CENTRAL SOMERS TOWN, LONDON

FACTUAL AND INTERPRETATIVE REPORT ON GROUND INVESTIGATION

VOLUME 2: INTERPRETATIVE REPORT

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1 INTRODUCTION

In September 2015 ESG was commissioned by AKT II, on behalf of the London Borough of Camden (LBC), to carry out a ground investigation at Central Somers Town, London. The investigation was required to obtain geotechnical and geoenvironmental information for the proposed redevelopment of Edith Neville Primary School, Polygon Road Residential, Brill Place Residential and the local community facilities.

The scope of the investigation, which was specified by AKT II, comprised a series of cable percussion and windowless sampling boreholes, trial pits, in situ testing and laboratory testing. The investigation was performed in accordance with the contract specification, and the general requirements of BS 5930 (2015), BS EN 1997-2 (2007), BS EN ISO 22475-1 (2006) and other relevant related standards identified below. The fieldwork took place between 16 November and 07 January 2016.

This report forms two volumes, the factual data of the investigation being presented in Volume 1 (Report No D5061-16/1), and a combined geotechnical and geoenvironmental assessment comprising Volume 2 (the current volume).

2 GROUND CONDITIONS AND GROUNDWATER

2.1 Strata Encountered

Full descriptions of the strata encountered are given on the exploratory hole records included in Volume 1 of this report. The anticipated downward succession of strata, comprising Made Ground underlain by the London Clay Formation over the Lambeth Group, was generally confirmed by the investigation findings. A slight variation, however, was that an additional layer of natural, superficial deposits was found to overlie the London Clay Formation in BH1, 2 and 3 (ie the western part of the site). Although the origin of this layer has not been confirmed, the fine grained, organic nature of the material is typical of alluvial soils and, therefore, for the purpose of this report this stratum has been referred to as a layer of Alluvium.

For the exploratory holes that were sufficiently deep to verify the total thickness of the Made Ground or underlying natural strata, a summary of their general findings (ie the boundary levels and thicknesses of the various geological units encountered) are tabulated in Figure 1. Lateral

variations of strata depths and thicknesses are also presented on two cross-sections, one trending SW-NE through the site (Figure 2) and the other trending NW-SE (Figure 3).

In addition, an overall site summary is shown in Table 2.1 below.

TABLE 2.1 - SUMMARY OF STRATA ENCOUNTERED (CABLE PERCUSSION BOREHOLES)

CODE	STRATUM NAME	FULLSTRATUM THICKNESS [PARTIAL STRATUM THICKNESS]* (m)	DEPTHS TO TOP OF STRATUM (m below ground level) [REDUCED LEVELS (m OD)]
MG	MADE GROUND (All boreholes)	0.85 to 3.20 [0.40 to 2.80]	0.00 [17.72 to 21.25]
ALL	ALLUVIUM (BH1, 2 and 3 only)	0.60 to 1.00	1.20 to 3.20 [18.05 to 19.61]
LCF	LONDON CLAY FORMATION (All boreholes except BH1A and BH06)	16.90 to 18.60 [18.45 to 18.95]	0.85 to 3.80 [15.02 to 18.87]
LG	LAMBETH GROUP (BH1, 3, 7, 8, 9 and 10 only)	[3.00 to 11.36]	19.00 to 21.20 [-1.88 to 0.05]

*Partial stratum thickness given where exploratory holes have been terminated above the base of the stratum.

In respect of the window sampler boreholes and hand excavated trial pits, the materials encountered were predominantly Made Ground, although some of the deeper window sampler holes also penetrated the underlying strata of the London Clay Formation. In these boreholes (WS4, WS5, WS8, WS10A, WS15A, WS18, WS19, WS25A and WS27) the total thickness of Made Ground was confirmed to vary between 0.80 m and 4.20 m.

2.2 Made Ground

In the majority of the exploratory hole locations the Made Ground was surfaced either by a layer of topsoil (typically 0.10 m to 0.30 m thick), or otherwise by a layer of macadam (0.10 m to 0.20 m), concrete (0.05 m to 0.20 m thick, where proved), or cobble setts.

The Made Ground underlying the surface layers comprised a range of both fine grained and coarse grained materials, including sandy, gravelly clay; sandy silt; gravelly, silty sand and sandy, clayey gravel. The gravel was generally angular, fine to coarse and consisted of brick, concrete, flint and sandstone. There were also occasional fragments of ceramic, black ash, shell, wood, metal, glass, asbestos and macadam. The various materials often had a low to high cobble

content, the angular cobbles comprising brick and concrete. Locally (eg BH6) the cobbles and boulders were dominant.

A number of boreholes were terminated at a shallow depth due to obstructions encountered within the Made Ground (typically comprising concrete, but occasionally brick or macadam). As indicated in Figure 21, these were distributed across the whole site, and included BH1A at 0.40 m, BH06 at 2.80 m, WS2 at 0.10 m, WS3 at 4.20 m, WS6 at 2.20 m, WS9A at 0.50 m, WS11B at 0.20 m, WS13A at 0.85 m, WS14A at 0.40 m, WS14B at 0.10 m, WS16 at 0.65 m, WS17B at 0.60 m, WS20 at 0.80 m, WS20A at 1.90 m, WS21 at 0.50 m, WS21A at 0.55 m, WS22 at 0.65 m, WS23 at 1.70 m, WS24 at 0.60 m, WS24A at 0.50 m, WS25 at 0.85 m, WS26 at 0.60 m, WS28 at 1.60 m and WS29 at 0.75 m).

Similarly, a number of exploratory holes were terminated on encountering evidence of asbestos. These boreholes were predominantly situated in the western and central parts of the site (eg WS7, WS7B, WS9, WS10, WS11A, WS12, WS12A, WS13, WS15, WS17 and WS17A), as shown in Figure 22. It should be noted that the thickness of the materials possibly containing asbestos has not been confirmed at these locations. A number of soil samples that contained suspected asbestos materials were removed from site by LBC.

Evidence of hydrocarbon contamination included a slight hydrocarbon odour in the Made Ground at BH10.

Made Ground is often highly variable by nature, and it can be difficult to predict changes in properties over short distances. As such, conservative values of geotechnical parameters should be assumed for preliminary design purposes, thereby allowing for at least a degree of inconsistency within the relevant site areas. In addition, should areas of Made Ground be discovered during construction that have significantly poorer geotechnical properties than indicated by the findings of the investigation, a review of the assumptions made at the design stage should be made. The properties discussed below are based on the material types generally encountered in the investigation.

SPTs within the Made Ground (Figure 4) gave N-values of between 1 and 94, with most results falling in the range of 2 to 12. For the coarse grained materials the results indicate a typical relative density of loose (WS8) or medium dense (WS25 and WS27), and in some areas very loose materials may be present. It is considered that an effective angle of friction (ϕ') value of 30 degrees

would be appropriate in such materials. For the fine-grained (cohesive) materials, which are assumed to be of relatively high plasticity, an effective angle of friction (ϕ') value of 19 degrees is considered appropriate. Effective cohesion should be taken as zero in each case. Furthermore, although not measured for the Made Ground, it is considered that a bulk unit weight of approximately 20 kN/m^3 would be suitable for preliminary design purposes.

2.3 Alluvium

The Alluvium, where encountered, typically comprised soft or firm, greyish brown, silty or sandy, locally organic clay with occasional black organic lenses and orangish brown silt partings.

Three SPTs undertaken in the Alluvium gave N-values of 7 and 8 (see Figure 5), which agrees with the general description of consistency being generally soft or firm.

Based on an assumed relationship between stiffness and shear strength, the generally soft nature of the alluvial soils indicates that relatively low values of both undrained and drained Young's modulus, probably of the order of 10 to 15 MPa, are likely to be applicable. Although site specific values of Poisson's ratio have not been assessed, a value of approximately 0.5 would typically apply to the undrained state, whereas a value of approximately 0.2 to 0.3 is likely to apply to the drained materials.

The water content and Atterberg limits tests carried out on two samples of Alluvium indicated water contents of 31% and 34%, plastic limits of 30% and 34% and liquid limits of 53% and 64%. As shown in Figure 13, the water contents are at or just above the plastic limits. The test results indicate that the materials have characteristics of clay or silt of high plasticity (CH and MH respectively), as shown in Figure 9.

The bulk unit weight of the alluvial soils has not been measured as part of the investigation. However, it is considered that a value of approximately 20 kN/m^3 would be suitable for preliminary design purposes.

2.4 London Clay Formation

The upper part of the London Clay Formation generally comprised firm or firm to stiff, brown or mottled grey and brown, clay or silty clay. Below depths of between 5.70 m and 8.00 m the

boreholes encountered firm to stiff to very stiff, fissured, dark grey to bluish or brownish grey, clay and silty clay. Locally the clay was found to contain partings of orangish brown or grey silt, or silt infilled burrows. The fissures were generally described as randomly orientated and closed.

Occasional selenite / gypsum crystals were noted locally, together with occasional black organic fragments or pyrite nodules.

Claystone, ranging from gravel sized fragments to layers up to 0.30 m thick, was encountered in BH4, BH5, BH9 and BH10.

The SPTs undertaken in the London Clay Formation gave uncorrected N-values in the range 4 to 55, the results showing an approximately linear increase of N-value with depth (Figure 6).

The SPT results can be converted to N_{60} values, which take into account the energy efficiency of the individual SPT hammers (Figure 8). The N_{60} values can then be used to estimate equivalent undrained shear strengths (using a multiplying factor of 4.5). Plotted alongside the direct measurements of undrained shear strength (from the laboratory triaxial tests), the combined values indicate the relationship between shear strength and level, from which a tentative design line has been drawn (shown as the black line on Figure 16). This indicates a linear rise from 50 kPa at 18 m OD to 160 kPa at -2 m OD (ie 50 kPa + 5.5z, where z is the depth below 18 m OD).

For the fine grained strata of the London Clay Formation approximate values for undrained Young's modulus (E_u) may be estimated from the shear strength properties (ie using $E_u = 400\ c_u$). This would indicate a typical profile of E_u values rising incrementally from approximately 25 MPa at a level of roughly 18 m OD to approximately 70 MPa at a level of roughly -2 m OD (Figure 17). Based on a typical relationship of drained to undrained Young's modulus (ie $E' = 0.8 \times E_u$), the corresponding values for drained Young's modulus would be approximately 20 MPa at 18 m OD, rising incrementally to approximately 56 MPa at -2 m OD. As indicated in Section 2.3, a Poisson's ratio of approximately 0.5 would typically apply to the undrained state, whereas a value of approximately 0.2 to 0.3 is likely to apply to the drained materials.

Consolidated undrained triaxial testing, undertaken on three undisturbed samples recovered from the top of the London Clay Formation (at depths of between 2.20 m and 4.20 m) gave effective cohesion (c') values of 8.0 to 18.1 kPa, and corresponding effective angle of shearing resistance values (ϕ') of between 17.9 and 28.9 degrees. In the London Clay Formation it is generally

recommended that, for design purposes, effective cohesion is restricted to a suitable nominal value (eg a maximum of 5 kPa). Furthermore, as the London Clay is typically of high plasticity, it is considered that the lower of the measured angles of shearing resistance (ie 18 degrees) is likely to be most appropriate for use in, for example, retaining wall design.

Based on the bulk density measurements made for the triaxial test specimens, which gave a mean value of 2.00 Mg/m^3, it is considered that a value of approximately 20 kN/m^3 would be suitable for the bulk unit weight of the London Clay strata.

Oedometer tests, carried out on six undisturbed samples of London Clay, gave values of the coefficient of volume compressibility (m_v) ranging from 0.013 to 0.088 m^2/MN. Due to the overconsolidated nature of the London Clay Formation, these values are based on the reloading of the samples following an unloading stage.

The water content and Atterberg limits tests carried out on twenty four samples of the London Clay Formation indicated water contents of between 17% and 31%, gradually decreasing with depth (see Figure 14). Corresponding plastic limits fell within the range of 20% and 35% and liquid limits were between 48% and 78%. With a few exceptions, the water contents were generally a little below the plastic limits. The test results indicate that the materials have characteristics of clay of high to very plasticity (CH to CV), as shown in Figure 10.

2.5 Lambeth Group

The Lambeth Group comprises a complex profile of units which includes a wide variety of materials. In many instances the full sequence of units is not readily identifiable in cable percussion boreholes and, consequently, individual unit names have not been included on the logs. In general terms, however, the upper levels of the Lambeth Group sequence are typically fine grained, with coarse grained materials dominating the lower units (in particular the Upnor Formation towards the base of the group).

At this site the Lambeth Group was penetrated to depths of up to 11.36 m, and the full thickness has not been observed. BH1, BH8 and BH9 penetrated fine grained strata by depths of 3.00 m, 4.70 m and 5.40 m respectively, whereas in BH3 1.20 m of fine grained materials was found to be underlain by a coarse grained layer, 1.90 m thick. The greatest thickness of the Lambeth Group encountered was 11.36 m in BH7. This was dominantly fine grained strata, with two coarse

grained interbeds, up to 1.75 m thick. In BH10, however, a similar thickness of strata was found to be exclusively fine grained.

The fine grained strata typically comprised very stiff, locally hard, fissured, mottled silty clays, occasionally gravelly (the gravel comprising calcrete) and with some lenses of silt. The materials in the coarse grained units comprised mottled, clayey, silty or very silty fine sand.
SPTs carried out within the fine grained strata gave N-values of between 31 and 105, while two SPTs in the coarse grained strata gave N-values of 49 and 68 (Figure 7). The results of the tests carried out in the fine grained units indicate estimated undrained shear strengths of between approximately 140 and 473 kPa. Using these values, together with the results of the unconsolidated undrained triaxial tests, a relationship between undrained shear strength and level may be developed (see Figure 16). A tentative design line may then be drawn through these shear strength values (the red line in Figure 16). This line rises linearly from 160 kPa at -2 m OD to 300 kPa at -14 m OD.

In terms of the stiffness, for the dominant fine grained strata the shear strength properties would indicate a typical value for undrained Young's modulus (E_u) of approximately 70 MPa at a level of roughly -2 m OD, rising incrementally to approximately 110 MPa at a level of roughly -12 m OD (Figure 17).

Based on a typical relationship of drained to undrained Young's modulus (ie $E' = 0.8 \times E_u$), the corresponding values for drained Young's modulus would be approximately 56 MPa at -2 m OD, rising incrementally to approximately 90 MPa at a level of -12 m OD.

The water content and Atterberg limits tests carried out on nine samples of fine grained soils from the Lambeth Group indicated water contents of between 12% and 26%, gradually increasing with depth (see Figure 15). Corresponding plastic limits fell within the range of 17% and 35% and liquid limits were between 42% and 89%. With one exception, the water contents were generally at least 5% lower than the plastic limits. The test results indicate that the materials have characteristics of clay of intermediate to very plasticity (CI to CV), as shown in Figure 11.

Based on the bulk density measurements made for the triaxial test specimens, which gave a mean value of 2.10 Mg/m^3, it is considered that a value of approximately 21 kN/m^3 would be suitable for the bulk unit weight of the London Clay strata.

Particle size distribution tests, carried out on three samples of materials generally described as coarse grained, indicated the presence of between 27% and 70% fines (ie clay and silt), with the remaining materials comprising fine to medium sand (Figure 12).

Two SPTs in the coarse grained (non-cohesive) strata indicated N values of 49 and 68 (Figure 7) and, from these results, an approximately Young's modulus of 30 to 45 MPa may be estimated (see Figure 18). As indicated in Section 2.3, a Poisson's ratio of approximately 0.5 would typically apply to the materials in an undrained state, whereas a value of approximately 0.2 to 0.3 is likely to apply to the drained materials.

2.6 Groundwater

As indicated in Figure 19, groundwater strikes were observed in six of the boreholes, at depths of between 1.10 m and 25.30 m, within all of the main geological units. The wide range of depths is indicative of significant variations in permeability (which influences how rapidly groundwater observations are made during the drilling process) as well as a relatively complex groundwater regime. This includes perched water tables illustrated, for example, in BH9 where the groundwater struck in the gravel-dominated materials forming the lower part of the Made Ground is sealed out of the borehole once the top of the (relatively impermeable) London Clay is penetrated at a depth of 2.70 m. Similarly, the groundwater strikes encountered in the relatively coarse grained strata within the Lambeth Group were sealed out of the borehole at or close to the base of these layers (depths of 24 m and 26 m).

It should be noted, however, that the observations made during the sinking of boreholes do not generally represent equilibrium conditions, particularly in fine-grained strata. This is because the drilling of the borehole is a relatively rapid process and, in low permeability materials, there is typically insufficient time for groundwater levels to become established before completion of the borehole. Therefore, under such circumstances it is necessary to install numerous groundwater monitoring instruments, at various levels and in different strata, in order to allow subsequent (longer-term) groundwater levels to be determined. Full details of these instruments, and the results of the associated programme of water level monitoring, are tabulated in Volume 1 of this report (Appendix C).

The results of the monitoring programme completed to date indicate a wide range of groundwater depths, from 2.72 m below ground level (in BH9) to 19.65 m (in BH7). The variations generally

relate to the different strata into which the standpipes have been installed, and confirm the presence of varying groundwater pressures with depth.

For example, the standpipes in BH4 and BH9, and the shallower of the two pipes in BH1, are installed at depths of 16.00 m, 15.50 m and 7.50 m respectively (ie within the London Clay Formation). Monitoring results indicate relatively shallow groundwater levels of between 2.72 m and 9.97 m

By comparison, the standpipes in BH7 and BH10, which were installed at a greater depth (approximately 30.30 m) within the Lambeth Group strata, have groundwater levels of between 15.28 m and 19.65 m. This indicates relatively low groundwater pressures in the Lambeth Group, when compared to the London Clay Formation. The London Clay Formation is said to be 'under-drained' by the Lambeth Group strata which, in the London area, is a recognised occurrence. The exception to this, in the case of the monitoring results available to date, is that the two standpipes in BH1, one installed in the London Clay Formation and the other in the Lambeth Group, both show similarly shallow groundwater levels. This may, however, be a consequence of a relatively poor seal between the two installations.

The monitoring of these instruments will continue for a total of six months, in order to establish further possible variations related to weather or seasons.

3 PROPOSED DEVELOPMENT

From the information provided by AKT II it is understood that the proposed development comprises the following elements:

- **Lot 1: Edith Neville School and Polygon Road Residential (Central site area):** The new Edith Neville School, together with three irregular shaped residential blocks, varying from three to nine storeys, which are likely to be concrete framed buildings on piled foundations. These structures will lie either side of Purchese Street in the central site area. (AKT Drawings 3597-C-SK001 and SK002).

- **Lot 2: Brill Place Residential Tower (Eastern site area):** A residential tower with a basement and supported on a piled foundation system. Brill Place is situated at the eastern end of the site (AKT Drawing 3597-C-SK002).

- **Lot 3: Community Facilities (Western site area):** A series of community facility buildings comprising a MUGA, a residential block, a changing room building, a nursery and another ancillary building. The buildings will be of concrete, steel or timber framed construction on piled foundations (AKT Drawing 3597-C-SK001).

- **Lot 4: Landscaping:** The areas between Lots 1, 2 and 3 will have a mixture of soft landscaping/planting and hard landscaped areas/pathways, with a variety of play areas.

4 GEOTECHNICAL ENGINEERING ASSESSMENT

4.1 Foundations

4.1.1 Foundation Options

It is understood that the maximum column loads associated with the larger structures outlined in Section 3 are relatively high, comprising 3,000 kN for the school building, 5,750 kN for the residential blocks and up to 10,000 kN for the tower. The smaller community buildings will have column loads of up to 600 kN, whereas the changing room, nursery and perimeter buildings will impose uniformly distributed load of 50 kPa or line loads of 30 kN/m.

The foundations for all the proposed structures will need to be supported by the natural strata of the London Clay Formation or Lambeth Group. The superficial layers of Made Ground, and in some places Alluvium, should not be used for foundation purposes due to their inherent variable nature, and typically weak and compressible characteristics. Based on the findings of the investigation, discussed in Section 2, it may be feasible to adopt conventional strip or pad foundations for the lightest of the structures (ie the changing room, nursery and perimeter buildings), depending on the ground conditions at their specific locations. This is discussed further in Section 4.1.3.

For the other more heavily loaded, multi-storey buildings, however, it is considered that piled foundations will be the most appropriate solution.

It is understood that there is a large culvert passing beneath the site, although full details of the nature of the culvert is not known at the time of writing. It is emphasised that the following discussion on foundation options assumes that the presence of the culvert is taken into full consideration as part of

any foundation design. This may include the provision of sleeved sections of any piles in the vicinity of the culvert in order to avoid imposing any additional stress on the existing structure.

4.1.2 Piled Foundations

In order to provide sufficient capacity to support the various column loads of the proposed structures, a range of pile diameters, pile groups and / or depths is likely to be required. In general, the piles, which are likely to be bored rather than driven, should be taken to a suitable penetration within the London Clay Formation which, at the borehole locations, was found to have a thickness of between 15.65 and 18.95 m. The higher capacity piles may also need to extend into the underlying strata of the Lambeth Group.

Examples of preliminary working loads for bored piles based within the London Clay Formation are presented below in Table 4.1.

TABLE 4.1 - PRELIMINARY ESTIMATE OF WORKING LOADS FOR SINGLE BORED PILES EXTENDING INTO THE LONDON CLAY FORMATION

Nominal depth of Pile (m)	**Pile working loads (kN) for various pile diameters**					
	450 mm	**600 mm**	**750 mm**	**1200 mm**	**1800 mm**	**2400 mm**
9	300	420	560	1000	1900	2900
11	390	540	710	1300	2300	3500
13	480	670	870	1600	2700	4100
15	560	790	1000	1800	3200	4800
17	650	900	1200	2100	3600	5400
19	740	1000	1300	2400	4000	6000

As indicated in Section 2 above, the inconsistent thickness of Made Ground, and in some areas Alluvium, has resulted in a variable upper surface of the London Clay Formation. For the purpose of these preliminary calculations typical depths to the top and base of the London Clay Formation have been taken as nominally 3 m and 20 m OD respectively (ie a unit thickness of 17 m).

The pile loads and lengths given are intended to be an indicative guide only, and the calculated loads are presented to two significant figures. It is essential that the advice of a specialist piling contractor be sought for final design working loads, and to formulate a suitable piling technique for the ground conditions encountered at this site.

The preliminary pile calculations in Table 4.1 have been based on the profile of undrained shear strength with depth for the London Clay Formation, as outlined in Section 2.4. This gives an undrained strength value of 65 kPa 3.00 m, rising below this depth at a rate of approximately 5.5 kPa per metre. The adhesion factor is inversely related to rising shear strength, and in these calculations a value of 1.00 has been adopted at a depth of 3.00 m, falling incrementally to a value of 0.44 at the base of the London Clay Formation.

The deeper of the pile examples would be in relatively close proximity to the base of the London Clay Formation. The estimated end bearing values are therefore dependent on the strata of the underlying Lambeth Group offering a similar degree of end bearing capacity as the London Clay Formation. This should be verified in the final pile design.

It is assumed that the heavier of the proposed columns would be supported by small groups of piles. However, should greater single pile loads than those indicated in Table 4.1 be envisaged, the consideration of deeper piles, extending into the Lambeth Group, may be required.

Once further details of the proposed piles have been formulated, such as the configuration of pile groups, the potential settlements of individual piles and pile groups should be determined to verify that they meet acceptable tolerances.

The contractor's pile design should be confirmed by appropriate pile load tests, with integrity testing carried out to confirm the integrity of a sample of the remaining piles.

It should be noted that, given the variable thickness of the Made Ground and near-surface concrete substructures (the full extent of which may not have been discovered by the investigation), obstructions which could affect the construction of piles may be more substantial than envisaged at pile design stage.

Layers of claystone present within the London Clay Formation can also create obstructions to piling, at least locally. These layers, which comprised gravel sized fragments to layers up to 0.30 m

thick (and which may be thicker in other parts of the site) were encountered in BH4, BH5, BH9 and BH10. It should be noted, however, that such beds are usually laterally extensive even though, being typically nodular in nature, a series of boreholes is unlikely to encounter them at each borehole location. Larger numbers of piled foundations, on the other hand, are more likely to encounter such obstructions at numerous locations.

In terms of pile construction, the piles may need to be cased through the Made Ground into the top of the London Clay Formation. Should any piles be extended into the Lambeth Group strata consideration should be given to the occasional layers of coarse grained soil (typically sand), within which it may be necessary to utilise a bentonite slurry to provide suitable support.

In areas of the site close to trees the potential shrinkage and swelling of the clay soils, as a consequence of moisture content changes, should be taken into account. Such near-surface movements can create additional stresses on the piles through wall friction and it may be necessary to sleeve the upper parts of the piles. Further information on suitable precautions is given in NHBC (2013).

4.1.3 Shallow Foundations

For the lightly loaded community buildings a shallow foundation solution may be a viable alternative to piles. However, based on the findings of the investigation in the western part of the site (eg BH1, BH2, BH3 and WS1 to WS4), the near surface ground conditions are highly variable. They comprise Made Ground underlain by a layer of soft or firm, organic clay, considered possibly to represent Alluvium, neither of which are considered suitable for foundation purposes. Although the superficial layers are underlain by the London Clay Formation, which represents a potentially good founding stratum, the combined thickness of Made Ground and Alluvium is locally up to 3.80 m (BH1), and occasionally in excess of 4.20 m (WS3). This excessive thickness is likely to preclude the use of strip or pad foundations in these areas. Elsewhere, however, the London Clay Formation was encountered at significantly shallower depths (eg 2.00 m in BH2). Therefore, the potential viability of shallow foundations will depend on the exact locations of the buildings. Once locations have been finalised a supplementary investigation could be undertaken to confirm the ground conditions beneath the proposed footprint.

Where the London Clay Formation is present at a suitable depth it should afford a safe bearing pressure of the order of 100 kPa. This should be verified on confirmation of the exact location, and also the proposed foundation depth and dimensions. In addition, the potential influence of nearby

trees should be considered, and foundation depths adjusted accordingly. In some cases additional precautions against heave, such as the use of compressible materials in foundation trenches, may be required. In this respect any shallow foundations should be designed to meet the requirements of NHBC (2013).

Alternatively, it may be more cost-effective to extend the piling operation being undertaken on other parts of the site to this area, and support the lighter buildings on short piles extending onto the London Clay Formation.

4.2 Floor Slabs

Due to the generally significant thickness of Made Ground, which in some areas is also underlain by a layer of relatively compressible alluvial soils, it is recommended that the use of suspended ground floor slabs be adopted at the site.

However, for the basement of the Brill Place residential tower consideration may be given to the use of a ground bearing floor slab. It is assumed that the basement would have a depth of the order of 3.00 m to 4.00 m. Based on the findings of BH9 and BH10, the upper surface of the London Clay Formation in this area has a depth of approximately 2.25 m to 2.70 m. Therefore, the whole basement area is likely to be underlain the London Clay Formation. While this stratum should provide suitable stiffness characteristics, should a ground bearing floor slab be adopted it will need to be designed to withstand potential swelling pressures generated by stress reduction or moisture content changes in the clays.

Alternatively, it may be preferable to accommodate such heave movements by the use of a suspended floor slab. This could be carried upon a reinforced beam grillage supported on piles taken down into the London Clay, or tied onto the proposed foundation piles. The additional loads imposed by the slabs would need to be taken into consideration when calculating the required working capacity of the piles should these be used as support for the slabs and beams.

Should a ground bearing floor slab be envisaged, and the designer wish to utilise the modulus of subgrade reaction in the slab design, an assessment of possible values will need to be made. Numerical modelling of potential deformations could assist in this respect. For preliminary design purposes, however, published values of the modulus of subgrade reaction are often used (although these should be taken as general guidance only). Published values include, for example, 0.014 N/mm^3 (ie 14 MN/m^3) for ‘inorganic clays of medium to high plasticity’ (Knapton, 2003).

4.3 Excavations

4.3.1 Excavation and Temporary Stability

The excavation of the natural materials and most of the Made Ground should be possible with conventional plant. In some areas, however, there are numerous brick and concrete structures and surfaces that may require the use of pneumatic tools and breakers to assist with their removal.

No excavations should be left unsupported, and suitable lateral support should be provided for excavations of all sizes. For small excavations this could comprise temporary heavy duty shuttering, while for the larger basement excavation support in the form of a sheet pile wall, or alternatively a contiguous or secant piled wall, is likely to be more appropriate (see Section 4.3.3 below).

As a possible alternative to shoring, excavation sides can be battered back to a safe temporary slope angle. However, this requires the availability of sufficient space beside the excavation, and is therefore unlikely to be suitable for all sides of the basement excavation, for example, due to the close proximity of Brill Place along its southern edge. Due to the highly variable and unpredictable nature of the Made Ground, should battered slopes be considered for any parts of the site it is recommended that a highly conservative approach be taken.

4.3.2 Groundwater in Excavations

As discussed in Section 2.6, groundwater seepage was observed locally from all of the strata beneath the site, at a wide range of depths. This includes observations indicating that shallow groundwater exists, at least locally, within the Made Ground. In BH9, for example, in the area of the proposed basement, a water strike was noted within the Made Ground at a depth of 2.10 m (rapidly rising to 1.90 m depth). As the gravel dominated materials at this location are likely to possess relatively high permeability characteristics, seepage into the proposed basement excavation may be rapid. This should be taken into consideration with regard to the most appropriate shoring system to be used for the basement. The possible use of a sheet pile wall, or a secant pile wall, to support the basement excavation would have advantages in terms of the control of groundwater seepage into the excavations, in addition to offering full support and erosion protection to the saturated materials. Under such circumstances the possibility of base heave due to groundwater pressures beneath the excavation should be considered (although it is considered that the risk at such a depth would be low).

The possibility of encountering groundwater seepage in other excavations should also be assumed and suitable precautions should be put in place for the control and removal of such water. In clay dominated materials seepage rates are likely to be low and it should be possible to remove water by pumping from sumps in excavations. However, due to the inherent high permeability characteristics of some granular strata (eg some of the Made Ground), inflow rates could increase rapidly when such materials are encountered.

4.3.3 Basement Retaining Walls

Based on the findings of the investigation (particularly BH9 and BH10), retaining walls around the perimeter of the proposed basement will need to support up to approximately 2.70 m of Made Ground over strata of the London Clay Formation. The Made Ground encountered in BH9 and BH10 to a depth of 1.45 m, comprised clayey, sandy gravel with high cobble content. In BH10 this was underlain by a 0.85 m of cohesive fill, comprising firm to stiff, slightly gravelly clay. The underlying strata of the London Clay Formation comprised firm or firm to stiff, grey and brown clay.

Table 4.3 below indicates values for the parameters relevant to the design of retaining walls. Active and passive earth pressure coefficients should be assessed from the relevant soil parameters given in Table 4.3, with consideration also to the appropriate wall friction and the site geometry (ie site levels surrounding the excavations).

TABLE 4.3 - SOIL PARAMETERS RELEVANT TO RETAINING WALL DESIGN

Stratum	**Soil Parameters**			
	Unit Weight (kN/m^3)	**Undrained shear strength (kPa)**	**Characteristic Constant Volume Parameters**	
			c' (kPa)	**ϕ' (degrees)**
Made Ground (Coarse Soils)	20*	-	0	30*
Made Ground (Fine Soils)	20*	50*	0	19*
London Clay Formation	20	60	0	18

*Estimated values

Should a contiguous bored pile wall be adopted for temporary stability control it is also likely to form the permanent retaining wall. The necessary depth of embedment in the London Clay Formation will depend on axial load requirements, and the configuration of the piles, as well as the need for suitable lateral support. It is assumed that the ground floor and basement floor slabs would be designed to act as an internal propping system for the retaining walls, in order to provide suitable permanent lateral support.

The design of the retaining walls should also take into account the groundwater pressures generated by the relatively shallow groundwater present in this part of the site, as outlined in Section 4.3.2 above.

4.3.4 Ground Movements due to Excavation

The basement excavation will result in a reduction of total and effective stresses in the underlying strata. The removal of approximately 4 m of soil, for example, would reduce the total stress at the basement level by approximately 80 kPa. This unloading through excavation is likely to result in a degree of short term (undrained) and long term (drained) heave movements within the overconsolidated clays, the magnitude of which will depend on the elastic deformation and swelling characteristics of the strata. As discussed in Section 4.2, the use of a suspended basement floor slab would allow for these heave movements to occur.

In addition to the heave of the excavation base, lateral movements behind the walls of the excavations could influence any nearby existing buildings or services. At the location of the proposed residential tower, an existing building is present a few metres to the south, on the south side of Brill Place, which could potentially be affected by the basement excavation. It is understood that an impact assessment will be undertaken by others in order to address this potential risk.

4.4 Chemical Considerations for Buried Concrete

Chemical testing, in accordance with the recommendations set out in BRE Special Digest (SD1): 2005, has been carried out on 43 selected soil samples. The results of the tests indicate water soluble sulphate concentrations of between 66 and 2780 mg/l, acid-soluble sulphate concentrations of 228 to 35500 mg/kg (i.e. 0.023 to 3.55%), total sulphur of 0.045 to 1.05% and pH levels ranging from 7.6 to 9.6.

Total sulphur was analysed in order to examine the potential for the strata to contain a significant amount of sulphide such as pyrite (a source of sulphate ion which can attack concrete). An estimate of oxidisable sulphide can be made by comparing the measured concentration of total (acid soluble) sulphate with the approximate amount of total potential sulphate (TPS) present. At this site the range of oxidisable sulphide concentrations (maximum of 2.51%) indicate that the presence of pyrite is likely, particularly within the London Clay Formation.

Assuming that most concrete substructures, including pile foundations and the lower parts of the retaining walls, will have some contact with the London Clay Formation, it is recommended that concrete design be based on the potentially aggressive conditions found in this unit.

Characteristic values for the London Clay Formation have been based on the mean of the highest 20% of values (or, in the case of pH, a mean of the lowest 20% of values). As such, the characteristic value for water soluble sulphate is 2400 mg/l (rounded to the nearest 100 mg/l). The characteristic value for total potential sulphate is 2.34%, and for pH the characteristic value is 7.7. In addition, the site has been assumed as 'brownfield' and ground water has been taken as being effectively mobile (although permeability will vary significantly in different strata).

In accordance with the BRE Special Digest, for structural elements that can be considered as being in contact with only undisturbed materials (such as piles) concrete design may be based on water soluble sulphate concentrations and pH levels. On this basis, the characteristic value for water soluble sulphate (2400 mg/l) would indicate a Design Sulphate Class of DS-3. Using a characteristic pH value of 7.7, and assuming a mobile groundwater regime, this Design Sulphate Class can be modified to give a site Aggressive Chemical Environment Classification (ACEC) of Class AC-3.

The design of any below ground level concrete that is likely to come into contact with reworked materials from the site (ie possibly shallow foundations, pile caps and retaining walls) should be based on the characteristic values for total potential sulphate and pH levels. A characteristic value for total potential sulphate of 2.34% would indicate a Design Sulphate Class of DS-4m (or DS-4 should magnesium concentrations be sufficiently low). Adopting a characteristic pH value of 7.7, and assuming a mobile groundwater regime, the Aggressive Chemical Environment Classification (ACEC) would be Class AC-4m.

The recommendations given in the above BRE digest, with respect to suitable concrete design and other associated precautions against sulphate attack, should be followed for all below ground level concrete.

4.5 Permeability and Potential Soakaways

The fine grained nature of the natural strata at the site, including the soils of the Alluvium and the London Clay Formation, means that their drainage properties are likely to be generally poor. Consequently, it is considered unlikely that the use of soakaways in the natural materials would be successful at this site. Soil infiltration / permeability testing is due to be undertaken as part of the groundwater monitoring programme, and will be reported in the next issue of the report.

Higher permeability materials exist within the Made Ground. However, as the lateral continuity of such materials is usually unpredictable, and as the promotion of infiltration in fill materials could lead to the migration of any contaminants that may be present, it is not recommended that the Made Ground be considered for such purposes.

4.6 Road Pavement Design

Dynamic cone penetrometer (DCP) tests were undertaken at ten locations across the site, primarily in the areas of proposed hard / soft landscaping (ie Lot 4). The resistance to penetration can be used to estimate the California bearing ratio (CBR) values for the various layers encountered. Based on the results of the tests carried out (presented in Appendix D of Volume 1), CBR values at relatively shallow depths typically fell within the range of 5 to 30%. As such, it is considered that a provisional CBR value of 5% could be adopted for preliminary design purposes. However, due to the inherent variability of the Made Ground present at shallow depths, it is recommended that supplementary in situ tests be carried out once the specific routes of new access roads, and areas of parking, have been finalised.

5 GEOENVIRONMENTAL ASSESSMENT

5.1 Assessment Basis

In line with existing legislation and the current regime for contaminated land, the site has been assessed using a risk based approach. To undertake this assessment it is necessary to define a conceptual model for the site which identifies the potential sources of contamination, the receptors

and the pathways that can connect them. In order for there to be a risk from contamination, there must first be a source, a receptor and a pathway by which the receptor can be exposed to the contaminant, ie a pollutant linkage.

5.2 Potential Site Sources of Contamination, Pathways and Receptors

As outlined in Section 3, the proposed scheme consists of a mixed development, including the construction of a school, low-rise community buildings; multi-storey residential blocks with the surrounding areas being hard and soft landscaping. The objectives of the investigation included the identification of any contamination present as there is a potential for receptors to be affected by contamination via pathways created during and after the development.

A desk study report for the site, written by Pell Frischmann (2013) and supplied by AKT II, draws the following conclusions in respect of the history of the site:

- The site has been subject to significant previous development; as such it is likely that there will be uncontrolled thicknesses of Made Ground associated with basements, previous foundations or site raising / levelling to create development platforms. Buried or covered remnant railway tracks or sleepers may be present within the Made Ground in the eastern parcel of land associated with the former coal depot in this area.

- A large culverted canal is located beneath the northern part of the site that may pose a significant risk to foundation requirements for the proposed development.

The desk study report provides the following summary of potential contaminants:

Potential On-site Contaminants

- Made Ground possibly including metals, metalloids, asbestos, PAH and petroleum hydrocarbons;
- PAH and petroleum hydrocarbons in the southern part of the site associated with the coal shoots historically located in this area;
- PCBs associated with former transformers.
- Elevated metals within natural soils.
- Unexploded Ordnance. A bomb map of the London Blitz shows that a high explosive bomb is recorded as having struck on or adjacent to the western boundary of the northern area of

the site. In addition, a number of other locations close by are recorded to have been struck by a large number of explosive devices. Given the local geology and history the site is considered to be located in a high risk area and further action to mitigate against this risk is considered essential.

Potential Off-site Contaminants

- General PAH and petroleum hydrocarbon particulate fall out associated with the gas works to the east of the site;
- Hydrocarbon fuels, lubricant and chlorinated solvents associated with the workshops.

The potential pathways are summarised as follows:

- Ingestion, inhalation or direct contact.
- Inhalation of fugitive dust.
- Root uptake.
- Leaching through unsaturated zone.
- Surface run-off, base flow from contaminated groundwater.
- Direct contact or contact with vapours.

The potential receptors are summarised as follows:

- Humans (neighbours, site end users).
- Development end use (buildings, utilities and landscaping).
- Surface water: Regents Canal on site beneath the northern parcel of land.
- Ecology: the drainage ditch to the north and west of the site is a known newt habitat.
- It should be noted that health and safety risks to site preparation and construction workers have not been assessed during these works and will need to be considered separately.

Based on the above source-pathway-receptor linkages, the desk study identifies the following potential risks as medium to high following the assessment of the available information:

- Moderate risk of inorganic contaminants being present across the site associated with any uncontrolled made Ground associated with the previous development of the site;
- High risk of organic contaminants being present in the eastern part of the site associated with the historic use as a coal depot;

- High risk of asbestos associated with any uncontrolled Made Ground or possibility of use within the building fabric of the existing buildings on site.

Based on historic land uses, information obtained during the site walkover, location and its current operational use, the overall risk from land contamination at the site is considered to be **moderate** for the current development, and **low to moderate** for a re-developed site, but would need to be confirmed by appropriate intrusive investigation, testing and assessment of the results of the investigation.

5.3 Soil Contaminants

Using the data presented in the desk study report, the most significant potential contaminants are considered to comprise metals, cyanide, phenols, sulphates, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB) and asbestos.

Hazardous ground gases, including methane and carbon dioxide, may also be present, and shall be addressed in Section 6.

Sulphates, in terms of their aggressivity to buried concrete, are discussed in Section 4.4.

Site based evidence of potential contamination included the following observations:

- A slight hydrocarbon odour noted in the Made Ground encountered in BH10.
- Potential asbestos materials encountered in some of the window sampler boreholes, particularly in the central and western site areas, eg WS7, WS7B, WS9, WS10, WS11A, WS12, WS12A, WS13, WS15, WS17 and WS17A (see Figure 22). It should be noted that the soil samples recovered from these areas were retained by the client and were therefore not analysed as part of this investigation. As such, further detailed comments on the possible presence / quantity of asbestos in these samples cannot be made at this stage. The general observation of the presence of these materials, however, should be taken into consideration.

In order to assess whether there is a likely source of soil contamination, fifteen soil samples, recovered from depths of between 0.30 m and 3.00 m (ie dominantly from within or just below the Made Ground), were selected for laboratory testing, comprising the determinands listed above.

The chemical analysis results are summarised in Table 5.1 below, together with Generic Assessment Criteria (GACs). The derivation of GACs is discussed in Section 5.4. A soil organic matter (SOM) content of 1% has been assumed in this table.

TABLE 5.1: SUMMARY OF CHEMICAL ANALYSIS RESULTS FOR SOILS

Determinand	**Maximum Measured Concentration (mg/kg)**	**Generic Assessment Criterion (GAC) (mg/kg)**	**No. of results exceeding GAC (no. of tests in brackets)**
Metals & semi- metals			
Arsenic	32.8	35	0 (15)
Barium	953	1300	0 (15)
Beryllium	2.41	51	0 (15)
Cadmium	10.64	85	0 (15)
Chromium III	78.5	600	0 (15)
Chromium VI		4.2	0 (15)
Copper	115.1	6200	0 (15)
Lead[1]	319.6	310	**1 (15) – BH6 at 1.00m**
Mercury	1.52	240	0 (15)
Nickel	45.4	130	0 (15)
Selenium	6	590	0 (15)
Vanadium	95.9	190	0 (15)
Zinc	270.9	40000	0 (15)
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.29	2000	0 (15)
Acenaphthylene	1.72	2000	0 (15)
Anthracene	1.88	20000	0 (15)
Benzo(a)anthracene	7.74	5.4	**1 (15) – WS28 at 1.00m**
Benzo(a)pyrene	8.31	1	**5 (15) BH5 at 0.50m WS8 at 2.60m WS16 at 0.30m WS28 at 1.00m HP5 at 1.00m**
Benzo(b)fluoranthene	9.29	9.8	0 (15)
Benzo(g,h,i)perylene	5.25	100	0 (15)
Benzo(k)fluoranthene	3.67	10	0 (15)
Chrysene	7.05	88	0 (15)
Dibenzo(a,h)anthracene	1.09	0.96	**1 (15) – WS28 at 1.00m**
Fluoranthene	12.3	970	0 (15)
Fluorene	0.2	1900	0 (15)
Indeno(1,2,3,c,d)pyrene	6.36	9.7	0 (15)
Naphthalene	0.33	8.1	0 (15)
Phenanthrene	3.23	830	0 (15)
Pyrene	11.9	200	0 (15)

Determinand	Maximum Measured Concentration (mg/kg)	Generic Assessment Criterion (GAC) (mg/kg)	No. of results exceeding GAC (no. of tests in brackets)
Total Petroluem Hydrcarbons			
TPH – >C08-C10	0	19[2]	0 (15)
TPH – >C10-C12	8.54	46[2]	0 (15)
TPH – >C12-C16	7.72	380[2]	0 (15)
TPH – >C16-C21	91.3	970[2]	0 (15)
TPH – >C21-C35	1660	1300[2]	**1 (11) – WS16 at 0.30m**
Other Compounds			
Asbestos	AM and CH	presence of fibres	**3 (15) WS29 0.30m: Amosite TP2 0.30m: Chrysotile HP5 1.00m: Chrysotile and amosite**
Cyanide (total)	<0.5	530[2]	0 (9)
Phenol (total)	<0.5	310[3]	0 (9)
PCBs (non-dioxin like)	<0.091	0.39	0 (15)

[1] C4 Screening Level is used for lead
[2] Using most conservative GAC for aliphatic or aromatic fraction.

5.4 Risks to Human Health

5.4.1 Risk to Site Users

Within the United Kingdom chronic long term risks posed to the health of human site users (both current and future) by soil contaminants are assessed using a number of methodologies. One of these methods is the Contaminated Land Exposure Assessment (CLEA) model developed by the Environment Agency (EA). The model (EA, 2009a, b and c) has been used by the EA to derive SGVs for a number of contaminants (2009d, e and f) for the generic site uses defined by CLEA.

As SGVs are only available for a certain number of contaminants, generic assessment criteria (GAC) have been derived by ESG in line with the CLEA guidance for substances without SGVs.

The proposed development of the site will include a school, residential properties, community buildings and hard and soft landscaping. Consequently, the test results in Table 5.1 have been compared with GAC for a residential without plant uptake site use.

The chemical analysis results in Table 5.3 show that the GAC for lead, dibenzo(a,h)anthracene, benzo(a)anthracene and TPH (>C21-C35) were exceeded in one sample each. The GAC for

benzo(a)pyrene was exceeded in five samples from various locations across the site (and at depths of up to 2.60 m).

Furthermore, asbestos (including chrysotile and amosite) was identified in three of the samples analysed, and evidence of asbestos was also reported during the drilling of a number of the window sampler boreholes (see Section 5.3 above).

In summary, it is therefore concluded that there is a potential risk to site users from the presence of asbestos, together with a more localised risk from lead, TPH and PAH. Potential mitigation of this risk is discussed in Section 5.9 below.

5.4.2 Risks to Other Human Receptors

The CLEA model cannot be used to assess the acute risks to construction and/or maintenance workers from soil contamination. CLEA only deals with chronic long term risks. In general, however, it may be concluded that the local significant concentration of lead, together with localised occurrences of TPH, PAH and asbestos, could pose a hazard to construction and/or maintenance workers. Potential mitigation of this risk is discussed in Section 5.9 below.

5.4.3 Unexploded Ordnance

An assessment of potential risks related to the possible presence of unexploded ordnance (UXO) is beyond the scope of this report. However, the Desk Study report undertaken by Pell Frischmann (see Section 5.2 above) notes that the bomb maps of the area records the site as having been struck by a number of bombs during the London Blitz. Therefore, there are potential risks posed by UXO at the site and these risks, together with appropriate control measures, should be addressed during the planning of the construction phase of work. It is recommended that a full risk assessment should be sought from an appropriate specialist consultant. All potential presence of UXO should be regarded as high risk until demonstrated otherwise.

5.5 Risks to Controlled Waters

The principal mechanisms resulting in groundwater contamination include the leaching of substances from contaminated soils (typically Made Ground), either by direct contact with groundwater, or by the percolation of rainwater from the surface, and also the possible downward migration of mobile contaminants (such as chlorinated solvents or benzene).

As stated in Section 5.2, the Desk Study report includes the nearby drainage ditches, and also Regents Canal, as surface water features that could represent potential receptors. However, due to the fact that canals are typically lined with clay, which forms a barrier to contaminant migration, the risk to the Regents Canal is likely to be relatively low.

In order to provide an assessment of the degree of risk that may be applicable to the site, the recovery and testing of groundwater samples could be undertaken, if required.

5.6 Site Conceptual Model

In Section 5.2 potential sources of contamination, pathways and receptors were identified for the site based on the desk study information. These potential pollutant linkages constituted the preliminary conceptual model for the site.

The results of the ground investigation have been used to refine the conceptual model and to define the specific source-pathway-receptor pollutant linkages for the site based on the proposed development.

TABLE 5.2: SUMMARY OF SOURCE-PATHWAY-RECEPTOR POLLUTANT LINKAGES

SOURCE	PATHWAY	RECEPTOR
Soil contamination **(Lead)**	Ingestion	Current and future site users and construction workers.
Soil contamination **(Asbestos)**	Dust/fibre Inhalation	Current and future site users and construction workers.
Soil contamination **(TPH, PAH)**	Ingestion, inhalation or direct contact. Leaching through unsaturated zone. Surface run-off, base flow from contaminated groundwater.	Current and future site users and construction workers. Surface waters

5.7 Reuse of Soils as Fill Materials

The suitability for the reuse of soils excavated on the site as fill materials elsewhere on the site will depend on the proposed end use and any risks it may present to relevant receptors. As such, a full assessment can only be made once detailed proposals are available. In general terms, however,

for any of the soils on the site (both natural and fill materials) that would either be buried beneath structures or other hard surfaces the risk to human health and potential environmental receptors are likely to remain relatively low.

In the shorter term it is emphasised that suitable precautions for need to be taken in terms of excavating, moving and compacting the soils to protect the health and safety of ground workers, particularly with regard to asbestos (as discussed in Section 5.4.2). It should be noted that any excavation and reuse of soils on site would need to be carried out under a Waste Exemption or in accordance with a Claire Code of practice for the definition of waste materials management plan (MMP). However, the risk assessment would form the basis of any Waste Exemption or MMP.

5.8 Indicative Waste Classification

It is a statutory requirement to classify waste designated for off-site disposal as inert, hazardous or non-hazardous prior to removal from site in accordance with the Environment Agency (EA) Technical Guidance WM3 (EA, 2015). The EA guidance requires that the number of samples representative of the waste be analysed based on the volume and consistency of the waste being generated. At this stage the exact volume of any excavated soils requiring off-site disposal is not known, however, an indicative waste classification of the soil has been carried out based on the available test results. The suitability and adequacy of the waste classification would need to be reassessed once the detail of any waste soil arisings is known.

The laboratory test results have been classified as non-hazardous or hazardous using the Hazwasteonline tool, using the individual concentrations of each substance identified. The assessment summary sheets, copies of which are appended to this report, indicate that the majority of the materials tested may be considered as non-hazardous. A single sample (recovered from WS16 at 0.20 m) was deemed to comprise hazardous material on the basis of the concentration of TPH (C6 to C40) at 0.216%.

Although asbestos was identified in three out of the fifteen soil samples analysed at the laboratory, no asbestos was identified by the naked eye in these samples. The maximum concentration quantified by the laboratory was 0.047% by weight, which is below the hazardous threshold of 0.1%. Therefore, based on the available results, the soils analysed would also be classified as non-hazardous due to asbestos. However, it should be noted that visual evidence of asbestos was found in some parts of the site (as discussed in Section 5.3). Should any asbestos containing material (ACM) be identified during the earthworks project, the ACM would contain greater than

0.1% and therefore be classified as hazardous waste. The ACM would need to be removed from the remainder of the soil matrix for separate disposal as hazardous waste. If it is not practical to remove the fragments of ACM from the remainder of the soil matrix, the soil arisings would be considered as a mixed waste and require disposal at an appropriate hazardous waste management facility.

It should be considered that the testing of selected samples recovered from the ground provides only a preliminary indication of the way that excavated soils are likely to be classified with regard to waste. Once specific materials have been identified as requiring disposal, and/or stockpiled ready for disposal, further confirmatory testing should be undertaken (the number of tests depending on the volume of waste). This supplementary testing would possibly need to include waste acceptance criteria (WAC) testing.

5.9 Conclusions and Recommendations

As discussed in the sections above, there are risks related to the presence of contaminants in the soil, including lead, hydrocarbons and asbestos. As such, some form of remedial action is likely to be required in areas of proposed soft landscaping to break the pathway between the source and future site users. This would likely take the form of a clean cover layer, possibly in conjunction with a geotextile membrane to separate the cover layer from the underlying contaminated soils. The details of the proposed design, including the appropriate thickness of cover layer, should be agreed with the Local Contaminated Land Officer.

With regard to asbestos, a further assessment of any asbestos containing materials (ACM) and asbestos quantities is likely to be required in order to establish appropriate methods of management / mitigation during the construction phase. It will also be necessary to determine whether an asbestos in soils management plan is required to detail how any future site works that may disturb the ground should be carried out.

It is understood that the proposed excavation for the basement will remove all of the Made Ground from that part of the site, and that the development will also result in other site areas being covered by hard surfacing. These actions will remove potential contaminants and/or pollutant linkages between any contaminated materials and future occupiers of the site. The excavation of contaminated materials and the provision of hard surfacing would also reduce, or even eliminate, the risk to controlled waters. Consequently, no specific mitigating action should be necessary in these areas.

With regard to the short-term risk to construction workers, contact with soil should be avoided and standard site hygiene procedures should be implemented, such as wearing gloves and overalls and providing adequate washing facilities. Eating, drinking and smoking should be banned in the working areas to prevent inadvertent ingestion of the soil. Furthermore, due to the local presence of asbestos at this site, discussed above, these general precautions should be enhanced by the wearing of appropriate PPE / RPE and by minimising dust by stringent damping down of any dry materials. In this respect, further assessment may be required in order to determine the licensing status under the Control of Asbestos Regulations (HSE, 2012), and an asbestos management plan should be put in place for the construction phase, as a minimum precaution.

The presence of carbon dioxide in the ground, although not in particularly high concentrations (see Section 6 below) should also be taken into account when planning potential work in enclosed spaces, including excavations, and an assessment of possible risk to personnel working in such areas, should be undertaken. The use of gas detectors / alarms, to be worn by construction workers, may be required.

Due to the limited nature of all site investigations, there always remains the possibility that pockets of previously undiscovered contamination may be encountered during the development.

6 GAS

Ground gas is largely generated by the decomposition of organic matter, both in natural soils such as peat, and man-made deposits such as landfill or other Made Ground. The gases that are normally associated with these materials, and which can pose a risk to health, are predominantly methane and carbon dioxide. Oxygen depletion typically occurs as a consequence of the generation of these other gases. An increase in gas concentrations can also be associated with temporary dewatering during construction.

For the assessment of sites, in terms of the potential for ground gas to present a hazard, the risk based methodology detailed in CIRIA Report C665 (2007) is used. This is primarily based on the main method of characterising a site proposed by Wilson and Card (1999). This method can be used for all types of development, except conventional low-rise housing, and is therefore applicable to the proposed development.

The potential risk associated with gases being generated in the ground depends on the concentrations of gas by volume and its rate of flow to the ground surface. These factors are assessed by monitoring of the gas installations in boreholes. The variable nature of gas generation, and the effect of barometric pressure on gas flow, means that the volume of gas potentially reaching the ground surface is normally inconsistent over time. It is therefore preferable to undertake a number of monitoring visits, if possible with varying atmospheric pressure conditions.

Six gas monitoring visits have been undertaken between 15 January and 20 June 2016. These visits took place during periods of barometric pressure ranging from 1008 to 1026 mbar.

Based on the findings of the monitoring visits, which are presented in Appendix C of Volume 1, it would appear that gas concentrations are not substantial. During these visits methane remained below the limit of detection and carbon dioxide was detected at a maximum concentration of 2.1% by volume. A maximum gas flow reading of 0.2 l/hr was recorded.

The gas screening value (GSV) is defined as a product of gas concentrations and gas flow, the worst case scenario for the site in general being established from the highest value of each. As summarised above, the highest concentration of a hazardous ground gas (methane or carbon dioxide) was 2.1%, and a maximum positive flow rate of 0.2 l/hr was measured. Based on these measurements the gas screening value would therefore be 0.0042 l/hr and the gas regime at the site would be considered as Characteristic Situation 1 (after BS8485, 2015). This is regarded as ‘very low risk’ and specific precautions to protect the buildings and occupants from ground gases are therefore unlikely to be required.

It should be noted, however, that there can be seasonal variations in gas generation, and further monitoring visits, at other times of the year, would be prudent in order to confirm long-term conditions.

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BS EN ISO 17892-2, Geotechnical investigation and testing – Laboratory Testing of soil – Determination of bulk density.

BS EN ISO 22475-1 : 2006 : Geotechnical investigation and testing – Sampling methods and groundwater measurements - Part 1 Technical principles for execution. British Standards Institution.

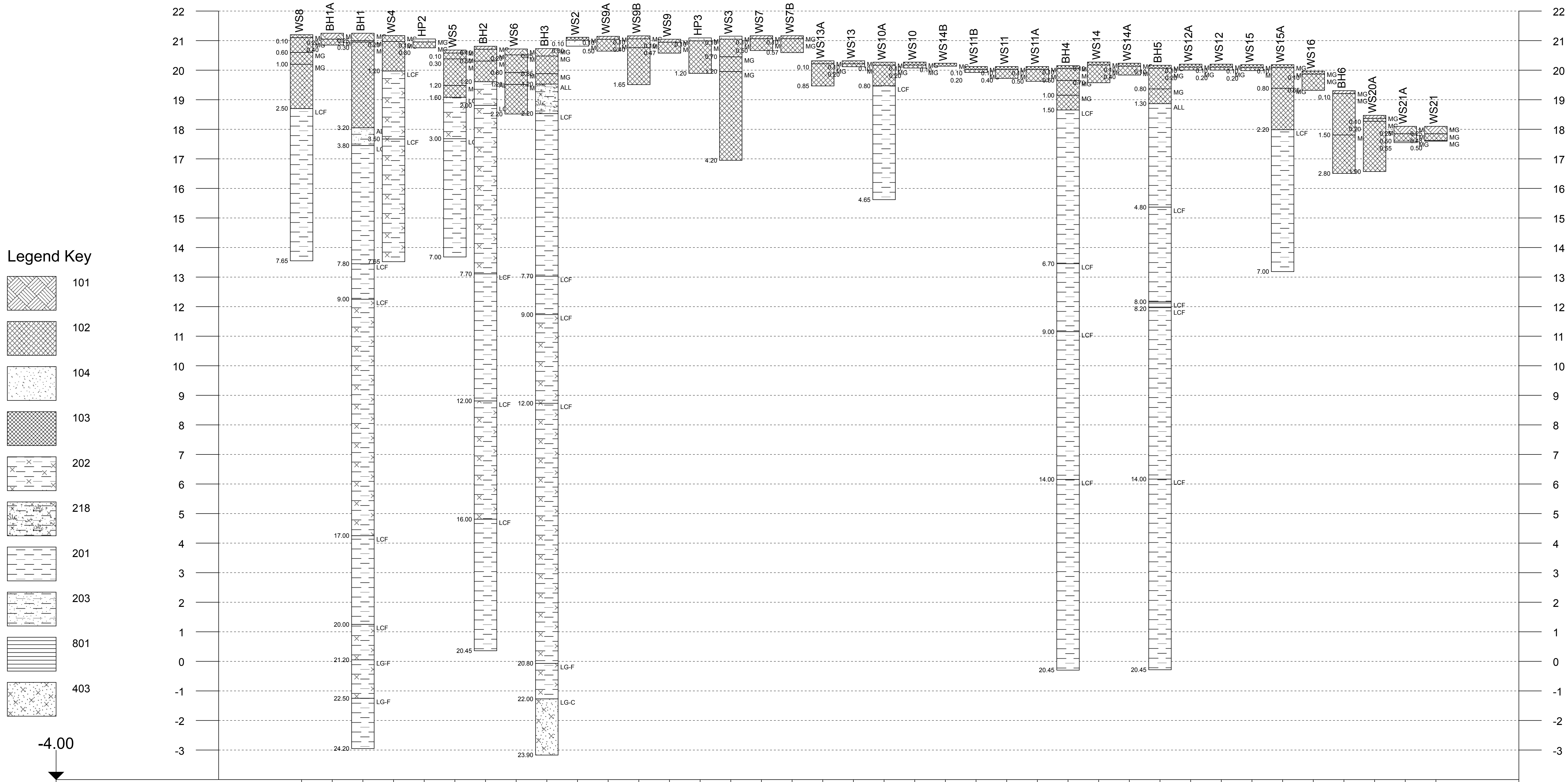
BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing - Part 3 Standard penetration test. British Standards Institution.

	MADE GROUND		ALLUVIUM			LONDON CLAY FORMATION			LAMBETH GROUP		
	Top m OD	Thick m	Top m BGL	Top m OD	Thick m	Top m BGL	Top m OD	Thick m	Top m BGL	Top m OD	Thick m
BH01	21.25	3.20	3.20	18.05	0.60	3.80	17.45	17.40	21.20	0.05	*3.00*
BH02	20.81	1.20	1.20	19.61	0.80	2.00	18.81	*18.45*	-	-	-
BH03	20.73	1.20	1.20	19.53	1.00	2.20	18.53	18.60	20.80	-0.07	*3.10*
BH04	20.15	1.50	-	-	-	1.50	18.65	*18.95*	-	-	-
BH05	20.17	1.30	-	-	-	1.30	18.87	*19.15*	-	-	-
BH06	19.31	*2.80*	-	-	-	-	-	-	-	-	-
BH07	17.72	0.85	-	-	-	0.85	16.87	18.15	19.00	-1.28	*11.36*
BH08	18.51	1.50	-	-	-	1.50	17.01	17.80	19.30	-0.79	*4.70*
BH09	17.72	2.70	-	-	-	2.70	15.02	16.90	19.60	-1.88	*5.40*
BH10	18.57	2.25	-	-	-	2.25	16.32	17.55	19.80	-1.23	*10.50*
Min	17.72	0.85	1.20	18.05	0.60	0.85	15.02	*16.90*	19.00	-1.88	*3.00*
Max	21.25	3.20	3.20	19.61	1.00	3.80	18.87	19.15	21.20	0.05	*11.36*

ESG	**Project:** Central Somers Town, London	**Project No:** D5061-15	**Client:** Camden Council	**Title:** Strata Summary	**Figure No:** 1

Project Id: D5061-15
Project Title: Central Somers Town, London
Location: Regents Park, London
Client: London Borough of Camden

Title: Figure 2: Section line 1- SW (left) to NE (right)
Vertical Scale: 1:137
Horizontal Scale: Not to scale
Engineer: AKT II

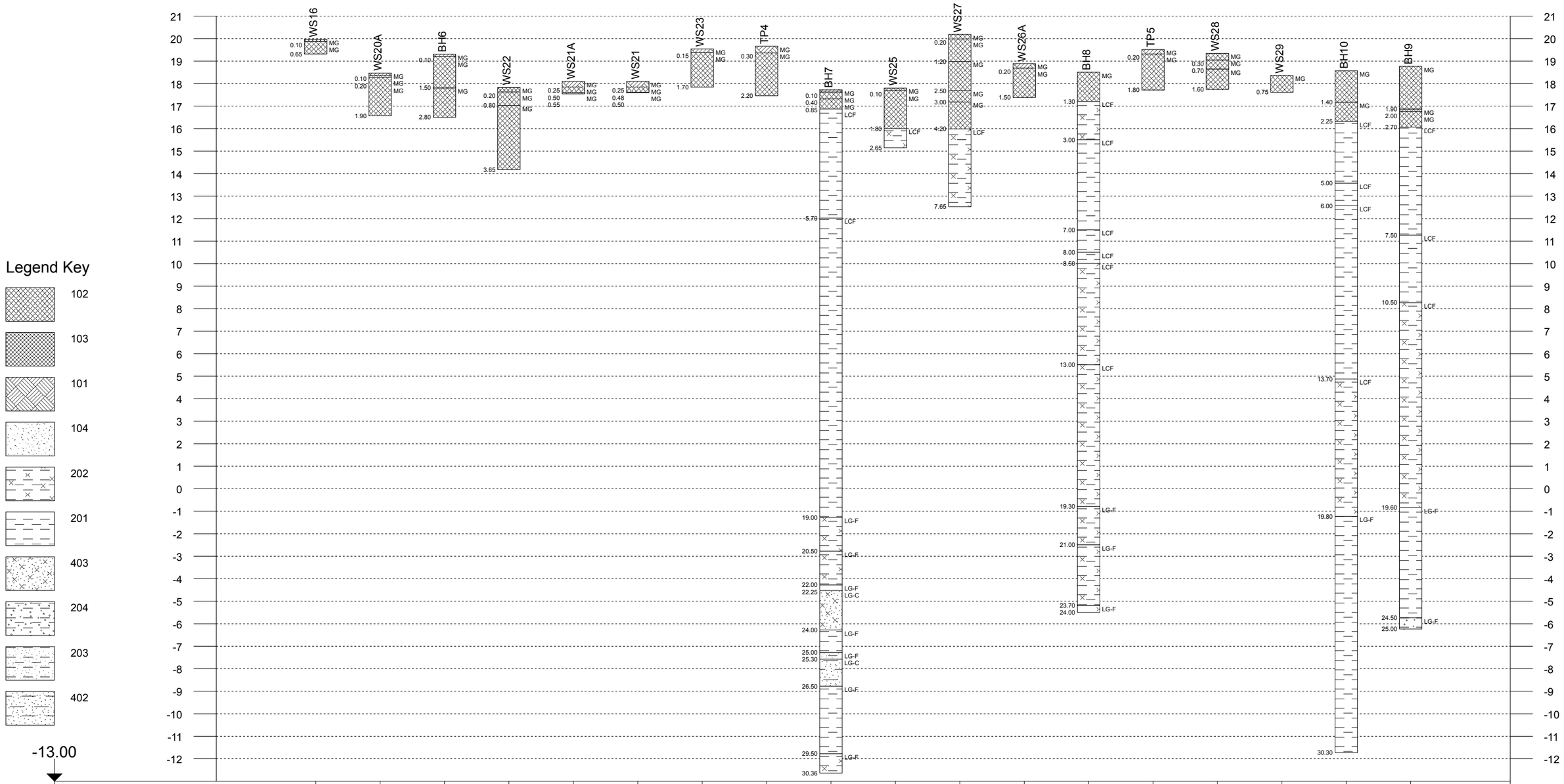


Chainage (m)	11.08	11.40	11.40	19.01	24.63	46.28	48.94	60.39	60.47	61.85	62.41	62.55	69.96	73.98	79.75	79.90	79.90	103.61	103.61
Offset (m)	20.28	13.06	13.06	10.09	27.66	3.14	11.73	0.91	1.04	25.20	24.33	24.09	19.10	26.74	18.94	2.44	2.44	5.69	5.69
Elevation (mAOD)	21.20	21.25	21.25	21.17	21.06	20.68	20.81	20.72	20.73	21.11	21.15	21.16	21.05	21.09	21.15	21.17	21.17	20.32	20.32

Chainage (m)	105.60	105.60	115.47	130.66	130.66	130.66	138.39	140.42	143.01	146.67	148.94	148.94	151.22	151.22	171.04	188.44	192.22	196.07	196.07
Offset (m)	24.42	24.42	24.18	27.63	27.63	27.63	37.67	5.49	6.50	1.13	33.16	33.16	12.14	12.14	9.85	25.11	14.00	40.38	40.38
Elevation (mAOD)	20.27	20.27	20.24	20.12	20.12	20.12	20.15	20.28	20.24	20.17	20.20	20.20	20.19	20.19	19.97	19.31	18.47	18.10	18.10

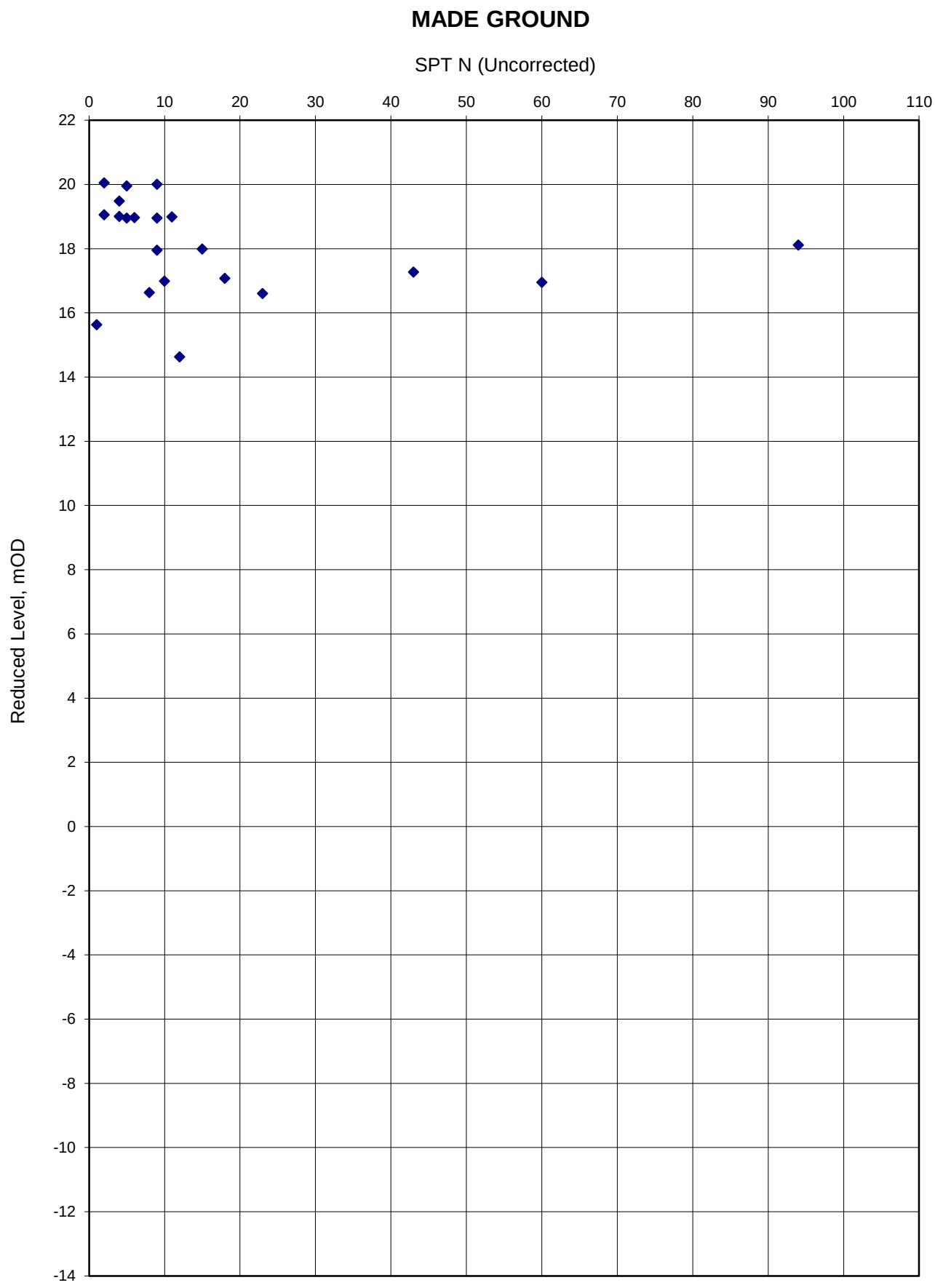
Project Id: D5061-15
Project Title: Central Somers Town, London
Location: Regents Park, London
Client: London Borough of Camden

Title: Figure 3: Section line 2- NW (left) to SE (right)
Vertical Scale: 1:179
Horizontal Scale: Not to scale
Engineer: AKT II



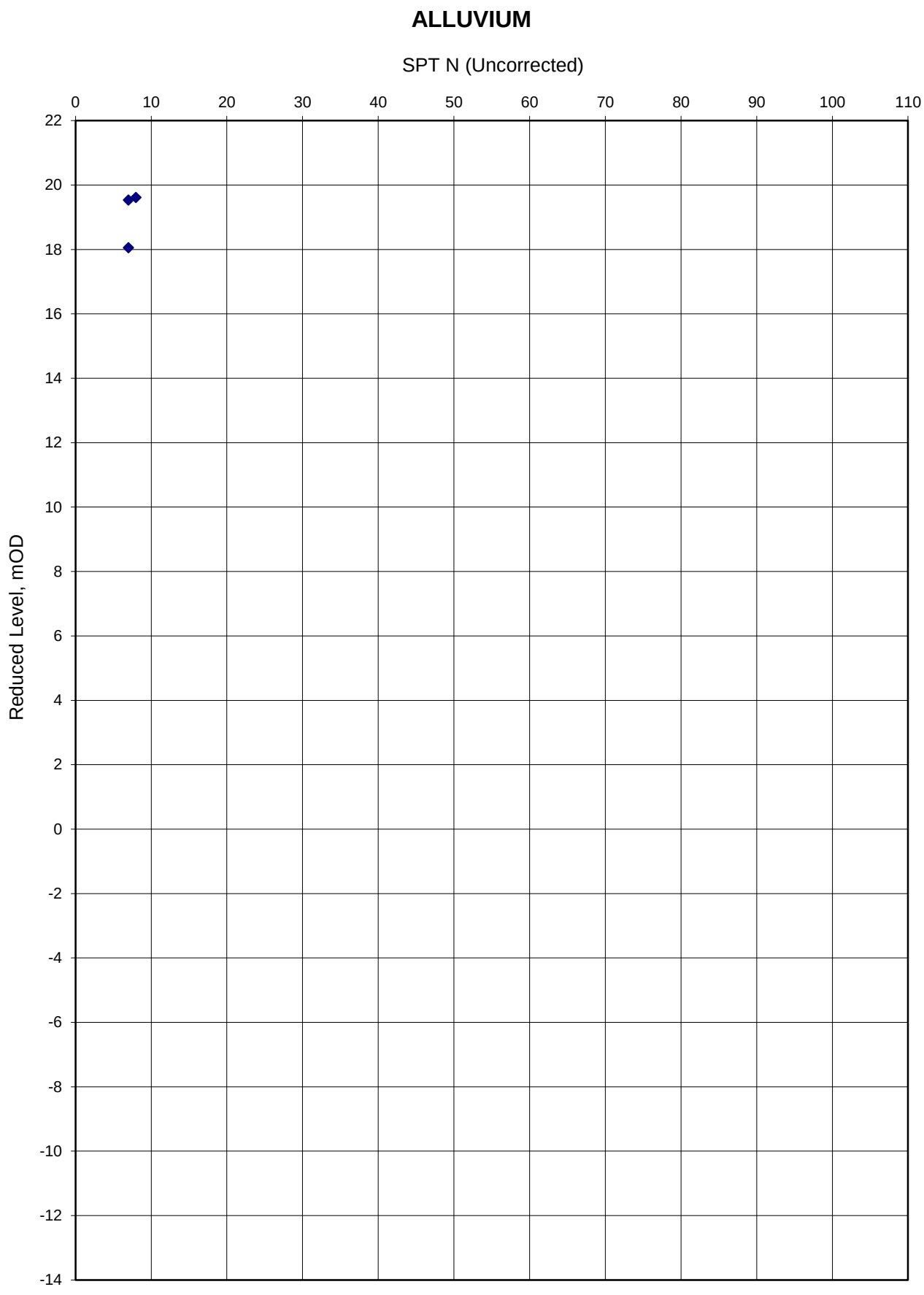
Chainage (m)	2.83	27.24	38.24	53.28	53.71	53.71	74.38	75.23	92.08	97.34	104.09	106.55	123.50	140.50	140.80	142.04	142.78	147.92
Offset (m)	27.40	6.85	10.93	14.34	3.70	3.70	1.08	0.37	23.49	25.27	21.01	2.53	6.99	1.17	4.29	23.31	22.18	8.65
Elevation (mAOD)	19.97	18.47	19.31	17.83	18.10	18.10	19.54	19.66	17.72	17.80	20.19	18.89	18.51	19.52	19.35	18.37	18.57	18.77

SPT N Value Profile - Made Ground



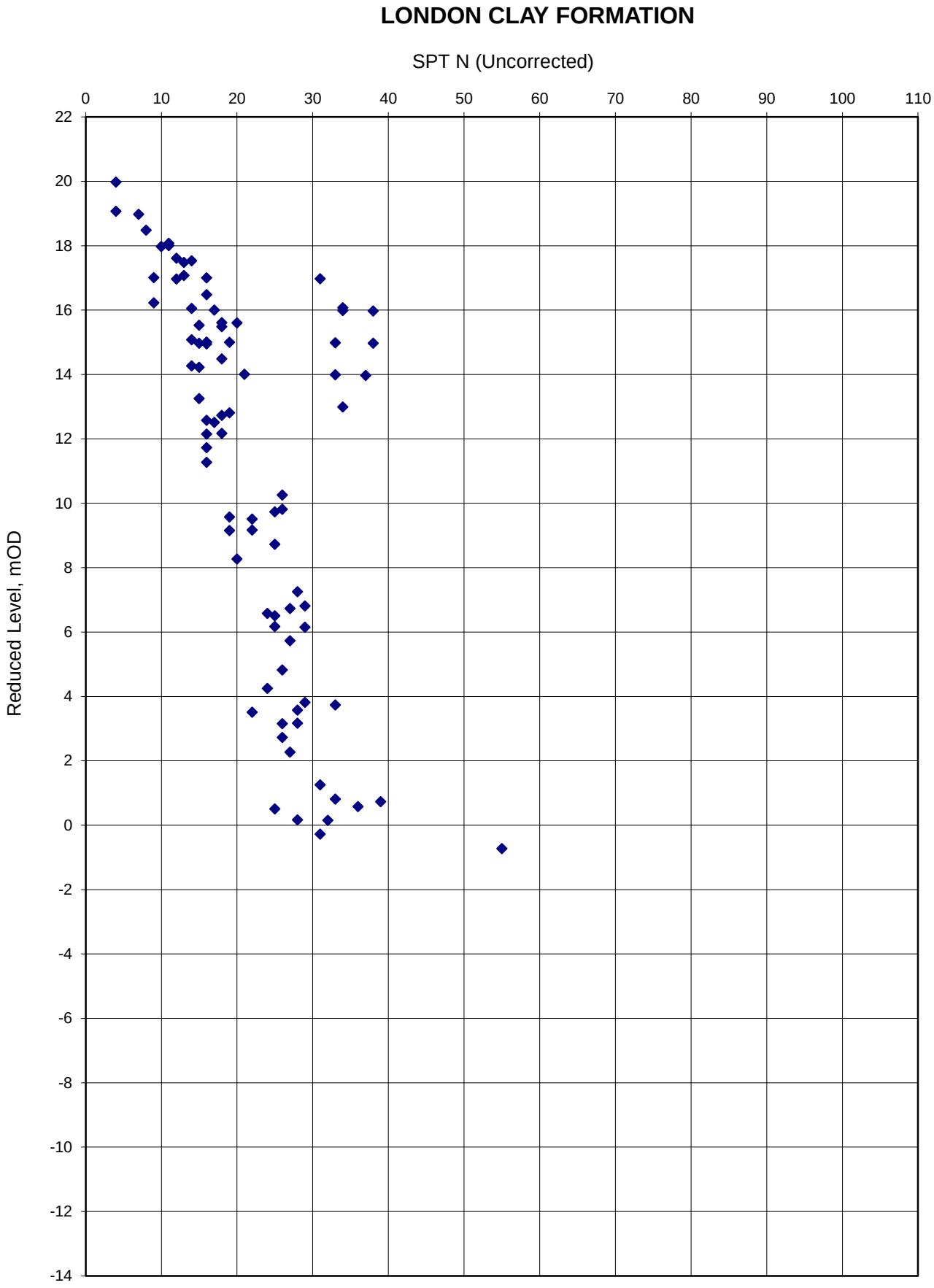
Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	4
	Carried out for	London Borough of Camden	

SPT N Value Profile - Alluvium



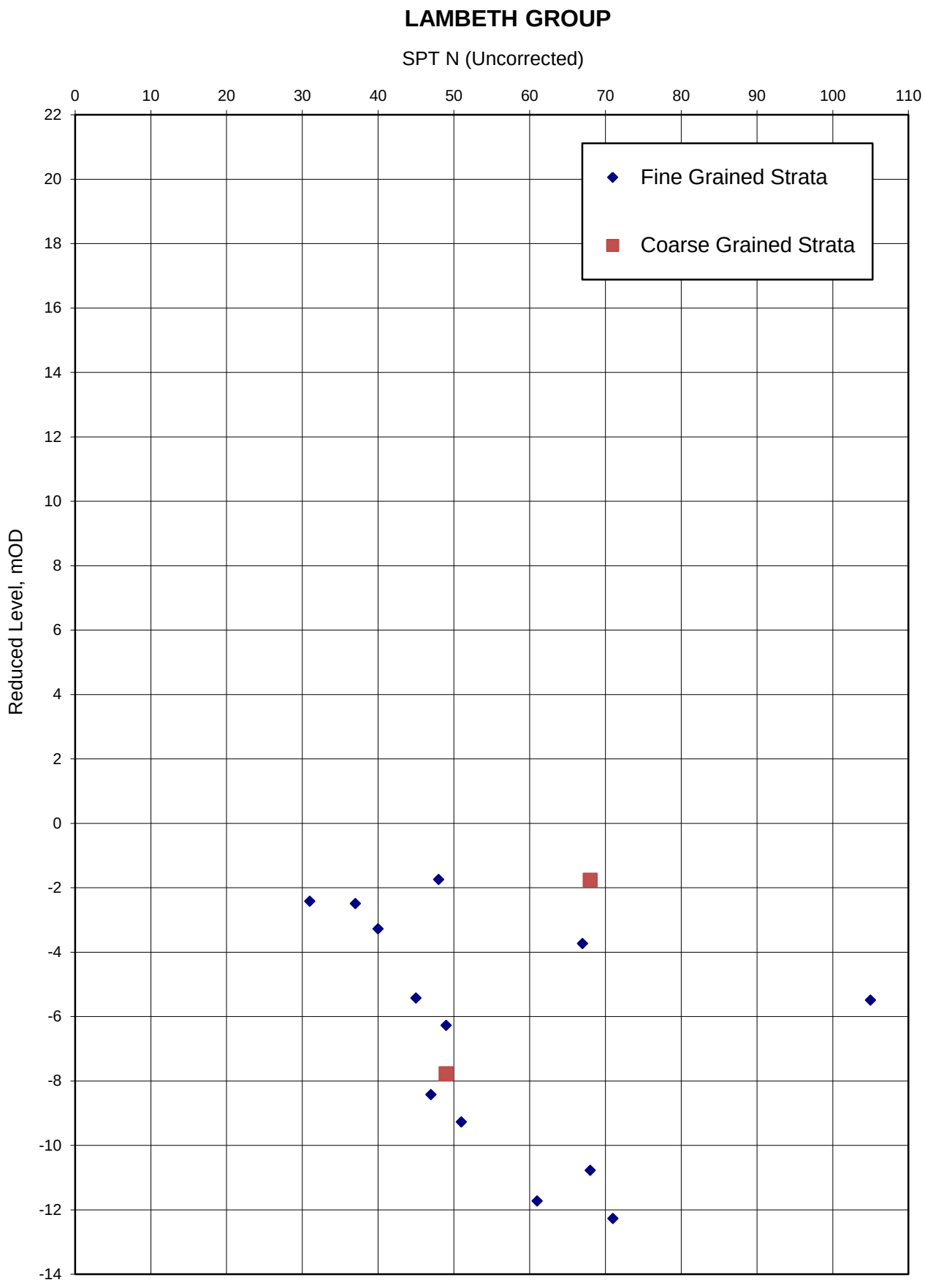
Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	5
	Carried out for	London Borough of Camden	

SPT N Value Profile - London Clay



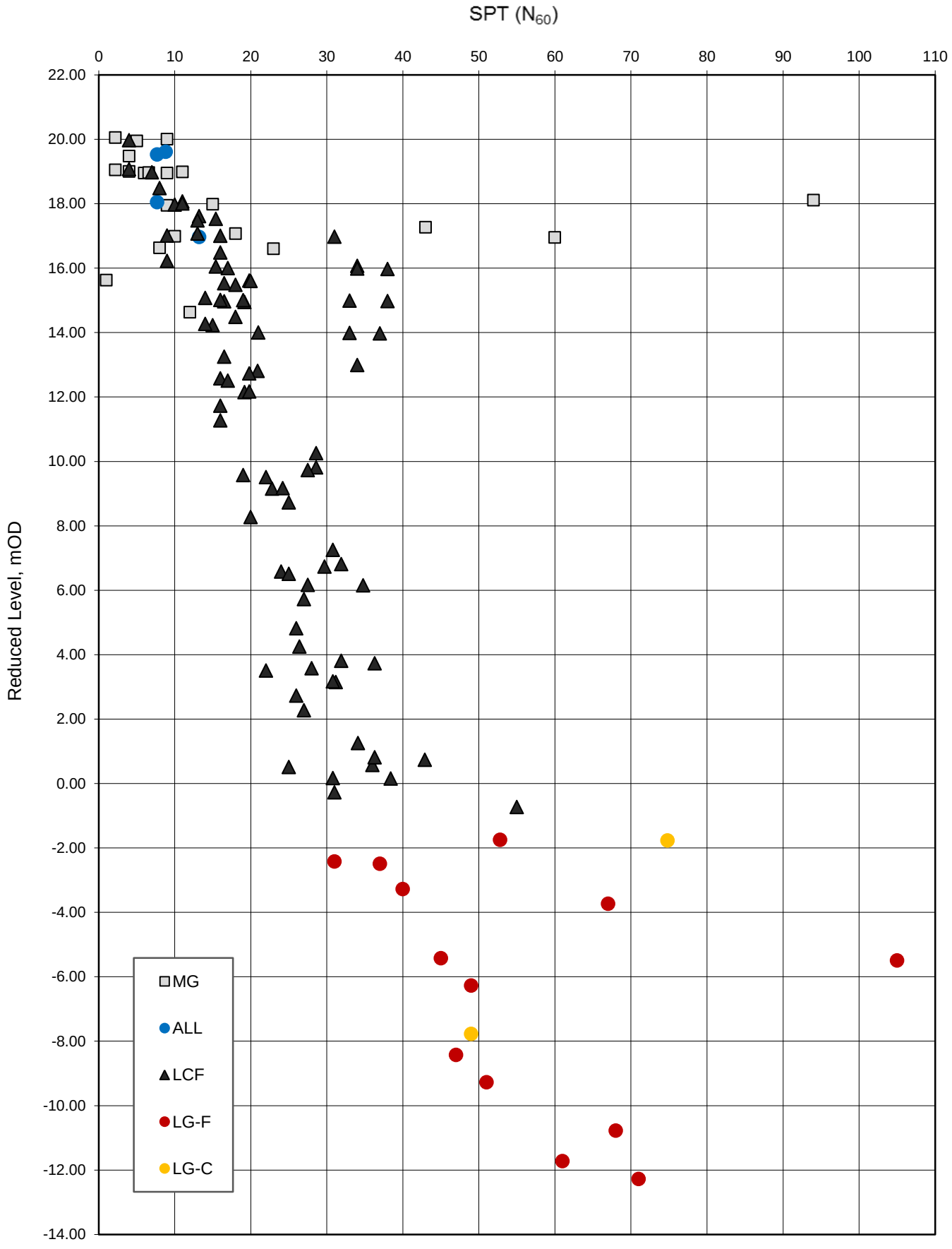
Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	6
	Carried out for	London Borough of Camden	

SPT N Value Profile - Lambeth Group



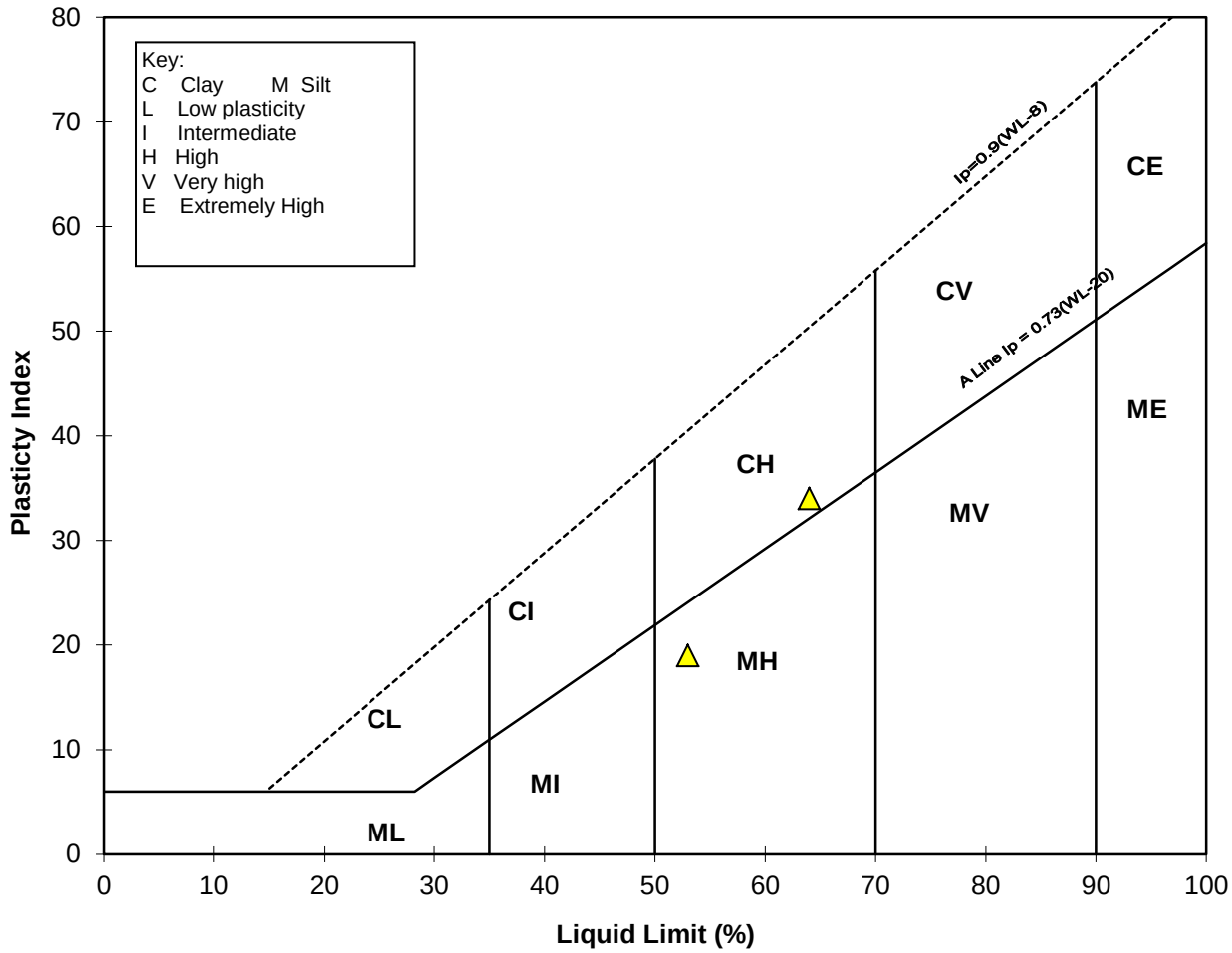
Notes:	Project	Central Somers Town, London	Figure 7
	Project No.	D5061-15	
	Carried out for	London Borough of Camden	

SPT N_{60} Value Profile



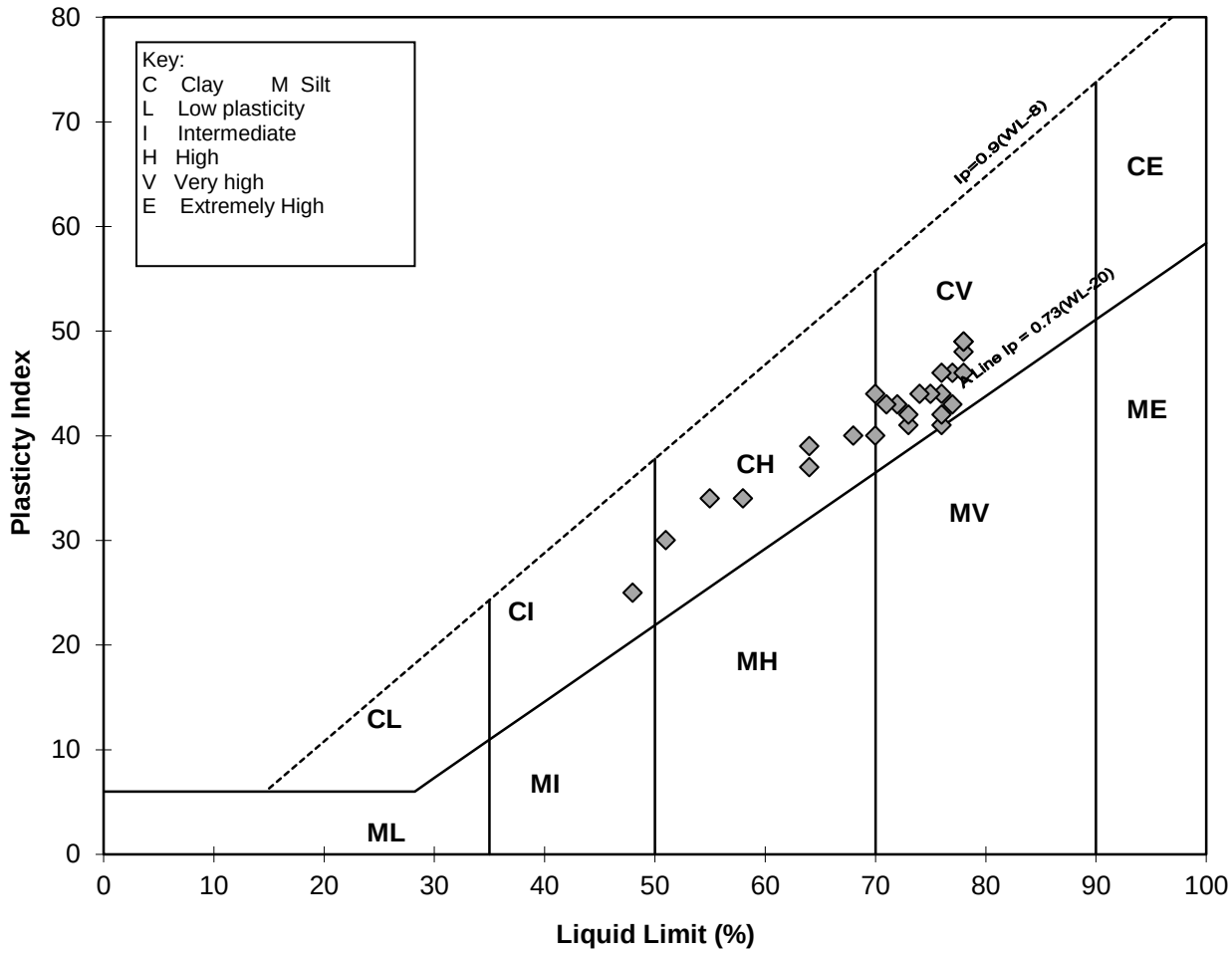
Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	8
	Carried out for	London Borough of Camden	

Plasticity Chart - Alluvium



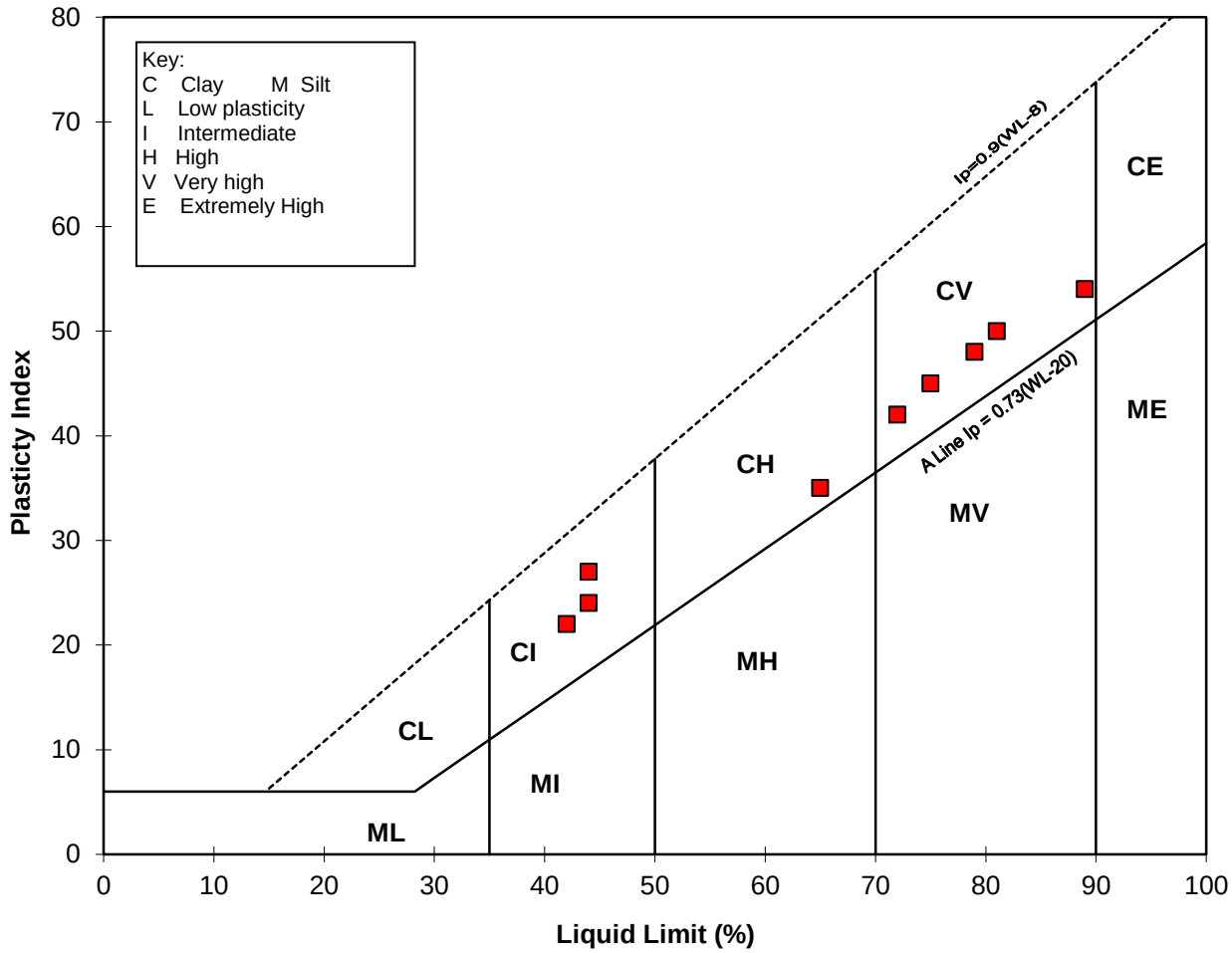
Notes:	Project	Central Somers Town, London	Figure 9
	Project No.	D5061-15	
	Carried out for	London Borough of Camden	

Plasticity Chart - London Clay Formation



Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	10
	Carried out for	London Borough of Camden	

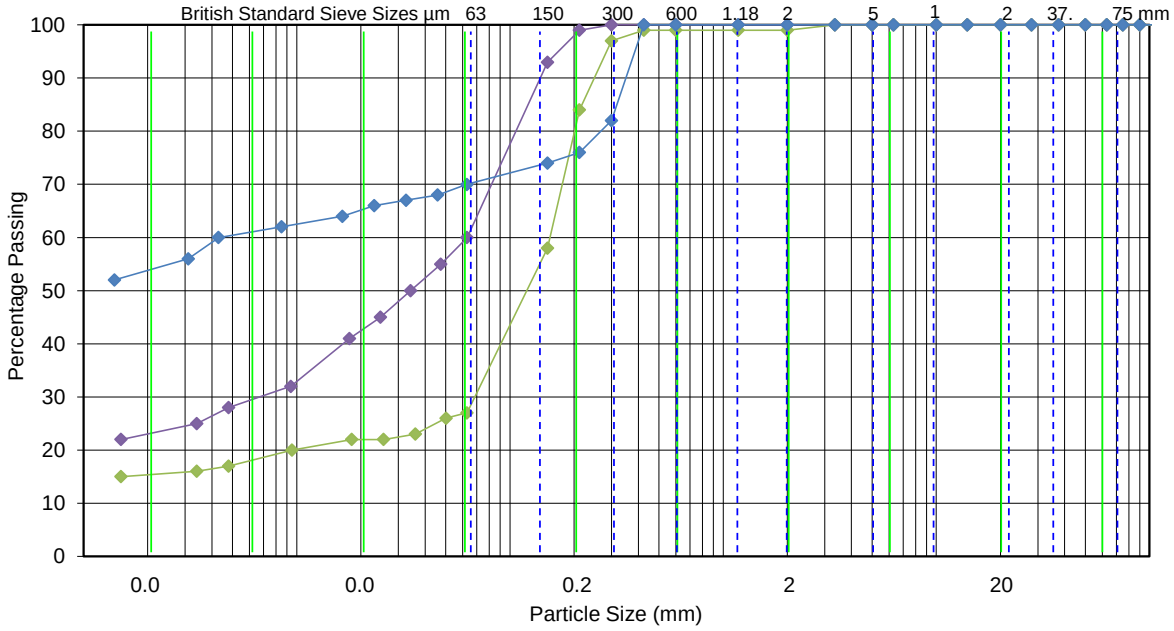
Plasticity Chart - Lambeth Group



Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	11
	Carried out for	London Borough of Camden	

Particle Size Distribution

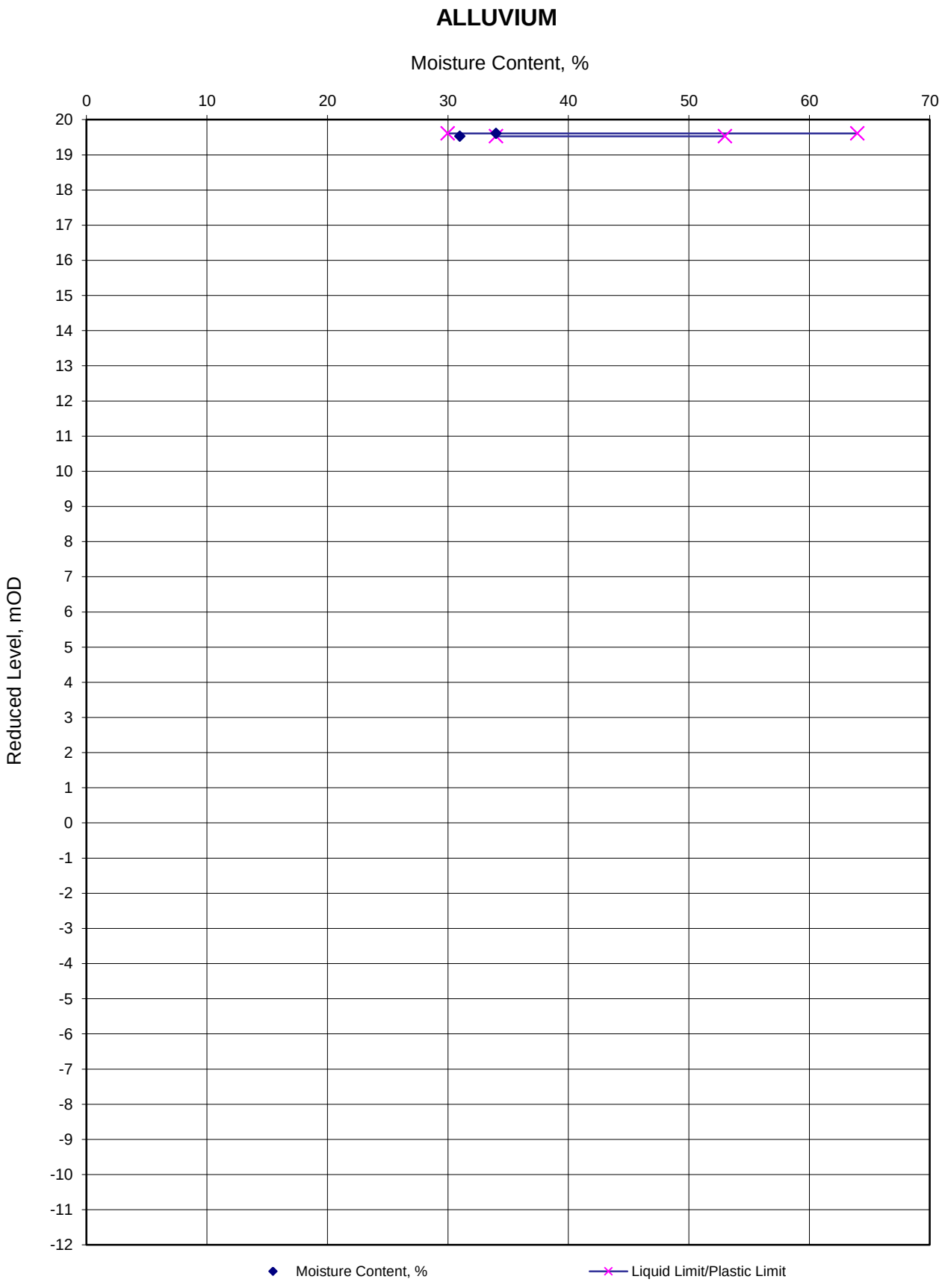
LAMBETH GROUP - COARSE GRAINED STRATA



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			

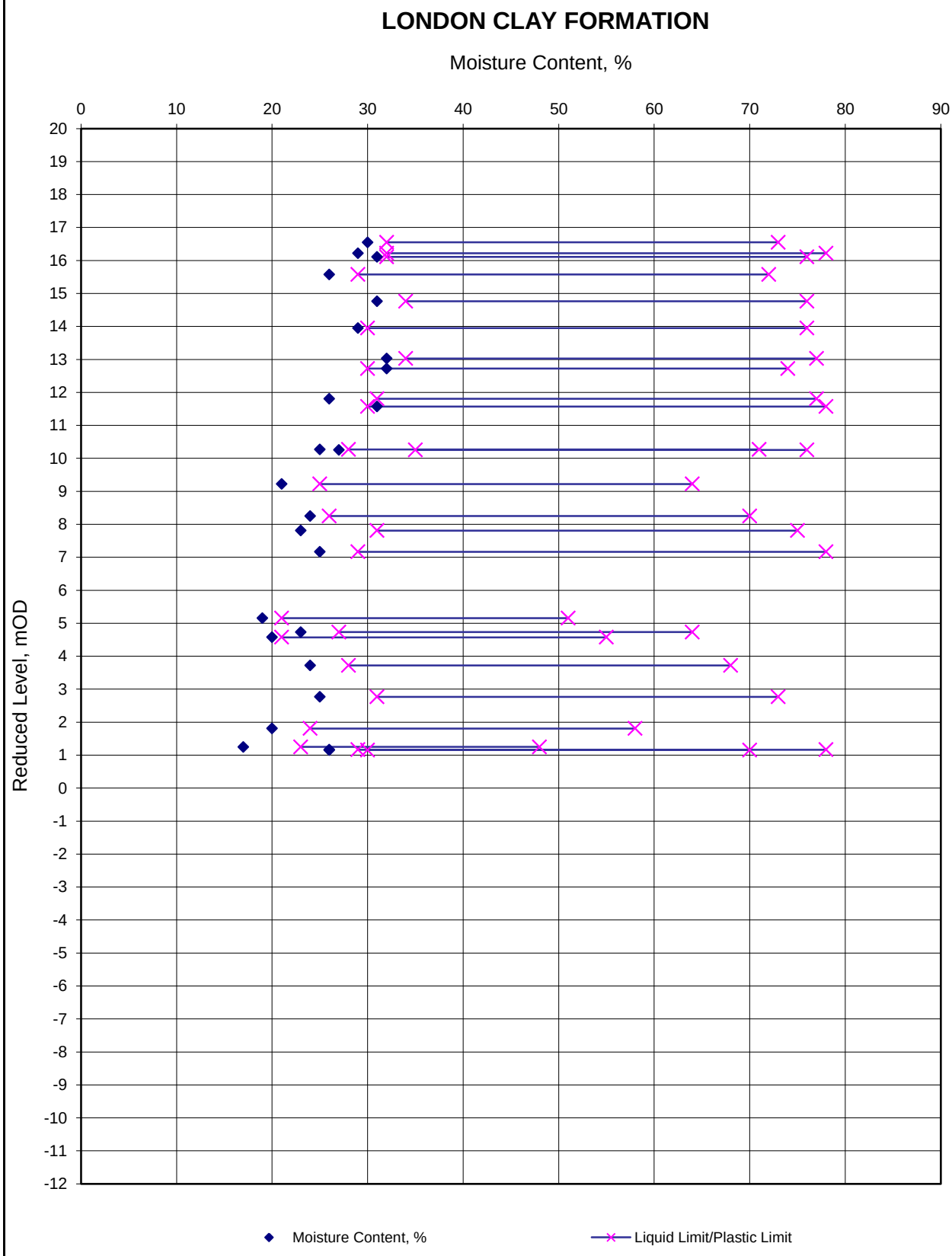
Notes:			
	Project	**Central Somers Town, London**	**Figure**
	Project No.	**D5061-15**	**12**
	Carried out for	**London Borough of Camden**	

Moisture Content and Atterberg Limits Profile



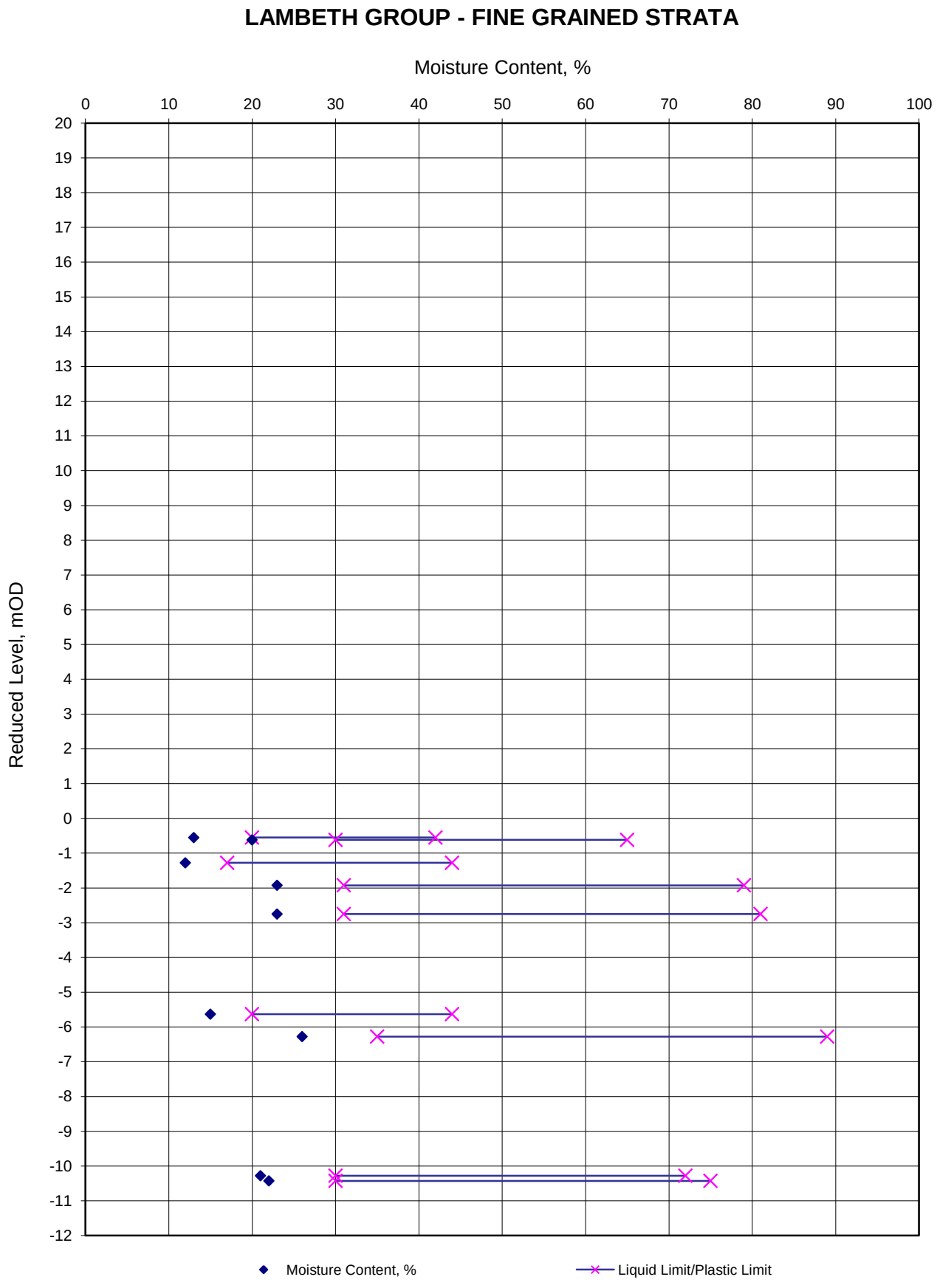
Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	13
	Carried out for	London Borough of Camden	

Moisture Content and Atterberg Limits Profile



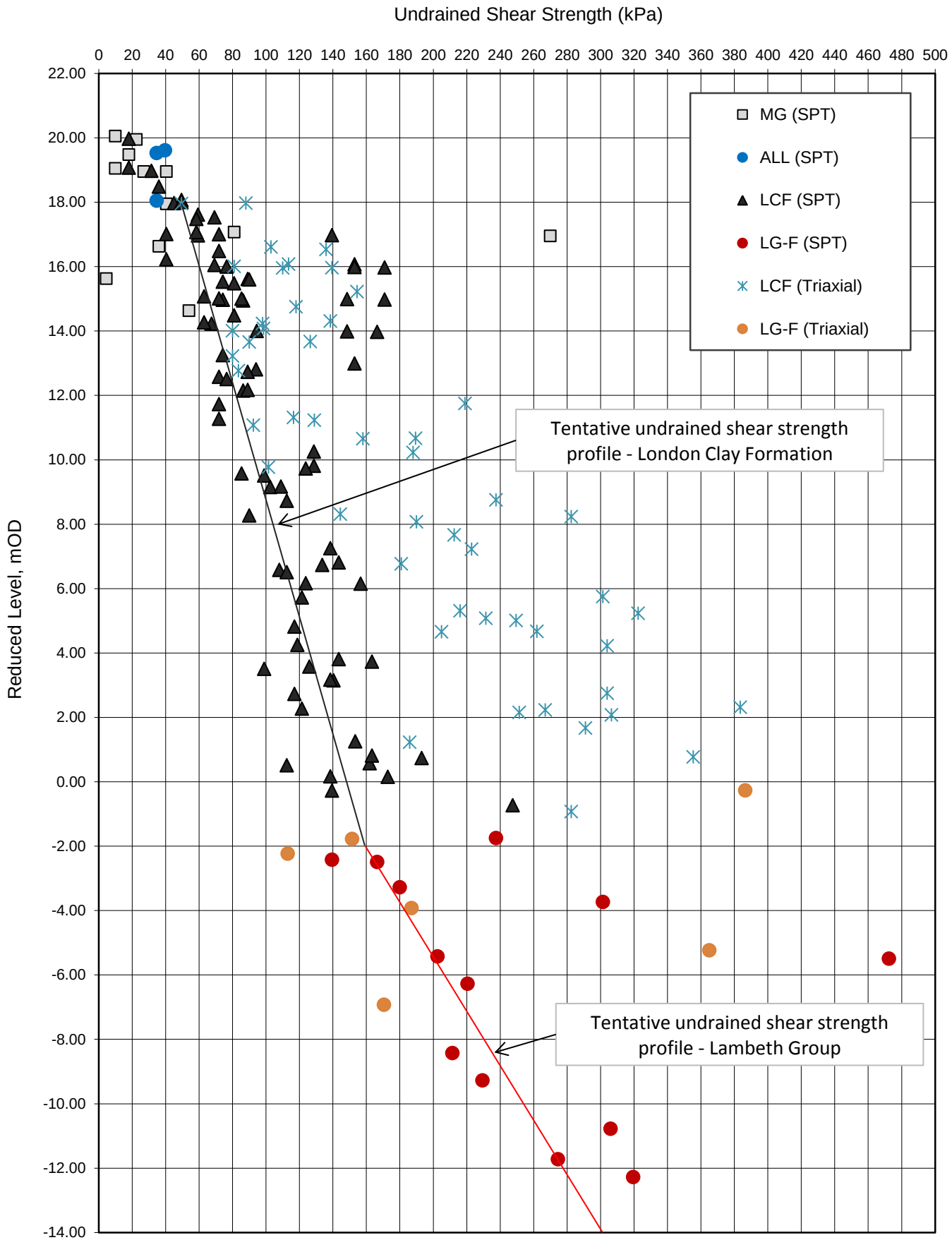
Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	14
	Carried out for	London Borough of Camden	

Moisture Content and Atterberg Limits Profile



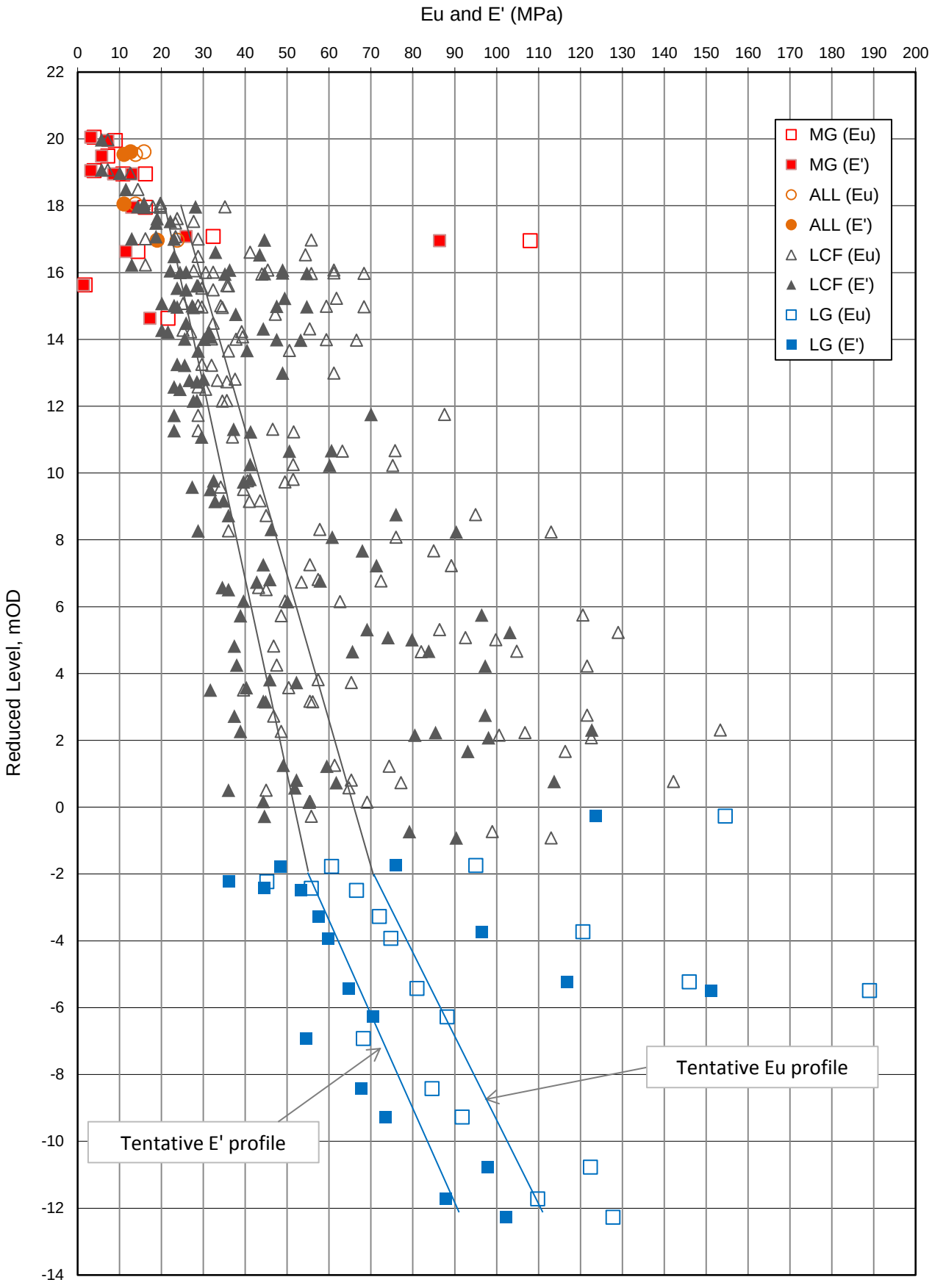
Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	15
	Carried out for	London Borough of Camden	

Undrained Shear Strength Profile



Notes:	Project	Central Somers Town, London	Figure
	Project No.	D5061-15	16
	Carried out for	London Borough of Camden	

Undrained and Drained Young's Modulus vs Reduced Level - Cohesive Strata



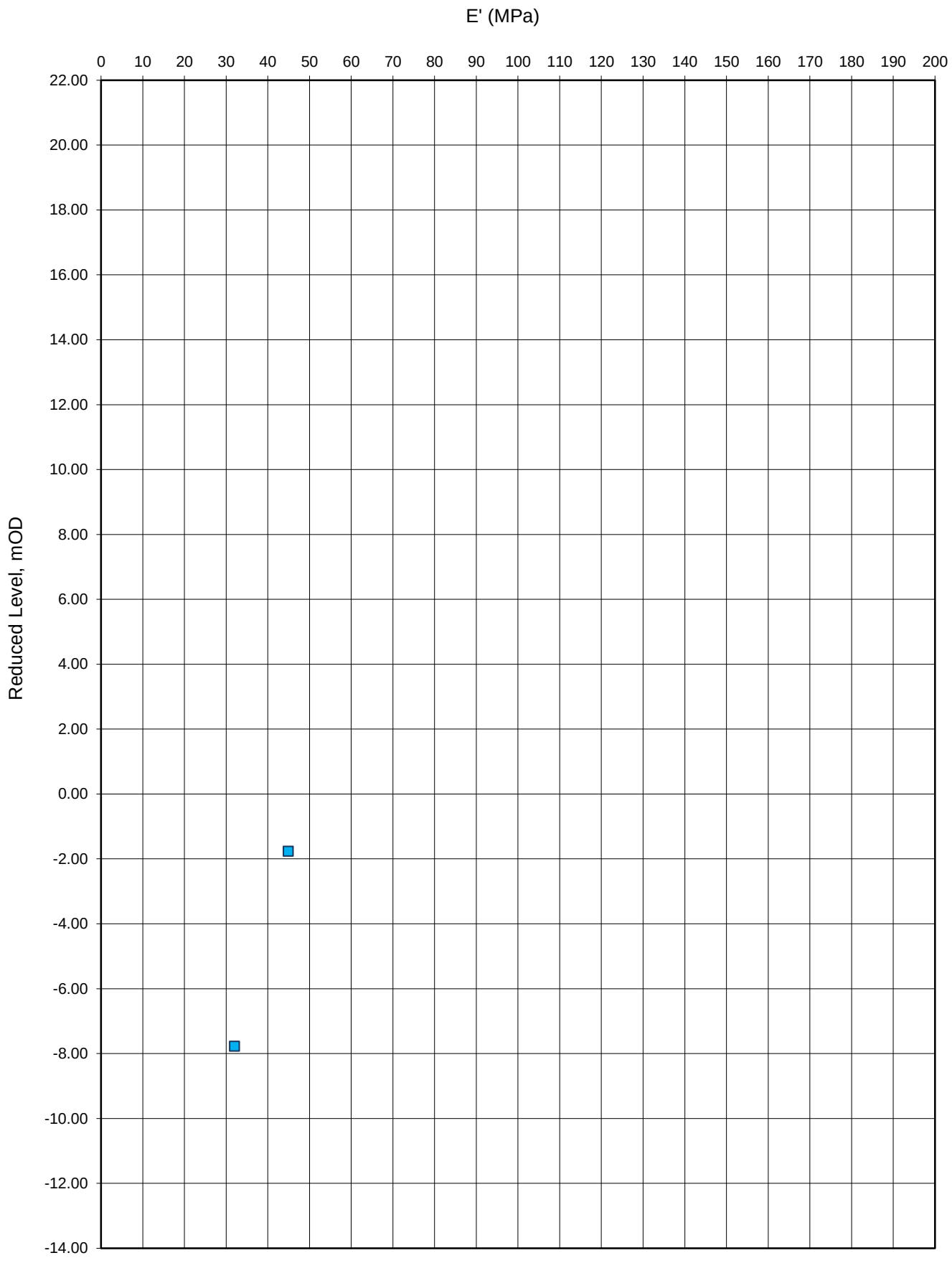
Notes:

Based on assumed relationship of $E_u = 400\ c_u$ and $E' = 0.8\ E_u$

Project	**Central Somers Town, London**
Project No.	**D5061-15**
Carried out for	**London Borough of Camden**

Figure 17

Estimated Young's Modulus: Lambeth Group Non-Cohesive Strata



Notes:
Based on assumed relationship of
E(kPa) = 500*(N+15)
(Bowles, 1996)

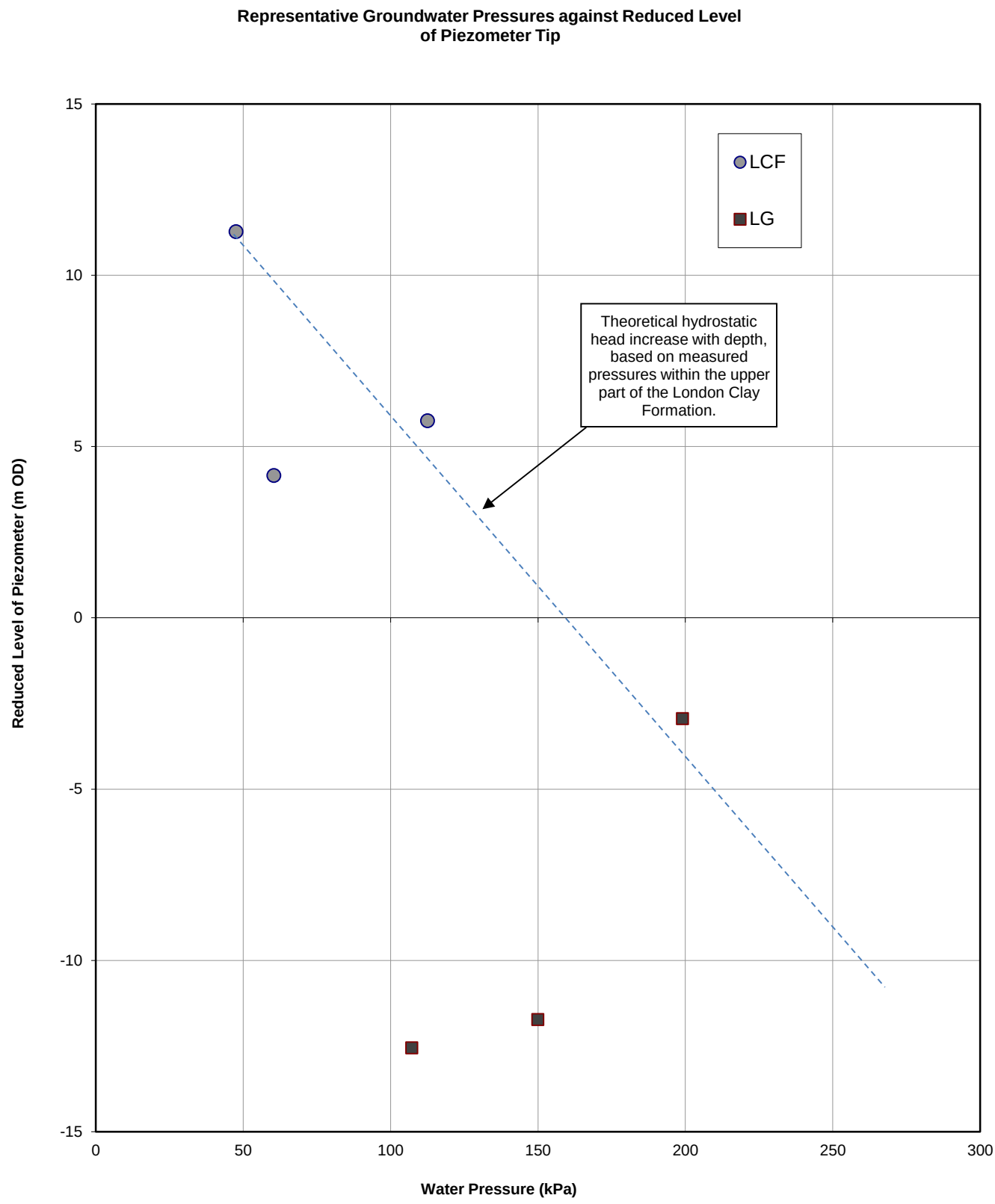
Project	**Central Somers Town, London**
Project No.	**D5061-15**
Carried out for	**London Borough of Camden**

Figure
18

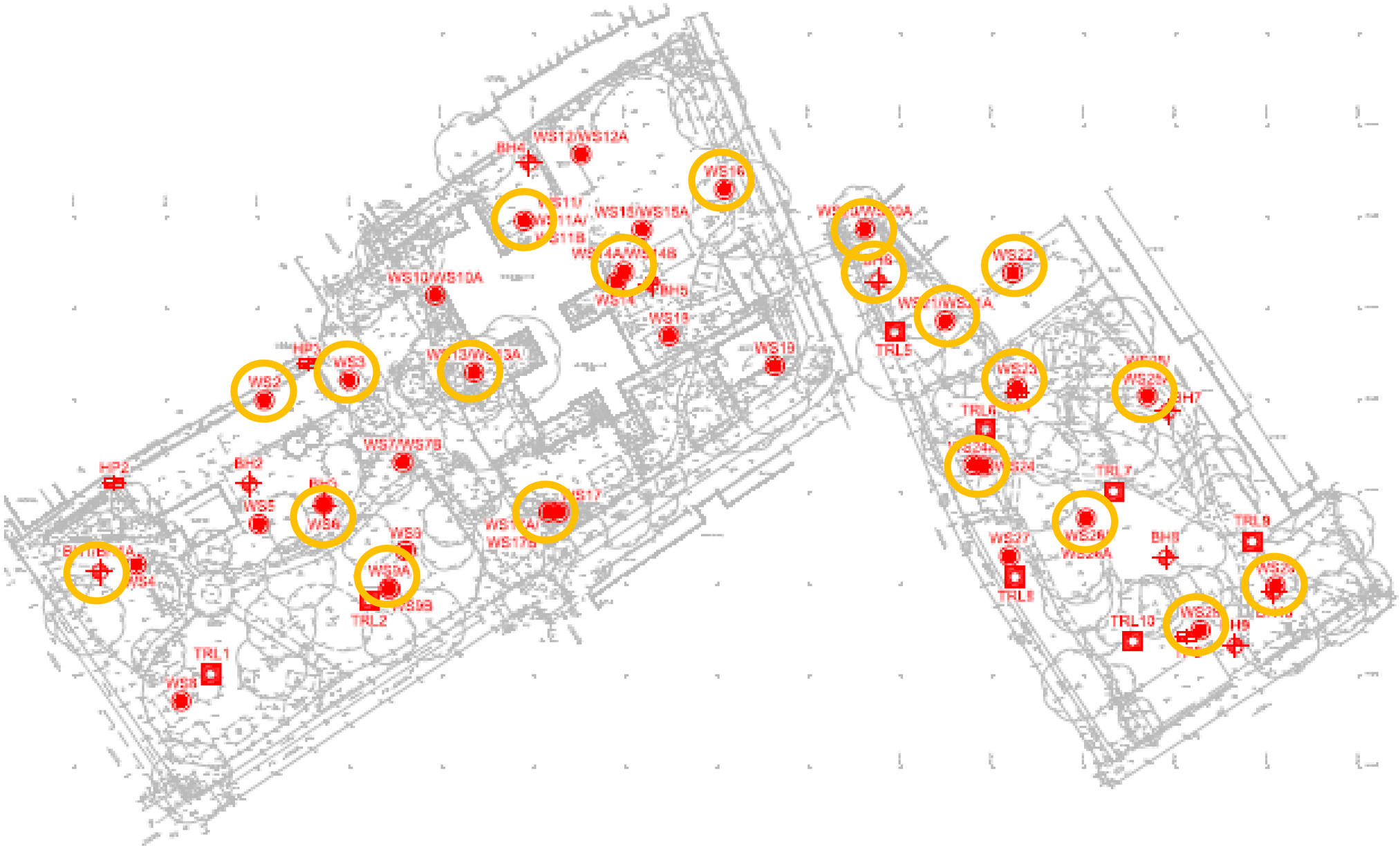
Groundwater Strikes

Hole No.	Strike No.	Strike		Groundwater Strike Depth (m)	Elapsed time after Strike (mins)	Groundwater Depth (m)	Groundwater Level (m OD)	Depth Sealed (mBGL)	Remarks
		Date	Time						
BH1	1	3 Dec 2015		3.40	20	3.40			Alluvium
BH1	2	3 Dec 2015		5.20	20	5.20			London Clay Fmn
BH1	3	3 Jul 2015		16.00	20	16.00			London Clay Fmn
BH2	1	26 Nov 2015		1.10	20	1.10			Made Ground
BH3	1	30 Nov 2015		22.00	20	21.90			Lambeth Group sand
BH4	1	23 Nov 2015		8.00	20	7.90			London Clay Fmn
BH4	2	23 Nov 2015		15.50	20	15.50			London Clay Fmn
BH7	1	14 Dec 2015		22.75	20	21.90		24.00	Lambeth Group sand
BH7	2	15 Dec 2015		25.30	20	21.80		26.00	Lambeth Group sand
BH9	1	18 Dec 2015		2.10	20	1.90		2.70	Made Ground
BH9	2	22 Dec 2015		7.10					London Clay Fmn

Plot of Water Pressures against Reduced Level



Notes	Project	Central Somers Town, London	Figure
	Project No	D5061-15	20
	Carried out for	London Borough of Camden	



N

Title

PLAN OF BURIED OBSTRUCTIONS

Project

Central Somers Town, London

Client

London Borough of Camden

Key

Boreholes terminated on obstructions (at 0.10 m to 4.20 m depth)

Scale

Not to scale

ESG

Project No	Figure No
D5061-15	**21**

N

Title

PLAN OF ASBESTOS OBSERVATIONS

Project

Central Somers Town, London

Client

London Borough of Camden

Key

Boreholes terminated on encountering asbestos

Scale

Not to scale

Project No	Figure No
D5061-15	22

Waste Classification Report

Z7B47-YA84L-H84BC

Job name

D5061 Central Somers Town, London

Waste Stream

ESG Core Contaminated Land Waste Suite WM3

Comments

Project

Site

Classified by

Name:
Gray, Malcom
Date:
16/02/2016 15:57 UTC
Telephone:
0118 932 8888

Company:
Environmental Scientifics Group
Glossop House
Hogwood Lane
Wokingham
RG40 4QW

Report

Created by: Gray, Malcom
Created date: 16/02/2016 15:57 UTC

Job summary

Classification of sample: BH1A ES 4 0.50

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

Sample details

Sample Name:
BH1A ES 4 0.50
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 32.8 mg/kg, converted to compound conc.:43.307 mg/kg or 0.00433%)
cadmium sulfide: (Cation conc. entered: 0.36 mg/kg, converted to compound conc.:0.463 mg/kg or 0.0000463%, Note 1 conc.: 0.000036%)
chromium(III) oxide: (Cation conc. entered: 24 mg/kg, converted to compound conc.:35.077 mg/kg or 0.00351%)
copper (I) oxide: (Cation conc. entered: 36.4 mg/kg, converted to compound conc.:40.982 mg/kg or 0.0041%)
lead chromate: (Cation conc. entered: 33.3 mg/kg, converted to compound conc.:51.942 mg/kg or 0.00519%, Note 1 conc.: 0.00333%)
mercury dichloride: (Cation conc. entered: 0.2 mg/kg, converted to compound conc.:0.271 mg/kg or 0.0000271%)
nickel dihydroxide: (Cation conc. entered: 28.1 mg/kg, converted to compound conc.:44.384 mg/kg or 0.00444%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<1.277 mg/kg or <0.000128%) IGNORED Because: "<LOD"
zinc chromate: (Cation conc. entered: 97.5 mg/kg, converted to compound conc.:270.479 mg/kg or 0.027%)
pH: (Whole conc. entered as: 8.2 pH, converted to conc.:8.2 pH or 8.2 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 55 mg/kg or 0.0055%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: 0.12 mg/kg or 0.000012%)
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
anthracene: (Whole conc. entered as: 0.12 mg/kg or 0.000012%)
fluoranthene: (Whole conc. entered as: 0.21 mg/kg or 0.000021%)
pyrene: (Whole conc. entered as: 0.23 mg/kg or 0.000023%)
benzo[a]anthracene: (Whole conc. entered as: 0.13 mg/kg or 0.000013%)
chrysene: (Whole conc. entered as: 0.22 mg/kg or 0.000022%)
benzo[b]fluoranthene: (Whole conc. entered as: 0.31 mg/kg or 0.000031%)
benzo[k]fluoranthene: (Whole conc. entered as: 0.15 mg/kg or 0.000015%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 0.27 mg/kg or 0.000027%)
indeno[123-cd]pyrene: (Whole conc. entered as: 0.24 mg/kg or 0.000024%)
dibenz[a,h]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"

benzo[ghi]perylene: (Whole conc. entered as: 0.24 mg/kg or 0.000024%)
polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"

Note 1 , used on:

Test: "HP 5 on STOT SE 1; H370, STOT RE 1; H372" for determinand: "cadmium sulfide"
Test: "HP 5 on STOT SE 2; H371, STOT RE 2; H373" for determinand: "cadmium sulfide"
Test: "HP 6 on Acute Tox. 4; H302" for determinand: "cadmium sulfide"
Test: "HP 7 on Carc. 1A; H350, Carc. 1B; H350, Carc. 1A; H350i, Carc. 1B; H350i" for determinand: "cadmium sulfide"
Test: "HP 10 on Repr. 1A; H360, Repr. 1A; H360D, Repr. 1A; H360Df, Repr. 1A; H360F, Repr. 1A; H360Fd, Repr. 1A; H360FD, Repr. 1B; H360, Repr. 1B; H360D, Repr. 1B; H360Df, Repr. 1B; H360F, Repr. 1B; H360Fd, Repr. 1B; H360FD " for determinand: "lead chromate"
Test: "HP 10 on Repr. 2; H361, Repr. 2; H361d, Repr. 2; H361f, Repr. 2; H361fd" for determinand: "cadmium sulfide"
Test: "HP 11 on Muta. 2; H341" for determinand: "cadmium sulfide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: BH4 ES 8 1.00

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

Sample details

Sample Name:
BH4 ES 8 1.00
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 17 mg/kg, converted to compound conc.:22.446 mg/kg or 0.00224%)
cadmium sulfide: (Cation conc. entered: 0.32 mg/kg, converted to compound conc.:0.411 mg/kg or 0.0000411%, Note 1 conc.: 0.000032%)
chromium(III) oxide: (Cation conc. entered: 32.4 mg/kg, converted to compound conc.:47.354 mg/kg or 0.00474%)
copper (I) oxide: (Cation conc. entered: 29.9 mg/kg, converted to compound conc.:33.664 mg/kg or 0.00337%)
lead chromate: (Cation conc. entered: 72 mg/kg, converted to compound conc.:112.307 mg/kg or 0.0112%, Note 1 conc.: 0.0072%)
mercury dichloride: (Cation conc. entered: 0.4 mg/kg, converted to compound conc.:0.541 mg/kg or 0.0000541%)
nickel dihydroxide: (Cation conc. entered: 24.4 mg/kg, converted to compound conc.:38.54 mg/kg or 0.00385%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.5 mg/kg, converted to compound conc.:1.277 mg/kg or 0.000128%)
zinc chromate: (Cation conc. entered: 77.2 mg/kg, converted to compound conc.:214.164 mg/kg or 0.0214%)
pH: (Whole conc. entered as: 7.5 pH, converted to conc.:7.5 pH or 7.5 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 25.7 mg/kg or 0.00257%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluoranthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
pyrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[a]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
chrysene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[b]fluoranthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[k]fluoranthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
indeno[123-cd]pyrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
dibenz[a,h]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"

benzo[ghi]perylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: BH5 ES 5 0.50

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

Sample details

Sample Name:
BH5 ES 5 0.50
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 16.6 mg/kg, converted to compound conc.:21.917 mg/kg or 0.00219%)
cadmium sulfide: (Cation conc. entered: 0.25 mg/kg, converted to compound conc.:0.321 mg/kg or 0.0000321%, Note 1 conc.: 0.000025%)
chromium(III) oxide: (Cation conc. entered: 26.4 mg/kg, converted to compound conc.:38.585 mg/kg or 0.00386%)
copper (I) oxide: (Cation conc. entered: 51.6 mg/kg, converted to compound conc.:58.096 mg/kg or 0.00581%)
lead chromate: (Cation conc. entered: 276.8 mg/kg, converted to compound conc.:431.757 mg/kg or 0.0432%, Note 1 conc.: 0.0277%)
mercury dichloride: (Cation conc. entered: 0.86 mg/kg, converted to compound conc.:1.164 mg/kg or 0.000116%)
nickel dihydroxide: (Cation conc. entered: 29.5 mg/kg, converted to compound conc.:46.595 mg/kg or 0.00466%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<1.277 mg/kg or <0.000128%) IGNORED Because: "<LOD"
zinc chromate: (Cation conc. entered: 92.8 mg/kg, converted to compound conc.:257.441 mg/kg or 0.0257%)
pH: (Whole conc. entered as: 9 pH, converted to conc.:9 pH or 9 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 135 mg/kg or 0.0135%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: 0.09 mg/kg or 0.000009%)
acenaphthylene: (Whole conc. entered as: 0.2 mg/kg or 0.00002%)
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: 0.75 mg/kg or 0.000075%)
anthracene: (Whole conc. entered as: 0.31 mg/kg or 0.000031%)
fluoranthene: (Whole conc. entered as: 2.5 mg/kg or 0.00025%)
pyrene: (Whole conc. entered as: 2.19 mg/kg or 0.000219%)
benzo[a]anthracene: (Whole conc. entered as: 1.52 mg/kg or 0.000152%)
chrysene: (Whole conc. entered as: 1.7 mg/kg or 0.00017%)
benzo[b]fluoranthene: (Whole conc. entered as: 2.62 mg/kg or 0.000262%)
benzo[k]fluoranthene: (Whole conc. entered as: 0.84 mg/kg or 0.000084%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 1.93 mg/kg or 0.000193%)
indeno[123-cd]pyrene: (Whole conc. entered as: 1.76 mg/kg or 0.000176%)
dibenz[a,h]anthracene: (Whole conc. entered as: 0.29 mg/kg or 0.000029%)

benzo[ghi]perylene: (Whole conc. entered as: 1.55 mg/kg or 0.000155%)
polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5

"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "naphthalene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "dibenz[a,h]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: BH6 ES 6 1.00

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

Sample details

Sample Name:
BH6 ES 6 1.00
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 15.5 mg/kg, converted to compound conc.:20.465 mg/kg or 0.00205%)
cadmium sulfide: (Cation conc. entered: 0.43 mg/kg, converted to compound conc.:0.553 mg/kg or 0.0000553%, Note 1 conc.: 0.000043%)
chromium(III) oxide: (Cation conc. entered: 26.7 mg/kg, converted to compound conc.:39.024 mg/kg or 0.0039%)
copper (I) oxide: (Cation conc. entered: 50 mg/kg, converted to compound conc.:56.294 mg/kg or 0.00563%)
lead chromate: (Cation conc. entered: 319.6 mg/kg, converted to compound conc.:498.517 mg/kg or 0.0499%, Note 1 conc.: 0.032%)
mercury dichloride: (Cation conc. entered: 0.63 mg/kg, converted to compound conc.:0.853 mg/kg or 0.0000853%)
nickel dihydroxide: (Cation conc. entered: 24.3 mg/kg, converted to compound conc.:38.382 mg/kg or 0.00384%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<1.277 mg/kg or <0.000128%) IGNORED Because: "<LOD"
zinc chromate: (Cation conc. entered: 167.7 mg/kg, converted to compound conc.:465.224 mg/kg or 0.0465%)
pH: (Whole conc. entered as: 8.2 pH, converted to conc.:8.2 pH or 8.2 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 36.71 mg/kg or 0.00367%)
chromium(VI) oxide: (Cation conc. entered: 0.2 mg/kg, converted to compound conc.:0.385 mg/kg or 0.0000385%)
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluoranthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
pyrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[a]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
chrysene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[b]fluoranthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[k]fluoranthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
indeno[123-cd]pyrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
dibenz[a,h]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"

benzo[ghi]perylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 2 on Ox. Gas 1; H270, Ox. Liq. 1; H271, Ox. Sol. 1; H271, Ox. Liq. 2; H272, Ox. Sol. 2; H272, Ox. Liq. 3; H272, Ox. Sol. 3; H272: Force this test to non hazardous because: "Unlikely to be hazardous by oxidizing at concentrations less than 1 mg/kg."
HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(VI) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Note 1 , used on:

Test: "HP 5 on STOT SE 1; H370, STOT RE 1; H372" for determinand: "cadmium sulfide"
Test: "HP 5 on STOT SE 2; H371, STOT RE 2; H373" for determinand: "cadmium sulfide"
Test: "HP 6 on Acute Tox. 4; H302" for determinand: "cadmium sulfide"
Test: "HP 7 on Carc. 1A; H350, Carc. 1B; H350, Carc. 1A; H350i, Carc. 1B; H350i" for determinand: "cadmium sulfide"
Test: "HP 10 on Repr. 1A; H360, Repr. 1A; H360D, Repr. 1A; H360Df, Repr. 1A; H360F, Repr. 1A; H360Fd, Repr. 1A; H360FD, Repr. 1B; H360, Repr. 1B; H360D, Repr. 1B; H360Df, Repr. 1B; H360F, Repr. 1B; H360Fd, Repr. 1B; H360FD " for determinand: "lead chromate"
Test: "HP 10 on Repr. 2; H361, Repr. 2; H361d, Repr. 2; H361f, Repr. 2; H361fd" for determinand: "cadmium sulfide"
Test: "HP 11 on Muta. 2; H341" for determinand: "cadmium sulfide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: BH7 ES 1 0.30

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

Sample details

Sample Name:
BH7 ES 1 0.30
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 7.9 mg/kg, converted to compound conc.:10.431 mg/kg or 0.00104%)
cadmium sulfide: (Cation conc. entered: 0.48 mg/kg, converted to compound conc.:0.617 mg/kg or 0.0000617%, Note 1 conc.: 0.000048%)
chromium(III) oxide: (Cation conc. entered: 21.5 mg/kg, converted to compound conc.:31.423 mg/kg or 0.00314%)
copper (I) oxide: (Cation conc. entered: 58 mg/kg, converted to compound conc.:65.302 mg/kg or 0.00653%)
lead chromate: (Cation conc. entered: 89.8 mg/kg, converted to compound conc.:140.071 mg/kg or 0.014%, Note 1 conc.: 0.00898%)
mercury dichloride: (Cation conc. entered: 0.21 mg/kg, converted to compound conc.:0.284 mg/kg or 0.0000284%)
nickel dihydroxide: (Cation conc. entered: 29.4 mg/kg, converted to compound conc.:46.437 mg/kg or 0.00464%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.8 mg/kg, converted to compound conc.:2.043 mg/kg or 0.000204%)
zinc chromate: (Cation conc. entered: 106.6 mg/kg, converted to compound conc.:295.724 mg/kg or 0.0296%)
pH: (Whole conc. entered as: 7.9 pH, converted to conc.:7.9 pH or 7.9 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 122 mg/kg or 0.0122%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: 0.09 mg/kg or 0.000009%)
acenaphthylene: (Whole conc. entered as: 0.12 mg/kg or 0.000012%)
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: 0.3 mg/kg or 0.00003%)
anthracene: (Whole conc. entered as: 0.14 mg/kg or 0.000014%)
fluoranthene: (Whole conc. entered as: 0.67 mg/kg or 0.000067%)
pyrene: (Whole conc. entered as: 0.62 mg/kg or 0.000062%)
benzo[a]anthracene: (Whole conc. entered as: 0.37 mg/kg or 0.000037%)
chrysene: (Whole conc. entered as: 0.4 mg/kg or 0.00004%)
benzo[b]fluoranthene: (Whole conc. entered as: 0.48 mg/kg or 0.000048%)
benzo[k]fluoranthene: (Whole conc. entered as: 0.24 mg/kg or 0.000024%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 0.38 mg/kg or 0.000038%)
indeno[123-cd]pyrene: (Whole conc. entered as: 0.39 mg/kg or 0.000039%)
dibenz[a,h]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[ghi]perylene: (Whole conc. entered as: 0.37 mg/kg or 0.000037%)

polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "naphthalene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: WS3 ES 10 3.00

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

Sample details

Sample Name:
WS3 ES 10 3.00
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 11.4 mg/kg, converted to compound conc.:15.052 mg/kg or 0.00151%)
cadmium sulfide: (Cation conc. entered: 0.32 mg/kg, converted to compound conc.:0.411 mg/kg or 0.0000411%, Note 1 conc.: 0.000032%)
chromium(III) oxide: (Cation conc. entered: 43.9 mg/kg, converted to compound conc.:64.162 mg/kg or 0.00642%)
copper (I) oxide: (Cation conc. entered: 27.4 mg/kg, converted to compound conc.:30.849 mg/kg or 0.00308%)
lead chromate: (Cation conc. entered: 79.6 mg/kg, converted to compound conc.:124.161 mg/kg or 0.0124%, Note 1 conc.: 0.00796%)
mercury dichloride: (Cation conc. entered: 0.24 mg/kg, converted to compound conc.:0.325 mg/kg or 0.0000325%)
nickel dihydroxide: (Cation conc. entered: 41.2 mg/kg, converted to compound conc.:65.075 mg/kg or 0.00651%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.8 mg/kg, converted to compound conc.:2.043 mg/kg or 0.000204%)
zinc chromate: (Cation conc. entered: 75.1 mg/kg, converted to compound conc.:208.338 mg/kg or 0.0208%)
pH: (Whole conc. entered as: 8.4 pH, converted to conc.:8.4 pH or 8.4 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 25.86 mg/kg or 0.00259%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluoranthene: (Whole conc. entered as: 0.09 mg/kg or 0.000009%)
pyrene: (Whole conc. entered as: 0.09 mg/kg or 0.000009%)
benzo[a]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
chrysene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[b]fluoranthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[k]fluoranthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
indeno[123-cd]pyrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
dibenz[a,h]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"

benzo[ghi]perylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: WS5 ES 2 1.50

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

Sample details

Sample Name:
WS5 ES 2 1.50
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 11.8 mg/kg, converted to compound conc.:15.58 mg/kg or 0.00156%)
cadmium sulfide: (Cation conc. entered: 0.18 mg/kg, converted to compound conc.:0.231 mg/kg or 0.0000231%, Note 1 conc.: 0.000018%)
chromium(III) oxide: (Cation conc. entered: 48.1 mg/kg, converted to compound conc.:70.301 mg/kg or 0.00703%)
copper (I) oxide: (Cation conc. entered: 31.1 mg/kg, converted to compound conc.:35.015 mg/kg or 0.0035%)
lead chromate: (Cation conc. entered: 32.5 mg/kg, converted to compound conc.:50.694 mg/kg or 0.00507%, Note 1 conc.: 0.00325%)
mercury dichloride: (Cation conc. entered: 0.11 mg/kg, converted to compound conc.:0.149 mg/kg or 0.0000149%)
nickel dihydroxide: (Cation conc. entered: 43.7 mg/kg, converted to compound conc.:69.024 mg/kg or 0.0069%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.6 mg/kg, converted to compound conc.:1.532 mg/kg or 0.000153%)
zinc chromate: (Cation conc. entered: 86.4 mg/kg, converted to compound conc.:239.686 mg/kg or 0.024%)
pH: (Whole conc. entered as: 7.9 pH, converted to conc.:7.9 pH or 7.9 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 54.93 mg/kg or 0.00549%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluoranthene: (Whole conc. entered as: 0.38 mg/kg or 0.000038%)
pyrene: (Whole conc. entered as: 0.41 mg/kg or 0.000041%)
benzo[a]anthracene: (Whole conc. entered as: 0.31 mg/kg or 0.000031%)
chrysene: (Whole conc. entered as: 0.3 mg/kg or 0.00003%)
benzo[b]fluoranthene: (Whole conc. entered as: 0.48 mg/kg or 0.000048%)
benzo[k]fluoranthene: (Whole conc. entered as: 0.2 mg/kg or 0.00002%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 0.38 mg/kg or 0.000038%)
indeno[123-cd]pyrene: (Whole conc. entered as: 0.27 mg/kg or 0.000027%)
dibenz[a,h]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[ghi]perylene: (Whole conc. entered as: 0.25 mg/kg or 0.000025%)

polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: WS8 ES 9 2.60

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

Sample details

Sample Name:
WS8 ES 9 2.60
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 19.5 mg/kg, converted to compound conc.:25.746 mg/kg or 0.00257%)
cadmium sulfide: (Cation conc. entered: 0.21 mg/kg, converted to compound conc.:0.27 mg/kg or 0.000027%, Note 1 conc.: 0.000021%)
chromium(III) oxide: (Cation conc. entered: 43.7 mg/kg, converted to compound conc.:63.87 mg/kg or 0.00639%)
copper (I) oxide: (Cation conc. entered: 45.8 mg/kg, converted to compound conc.:51.566 mg/kg or 0.00516%)
lead chromate: (Cation conc. entered: 98.2 mg/kg, converted to compound conc.:153.174 mg/kg or 0.0153%, Note 1 conc.: 0.00982%)
mercury dichloride: (Cation conc. entered: 0.18 mg/kg, converted to compound conc.:0.244 mg/kg or 0.0000244%)
nickel dihydroxide: (Cation conc. entered: 45.4 mg/kg, converted to compound conc.:71.709 mg/kg or 0.00717%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.9 mg/kg, converted to compound conc.:2.298 mg/kg or 0.00023%)
zinc chromate: (Cation conc. entered: 105.8 mg/kg, converted to compound conc.:293.505 mg/kg or 0.0294%)
pH: (Whole conc. entered as: 7.9 pH, converted to conc.:7.9 pH or 7.9 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 196 mg/kg or 0.0196%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: 0.33 mg/kg or 0.000033%)
acenaphthylene: (Whole conc. entered as: 0.26 mg/kg or 0.000026%)
acenaphthene: (Whole conc. entered as: 0.26 mg/kg or 0.000026%)
fluorene: (Whole conc. entered as: 0.16 mg/kg or 0.000016%)
phenanthrene: (Whole conc. entered as: 2.33 mg/kg or 0.000233%)
anthracene: (Whole conc. entered as: 0.62 mg/kg or 0.000062%)
fluoranthene: (Whole conc. entered as: 4.62 mg/kg or 0.000462%)
pyrene: (Whole conc. entered as: 3.96 mg/kg or 0.000396%)
benzo[a]anthracene: (Whole conc. entered as: 2.2 mg/kg or 0.00022%)
chrysene: (Whole conc. entered as: 2.3 mg/kg or 0.00023%)
benzo[b]fluoranthene: (Whole conc. entered as: 2.51 mg/kg or 0.000251%)
benzo[k]fluoranthene: (Whole conc. entered as: 1.08 mg/kg or 0.000108%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 2.05 mg/kg or 0.000205%)
indeno[123-cd]pyrene: (Whole conc. entered as: 1.45 mg/kg or 0.000145%)
dibenz[a,h]anthracene: (Whole conc. entered as: 0.26 mg/kg or 0.000026%)
benzo[ghi]perylene: (Whole conc. entered as: 1.31 mg/kg or 0.000131%)

polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "naphthalene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "acenaphthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluorene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "dibenz[a,h]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: WS16 ES 2 0.30

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
WS16 ES 2 0.30
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.216%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.216%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.216%)

Determinands (Moisture content: 0%, no correction)

arsenic trioxide: (Cation conc. entered: 7 mg/kg, converted to compound conc.:9.242 mg/kg or 0.000924%)
cadmium sulfide: (Cation conc. entered: 0.43 mg/kg, converted to compound conc.:0.553 mg/kg or 0.0000553%, Note 1 conc.: 0.000043%)
chromium(III) oxide: (Cation conc. entered: 39.8 mg/kg, converted to compound conc.:58.17 mg/kg or 0.00582%)
copper (I) oxide: (Cation conc. entered: 25.9 mg/kg, converted to compound conc.:29.161 mg/kg or 0.00292%)
lead chromate: (Cation conc. entered: 50.4 mg/kg, converted to compound conc.:78.615 mg/kg or 0.00786%, Note 1 conc.: 0.00504%)
mercury dichloride: (Cation conc. entered: 0.13 mg/kg, converted to compound conc.:0.176 mg/kg or 0.0000176%)
nickel dihydroxide: (Cation conc. entered: 15.4 mg/kg, converted to compound conc.:24.324 mg/kg or 0.00243%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.8 mg/kg, converted to compound conc.:2.043 mg/kg or 0.000204%)
zinc chromate: (Cation conc. entered: 59.4 mg/kg, converted to compound conc.:164.784 mg/kg or 0.0165%)

pH: (Whole conc. entered as: 8.7 pH, converted to conc.:8.7 pH or 8.7 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 2160 mg/kg or 0.216%)
chromium(VI) oxide: (Cation conc. entered: 0.1 mg/kg, converted to compound conc.:0.192 mg/kg or 0.0000192%)
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: 0.41 mg/kg or 0.000041%)
acenaphthene: (Whole conc. entered as: 0.25 mg/kg or 0.000025%)
fluorene: (Whole conc. entered as: 0.2 mg/kg or 0.00002%)
phenanthrene: (Whole conc. entered as: 2.2 mg/kg or 0.00022%)
anthracene: (Whole conc. entered as: 0.83 mg/kg or 0.000083%)
fluoranthene: (Whole conc. entered as: 4.57 mg/kg or 0.000457%)
pyrene: (Whole conc. entered as: 3.96 mg/kg or 0.000396%)
benzo[a]anthracene: (Whole conc. entered as: 2.14 mg/kg or 0.000214%)
chrysene: (Whole conc. entered as: 2.04 mg/kg or 0.000204%)
benzo[b]fluoranthene: (Whole conc. entered as: 2.93 mg/kg or 0.000293%)
benzo[k]fluoranthene: (Whole conc. entered as: 1.01 mg/kg or 0.000101%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 3.01 mg/kg or 0.000301%)
indeno[123-cd]pyrene: (Whole conc. entered as: 2.61 mg/kg or 0.000261%)
dibenz[a,h]anthracene: (Whole conc. entered as: 0.47 mg/kg or 0.000047%)
benzo[ghi]perylene: (Whole conc. entered as: 2.34 mg/kg or 0.000234%)
polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 2 on Ox. Gas 1; H270, Ox. Liq. 1; H271, Ox. Sol. 1; H271, Ox. Liq. 2; H272, Ox. Sol. 2; H272, Ox. Liq. 3; H272, Ox. Sol. 3; H272: Force this test to non hazardous because: "Unlikely to be hazardous by oxidizing at concentrations less than 1 mg/kg."
HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5

"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(VI) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "acenaphthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluorene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "dibenz[a,h]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Note 1 , used on:

Test: "HP 5 on STOT SE 1; H370, STOT RE 1; H372" for determinand: "cadmium sulfide"
Test: "HP 5 on STOT SE 2; H371, STOT RE 2; H373" for determinand: "cadmium sulfide"
Test: "HP 6 on Acute Tox. 4; H302" for determinand: "cadmium sulfide"
Test: "HP 7 on Carc. 1A; H350, Carc. 1B; H350, Carc. 1A; H350i, Carc. 1B; H350i" for determinand: "cadmium sulfide"
Test: "HP 10 on Repr. 1A; H360, Repr. 1A; H360D, Repr. 1A; H360Df, Repr. 1A; H360F, Repr. 1A; H360Fd, Repr. 1A; H360FD, Repr. 1B; H360, Repr. 1B; H360D, Repr. 1B; H360Df, Repr. 1B; H360F, Repr. 1B; H360Fd, Repr. 1B; H360FD " for determinand: "lead chromate"
Test: "HP 10 on Repr. 2; H361, Repr. 2; H361d, Repr. 2; H361f, Repr. 2; H361fd" for determinand: "cadmium sulfide"
Test: "HP 11 on Muta. 2; H341" for determinand: "cadmium sulfide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: WS26A ES 4 0.90

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

Sample details

Sample Name:
WS26A ES 4 0.90
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 12 mg/kg, converted to compound conc.:15.844 mg/kg or 0.00158%)
cadmium sulfide: (Cation conc. entered: 0.23 mg/kg, converted to compound conc.:0.296 mg/kg or 0.0000296%, Note 1 conc.: 0.000023%)
chromium(III) oxide: (Cation conc. entered: 35.6 mg/kg, converted to compound conc.:52.031 mg/kg or 0.0052%)
copper (I) oxide: (Cation conc. entered: 29.4 mg/kg, converted to compound conc.:33.101 mg/kg or 0.00331%)
lead chromate: (Cation conc. entered: 142.8 mg/kg, converted to compound conc.:222.742 mg/kg or 0.0223%, Note 1 conc.: 0.0143%)
mercury dichloride: (Cation conc. entered: 0.37 mg/kg, converted to compound conc.:0.501 mg/kg or 0.0000501%)
nickel dihydroxide: (Cation conc. entered: 28.9 mg/kg, converted to compound conc.:45.648 mg/kg or 0.00456%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.7 mg/kg, converted to compound conc.:1.788 mg/kg or 0.000179%)
zinc chromate: (Cation conc. entered: 69.2 mg/kg, converted to compound conc.:191.971 mg/kg or 0.0192%)
pH: (Whole conc. entered as: 8.4 pH, converted to conc.:8.4 pH or 8.4 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 76 mg/kg or 0.0076%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: 0.1 mg/kg or 0.00001%)
acenaphthylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthene: (Whole conc. entered as: 0.12 mg/kg or 0.000012%)
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: 0.78 mg/kg or 0.000078%)
anthracene: (Whole conc. entered as: 0.22 mg/kg or 0.000022%)
fluoranthene: (Whole conc. entered as: 1.49 mg/kg or 0.000149%)
pyrene: (Whole conc. entered as: 1.29 mg/kg or 0.000129%)
benzo[a]anthracene: (Whole conc. entered as: 0.88 mg/kg or 0.000088%)
chrysene: (Whole conc. entered as: 0.9 mg/kg or 0.00009%)
benzo[b]fluoranthene: (Whole conc. entered as: 1.18 mg/kg or 0.000118%)
benzo[k]fluoranthene: (Whole conc. entered as: 0.4 mg/kg or 0.00004%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 0.88 mg/kg or 0.000088%)
indeno[123-cd]pyrene: (Whole conc. entered as: 0.7 mg/kg or 0.00007%)
dibenz[a,h]anthracene: (Whole conc. entered as: 0.13 mg/kg or 0.000013%)
benzo[ghi]perylene: (Whole conc. entered as: 0.6 mg/kg or 0.00006%)

polychlorobiphenyls; PCB: (Whole conc. entered as: <0.035 mg/kg or <0.0000035%) IGNORED Because: "<LOD"

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "naphthalene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "acenaphthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "dibenz[a,h]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Note 1 , used on:

Test: "HP 5 on STOT SE 1; H370, STOT RE 1; H372" for determinand: "cadmium sulfide"
Test: "HP 5 on STOT SE 2; H371, STOT RE 2; H373" for determinand: "cadmium sulfide"
Test: "HP 6 on Acute Tox. 4; H302" for determinand: "cadmium sulfide"
Test: "HP 7 on Carc. 1A; H350, Carc. 1B; H350, Carc. 1A; H350i, Carc. 1B; H350i" for determinand: "cadmium sulfide"
Test: "HP 10 on Repr. 1A; H360, Repr. 1A; H360D, Repr. 1A; H360Df, Repr. 1A; H360F, Repr. 1A; H360Fd, Repr. 1A; H360FD, Repr. 1B; H360, Repr. 1B; H360D, Repr. 1B; H360Df, Repr. 1B; H360F, Repr. 1B; H360Fd, Repr. 1B; H360FD " for determinand: "lead chromate"
Test: "HP 10 on Repr. 2; H361, Repr. 2; H361d, Repr. 2; H361f, Repr. 2; H361fd" for determinand: "cadmium sulfide"
Test: "HP 11 on Muta. 2; H341" for determinand: "cadmium sulfide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: WS27 ES 3 1.00

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

Sample details

Sample Name:
WS27 ES 3 1.00
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 13.6 mg/kg, converted to compound conc.:17.956 mg/kg or 0.0018%)
cadmium sulfide: (Cation conc. entered: 10.64 mg/kg, converted to compound conc.:13.675 mg/kg or 0.00137%, Note 1 conc.: 0.00106%)
chromium(III) oxide: (Cation conc. entered: 78.5 mg/kg, converted to compound conc.:114.732 mg/kg or 0.0115%)
copper (I) oxide: (Cation conc. entered: 115.1 mg/kg, converted to compound conc.:129.59 mg/kg or 0.013%)
lead chromate: (Cation conc. entered: 121 mg/kg, converted to compound conc.:188.738 mg/kg or 0.0189%, Note 1 conc.: 0.0121%)
mercury dichloride: (Cation conc. entered: 1.52 mg/kg, converted to compound conc.:2.057 mg/kg or 0.000206%)
nickel dihydroxide: (Cation conc. entered: 38.3 mg/kg, converted to compound conc.:60.495 mg/kg or 0.00605%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 6 mg/kg, converted to compound conc.:15.322 mg/kg or 0.00153%)
zinc chromate: (Cation conc. entered: 270.9 mg/kg, converted to compound conc.:751.516 mg/kg or 0.0752%)
pH: (Whole conc. entered as: 8 pH, converted to conc.:8 pH or 8 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 219 mg/kg or 0.0219%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: 0.09 mg/kg or 0.000009%)
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: 0.31 mg/kg or 0.000031%)
anthracene: (Whole conc. entered as: 0.11 mg/kg or 0.000011%)
fluoranthene: (Whole conc. entered as: 0.95 mg/kg or 0.000095%)
pyrene: (Whole conc. entered as: 0.91 mg/kg or 0.000091%)
benzo[a]anthracene: (Whole conc. entered as: 0.59 mg/kg or 0.000059%)
chrysene: (Whole conc. entered as: 0.63 mg/kg or 0.000063%)
benzo[b]fluoranthene: (Whole conc. entered as: 0.77 mg/kg or 0.000077%)
benzo[k]fluoranthene: (Whole conc. entered as: 0.32 mg/kg or 0.000032%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 0.59 mg/kg or 0.000059%)
indeno[123-cd]pyrene: (Whole conc. entered as: 0.49 mg/kg or 0.000049%)
dibenz[a,h]anthracene: (Whole conc. entered as: 0.09 mg/kg or 0.000009%)
benzo[ghi]perylene: (Whole conc. entered as: 0.41 mg/kg or 0.000041%)

polychlorobiphenyls; PCB: (Whole conc. entered as: 0.0909 mg/kg or 0.00000909%)

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5
"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "dibenz[a,h]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "polychlorobiphenyls; PCB"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

Note C , used on:

determinand: "polychlorobiphenyls; PCB"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: WS28 ES 3 1.00

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

Sample details

Sample Name:
WS28 ES 3 1.00
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 11.7 mg/kg, converted to compound conc.:15.448 mg/kg or 0.00154%)
cadmium sulfide: (Cation conc. entered: 0.62 mg/kg, converted to compound conc.:0.797 mg/kg or 0.0000797%, Note 1 conc.: 0.000062%)
chromium(III) oxide: (Cation conc. entered: 33 mg/kg, converted to compound conc.:48.231 mg/kg or 0.00482%)
copper (I) oxide: (Cation conc. entered: 37.6 mg/kg, converted to compound conc.:42.333 mg/kg or 0.00423%)
lead chromate: (Cation conc. entered: 178.6 mg/kg, converted to compound conc.:278.583 mg/kg or 0.0279%, Note 1 conc.: 0.0179%)
mercury dichloride: (Cation conc. entered: 0.44 mg/kg, converted to compound conc.:0.596 mg/kg or 0.0000596%)
nickel dihydroxide: (Cation conc. entered: 25.3 mg/kg, converted to compound conc.:39.961 mg/kg or 0.004%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.6 mg/kg, converted to compound conc.:1.532 mg/kg or 0.000153%)
zinc chromate: (Cation conc. entered: 112.7 mg/kg, converted to compound conc.:312.646 mg/kg or 0.0313%)
pH: (Whole conc. entered as: 8.5 pH, converted to conc.:8.5 pH or 8.5 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 427 mg/kg or 0.0427%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: 0.32 mg/kg or 0.000032%)
acenaphthylene: (Whole conc. entered as: 1.72 mg/kg or 0.000172%)
acenaphthene: (Whole conc. entered as: 0.29 mg/kg or 0.000029%)
fluorene: (Whole conc. entered as: 0.2 mg/kg or 0.00002%)
phenanthrene: (Whole conc. entered as: 3.23 mg/kg or 0.000323%)
anthracene: (Whole conc. entered as: 1.88 mg/kg or 0.000188%)
fluoranthene: (Whole conc. entered as: 12.3 mg/kg or 0.00123%)
pyrene: (Whole conc. entered as: 11.9 mg/kg or 0.00119%)
benzo[a]anthracene: (Whole conc. entered as: 7.74 mg/kg or 0.000774%)
chrysene: (Whole conc. entered as: 7.05 mg/kg or 0.000705%)
benzo[b]fluoranthene: (Whole conc. entered as: 9.29 mg/kg or 0.000929%)
benzo[k]fluoranthene: (Whole conc. entered as: 3.67 mg/kg or 0.000367%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 8.31 mg/kg or 0.000831%)
indeno[123-cd]pyrene: (Whole conc. entered as: 6.36 mg/kg or 0.000636%)
dibenz[a,h]anthracene: (Whole conc. entered as: 1.09 mg/kg or 0.000109%)
benzo[ghi]perylene: (Whole conc. entered as: 5.25 mg/kg or 0.000525%)

polychlorobiphenyls; PCB: (Whole conc. entered as: 0.035 mg/kg or 0.0000035%)

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5

"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "naphthalene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "acenaphthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluorene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "dibenz[a,h]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "polychlorobiphenyls; PCB"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

Note C , used on:

determinand: "polychlorobiphenyls; PCB"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: WS29 ES 1 0.30

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

Sample details

Sample Name:
WS29 ES 1 0.30
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 12.3 mg/kg, converted to compound conc.:16.24 mg/kg or 0.00162%)
cadmium sulfide: (Cation conc. entered: 0.2 mg/kg, converted to compound conc.:0.257 mg/kg or 0.0000257%, Note 1 conc.: 0.00002%)
chromium(III) oxide: (Cation conc. entered: 26.7 mg/kg, converted to compound conc.:39.024 mg/kg or 0.0039%)
copper (I) oxide: (Cation conc. entered: 22.2 mg/kg, converted to compound conc.:24.995 mg/kg or 0.0025%)
lead chromate: (Cation conc. entered: 123.6 mg/kg, converted to compound conc.:192.793 mg/kg or 0.0193%, Note 1 conc.: 0.0124%)
mercury dichloride: (Cation conc. entered: 0.48 mg/kg, converted to compound conc.:0.65 mg/kg or 0.000065%)
nickel dihydroxide: (Cation conc. entered: 24.4 mg/kg, converted to compound conc.:38.54 mg/kg or 0.00385%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 0.5 mg/kg, converted to compound conc.:1.277 mg/kg or 0.000128%)
zinc chromate: (Cation conc. entered: 65 mg/kg, converted to compound conc.:180.32 mg/kg or 0.018%)
pH: (Whole conc. entered as: 8.7 pH, converted to conc.:8.7 pH or 8.7 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 57 mg/kg or 0.0057%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: 0.22 mg/kg or 0.000022%)
anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
fluoranthene: (Whole conc. entered as: 0.45 mg/kg or 0.000045%)
pyrene: (Whole conc. entered as: 0.41 mg/kg or 0.000041%)
benzo[a]anthracene: (Whole conc. entered as: 0.25 mg/kg or 0.000025%)
chrysene: (Whole conc. entered as: 0.26 mg/kg or 0.000026%)
benzo[b]fluoranthene: (Whole conc. entered as: 0.3 mg/kg or 0.00003%)
benzo[k]fluoranthene: (Whole conc. entered as: 0.15 mg/kg or 0.000015%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 0.26 mg/kg or 0.000026%)
indeno[123-cd]pyrene: (Whole conc. entered as: 0.23 mg/kg or 0.000023%)
dibenz[a,h]anthracene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
benzo[ghi]perylene: (Whole conc. entered as: 0.2 mg/kg or 0.00002%)

polychlorobiphenyls; PCB: (Whole conc. entered as: 0.035 mg/kg or 0.0000035%)

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5

"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "polychlorobiphenyls; PCB"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

Note C , used on:

determinand: "polychlorobiphenyls; PCB"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: TP2 ES 1 0.30

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

Sample details

Sample Name:
TP2 ES 1 0.30
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 15.6 mg/kg, converted to compound conc.:20.597 mg/kg or 0.00206%)
cadmium sulfide: (Cation conc. entered: 3.04 mg/kg, converted to compound conc.:3.907 mg/kg or 0.000391%, Note 1 conc.: 0.000304%)
chromium(III) oxide: (Cation conc. entered: 38.8 mg/kg, converted to compound conc.:56.708 mg/kg or 0.00567%)
copper (I) oxide: (Cation conc. entered: 68.5 mg/kg, converted to compound conc.:77.123 mg/kg or 0.00771%)
lead chromate: (Cation conc. entered: 221.9 mg/kg, converted to compound conc.:346.123 mg/kg or 0.0346%, Note 1 conc.: 0.0222%)
mercury dichloride: (Cation conc. entered: 1.4 mg/kg, converted to compound conc.:1.895 mg/kg or 0.000189%)
nickel dihydroxide: (Cation conc. entered: 26.3 mg/kg, converted to compound conc.:41.541 mg/kg or 0.00415%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 1.1 mg/kg, converted to compound conc.:2.809 mg/kg or 0.000281%)
zinc chromate: (Cation conc. entered: 239.6 mg/kg, converted to compound conc.:664.686 mg/kg or 0.0665%)
pH: (Whole conc. entered as: 8 pH, converted to conc.:8 pH or 8 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 90 mg/kg or 0.009%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: 0.09 mg/kg or 0.000009%)
acenaphthene: (Whole conc. entered as: 0.09 mg/kg or 0.000009%)
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: 0.74 mg/kg or 0.000074%)
anthracene: (Whole conc. entered as: 0.22 mg/kg or 0.000022%)
fluoranthene: (Whole conc. entered as: 1.51 mg/kg or 0.000151%)
pyrene: (Whole conc. entered as: 1.32 mg/kg or 0.000132%)
benzo[a]anthracene: (Whole conc. entered as: 0.75 mg/kg or 0.000075%)
chrysene: (Whole conc. entered as: 0.73 mg/kg or 0.000073%)
benzo[b]fluoranthene: (Whole conc. entered as: 0.9 mg/kg or 0.00009%)
benzo[k]fluoranthene: (Whole conc. entered as: 0.39 mg/kg or 0.000039%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 0.74 mg/kg or 0.000074%)
indeno[123-cd]pyrene: (Whole conc. entered as: 0.6 mg/kg or 0.00006%)
dibenz[a,h]anthracene: (Whole conc. entered as: 0.1 mg/kg or 0.00001%)
benzo[ghi]perylene: (Whole conc. entered as: 0.54 mg/kg or 0.000054%)

polychlorobiphenyls; PCB: (Whole conc. entered as: 0.035 mg/kg or 0.0000035%)

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5

"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "acenaphthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "dibenz[a,h]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "polychlorobiphenyls; PCB"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

Note C , used on:

determinand: "polychlorobiphenyls; PCB"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Classification of sample: HP5 ES 3 1.00

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

Sample details

Sample Name:
HP5 ES 3 1.00
Sample Depth:
m
Moisture content: **0%**
(no correction)

LoW Code:
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 correction)

arsenic trioxide: (Cation conc. entered: 10.9 mg/kg, converted to compound conc.:14.392 mg/kg or 0.00144%)
cadmium sulfide: (Cation conc. entered: 0.24 mg/kg, converted to compound conc.:0.308 mg/kg or 0.0000308%, Note 1 conc.: 0.000024%)
chromium(III) oxide: (Cation conc. entered: 44.9 mg/kg, converted to compound conc.:65.624 mg/kg or 0.00656%)
copper (I) oxide: (Cation conc. entered: 28.9 mg/kg, converted to compound conc.:32.538 mg/kg or 0.00325%)
lead chromate: (Cation conc. entered: 157.1 mg/kg, converted to compound conc.:245.047 mg/kg or 0.0245%, Note 1 conc.: 0.0157%)
mercury dichloride: (Cation conc. entered: 0.22 mg/kg, converted to compound conc.:0.298 mg/kg or 0.0000298%)
nickel dihydroxide: (Cation conc. entered: 29 mg/kg, converted to compound conc.:45.805 mg/kg or 0.00458%)
selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex: (Cation conc. entered: 1.1 mg/kg, converted to compound conc.:2.809 mg/kg or 0.000281%)
zinc chromate: (Cation conc. entered: 101.7 mg/kg, converted to compound conc.:282.131 mg/kg or 0.0282%)
pH: (Whole conc. entered as: 8.7 pH, converted to conc.:8.7 pH or 8.7 pH)
salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex: (Cation conc. entered: <0.5 mg/kg, converted to compound conc.:<0.942 mg/kg or <0.0000942%) IGNORED Because: "<LOD"
phenol: (Whole conc. entered as: <0.5 mg/kg or <0.00005%) IGNORED Because: "<LOD"
TPH (C6 to C40) petroleum group: (Whole conc. entered as: 111 mg/kg or 0.0111%)
chromium(VI) oxide: (Cation conc. entered: <0.1 mg/kg, converted to compound conc.:<0.192 mg/kg or <0.0000192%) IGNORED Because: "<LOD"
naphthalene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
acenaphthylene: (Whole conc. entered as: 0.33 mg/kg or 0.000033%)
acenaphthene: (Whole conc. entered as: 0.1 mg/kg or 0.00001%)
fluorene: (Whole conc. entered as: <0.08 mg/kg or <0.000008%) IGNORED Because: "<LOD"
phenanthrene: (Whole conc. entered as: 1.06 mg/kg or 0.000106%)
anthracene: (Whole conc. entered as: 0.46 mg/kg or 0.000046%)
fluoranthene: (Whole conc. entered as: 3.52 mg/kg or 0.000352%)
pyrene: (Whole conc. entered as: 3.24 mg/kg or 0.000324%)
benzo[a]anthracene: (Whole conc. entered as: 2 mg/kg or 0.0002%)
chrysene: (Whole conc. entered as: 1.77 mg/kg or 0.000177%)
benzo[b]fluoranthene: (Whole conc. entered as: 2.31 mg/kg or 0.000231%)
benzo[k]fluoranthene: (Whole conc. entered as: 1.12 mg/kg or 0.000112%)
benzo[a]pyrene; benzo[def]chrysene: (Whole conc. entered as: 2.07 mg/kg or 0.000207%)
indeno[123-cd]pyrene: (Whole conc. entered as: 1.58 mg/kg or 0.000158%)
dibenz[a,h]anthracene: (Whole conc. entered as: 0.26 mg/kg or 0.000026%)
benzo[ghi]perylene: (Whole conc. entered as: 1.39 mg/kg or 0.000139%)

polychlorobiphenyls; PCB: (Whole conc. entered as: 0.035 mg/kg or 0.0000035%)

Test Settings

HP 3(i) on Flam. Liq. 1; H224, Flam. Liq. 2; H225, Flam. Liq. 3; H226: Force this test to non hazardous because: "Unlikely to be hazardous by flammability at concentrations less than 1000 mg/kg."

Notes utilised in assessment

C14: Step 5

"identify whether any individual ecotoxic substance is present at or above a cut-off value ..." , used on:

Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "arsenic trioxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chromium(III) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "copper (I) oxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "mercury dichloride"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "nickel dihydroxide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "zinc chromate"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "acenaphthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "phenanthrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "pyrene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[b]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[k]fluoranthene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[a]pyrene; benzo[def]chrysene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "dibenz[a,h]anthracene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "benzo[ghi]perylene"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "polychlorobiphenyls; PCB"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "TPH (C6 to C40) petroleum group"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "cadmium sulfide"

Note 1 , used on:

Test: "HP 5 on STOT SE 1; H370, STOT RE 1; H372" for determinand: "cadmium sulfide"
Test: "HP 5 on STOT SE 2; H371, STOT RE 2; H373" for determinand: "cadmium sulfide"
Test: "HP 6 on Acute Tox. 4; H302" for determinand: "cadmium sulfide"
Test: "HP 7 on Carc. 1A; H350, Carc. 1B; H350, Carc. 1A; H350i, Carc. 1B; H350i" for determinand: "cadmium sulfide"
Test: "HP 10 on Repr. 1A; H360, Repr. 1A; H360D, Repr. 1A; H360Df, Repr. 1A; H360F, Repr. 1A; H360Fd, Repr. 1A; H360FD, Repr. 1B; H360, Repr. 1B; H360D, Repr. 1B; H360Df, Repr. 1B; H360F, Repr. 1B; H360Fd, Repr. 1B; H360FD " for determinand: "lead chromate"
Test: "HP 10 on Repr. 2; H361, Repr. 2; H361d, Repr. 2; H361f, Repr. 2; H361fd" for determinand: "cadmium sulfide"
Test: "HP 11 on Muta. 2; H341" for determinand: "cadmium sulfide"
Test: "HP 14 on R50, R50/53, R51/53, R52/53, R52, R53" for determinand: "lead chromate"

Determinand notes

Note 1 , used on:

determinand: "cadmium sulfide"
determinand: "lead chromate"

Note A , used on:

determinand: "selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex"
determinand: "zinc chromate"

Note C , used on:

determinand: "polychlorobiphenyls; PCB"

WM3: Unknown oil , used on:

determinand: "TPH (C6 to C40) petroleum group"

Appendix A: Classifier defined and non CLP determinands

chromium(III) oxide (CAS Number: 1308-38-9)

Conversion factor: 1.462
Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17/07/2015
Risk Phrases: R20, R22, R36, R37, R38, R42, R43, R50/53, R60, R61
Hazard Statements: Acute Tox. 4; H332, Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317, Repr. 1B; H360FD, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

pH

Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25/05/2015
Risk Phrases: None.
Hazard Statements: None.

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
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Risk Phrases: T+; R26/27/28, R32, N; R50/53
Additional Hazard Statements: Acute Tox. 2; H330, Acute Tox. 1; H310, Acute Tox. 2; H300, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, EUH032, EUH032>= 0.2%
Reason:
14/12/2015 - EUH032>= 0.2% hazard statement sourced from: WM3, Table C12.2

TPH (C6 to C40) petroleum group

Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25/05/2015
Risk Phrases: R10, R45, R46, R51/53, R63, R65
Hazard Statements: Flam. Liq. 3; H226, Asp. Tox. 1; H304, STOT RE 2; H373, Muta. 1B; H340, Carc. 1B; H350, Repr. 2; H361d, Aquatic Chronic 2; H411

acenaphthylene (CAS Number: 208-96-8)

Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17/07/2015
Risk Phrases: R22, R26, R27, R36, R37, R38
Hazard Statements: Acute Tox. 4; H302, Acute Tox. 1; H330, Acute Tox. 1; H310, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

acenaphthene (CAS Number: 83-32-9)

Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17/07/2015
Risk Phrases: R36, R37, R38, N; R50/53, N; R51/53
Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Aquatic Chronic 2; H411

fluorene (CAS Number: 86-73-7)

Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06/08/2015
Risk Phrases: N; R50/53
Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

phenanthrene (CAS Number: 85-01-8)

Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06/08/2015
Risk Phrases: R22, R36, R37, R38, R40, R43, N; R50/53
Hazard Statements: Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Carc. 2; H351, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Skin Irrit. 2; H315

anthracene (CAS Number: 120-12-7)

Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17/07/2015
Risk Phrases: R36, R37, R38, R43, N; R50/53
Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

fluoranthene (CAS Number: 206-44-0)

Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21/08/2015
Risk Phrases: Xn; R22, N; R50/53
Hazard Statements: Acute Tox. 4; H302, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

pyrene (CAS Number: 129-00-0)

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: 21/08/2015
Risk Phrases: Xi; R36/37/38, N; R50/53
Hazard Statements: Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

indeno[123-cd]pyrene (CAS Number: 193-39-5)

Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06/08/2015
Risk Phrases: R40
Hazard Statements: Carc. 2; H351

benzo[ghi]perylene (CAS Number: 191-24-2)

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: 23/07/2015
Risk Phrases: N; R50/53
Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

polychlorobiphenyls; PCB (CAS Number: 1336-36-3)

CLP index number: 602-039-00-4
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Risk Phrases: R33, N; R50/53, R33>= 0.005%
Additional Hazard Statements: STOT RE 2; H373, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, STOT RE 2; H373>= 0.005%, POP>= 0.005%, Carc. 1A; H350
Reason:
29/09/2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Notes

C14: Step 5

from section: WM3: C14 in the document: "WM3 - Waste Classification"

"identify whether any individual ecotoxic substance is present at or above a cut-off value ..."

Note 1

from section: 1.1.3.2, Annex VI in the document: "CLP Regulations"

"The concentration stated or, in the absence of such concentrations, the generic concentrations of this Regulation (Table 3.1) or the generic concentrations of Directive 1999/45/EC (Table 3.2), are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture."

Note A

from section: 1.1.3.1, Annex VI in the document: "CLP Regulations"

"Without prejudice to Article 17(2), the name of the substance must appear on the label in the form of one of the designations given in Part 3. In Part 3, use is sometimes made of a general description such as '... compounds' or '... salts'. In this case, the supplier is required to state on the label the correct name, due account being taken of section 1.1.1.4."

Note C

from section: 1.1.3.1, Annex VI in the document: "CLP Regulations"

"Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers."

WM3: Unknown oil

from section: Chapter 3: 4. Waste oils and other wastes containing or contaminated with oil in the document: "WM3 - Waste Classification"

"If the identity of the oil is unknown, and the petroleum group cannot be established, then the oil contaminating the waste can be classified as non-carcinogenic due to the presence of oil if all three of the following criteria are met:

- the waste contains **benzo[a]pyrene (BaP)** at a concentration of less than 0.01% (1/10,000th) of the TPH concentration (This is the carcinogenic limit specified in table 3.2 of the CLP for BaP)
- this has been determined by an appropriate and representative sampling approach in accordance with the principles set out in Appendix D, and
- the analysis clearly demonstrates, for example by carbon bands or chromatograph, and the laboratory has reasonably concluded that the hydrocarbons present have not arisen from petrol or diesel

"

Appendix C: Version

Classification utilises the following:

- CLP Regulations - 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
- WM3 - Waste Classification - May 2015
- 7th ATP - Regulation 2015/1221/EU of 24 July 2015
- 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

HazWasteOnline Engine: WM3 1st Edition, May 2015
HazWasteOnline Engine Version: 2016.42.3032.6032 (11 Feb 2016)
HazWasteOnline Database: 2016.42.3032.6032 (11 Feb 2016)