soft dark grey silty CLAY with rare fine to medium gravel

Specimen Details

Specimen conditions	Undisturbed		
Length (mm)	199.7		
Diameter (mm)	103.2		
Moisture content (%)	43.7		
Bulk density (Mg/m ³)	1.79		
Dry density (Mg/m ³)	1.25		
Test Details	1	2	3
Latex membrane thickness (mm)	0.3	0.3	0.3
Specimen height prior to shearing (mm)	199.0	-	-
Membrane correction (kPa)	0.3	0.7	0.9
Mean rate of shear (%/min)	1.0	1.0	1.0
Cell pressure (kPa)	42	84	126
Strain at failure (%)	3.8	11.5	16.0
Maximum deviator stress (kPa)	10	17	19
Shear Stress Cu (kPa)	5	9	10

Mode of failure

Orientation of the sample

Vertical

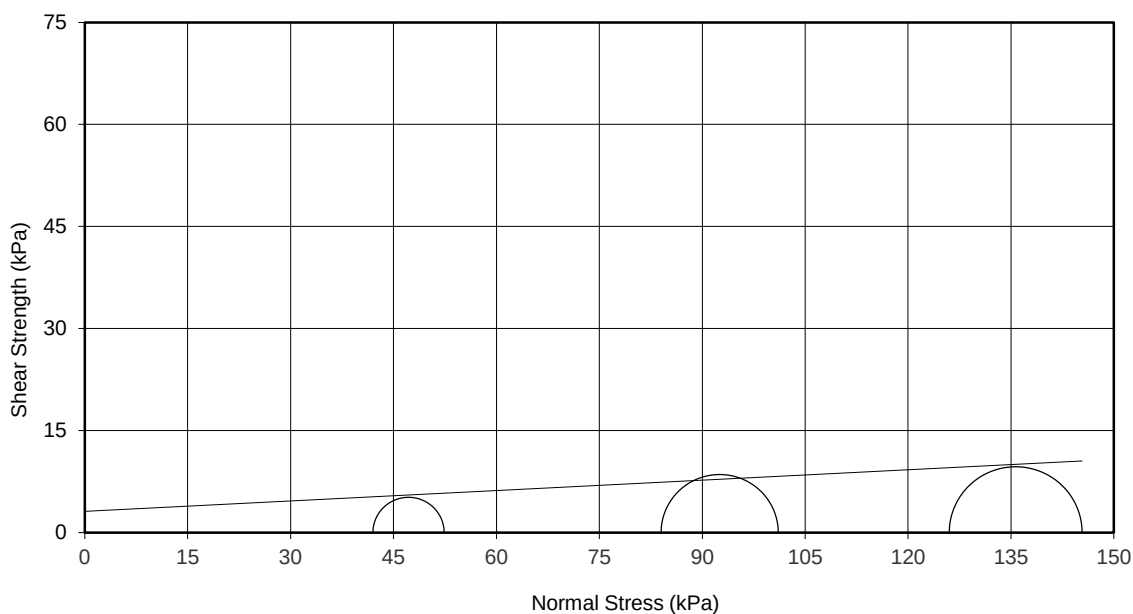
Distance from top of tube mm

100

Shear Strength Parameters

Cohesion (kPa) 3

Angle of Shear Resistance (°) 3.0



Processed by SB
Checked and Approved by

S Burke

S Burke - Senior Technician
13/02/2020

Project Number:

GEO / 30530

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

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SUMMARY OF LIQUID AND PLASTIC LIMIT TESTS

Location	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Percentage Passing 425µm %	Atterberg Classification	Test Type	Sample Condition
BH103	1.00	B1	B	Brown and grey gravelly sandy silty CLAY. Gravel is flint and concrete.	20.0	34	20	14	63	CL	2	3
BH103	2.00	B2	B	Greyish brown and grey gravelly sandy silty CLAY. Gravel is fine to medium gravel sized chalk and concrete.	23.0	31	19	12	74	CL	2	3
BH103	3.00	B3	B	Brownish grey gravelly sandy silty CLAY. Gravel is flint and chalk.	29.5	30	20	10	76	CL	2	3
BH106	1.00	B1	B	Yellowish brown silty clayey structureless CHALK with some gravel sized chalk.	20.1	29	14	15	72	CL	2	3
BH111	1.00	B1	B	Yellowish brown and greyish brown sandy silty CLAY with rare gravel sized chalk.	20.2	36	17	19	92	CI	2	3
BH111	2.00	B3	B	Brown and grey sandy silty CLAY with rare gravel.	23.8	33	16	17	91	CL	2	3
BH111	3.00	B5	B	Cream and white gravel sized CHALK in a structureless chalk matrix.	24.9	30	18	12	51	CL	2	3
BH112	4.00	B6	B	Brown and light grey very gravelly sandy silty CLAY. Gravel is flint and chalk.	29.5	55	24	31	45	CH	2	3
BH112	5.00	B7	B	Brownish grey and white gravelly silty CLAY. Gravel is chalk.	40.0	52	22	30	69	CH	2	3
BH113	2.00	B3	B	Orangish brown and brown gravelly sandy silty CLAY.	19.7	28	16	12	81	CL	2	3
BH113	4.00	B6	B	Orangish brown and brown gravelly sandy silty CLAY. Gravel is chalk.	14.9	26	13	13	78	CL	2	3

Test Type:

- 1 - 1 point 80g / 30° fall cone method.
 2 - 4 point 80g / 30° fall cone method.
 3 - Non plastic determination.

Sample condition:

- 1 - As Received
 2 - Air Dried
 3 - Washed & Air Dried

Checked and Approved by:



J Sturges - Operations Manager
 27/02/2020

Project Number:

GEO / 30617

Project Name:

NORTH LITTLEHAMPTON
 LP2128

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SATURATION MOISTURE CONTENT OF CHALK

Location	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 %	Bulk Density Mg/m ³	Dry Density Mg/m ³	Saturation Moisture Content %	Porosity %
BH103	3.50	B5	B	White CHALK.	14.6	2.19	1.91	15	29
BH103	7.00	D10	D	White CHALK.	18.0	2.13	1.81	18	33
BH103	10.00	B14	B	Cream and white CHALK.	13.4	2.23	1.97	14	27
BH103	13.00	D18	D	White CHALK.	13.5	2.21	1.95	14	28
BH106	2.00	B4	B	Cream and white CHALK.	20.2	2.08	1.73	21	36
BH106	3.00	D6	D	White CHALK.	19.3	2.10	1.76	20	35
BH106	6.00	D11	D	White CHALK.	22.1	2.06	1.69	22	37
BH106	7.00	D13	D	White CHALK.	19.7	2.08	1.74	20	36
BH106	9.00	D16	D	White CHALK.	15.9	2.18	1.88	16	30
BH106	11.50	D20	D	White CHALK.	20.7	2.09	1.73	21	36
BH106	14.50	D24	D	White CHALK.	16.9	2.07	1.77	19	34
BH106	16.00	D26	D	White CHALK.	18.6	2.11	1.78	19	34
BH111	4.00	B7	B	White CHALK.	18.6	2.10	1.77	19	34
BH111	6.50	B11	B	White CHALK.	17.1	2.14	1.83	18	32
BH111	9.50	B15	B	White CHALK.	19.8	2.07	1.73	21	36

Notes

Checked and Approved by:


J Sturges - Operations Manager
27/02/2020

Project Number:

GEO / 30617

Project Name:

**NORTH LITTLEHAMPTON
LP2128****GEOLABS®**

SATURATION MOISTURE CONTENT OF CHALK

Location	Depth m	Sample Ref	Sample Type	Description	Water Content BS EN ISO 17892-1 : 2014 %	Bulk Density Mg/m ³	Dry Density Mg/m ³	Saturation Moisture Content %	Porosity %
BH111	12.50	D19	D	White CHALK.	16.6	2.17	1.86	17	31
BH111	15.50	D23	D	White CHALK.	15.5	2.17	1.88	16	30
BH111	18.00	D27	D	White CHALK.	22.0	2.07	1.70	22	37
BH111	21.50	D31	D	White CHALK.	16.8	2.13	1.82	18	33
BH112	5.50	B9	B	Cream and white CHALK.	16.1	2.18	1.88	16	30
BH112	7.00	B10	B	White CHALK.	16.4	2.15	1.85	17	31
BH112	9.50	B14	B	White CHALK.	18.1	2.14	1.81	18	33
BH112	12.50	B18	B	White CHALK.	21.3	2.08	1.71	21	37
BH112	15.50	D22	D	White CHALK.	21.5	2.05	1.69	22	37
BH112	18.50	D26	D	White CHALK.	15.3	2.20	1.91	15	29
BH112	23.00	D32	D	White CHALK.	20.1	2.08	1.73	21	36
BH112	24.50	D34	D	White CHALK.	14.2	2.19	1.92	15	29
BH113	5.00	B8	B	White CHALK.	20.6	2.06	1.71	21	37
BH113	7.00	D11	D	White iron stained CHALK.	21.5	2.08	1.71	21	37
BH113	8.00	B13	B	White CHALK.	21.6	2.06	1.69	22	37

Notes

Checked and Approved by:


J Sturges - Operations Manager
27/02/2020

Project Number:

GEO / 30617

Project Name:

**NORTH LITTLEHAMPTON
LP2128****GEOLABS®**

Notes

J Sturges - Operations Manager
27/02/2020

Project Name:

NORTH LITTLEHAMPTON
LP2128



PARTICLE SIZE DISTRIBUTION

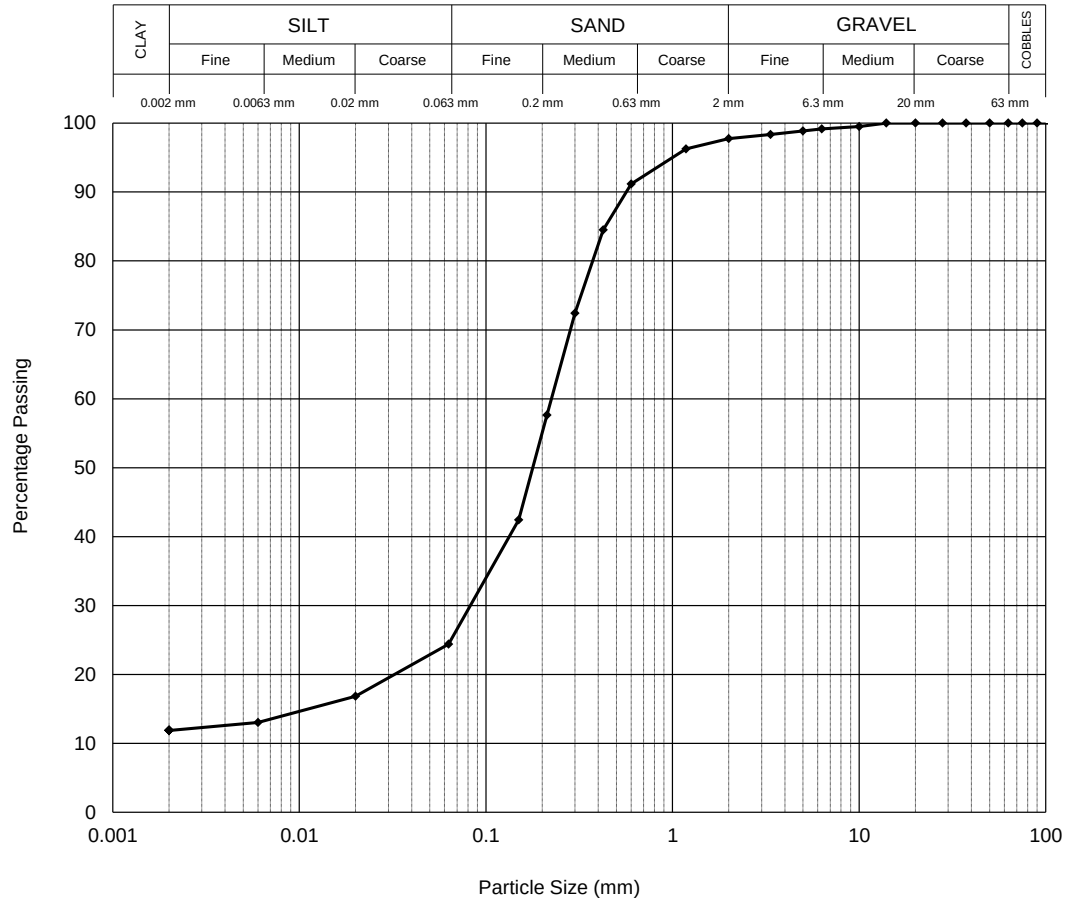
BH / TP No. BH113
 Sample Ref B1
 Depth (m) 1.00
 Sample Type B

Description

Brown clayey silty SAND with rare fine to medium gravel.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
 BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	99
6.30 mm	99
5.00 mm	99
3.35 mm	98
2.00 mm	98
1.18 mm	96
600 µm	91
425 µm	85
300 µm	72
212 µm	58
150 µm	42
63 µm	24



Sedimentation	
Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	17
6 µm	13
2 µm	12

Particle Proportions	
Cobbles	0
Gravel	2
Sand	73
Silt	13
Clay	12

Particle Density 2.70(A) Mg/m³

Processed by JS
 Checked and Approved by

J Sturges - Operations Manager
 28/02/2020

Project Number:

GEO / 30617

Project Name:

**NORTH LITTLEHAMPTON
 LP2128**

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Page 1 of 1

(Ref 1582908761)

Test Report By GEOLABS Limited

Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : Leap Environmental Limited, Southern Coast Regional Office, Victoria Road, Burgess Hill, West Sussex, RH15 9LR

SUMMARY OF CHEMICAL TESTS ON SOIL

Location	Depth m	Sample Ref	Sample Type	pH Value	Total Acid Soluble Sulphate as SO ₄ %	Water Soluble Sulphate as SO ₄ 2:1 Water:Soil Extract g/l	Total Sulphur %	Water Soluble Chloride g/l	Water Soluble Nitrate g/l	Magnesium g/l	Organic Content %	Mass Loss on Ignition %	Carbonate Content %
BH103	1.00	B1	B	10.2	0.15	0.31	0.054	-	-	-	-	-	-
BH103	3.00	B3	B	8.8	0.091	0.18	0.052	-	-	-	-	-	-
BH106	1.00	B1	B	8.5	0.043	0.023	0.019	-	-	-	-	-	-
BH111	1.00	B1	B	8.5	0.016	0.031	0.012	-	-	-	-	-	-
BH111	2.00	B3	B	7.8	0.048	0.13	0.025	-	-	-	-	-	-
BH111	3.00	B5	B	8.7	0.030	< 0.010	0.011	-	-	-	-	-	-
BH112	5.00	B7	B	10.7	0.13	0.21	0.056	-	-	-	-	-	-
BH113	2.00	B3	B	8.3	0.010	0.047	< 0.010	-	-	-	-	-	-
BH113	4.00	B6	B	9.1	0.024	0.012	0.011	-	-	-	-	-	-
TP115	1.00		B	8.1	0.061	0.11	0.044	-	-	-	-	-	-
TP116	1.00		D	7.6	0.031	0.019	0.019	-	-	-	-	-	-
TP120	1.00		D	8.4	0.010	0.018	0.011	-	-	-	-	-	-
TP127	0.60		D	7.3	0.037	0.055	0.019	-	-	-	-	-	-
TP211	0.50		D	8.2	0.024	0.057	0.014	-	-	-	-	-	-
TP212	0.90		D	8.1	0.016	0.014	0.011	-	-	-	-	-	-
TP224	0.80		D	8.2	0.039	0.048	0.028	-	-	-	-	-	-

Tested by Chemtest Ltd : MCERTS / UKAS No 2183

Checked and Approved by:



J Sturges - Operations Manager
28/02/2020

Project Number:

GEO / 30617

Project Name:

**NORTH LITTLEHAMPTON
LP2128**

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Tested by Chemtest Ltd : MCERTS / UKAS No 2183

GEOLABSPage 2 of 2
(Ref 1582908382)

APPENDIX H – Soil Screening Tables

Soil Screening Tables

LP2128 North Littlehampton - A2 and B6 - Lab Results

			Sample Location:				TP135	TP136	TP137	TP138	TP139	BS1	BS2
			Depth (m):	0.2			0.6	0.2	0.4	0.15	0.15	0.15	
			Date Sampled:	04/12/2019			04/12/2019	04/12/2019	04/12/2019	04/12/2019	04/12/2019	04/12/2019	
			Land Parcel:	B6			B6	A2	A2	A2	A2	A2	
			Matrix:			Superficial	Superficial	Superficial	Superficial	Superficial	Stockpile	Stockpile	
			Screening Values										
Determinand	Units	LOD	Resi	Source	N	N>GAC							
Miscellaneous													
Acid Neutralisation Capacity	mol/kg	0.1											
Loss On Ignition (450°C)	%	0.01											
pH	pH units	0.1	n.v.	-	7	0	7.4	7.7	7.1	7.4	8.1	7.8	7.3
Total Organic Carbon	%	0.1	n.v.	-	7	0	1.1	0.38	0.5	0.31	0.37	0.69	0.46
Calculated Soil Organic Matter	%				0	0							
Metals													
Arsenic	mg/kg	2	37	C4SL	7	0	10.5	13.4	10.4	12.4	13.1	11.1	13.1
Cadmium	mg/kg	0.1	22	C4SL	7	0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	0.5	910	S4UL	7	0	20	35	22.6	35.5	30.1	28	36.3
Chromium VI	mg/kg	1	21	C4SL	7	0	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Copper	mg/kg	2	2,400	S4UL	7	0	20.3	21.6	18.9	21.3	21.7	20.4	21.4
Lead	mg/kg	2	200	C4SL	7	0	36.2	17.1	19.8	15.5	15.8	19.5	18.1
Mercury	mg/kg	1	40	S4UL	7	0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	mg/kg	0.5	130	S4UL	7	0	14.8	26.7	15.4	25.3	24.1	19.7	24.6
Selenium	mg/kg	3	250	S4UL	7	0	<1	<1	<1	<1	<1	<1	<1
Zinc	mg/kg	2	3,700	S4UL	7	0	62.5	64.6	54.8	58.2	61.9	69.9	67
Asbestos													
Asbestos Identification	-	-	Presence		7	0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Asbestos Quantification	%	0.001	Presence										
Polycyclic Aromatic Hydrocarbons (USEPA 16)													
Benzo(a)pyrene	mg/kg	0.1	5.0	C4SL	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	mg/kg	0.1	2.3	S4UL	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
Benzo(a)anthracene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	5	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	n.v.	-	7	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PAH (total)	mg/kg	0.1	-	-	7	0	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5	<0.4
MG = Made Ground Superficial = River Terrace Deposits, Raised Beach Deposits, Raised Marine Deposits Stockpile = Overburden from the archeological dig area in Parcels A2 and B6													

			Sample Location:				HP140	HP141	HP142
			Depth (m):	0.15			0.15	0.8	
			Date Sampled:	09/12/2019			09/12/2019	09/12/2019	
			Land Parcel:	S. Allotments			S. Allotments	S. Allotments	
			Matrix:	Superficial			Superficial	Superficial	
			Screening Values						
Determinand	Units	LOD	Allot	Source	N	N>GAC			
Miscellaneous									
Acid Neutralisation Capacity	mol/kg	0.1	n.v.	-	3	0	n/t	n/t	n/t
Loss On Ignition (450°C)	%	0.01					n/t	n/t	n/t
pH	pH units	0.1					7	6.2	6.9
Total Organic Carbon	%	0.1					0.52	1.6	0.31
Calculated Soil Organic Matter	%						0	0	
Metals									
Arsenic	mg/kg	2	49	C4SL	3	0	9.5	10.4	10
Cadmium	mg/kg	0.1	3.9	C4SL	3	0	<0.5	<0.5	<0.5
Chromium	mg/kg	0.5	18000	S4UL	3	0	24.2	25	28.4
Chromium VI	mg/kg	1	170	C4SL	3	0	<0.8	<0.8	<0.8
Copper	mg/kg	2	520	S4UL	3	0	17.8	24.8	14.4
Lead	mg/kg	2	80	C4SL	3	0	22.2	49	13.8
Mercury	mg/kg	1	19	S4UL	3	0	<0.5	<0.5	<0.5
Nickel	mg/kg	0.5	53	S4UL	3	0	17.7	17.4	17.7
Selenium	mg/kg	3	88	S4UL	3	0	<1	<1	<1
Zinc	mg/kg	2	620	S4UL	3	0	56.8	70	54.9
Asbestos									
Asbestos Identification	-	-	Presence		3	0	N.D.	N.D.	N.D.
Asbestos Quantification	%	0.001	Presence						
Polycyclic Aromatic Hydrocarbons (USEPA 16)									
Benzo(a)pyrene	mg/kg	0.1	5.7	C4SL	3	0	<0.1	<0.1	<0.1
Naphthalene	mg/kg	0.1	4.1	S4UL	3	0	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	5	-	3	0	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	n.v.		3	0	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	n.v.	-	3	0	<0.1	<0.1	<0.1
PAH (total)	mg/kg	0.1	-	-	3	0	<0.4	<0.4	<0.4
OrganoChlorine Pesticides									
alpha-HCH	ug/kg	10	35		1		n/t	<10	n/t
beta_HCH	ug/kg	10	13		1		n/t	<10	n/t
gamma-HCH	ug/kg	10	9.2		1		n/t	<10	n/t
delta-HCH	ug/kg	10			1		n/t	<10	n/t
Heptachlor	ug/kg	10			1		n/t	<10	n/t
Aldrin	ug/kg	10	3200		1		n/t	<10	n/t
Heptachlor expoxide	ug/kg	10			1		n/t	<10	n/t
trans-Chlordane	ug/kg	10			1		n/t	<10	n/t
alpha cis-Chlordane	ug/kg	10			1		n/t	<10	n/t
p,p-DDE	ug/kg	10			1		n/t	<10	n/t
Dieldrin	ug/kg	10	170		1		n/t	<10	n/t
Endrin	ug/kg	10			1		n/t	<10	n/t
p,p-DDD	ug/kg	10			1		n/t	<10	n/t
Endosulfan II	ug/kg	10			1		n/t	<10	n/t
Endrin aldehyde	ug/kg	10			1		n/t	<10	n/t
p,p-DDT	ug/kg	10			1		n/t	<10	n/t
Endosulphan sulphate	ug/kg	10			1		n/t	<10	n/t
Methoxychlor	ug/kg	10			1		n/t	<10	n/t
Endrin ketone	ug/kg	10			1		n/t	<10	n/t
Superficial = River Terrace Deposits, Raised Beach Deposits, Raised Marine Deposits									

APPENDIX I – Groundwater Level Monitoring

Groundwater Level Monitoring

	17/01/2020		29/01/2020		07/02/2020		18/02/2020		04/03/2020		18/03/2020	
	Depth to water	Depth to base	Depth to water*	Depth to base*	Depth to water*	Depth to base*	Depth to water*	Depth to base*	Depth to water*	Depth to base*	Depth to water*	Depth to base*
BH101	5.62	7.23	5.63	7.13	5.36	7.01	5.34	7.10	5.40	7.05	5.25	7.10
BHX	n.r.	n.r.	n.r.	n.r.	5.58	9.95	n.r.	n.r.	5.46	9.95	n.r.	n.r.
WS103	0.80	3.20	0.66	3.01	0.80	3.11	0.45	2.95	0.50	3.00	0.50	3.05
WS104	1.70	1.95	1.58	1.86	1.20	1.55	1.35	1.95	1.20	1.95	1.25	2.00
BH104	5.61	6.00	3.08	6.43	2.50	5.91	n.r.	n.r.	n.r.	n.r.	2.33	5.93
HP101	n.r.	n.r.	Dry	0.96	Dry	0.85	Dry	0.90	Dry	0.85	Dry	0.90
BH106	n.r.	n.r.	2.70	5.77	2.47	5.20	2.60	5.68	2.55	5.70	2.72	5.80

Measurements from top of well cover

*Measurements from top of pipe

*Measurements from top of pipe

*Measurements from top of pipe

*Measurements from top of pipe

*Measurements from top of pipe

APPENDIX J – Preliminary Waste Classification

**Preliminary Waste
Classification**

Waste Classification Report



7EPBL-BFAME-6RNUB

Job name

LP2128 A2_B6

Description/Comments
Project
Site
Related Documents

#	Name	Description
None		

Waste Stream Template

Leap Standard Classification WM3

Classified by

Name:
Martin Weil
Date:
18 Mar 2020 10:52 GMT
Telephone:
01306 646510

Company:
Leap Environmental
The Atrium
Curtis Road
Dorking
RH4 1XA

HazWasteOnline™ Training Record:

Course	Date
Hazardous Waste Classification	-
Advanced Hazardous Waste Classification	-

Report

Created by: Martin Weil
Created date: 18 Mar 2020 10:52 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP135	0.2	Non Hazardous		3
2	TP136	0.6	Non Hazardous		5
3	TP137	0.2	Non Hazardous		7
4	TP138	0.4	Non Hazardous		9
5	TP139	0.15	Non Hazardous		11
6	BS1	0.15	Non Hazardous		13
7	BS2	0.15	Non Hazardous		15
8	MTP23	0.00-1.20	Non Hazardous		17
9	MTP23[2]	1.20-2.20	Non Hazardous		19
10	MTP24	0.00-1.10	Non Hazardous		21
11	MTP24[2]	1.10-2.00	Non Hazardous		23
12	MTP25	0.00-1.80	Non Hazardous		25



#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
13	MTP7	0.4	Non Hazardous		27
14	MTP7[2]	0.40-1.20	Non Hazardous		29

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	31
Appendix B: Rationale for selection of metal species	32
Appendix C: Version	33

Classification of sample: TP135

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP135	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.4	pH		7.4	pH	7.4 pH		
2	arsenic { arsenic trioxide }				10.5	mg/kg	1.32	13.863	mg/kg	0.00139 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				20	mg/kg	1.462	29.231	mg/kg	0.00292 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				20.3	mg/kg	1.126	22.856	mg/kg	0.00229 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	36.2	mg/kg		36.2	mg/kg	0.00362 %		
	082-001-00-6											
7	mercury { mercury dichloride }				0.5	mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				14.8	mg/kg	1.579	23.377	mg/kg	0.00234 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				62.5	mg/kg	2.469	154.331	mg/kg	0.0154 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8									
12	acenaphthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9									
13	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7									
14	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8									
15	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		205-883-8	191-24-2							
Total:								0.0283 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP136

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP136	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.6 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.7	pH		7.7	pH	7.7 pH		
2	arsenic { arsenic trioxide }				13.4	mg/kg	1.32	17.692	mg/kg	0.00177 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				35	mg/kg	1.462	51.154	mg/kg	0.00512 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				21.6	mg/kg	1.126	24.319	mg/kg	0.00243 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	17.1	mg/kg		17.1	mg/kg	0.00171 %		
	082-001-00-6											
7	mercury { mercury dichloride }				0.5	mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				26.7	mg/kg	1.579	42.173	mg/kg	0.00422 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				64.6	mg/kg	2.469	159.517	mg/kg	0.016 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8									
12	acenaphthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9									
13	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7									
14	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8									
15	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		205-883-8	191-24-2							
Total:								0.0315 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP137

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP137	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.1	pH		7.1	pH	7.1 pH		
2	arsenic { arsenic trioxide }				10.4	mg/kg	1.32	13.731	mg/kg	0.00137 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				22.6	mg/kg	1.462	33.031	mg/kg	0.0033 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				18.9	mg/kg	1.126	21.279	mg/kg	0.00213 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	19.8	mg/kg		19.8	mg/kg	0.00198 %		
	082-001-00-6											
7	mercury { mercury dichloride }				0.5	mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				15.4	mg/kg	1.579	24.324	mg/kg	0.00243 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				54.8	mg/kg	2.469	135.317	mg/kg	0.0135 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8									
12	acenaphthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9									
13	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7									
14	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8									
15	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		205-883-8	191-24-2							
Total:								0.0251 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP138

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP138	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.4 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.4	pH		7.4	pH	7.4 pH		
2	arsenic { arsenic trioxide }				12.4	mg/kg	1.32	16.372	mg/kg	0.00164 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				35.5	mg/kg	1.462	51.885	mg/kg	0.00519 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				21.3	mg/kg	1.126	23.981	mg/kg	0.0024 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	15.5	mg/kg		15.5	mg/kg	0.00155 %		
	082-001-00-6											
7	mercury { mercury dichloride }				0.5	mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				25.3	mg/kg	1.579	39.961	mg/kg	0.004 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				58.2	mg/kg	2.469	143.713	mg/kg	0.0144 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8									
12	acenaphthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9									
13	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7									
14	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8									
15	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		205-883-8	191-24-2							
Total:								0.0294 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP139

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP139	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.15 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				8.1	pH		8.1	pH	8.1 pH		
2	arsenic { arsenic trioxide }				13.1	mg/kg	1.32	17.296	mg/kg	0.00173 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				30.1	mg/kg	1.462	43.993	mg/kg	0.0044 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				21.7	mg/kg	1.126	24.432	mg/kg	0.00244 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	15.8	mg/kg		15.8	mg/kg	0.00158 %		
	082-001-00-6											
7	mercury { mercury dichloride }				0.5	mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				24.1	mg/kg	1.579	38.066	mg/kg	0.00381 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				61.9	mg/kg	2.469	152.849	mg/kg	0.0153 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8									
12	acenaphthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9									
13	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7									
14	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8									
15	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		205-883-8	191-24-2							
Total:								0.0296 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: BS1

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
BS1	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.15 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.8	pH		7.8	pH	7.8 pH		
2	arsenic { arsenic trioxide }				11.1	mg/kg	1.32	14.656	mg/kg	0.00147 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				28	mg/kg	1.462	40.924	mg/kg	0.00409 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				20.4	mg/kg	1.126	22.968	mg/kg	0.0023 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	19.5	mg/kg		19.5	mg/kg	0.00195 %		
	082-001-00-6											
7	mercury { mercury dichloride }				0.5	mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				19.7	mg/kg	1.579	31.116	mg/kg	0.00311 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				69.9	mg/kg	2.469	172.604	mg/kg	0.0173 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8									
12	acenaphthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9									
13	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7									
14	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8									
15	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.5 mg/kg		0.5 mg/kg	0.00005 %		
		205-883-8	191-24-2							
Total:								0.0305 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: BS2

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	BS2	LoW Code:	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	0.15 m	Entry:		17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.3	pH		7.3	pH	7.3 pH		
2	arsenic { arsenic trioxide }				13.1	mg/kg	1.32	17.296	mg/kg	0.00173 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				36.3	mg/kg	1.462	53.054	mg/kg	0.00531 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				21.4	mg/kg	1.126	24.094	mg/kg	0.00241 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	18.1	mg/kg		18.1	mg/kg	0.00181 %		
	082-001-00-6											
7	mercury { mercury dichloride }				0.5	mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				24.6	mg/kg	1.579	38.856	mg/kg	0.00389 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				67	mg/kg	2.469	165.443	mg/kg	0.0165 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8									
12	acenaphthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9									
13	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7									
14	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8									
15	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
		205-883-8	191-24-2							
Total:								0.032 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: MTP23

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MTP23	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.00-1.20 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	pH				7.1 pH		7.1	pH	7.1 pH		
2	arsenic { arsenic trioxide }				9.9 mg/kg	1.32	13.071	mg/kg	0.00131 %		
	033-003-00-0	215-481-4	1327-53-3								
3	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514	mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6								
4	chromium { chromium(III) oxide }				24 mg/kg	1.462	35.077	mg/kg	0.00351 %		
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				16 mg/kg	1.126	18.014	mg/kg	0.0018 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	16 mg/kg		16	mg/kg	0.0016 %		
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel dihydroxide }				16 mg/kg	1.579	25.272	mg/kg	0.00253 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
9	zinc { zinc sulphate }				53 mg/kg	2.469	130.873	mg/kg	0.0131 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
10	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
11	acenaphthylene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8								
12	acenaphthene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9								
13	fluorene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7								
14	phenanthrene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8								
15	anthracene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
16	fluoranthene	205-912-4	206-44-0		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
17	pyrene	204-927-3	129-00-0		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
18	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
19	chrysene	601-048-00-0	205-923-4	218-01-9	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
20	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
21	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
22	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
23	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
24	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
25	benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26	confirm TPH has NOT arisen from diesel or petrol				☒							
27	TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
28	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
29	toluene	601-021-00-3	203-625-9	108-88-3	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
30	benzene	601-020-00-8	200-753-7	71-43-2	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
31	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
32	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
Total:										0.0257 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: MTP23[2]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MTP23[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.20-2.20 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.3	pH		7.3	pH	7.3 pH		
2	arsenic { arsenic trioxide }				17	mg/kg	1.32	22.446	mg/kg	0.00224 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.4	mg/kg	1.285	0.514	mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				31	mg/kg	1.462	45.308	mg/kg	0.00453 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	12	mg/kg		12	mg/kg	0.0012 %		
	082-001-00-6											
7	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				21	mg/kg	1.579	33.169	mg/kg	0.00332 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				46	mg/kg	2.469	113.588	mg/kg	0.0114 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8									
12	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
13	fluorene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7									
14	phenanthrene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8									
15	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
16	fluoranthene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-912-4	206-44-0									
17	pyrene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		204-927-3	129-00-0									
18	benzo[a]anthracene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		601-033-00-9	200-280-6									
19	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4									
20	benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9									
21	benzo[k]fluoranthene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		601-036-00-5	205-916-6									
22	benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5									
23	indeno[123-cd]pyrene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-893-2	193-39-5									
24	dibenz[a,h]anthracene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		601-041-00-2	200-181-8									
25	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
26	confirm TPH has NOT arisen from diesel or petrol				☒							
27	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
28	ethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-023-00-4	202-849-4									
29	toluene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-021-00-3	203-625-9									
30	benzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-020-00-8	200-753-7									
31	xylene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]									
			95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
32	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5										
Total:										0.0259 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: MTP24

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MTP24	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.00-1.10 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	pH				7.1 pH		7.1	pH	7.1 pH		
2	arsenic { arsenic trioxide }				12 mg/kg	1.32	15.844	mg/kg	0.00158 %		
	033-003-00-0	215-481-4	1327-53-3								
3	cadmium { cadmium sulfide }			1	0.4 mg/kg	1.285	0.514	mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6								
4	chromium { chromium(III) oxide }				32 mg/kg	1.462	46.77	mg/kg	0.00468 %		
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				16 mg/kg	1.126	18.014	mg/kg	0.0018 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	14 mg/kg		14	mg/kg	0.0014 %		
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel dihydroxide }				19 mg/kg	1.579	30.01	mg/kg	0.003 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
9	zinc { zinc sulphate }				60 mg/kg	2.469	148.158	mg/kg	0.0148 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
10	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
11	acenaphthylene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8								
12	acenaphthene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9								
13	fluorene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7								
14	phenanthrene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8								
15	anthracene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
16	fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-912-4	206-44-0								
17	pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		204-927-3	129-00-0								
18	benzo[a]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-033-00-9	200-280-6								
19	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		601-048-00-0	205-923-4								
20	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		601-034-00-4	205-911-9								
21	benzo[k]fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-036-00-5	205-916-6								
22	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		601-032-00-3	200-028-5								
23	indeno[123-cd]pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-893-2	193-39-5								
24	dibenz[a,h]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-041-00-2	200-181-8								
25	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
26	confirm TPH has NOT arisen from diesel or petrol				☒						
27	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
28	ethylbenzene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-023-00-4	202-849-4								
29	toluene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-021-00-3	203-625-9								
30	benzene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-020-00-8	200-753-7								
31	xylene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]								
			95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
32	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
		006-007-00-5									
Total:									0.0292 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: MTP24[2]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MTP24[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.10-2.00 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.3	pH		7.3	pH	7.3 pH		
2	arsenic { arsenic trioxide }				22	mg/kg	1.32	29.047	mg/kg	0.0029 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				33	mg/kg	1.462	48.231	mg/kg	0.00482 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				15	mg/kg	1.126	16.888	mg/kg	0.00169 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	13	mg/kg		13	mg/kg	0.0013 %		
	082-001-00-6											
7	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				22	mg/kg	1.579	34.749	mg/kg	0.00347 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				47	mg/kg	2.469	116.057	mg/kg	0.0116 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8									
12	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
13	fluorene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7									
14	phenanthrene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8									
15	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
16	fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-912-4	206-44-0								
17	pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		204-927-3	129-00-0								
18	benzo[a]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-033-00-9	200-280-6								
19	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		601-048-00-0	205-923-4								
20	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		601-034-00-4	205-911-9								
21	benzo[k]fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-036-00-5	205-916-6								
22	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		601-032-00-3	200-028-5								
23	indeno[123-cd]pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-893-2	193-39-5								
24	dibenz[a,h]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-041-00-2	200-181-8								
25	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
26	confirm TPH has NOT arisen from diesel or petrol				☒						
27	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
28	ethylbenzene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-023-00-4	202-849-4								
29	toluene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-021-00-3	203-625-9								
30	benzene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-020-00-8	200-753-7								
31	xylene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]								
			95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
32	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
		006-007-00-5									
Total:									0.0277 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: MTP25

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MTP25	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.00-1.80 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7	pH		7	pH	7pH		
2	arsenic { arsenic trioxide }				8.7	mg/kg	1.32	11.487	mg/kg	0.00115 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.3	mg/kg	1.285	0.386	mg/kg	0.00003 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				25	mg/kg	1.462	36.539	mg/kg	0.00365 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	14	mg/kg		14	mg/kg	0.0014 %		
	082-001-00-6											
7	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				15	mg/kg	1.579	23.692	mg/kg	0.00237 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				52	mg/kg	2.469	128.403	mg/kg	0.0128 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8									
12	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
13	fluorene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7									
14	phenanthrene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8									
15	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
16	fluoranthene	205-912-4	206-44-0		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
17	pyrene	204-927-3	129-00-0		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
18	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
19	chrysene	601-048-00-0	205-923-4	218-01-9	<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
20	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
21	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
22	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
23	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
24	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
25	benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26	confirm TPH has NOT arisen from diesel or petrol				☒							
27	TPH (C6 to C40) petroleum group		TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
28	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
29	toluene	601-021-00-3	203-625-9	108-88-3	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
30	benzene	601-020-00-8	200-753-7	71-43-2	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
31	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
32	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
Total:										0.0249 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: MTP7

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MTP7	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.4 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	pH				7.2 pH		7.2 pH	7.2 pH		
2	arsenic { arsenic trioxide }				13 mg/kg	1.32	17.164 mg/kg	0.00172 %		
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium sulfide }			1	0.6 mg/kg	1.285	0.771 mg/kg	0.00006 %		
	048-010-00-4	215-147-8	1306-23-6							
4	chromium { chromium(III) oxide }				23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
		215-160-9	1308-38-9							
5	copper { dicopper oxide; copper (I) oxide }				17 mg/kg	1.126	19.14 mg/kg	0.00191 %		
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	110 mg/kg		110 mg/kg	0.011 %		
	082-001-00-6									
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel dihydroxide }				15 mg/kg	1.579	23.692 mg/kg	0.00237 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
9	zinc { zinc sulphate }				62 mg/kg	2.469	153.096 mg/kg	0.0153 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
10	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
11	acenaphthylene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8							
12	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
13	fluorene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7							
14	phenanthrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8							
15	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
16	fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-912-4	206-44-0								
17	pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		204-927-3	129-00-0								
18	benzo[a]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-033-00-9	200-280-6								
19	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		601-048-00-0	205-923-4								
20	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		601-034-00-4	205-911-9								
21	benzo[k]fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-036-00-5	205-916-6								
22	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		601-032-00-3	200-028-5								
23	indeno[123-cd]pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-893-2	193-39-5								
24	dibenz[a,h]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-041-00-2	200-181-8								
25	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
26	confirm TPH has NOT arisen from diesel or petrol				☒						
27	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
28	ethylbenzene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-023-00-4	202-849-4								
29	toluene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-021-00-3	203-625-9								
30	benzene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-020-00-8	200-753-7								
31	xylene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]								
			95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
32	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
		006-007-00-5									
Total:									0.0376 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: MTP7[2]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MTP7[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.40-1.20 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH				7.4	pH		7.4	pH	7.4 pH		
2	arsenic { arsenic trioxide }				11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3									
3	cadmium { cadmium sulfide }			1	0.4	mg/kg	1.285	0.514	mg/kg	0.00004 %		
	048-010-00-4	215-147-8	1306-23-6									
4	chromium { chromium(III) oxide }				23	mg/kg	1.462	33.616	mg/kg	0.00336 %		
		215-160-9	1308-38-9									
5	copper { dicopper oxide; copper (I) oxide }				10	mg/kg	1.126	11.259	mg/kg	0.00113 %		
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	11	mg/kg		11	mg/kg	0.0011 %		
	082-001-00-6											
7	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel dihydroxide }				15	mg/kg	1.579	23.692	mg/kg	0.00237 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
9	zinc { zinc sulphate }				50	mg/kg	2.469	123.465	mg/kg	0.0123 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
11	acenaphthylene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8									
12	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9									
13	fluorene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7									
14	phenanthrene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8									
15	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
16	fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-912-4	206-44-0								
17	pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		204-927-3	129-00-0								
18	benzo[a]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-033-00-9	200-280-6								
19	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		601-048-00-0	205-923-4								
20	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		601-034-00-4	205-911-9								
21	benzo[k]fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-036-00-5	205-916-6								
22	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		601-032-00-3	200-028-5								
23	indeno[123-cd]pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-893-2	193-39-5								
24	dibenz[a,h]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		601-041-00-2	200-181-8								
25	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
26	confirm TPH has NOT arisen from diesel or petrol				☒						
27	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
28	ethylbenzene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-023-00-4	202-849-4								
29	toluene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-021-00-3	203-625-9								
30	benzene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-020-00-8	200-753-7								
31	xylene				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]								
			95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
32	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
		006-007-00-5									
Total:									0.0237 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD Below limit of detection
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Appendix A: Classifier defined and non CLP determinands

• pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

• chromium(III) oxide (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

• lead compounds with the exception of those specified elsewhere in this Annex (worst case)

CLP index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 1; Carcinogenic to humans; Lead REACH Consortium considers some lead compounds Carcinogenic category 1A
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

• acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

• acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

• fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

• phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

• anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

• fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

• **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

• **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

• **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

• **confirm TPH has NOT arisen from diesel or petrol**

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

• **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

• **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

• **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on risk phrases

cadmium {cadmium sulfide}

Worst case species based on risk phrases

chromium {chromium(III) oxide}

CrVI below LoD

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

CrVI below LoD

mercury {mercury dichloride}

Worst case species based on risk phrases

nickel {nickel dihydroxide}

Worst case species based on risk phrases

zinc {zinc sulphate}

CrVI below LoD

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Worst case species

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**

HazWasteOnline Classification Engine Version: 2020.52.4178.8324 (21 Feb 2020)

HazWasteOnline Database: 2020.52.4178.8324 (21 Feb 2020)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

Waste Classification Report



WZ7HF-SJAPN-Q73XH

Job name

LP2128 Southern Allotments

Description/Comments

Project

Site

Related Documents

#	Name	Description
None		

Waste Stream Template

Leap Standard Classification WM3

Classified by

Name:
Martin Weil
Date:
18 Mar 2020 10:47 GMT
Telephone:
01306 646510

Company:
Leap Environmental
The Atrium
Curtis Road
Dorking
RH4 1XA

HazWasteOnline™ Training Record:

Course	Date
Hazardous Waste Classification	-
Advanced Hazardous Waste Classification	-

Report

Created by: Martin Weil
Created date: 18 Mar 2020 10:47 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	HP140	0.15	Non Hazardous		2
2	HP141	0.15	Non Hazardous		4
3	HP142	0.8	Non Hazardous		6
4	MWS30	0.5	Non Hazardous		8
5	MWS32[2]	1	Non Hazardous		10

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	12
Appendix B: Rationale for selection of metal species	13
Appendix C: Version	13

Classification of sample: HP140

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
HP140	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.15 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	pH				7 pH		7	pH	7pH		
2	arsenic { arsenic trioxide }				9.5 mg/kg	1.32	12.543	mg/kg	0.00125 %		
	033-003-00-0	215-481-4	1327-53-3								
3	cadmium { cadmium sulfide }			1	0.5 mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6								
4	chromium { chromium(III) oxide }				24.2 mg/kg	1.462	35.37	mg/kg	0.00354 %		
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				17.8 mg/kg	1.126	20.041	mg/kg	0.002 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	22.2 mg/kg		22.2	mg/kg	0.00222 %		
	082-001-00-6										
7	mercury { mercury dichloride }				0.5 mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel dihydroxide }				17.7 mg/kg	1.579	27.957	mg/kg	0.0028 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
9	zinc { zinc sulphate }				56.8 mg/kg	2.469	140.256	mg/kg	0.014 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
10	naphthalene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3								
11	acenaphthylene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8								
12	acenaphthene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9								
13	fluorene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7								
14	phenanthrene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8								
15	anthracene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-883-8	191-24-2							
Total:								0.0261 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: HP141

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
HP141	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.15 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	pH				6.2 pH		6.2	pH	6.2 pH		
2	arsenic { arsenic trioxide }				10.4 mg/kg	1.32	13.731	mg/kg	0.00137 %		
	033-003-00-0	215-481-4	1327-53-3								
3	cadmium { cadmium sulfide }			1	0.5 mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6								
4	chromium { chromium(III) oxide }				25 mg/kg	1.462	36.539	mg/kg	0.00365 %		
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				24.8 mg/kg	1.126	27.922	mg/kg	0.00279 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	49 mg/kg		49	mg/kg	0.0049 %		
	082-001-00-6										
7	mercury { mercury dichloride }				0.5 mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel dihydroxide }				17.4 mg/kg	1.579	27.483	mg/kg	0.00275 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
9	zinc { zinc sulphate }				70 mg/kg	2.469	172.851	mg/kg	0.0173 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
10	naphthalene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3								
11	acenaphthylene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8								
12	acenaphthene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9								
13	fluorene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7								
14	phenanthrene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8								
15	anthracene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-883-8	191-24-2							
Total:								0.033 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: HP142



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	HP142	LoW Code:	
Sample Depth:	0.8 m	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	pH				6.9 pH		6.9	pH	6.9 pH		
2	arsenic { arsenic trioxide }				10 mg/kg	1.32	13.203	mg/kg	0.00132 %		
	033-003-00-0	215-481-4	1327-53-3								
3	cadmium { cadmium sulfide }			1	0.5 mg/kg	1.285	0.643	mg/kg	0.00005 %		
	048-010-00-4	215-147-8	1306-23-6								
4	chromium { chromium(III) oxide }				28.4 mg/kg	1.462	41.508	mg/kg	0.00415 %		
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				14.4 mg/kg	1.126	16.213	mg/kg	0.00162 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	13.8 mg/kg		13.8	mg/kg	0.00138 %		
	082-001-00-6										
7	mercury { mercury dichloride }				0.5 mg/kg	1.353	0.677	mg/kg	0.0000677 %		
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel dihydroxide }				17.7 mg/kg	1.579	27.957	mg/kg	0.0028 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
9	zinc { zinc sulphate }				54.9 mg/kg	2.469	135.564	mg/kg	0.0136 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
10	naphthalene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
	601-052-00-2	202-049-5	91-20-3								
11	acenaphthylene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		205-917-1	208-96-8								
12	acenaphthene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-469-6	83-32-9								
13	fluorene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-695-5	86-73-7								
14	phenanthrene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		201-581-5	85-01-8								
15	anthracene				0.1 mg/kg		0.1	mg/kg	0.00001 %		
		204-371-1	120-12-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-912-4	206-44-0							
17	pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		204-927-3	129-00-0							
18	benzo[a]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-033-00-9	200-280-6	56-55-3							
19	chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-048-00-0	205-923-4	218-01-9							
20	benzo[b]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-034-00-4	205-911-9	205-99-2							
21	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
22	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-032-00-3	200-028-5	50-32-8							
23	indeno[123-cd]pyrene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-893-2	193-39-5							
24	dibenz[a,h]anthracene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-041-00-2	200-181-8	53-70-3							
25	benzo[ghi]perylene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
		205-883-8	191-24-2							
Total:								0.0251 %		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: MWS30

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MWS30	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	pH				6.6 pH		6.6	pH	6.6 pH		
2	arsenic { arsenic trioxide }				15 mg/kg	1.32	19.805	mg/kg	0.00198 %		
	033-003-00-0	215-481-4	1327-53-3								
3	cadmium { cadmium sulfide }			1	0.3 mg/kg	1.285	0.386	mg/kg	0.00003 %		
	048-010-00-4	215-147-8	1306-23-6								
4	chromium { chromium(III) oxide }				33 mg/kg	1.462	48.231	mg/kg	0.00482 %		
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	20.266	mg/kg	0.00203 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	15 mg/kg		15	mg/kg	0.0015 %		
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	zinc { zinc sulphate }				66 mg/kg	2.469	162.974	mg/kg	0.0163 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
9	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
10	acenaphthylene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8								
11	acenaphthene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9								
12	fluorene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7								
13	phenanthrene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8								
14	anthracene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7								
15	fluoranthene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-912-4	206-44-0								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
16	pyrene	204-927-3	129-00-0		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
17	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
18	chrysene	601-048-00-0	205-923-4	218-01-9	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
19	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
21	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
23	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
24	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
25	confirm TPH has NOT arisen from diesel or petrol				☒						
26	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
Total:									0.0279 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: MWS32[2]

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
MWS32[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m		

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	pH				6.6 pH		6.6	pH	6.6 pH		
2	arsenic { arsenic trioxide }				19 mg/kg	1.32	25.086	mg/kg	0.00251 %		
	033-003-00-0	215-481-4	1327-53-3								
3	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6								
4	chromium { chromium(III) oxide }				38 mg/kg	1.462	55.539	mg/kg	0.00555 %		
		215-160-9	1308-38-9								
5	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	20.266	mg/kg	0.00203 %		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	16 mg/kg		16	mg/kg	0.0016 %		
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	zinc { zinc sulphate }				61 mg/kg	2.469	150.627	mg/kg	0.0151 %		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
9	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
10	acenaphthylene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-917-1	208-96-8								
11	acenaphthene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9								
12	fluorene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-695-5	86-73-7								
13	phenanthrene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-581-5	85-01-8								
14	anthracene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7								
15	fluoranthene				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-912-4	206-44-0								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
16	pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		204-927-3	129-00-0								
17	benzo[a]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
18	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
19	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
20	benzo[k]fluoranthene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
21	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
22	indeno[123-cd]pyrene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-893-2	193-39-5								
23	dibenz[a,h]anthracene				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
24	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
25	confirm TPH has NOT arisen from diesel or petrol				☒						
26	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
Total:									0.028 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non CLP determinands

■ pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

■ chromium(III) oxide (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

■ lead compounds with the exception of those specified elsewhere in this Annex (worst case)

CLP index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 1; Carcinogenic to humans; Lead REACH Consortium considers some lead compounds Carcinogenic category 1A
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

■ acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

■ acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

■ fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

■ phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

■ anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

■ fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

▪ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

▪ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2 H351

▪ **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

▪ **confirm TPH has NOT arisen from diesel or petrol**

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating

Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

▪ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on risk phrases

cadmium {cadmium sulfide}

Worst case species based on risk phrases

chromium {chromium(III) oxide}

Cr VI not detected above LoD

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Cr VI not detected above LoD

mercury {mercury dichloride}

Worst case species based on risk phrases

zinc {zinc sulphate}

Cr VI not detected above LoD

nickel {nickel dihydroxide}

Worst case species based on risk phrases

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018

HazWasteOnline Classification Engine Version: 2020.52.4178.8324 (21 Feb 2020)

HazWasteOnline Database: 2020.52.4178.8324 (21 Feb 2020)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004

1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010

2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010