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ENVIRONMENT

Kirklees Council
New Woodley School & College
Huddersfield

Ground Investigation Report

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Ground Investigation Report

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY	
Site Address	Former Almondbury High School, 31 Oaken Bank Crescent, Huddersfield HD5 8LQ
Site Setting	A vacant former school comprising multiple interconnected school buildings of between one and three storeys and includes a swimming pool and basement plant area. The school buildings are surrounded by playing fields, sporting facilities, parking and associated infrastructure.
Proposed Development	It is anticipated that the existing school will be demolished and following an earthworks exercise to create a suitable development plateau, a new SEND school will be constructed. It is anticipated that the demolition contract will be separate to the main build and will include removal of all slabs, grubbing out of and backfill of existing footings, and backfilling of below ground voids, including basements and the swimming pool.
Published Ground Conditions	BGS mapping indicated that the site is directly underlain by bedrock of the Pennine Lower Coal Measures Formation (PLCMF) of the Pennine Coal Measures Group (Secondary A Aquifer), with no superficial deposits indicated.
Previous Reports	Ground investigation and Phase 1 and 2 Geo-environmental assessment has previously been undertaken by LK Group. Ground Conditions encountered comprised Topsoil in landscaped areas including localised ash and clinker. Made Ground thicknesses were variable and generally thin (<1.0m) but locally up to 2.0m and overlay weathered deposits (weathered mudstone and sandstone) of the PLCMF. The Made Ground included a thin sub-base layer of red shale in southern parts of the site. No groundwater was recorded. The hazardous ground gas assessment classified the site as CS1, whereby no gas protection measures required. No visual or olfactory evidence of hydrocarbons or volatile contaminants were identified during the GI. The laboratory chemical results indicated little impact except for elevated Benzo(a) pyrene at WS108 (0.0-0.6m), and asbestos fibres (Chrysotile) in a single sample at location WS113 at (0.2-0.4m); quantification showed <0.001%. Shallow bedrock was considered as a suitable bearing stratum for pad footings, following post demolition confirmation below the current buildings. From natural soils a Design Sulphate Classification of DS-1 AC-1s was recommended, while made ground soils conditions up to DS-3 was indicated.
Site Investigation	Additional ground investigation has been undertaken by BWB to supplement the existing information with an emphasis of informing geotechnical design and the earthworks, further assessing the localised impact identified by LK Group, assessing the significant of the red shale, and obtaining additional information to inform drainage design.
Ground Conditions Encountered	The ground conditions recorded confirmed the published geology discussed in the LKC report comprising a generally shallow thickness of anthropogenic (made) ground over weathered siltstone bedrock.
Geotechnical Appraisal	Weathered siltstone bedrock will provide adequate bearing support for foundation loads. Traditional spread pad or strips footings bearing upon the weathered bedrock at shallow depth <1.0m is likely to be the most economical solution in the west of the building where earthworks are to lower site levels. Beneath the east and north of the proposed building footprint, increasing site levels above current levels will mean bedrock is perhaps up to 4m below finished

	earthworks levels. It is anticipated shallow foundations of up to 120kPa bearing pressure may be suitable, subject to control of differential settlement concerns. Soakaway infiltration rates for natural weathered subsoils and bedrock of 10^{-5} to 10^{-6} m/s have been confirmed. No significant potential for re-emergence has been identified.
Environmental Appraisal	No significant contamination has been identified.
Waste Assessment	The preliminary assessment using HazWasteOnline has identified that soils at the site would generally be categorised as non-hazardous.
Recommendations	A Material Management Plan (MMP) will need to be lodged with CL:AIRE to demonstrate the suitable reuse of materials at the site. This will need to be supported by a Remediation Strategy. Foundations options need to be considered and finalised in consideration of the proposed development layout and earthworks levels, with particular attention to mitigation of potential differential settlement between areas founded on bedrock and areas founded on fill.
This summary should be read in conjunction with BWB's full report (ref. 22315-BWB-ZZ-XX-RP-G-0002_GIR) and reflects an assessment of the Site based on information received by BWB at the time of production.	

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1. INTRODUCTION

Instruction

1.1 The proposed development is to comprise the demolition of the existing school buildings, enabling works including levelling the site which will require earthworks cut and fill to achieve levels for construction, and then construction of a new school. A masterplan is included in **Appendix 1.** It is anticipated that the demolition contract will be separate to the main build and will include removal of all slabs, grubbing out of and backfill of existing footings, and backfilling of below ground voids, including basements and the swimming pool.

Previous Reports

1.2 The following geo-environmental reports have previously been completed for the site:

- ''*Phase I Preliminary Risk Assessment, Almondbury SEND School*', by LK Consult Ltd. for Wilde Consulting Engineers, ref. LKC 22 1679 -A1-PRA, dated February 2023. and
- 'Phase II Geo-Environmental Exploratory Investigation, Risk Assessment and Remediation Strategy, Almondbury SEND School', by LK Consult Ltd. for Wilde Consulting Engineers, ref. LKC 22 1679-B1-GI, dated May 2023

1.3 It is understood that the Client has reliance on the above reports and therefore pertinent information has been included within this report.

Objectives

1.4 The objectives of the report are to confirmand and fill in any gaps from the LK consult GI:

- Confirm the ground and groundwater conditions across the site.
- To assess the localised presence and extent of Asbestos contamination and elevated Poly-aromatic Hydrocarbons (PAH) in shallow soils previously identified in The LK GI report;
- To confirm the strength properties of the soil beneath the site to support shallow foundation design; and
- Classify assess the site soils for reuse in the earthworks, including the extent and possible reuse of red shale materials previously identified by LK GI report

1.5 The report has been completed in accordance with BS10175:2011(+A2:2017) 'Investigation of Potentially Contaminated Sites, Code of Practice' and EA Guidance on Risk Management of Land Contamination https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm.

Scope of Works

1.6 The ground investigation scope of works was completed on 10th April 2024 and comprised the following.

- Non-intrusive survey of excavation locations for underground utilities.
- Five machine excavated trial pits FP101 to FP105 to assess current building foundations.
- Four machine excavated trial pits TP201 to TP204 to confirm ground conditions. TP204 was positioned to target a Previously identified Benzo(a)pyrene exceedance.
- Four machine excavated Soakaway Pits SA201 to SA204 to assess permeability of soils for use and design of soakways.
- Eight windowless sampler Dynamic driven boreholes; DS201 to DS203 positioned to assess the previously identified asbestos fibres in shallow made ground soils; and DS205 to DS208 installed with standpipes to assess re-emergence of groundwater from soakaways.
- Six concrete cores DS209 to DS211 within the current floor slab to confirm thickness, construction detail and composition of base materials, along with underlying ground conditions.
- Continuous groundwater monitoring of DS205 to DS208.
- Chemical analysis of soils.
- Geotechnical testing of soil samples for earthworks classification.

2. THE SITE

Site Location

2.1 The site is located south of Fernside Avenue in the village of Almondbury, Huddersfield centred at National Grid reference 417006, 415969. The location of the site is shown in **Figure 2-1.**

Figure 2-1: Site Location Plan

Site Description

2.2 The site is approximately 2.8 hectares in area and irregular in shape. It gently grades from an elevation of over 140m AOD in the north-west to 120m AOD in the south-east.

2.3 It is currently occupied by the closed former Almondbury High School and adjacent disused sports centre, the associated multi-sports courts to the south-west of the buildings and a grassed area to the north-west. It does not include the playing fields to the south-east.

Previous Report Summary

2.4 The following paragraphs refer to information contained in the Phase II Geo-Environmental Exploratory Investigation, Risk Assessment and Remediation Strategy Report, by LK Consult Ltd. for Wilde Consulting Engineers, ref. LKC 22 1679-B1-GI, dated May 2023

Topsoil

2.5 Topsoil is present in landscaped areas. Topsoil is described as a dark brown sandy Silt with rootlets, some ash, clinker and with fragments of brick, sandstone, mudstone, coal and rare plastic and ceramics. It was recorded between 1.0m and 0.3m thickness.

Made Ground (Anthropogenic ground)

2.6 The ground investigation (GI) revealed a variable depth of Made Ground of generally less than 1.0m thickness but locally reaching 2.0m thickness overlying bedrock which is described as weathered mudstone and sandstone.

2.7 Made Ground (anthropogenic ground) was generally thin, less than 1m in thickness, across much of the site. It was recorded to comprise gravels of construction materials below pavements and slabs described as red shale (up to 100mm thickness), brick and sandstone, or gravelly clays or reworked subsoils and weathered bedrock containing some anthropogenic materials such as coal, and brick.

2.8 Made Ground up to 2.0m thickness was identified at WS105, and as probable at WS127. While WS126 also had probably 1.3m of Made Ground. WS126 and WS127 appeared to be associated with reworked soils forming a earthwork bund at the east of the site. The organic layers in WS127 and WS126 are anticipated to be the buried ground surface below the earthwork bund.

Residual soils

2.9 The ground investigation revealed an absence of subsoils over much of the site. Instead Made Ground or construction build up was found over bedrock.

2.10 Where present, subsoils were described as firm brown silty sandy, gravelly clay.

Pennine Coal Measures bedrock

2.11 Bedrock was encountered at 0.1m depth to 2.0m depth and between 120mAOD and 136mAOD and was described as weathered mudstone and sandstone.

Groundwater

2.12 No groundwater was recorded during the GI. Post investigation monitoring recorded only slightly accumulation of groundwater at 1.51m to 1.63m below ground level in one well only WS102.

2.13 Soakaway testing carried out within weathered bedrock recorded infiltration rates between 10^{-4} meters per second (m/s) to 10^{-6} m/s.

Ground Gas

2.14 No ground gas monitoring has been carried out to date. An assessment was made based on Made Ground thicknesses, soil organic matter and total organic carbon soil

contents. The site was classified as Characteristic Situation 1 (CS1) whereby nNo gas protection measures are required.

Contamination

2.15 No visual or olfactory evidence of hydrocarbons or volatile contaminants were recorded at any exploratory locations. No elevated concentrations of contaminants were identified across the site except for:

- Elevated Benzo(a) pyrene at WS108 (0.0-0.6m).
- Asbestos fibres (Chrysotile) in a single sample at location WS113 (0.2-0.4m) with a quantification of <0.001%.

2.16 The above contaminants were assessed as a local moderate risk to Human health.

Foundations

2.17 Shallow bedrock was assessed as a suitable bearing stratum for pad footings, following post demolition confirmation below the current buildings.

Concrete

2.18 Investigations of floor slabs indicate ground bearing slabs of 170mm to 290mm thickness. No reinforcing was recorded. The sub-base is reported as reworked gravel, or possible MOT over bedrock.

Concrete in Aggressive Ground

2.19 Sulphate testing on soil samples identified natural soils a Design Sulphate Classification as DS-1 AC-1s and Made Ground soils of up to DS-3.

3. PUBLISHED GROUND CONDITIONS

Published Geology

3.1 British Geological Survey (BGS) mapping (GeoIndex) records indicate that the site is devoid of natural Superficial deposits and the solid geology comprises strata of the Pennine Lower Coal Measures Formation of the Pennine Coal Measures Group. The BGS 1;50,000 Map Sheet 77, 2003, indicates that the Greenmoor Rock (sandstone) outcrops beneath the site.

3.2 The GI report described the solid geology as mudstone. No superficial deposits were identified.

Hydrogeology

3.3 The underlying bedrock has been classified by the BGS and Environment Agency (EA) as a Secondary A Aquifer.

Hydrology

3.4 The closest mapped open surface water feature to the site is approximately 500m south of the site, an unnamed tributary of Fenay Beck.

4. ENVIRONMENTAL AND GEOTECHNICAL GROUND INVESTIGATION

4.1 Additional ground investigation has been undertaken by BWB to supplement the existing information with an emphasis of informing geotechnical design and the earthworks, further assessing the localised impact identified by LK Group, assessing the significant of the red shale, and obtaining additional information to inform drainage design. Intrusive ground investigation works were undertaken between 21st February and 20th March 2024 and comprised the following works:

- Clearance of investigation locations by a specialist buried services tracing company;
- Collection of coordinates and elevations of exploratory hole locations;
- Advancement of eleven boreholes (DS201 – DS212 excluding DS211) by dynamic sampling drilling techniques, to a maximum depth of 2.00m bgl with completion of SPTs and installations of groundwater monitoring wells in DS205 to DS208.
- Concrete coring of floor slab DS209 to DS214 with dynamic sample follow using a hydraulic modular rig to assess the current slab thickness, construction and sub-base materials;
- The advancement of nine machine excavated trial pits including five foundation inspection pits (TP201 to TP204 and FP101 to FP105) to a maximum depth of 2m bgl;
- Excavation of four soakaway pits (SA201 to SA204) to maximum depth of 3.0m bgl. To allow Permeability testing undertaken.
- Continuous ground groundwater level monitoring of DS205 to DS209 to assess for potential soakaway re-emergence.
- Collection of environmental soil samples for chemical analysis at a UKAS and MCERTS accredited laboratory; and
- Collection of bulk and disturbed soil samples for geotechnical analysis at a UKAS accredited laboratory.

4.2 An exploratory hole location plan is presented as **Drawing 1**. BWB exploratory hole records are presented as **Appendix 2**, the SPT calibration certificate is presented in **Appendix 3**, a photographic record is presented as **Appendix 4** and soakaway test results are presented as **Appendix 5**.

4.3 The site investigation works were carried out in general accordance with BS5930:2015 'Code of Practice for Site Investigations' and BS10175:2011 'Investigation of Potentially Contaminated Sites'.

Chemical Sampling Strategy

4.4 The sampling strategy was developed to try and confirm and assess the residual risks identified in the LKC GI report:

- DS201 to DS203 targeted the area where asbestos fibres were found in WS113 in a sample at 0.2-0.4m.

- TP204 was to assess the Elevated PAH found at 0.0-06m in WS108, however due to live services at the time of the investigation no trial pit could currently be sited directly in the area, and TP204 had to be relocated.

Chemical Analytical Strategy

4.5 Soil samples collected from exploratory hole locations were sent to i2 Analytical Services (UKAS and MCERTS accredited) for chemical analysis. The following chemical analytical testing was undertaken:

- Eight soil samples tested for a soil suite (BWB Standard Suite) comprising arsenic, barium, beryllium, water soluble boron, cadmium, chromium, hexavalent chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate (2:1 extract), total phenols, total cyanide, free cyanide, complex cyanide, fraction of organic carbon, pH, Polycyclic Aromatic Hydrocarbons (PAHs) (United States Environment Protection Agency priority 16 compounds) and Total Petroleum Hydrocarbons (TPH) C6-C40;
- Three samples of Tarmac were assessed for coal tar.
- Five soil samples for asbestos screening; and
- Four samples were assessed for water soluble sulphate 2:1 soil extract.

4.6 The results of the soil chemical testing are presented as **Appendix 6**.

Geotechnical Strategy

4.7 Trial holes FP101 to FP105 were used to assess the current foundation depths and bearing stratum.

4.8 TP201 and TP202 were located to assess the presence of former underground structures associated with the former military anti-aircraft facility. TP203 was positioned to assess the thickness and composition of Made Ground soils adjacent to the swimming pool.

4.9 The positions in the south would also further assess the extents of the red shale.

4.10 In-situ soil testing comprising SPTs were undertaken within the dynamic sample holes. SPT 'N' values are included on the exploratory hole logs presented as **Appendix 2**.

4.11 Selected disturbed and bulk samples were collected from the investigation locations and sent to the geotechnical project laboratory (Professional Soils Laboratories Ltd), which is UKAS accredited. The following geotechnical testing was undertaken;

- Five samples tested for moisture content;
- Five samples tested for Atterberg (liquid and plastic) limits;
- Five samples tested for particle size distribution;
- Four samples tested for aqueous sulphate and pH;
- Four (2.5kg) compaction testing.

4.12 The results of the geotechnical testing are included as **Appendix 7**.

Limitations and Uncertainty

4.13 Due to live services, and in some instances access, some of the originally proposed locations had to be moved. Locations TP203, TP204, FP101, FP104, FP105, SA203 and SA204 were all repositioned. Their locations are indicated on **Drawing 1**.

5. GROUND CONDITIONS ENCOUNTERED

Geological Summary

5.1 The ground conditions recorded confirmed the published geology discussed in the LKC report comprising a generally shallow thickness of anthropogenic ground over weathered siltstone bedrock.

5.2 The recorded ground conditions are summarised in **Table 4** below**.** Uncorrected SPT results collected from the borehole locations are presented on the exploratory hole records presented in **Appendix 2**.

Table 5-1 : Summary of Ground Conditions

Stratum	Top Depth (m)		Base Depth (m)		Thickness (m)		SPT N Value	
	Min	Max	Min	Max	Min	Max	Min	Max
Topsoil	0.0	1.40	0.35	1.45	0.05	0.85	N/A	N/A
Flagstone/Tarmac Pavements/sub- base	0.0	0.0	0.1	0.2	0.1	0.2	N/A	N/A
Concrete Floor Slab Excluding screed	0.0	0.0	0.21	0.3	0.16	0.21	N/A	N/A
Anthropogenic ground excluding slabs & Pavements	0.1	0.5	0.4	>3.0	0.0	>3.0	16	36
Subsoil	0.1	1.45	0.2	2.0	0.0	0.9	N/A	N/A
Weathered Bedrock	0.2	>3.0	NR	NR	NR	NR	>50	>50

Soil Descriptions

Topsoil

5.3 Topsoil was encountered across the site in landscaped areas at thicknesses of between 0.4m and 0.85m. The composition also displayed consistency, typically comprising dark brown silty slightly gravelly to gravelly clay with rootlets. The gravel was typically of shale, brick, concrete, siltstone and sandstone.

5.4 The depth of topsoil over the site may vary from that encountered at the locations investigated within the scope of this investigation which may result in inaccurate estimations of topsoil quantities on the site.

Pavements

5.5 Tarmac playgrounds, paved footpaths and road surface was intercepted by several investigation locations. Tarmac thickness of 50mm to 100mm are consistent with LKC investigations. Sub-base comprises sandy gravel of either red shale, crushed concrete

or limestone aggregate typically 100mm thickness below tarmac, and 50mm below paving slabs for footpaths.

Floor Slabs

5.6 Floor slabs were investigated by concrete coring within the building following asbestos removal. Screed typically 40mm to 50mm thick was found over reinforced concrete. A single layer of mesh appeared to be present of 10-20mm re-bar. Two layers of concrete were present in most locations; an upper 70-100mm reinforced layer with aggregate of 20mm maximum, then a plastic membrane, over a lower non-reinforced layer of 70mm to 140mm with 10mm aggregate. The slab overlayed typical 100mm of red shale sandy gravel base.

5.7 At a single location DS211, the floor was suspended comprising honeycomb precast concrete slab.

Anthropogenic (Made) Ground

5.8 Anthropogenic Ground was encountered within the majority of exploratory holes at the site beneath either floor slabs, pavement layers or Topsoil. Its thicknesses raging between 0m and >3m. However, there was a pattern to its occurrence. Anthropogenic ground was mainly absent to the west side of the current building, in locations DS201-DS204, TP203, and SA202 where it appeared the site had been subject to previous, earthworks cut.

5.9 The thickest Anthropogenic Ground was to the north and east of the building extending below the perimeter road where a break line in the slope occurs. Here the site has been built up. The thickness recoded was 1.0m to >3.0m, increasing from south to north. Here the fill was loose and was collapsing into the excavations.

5.10 Beyond the break in slope below (east of) the road, DS205 to DS208 recorded no Anthropogenic Ground. The typical composition was a gravelly silty clay of reworked underlying natural subsoils and weathered bedrock with inclusions of demolition or construction waste, such as brick, and concrete. Occasional boulders of concrete were in the vicinity of SA204 which posed an obstruction to excavation of this soakaway. It was relocated to the south of its original position.

5.11 At DS209 and TP204 the Anthropogenic ground was more variable, comprising 1.0m to 1.2m of mixed cohesive and granular fill, made up of mudstone, clay, red shale, and rubble. Here the fill was stiff and dense and probably engineered.

5.12 Particle size distribution (PSD) was assessed on a sample excavated from TP204 at 1.0m depth from the red shale, the sample was described as a sandy very gravelly clay or very clayey sandy gravel. The fines were classified as low plasticity clay.

5.13 SPT tests undertaken at 1.0m depth in DS209 and DS210 within the Anthropogenic Ground recorded 16 blows and 36 blows. The test in DS210 appears to have hit a sandstone cobble.

5.14 Two samples from the reworked natural soils were subject to sieving to assess the PSD. These samples were from FP103 and FP105. FP103 from above a footing gave 71% gravel 16% sand and 13% <0.063mm. FP105 gave 38% <0.063mm 37% Gravel and 25% sand. The fines classified as low plasticity clay. A particle density of 2.68Mg/m^3 was measured.

5.15 A standard compaction 2.5Kgs test on the gravel sample from FP103 returned at maximum dry density of 1.90Mg/m^3 and optimum moisture of 12%, The natural moisture of 15% was 3% wet of optimum moisture. A second proctor test on the very clayey gravel/very gravelly clay sample from FP105 returned a MDD of 1.86Mg/m^3 and OMC of 15%. Natural moisture was 18% again wet of OMC by 3%.

Relic Topsoil

5.16 A buried relic topsoil was recorded in FP105 at 1.7mbgl and in DS209 at 1.4mbgl both below Anthropogenic soils.

Subsoil

5.17 Subsoil, described as a Stiff slightly sandy gravelly silty Clay, with gravel of siltstone is of variable thickness, either absent or up to 0.9m thickness and where present overlies bedrock. It was noted to contain some charcoal.

Weathered Lower Pennine Coal Measure Bedrock

5.18 Extremely weak weathered yellowish brown thinly laminated micaceous slightly sandy Siltstone. Recorded at depths of between 0.2mbgl and >3.0mbgl.

5.19 Bedrock was generally shallow less than 1.0m depth. It was at its shallowest in the west of the site and deepest in the east and northeast of the site where made ground is at its thickest.

5.20 Standard Penetration Testing SPT N Values of 50 were consistently recorded.

5.21 A single PSD tests was undertaken on a sample excavated from TP203 at 1.0m depth from the Pennine coal measure Formation, the sample described as a silty sandy Gravel with some cobbles. The fines were Classified as non-plastic.

5.22 A standard 2.5kgs compaction test undertaken on this sample returned at MDD of 1.98Mg/m3 with OMC of 11% natural moisture was also 11%.

5.23 A particle density of 2.65Mg/m3 was measured.

In Situ Testing

Soakaway Permeability Testing

5.24 Soakaways permeability testing was undertaken at locations SA201 to SA204. The results of the testing undertaken are presented as **Appendix 5** and are summarised within **Table 5-2** below.

Table 5-2 : Permeability Testing Results

Test Location	Geology	Pit dimensions m	Aggregate depths m	Infiltration Rate (m/s)
SA201	Weathered siltstone	1.7 x 0.6	0.5 -1.5m	$2.2E^{-06}$
SA202	Weathered siltstone	1.8 x 0.6	0.5-1.5m	$1.0E^{-05}$
SA203	Made ground gravelly Silty Clay	2.1 X 0.6	2-3m	$4.4E^{-05}$
SA204	Subsoils sandy gravelly silty Clay	2.1 x 0.6	1-2m	$8.5E^{-06}$

5.25 Based on the results of the soakaway tests, the permeability of the weathered bedrock has been calculated within an order of magnitude between 10^{-5}m/s to 10^{-6}m/s which is consistent with the results within the LKC report. It should be noted that SA203 was in soil described as reworked natural ground and so may be unsuitable for soakaway drainage and for calculating infiltration rates.

Hydrogeology and Re-emergence Testing

5.26 No groundwater was encountered during the excavation of exploratory holes. Slight seepages of perched water were noted upon concrete foundations at FP103 and FP105. A summary of the water strikes recorded during the GI are summarised below in **Table 5-3**.

Table 5-3 : Water Strikes

Location	Depth	Stratum	Description
FP103	1.1	Concrete Foundation	Slight Seepage
FP105	1.7	Concrete Foundation	Slight Seepage

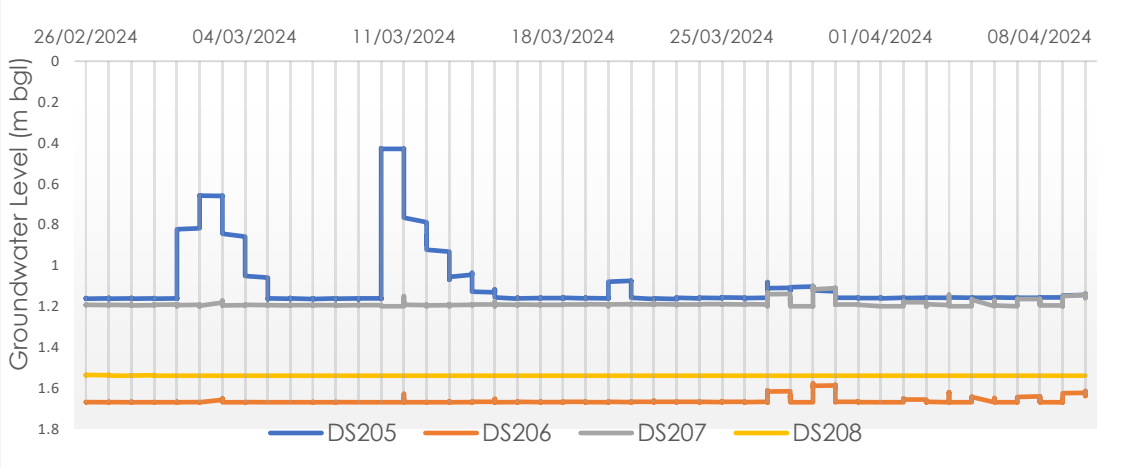
5.27 Levellogger continuous groundwater monitoring probes were installed within standpipes at locations DS205 to DS208 over a period of approximately one month following the soakaway testing to record possibility of re-emergence from soakaway testing at SA203 and SA204. Additionally, spot groundwater dip levels were recorded on two occasions during the period that the Levelloggers were in place. The spot groundwater levels recorded are presented in **Table 5-4** below.

Table 5-4 : Groundwater Spot Monitoring Levels

Location	26th Feb 2024 - Groundwater Level (m bgl)	20th March 2024 Groundwater Level (m bgl)	10th April 2024 Groundwater Level (m bgl)
DS205	1.17	1.15	Dry
DS206	Dry	Dry	Dry
DS207	Dry	Dry	Dry
DS208	Dry	1.46	Dry

5.28 The continuous groundwater data identified that the wells largely remained dry during the monitoring period with only minor accumulations of eluate at the base of the wells, for short periods, likely associated with rainfall events, and with more significant groundwater level increases at DS205. The results are indicated in **Figure 5-1** below with flat bases of graphs indicating where the wells were dry. No significant groundwater body has been identified at shallow depth at the site. The monitoring has not identified potentially significant re-emergence from soakaways at the site. The playing fields also benefit from shallow land drains which would disperse significant groundwater from soakaways.

Figure 5-1 : Continuous Groundwater Monitoring Data



Contamination Observations

5.29 No visual or olfactory evidence of contamination was observed during the investigation.

6. GEOTECHNICAL ASSESSMENT

Introduction

6.1 The proposed development is to include demolition of the current school buildings along with earthworks to create a level plateau for the construction of a new single storey school building surrounding a central courtyard and with external car parks and landscaped play areas.

6.2 The purpose of this assessment is to highlight the geotechnical considerations and anticipated approaches to managing risk in the ground. It is envisaged that scheme design and specifications will be produced to address these considerations in detail.

Current Building Footings

6.3 Investigation of the current buildings footings was carried out by excavation of five trial pits FP201 to FP205. Strip non- reinforced footings were founded upon weathered thinly laminated siltstone rock. Footing depths varied from 0.6m to below 2.0mbgl. Details at each location are summarised below:

- Footings at FP101 and FP102 projected 300mm beyond base of walls. Concrete was 100mm thickness.
- At FP105 and FP104 ground levels had been built up with loose backfill, the depth to the base footings could not be seen. The top of the footing was at 1.7m and 1.5m depth. A basement is present in this location.
- Footings below walls were mass concrete 100mm thick extending 300mm from the base of the masonry wall.

6.4 It is anticipated these existing footings will be removed as part of demolition works.

Foundation Options

6.5 Various foundation options are potentially available for development at this site, although it is understood that shallow spread footings are preferred. Proposed footings are therefore likely to comprise pads to support columns loads and strips to support line (wall) loads.

6.6 It is understood that current proposals anticipate applied pressures up to 120kPa on footings (subject to detailed design).

Shallow Spread Footings Pads & Strips

6.7 Made ground soils in their current state are not suitable as a bearing stratum for foundations or ground bearing floor slabs without further improvement.

6.8 The bedrock, comprising weathered extremely weak to weak laminated very low compressibility siltstone rock of Lower Pennine Coal Measures, located at shallow depths will likely provide adequate bearing capacity to support both column and line loads. A safe bearing capacity of 350kPa is recommended. However, given cut and fill, the

bedrock will be located up to 3m below finished earthworks levels in the northeast of the proposed building.

6.9 Potentially, shallow footings may be suitable on engineered fill subject to compaction of fill to a suitable specification. However, differential settlement between footings on fill and footings on bedrock will need to be considered. An approach to managing the potential for differential settlements will need to be presented in detailed design drawings and specifications. Abrupt transitions between foundations on fill and foundations on rock should be avoided to limit sharp boundaries of stiffness in founding strata.

Trench Fill

6.10 It is anticipated that the preferred approach will be the management of differential settlement potential between bedrock and fill areas within the main structure will be addressed through earthworks, as outlined above. However, if preferred Trench Fill foundations for masonry walls may be more economic where weathered bedrock lies below deeper fill of up to 3.0m.

Short Bored or Driven Piles

6.11 Piling is unlikely to be a preferred solution for this site. Piling is not required over most of the proposed structural footprint, given that earthworks levelling of the site will create a shallow depth to rock (less than 1.0m) beneath the west of the building. However, where up to 3m of engineered fill is anticipated over the same rock at the east and northeast of the building, a system of short-bored or driven piles would be feasible. Piles transfer loads to a competent bedrock bearing stratum and also limit settlements, and address the potential differential settlement concerns between shallow footings on bedrock and shallow footings on fill. However, as noted, this option is unlikely to be the most cost-effective solution for this site.

Ground Improvement Techniques

Excavation and replacement

6.12 Improvement of Made Ground soils will be undertaken as part of the earthworks by digging the material out and recompacting it. The Made Ground will be compacted by mechanical compaction methods to achieve 95% of their maximum dry density 5% air voids and an equivalent minimum CBR of 5% or minimum shear strength of 75KPa.

6.13 The recompacted ground would likely provide a suitable bearing stratum for lightly loaded shallow footings, but as discussed above there may still be differential settlement concerns between footings on fill and footings on bedrock. Approach to managing differential settlement should be defined clearly in design and specification documents.

Vibro-Stone or Concrete Columns

6.14 Consideration may be given to the improvement of the fill below floor slabs and foundations with inclusions of stone or concrete columns where the fill thickness is greater than 3m where traditional foundation types become uneconomical.

6.15 Experience specialist contractors would be able to assist in assessing the suitability for these ground treatment techniques and likely cost and benefits. However, it is understood that this option is unlikely to be preferred.

Floor Slabs

6.16 The current building floor slabs are a mixture of both ground and pre-cast suspended concrete floors.

6.17 Ground bearing floor slabs should not be constructed on untreated Anthropogenic (made) Ground and only on either engineered fill or natural weathered rock.

6.18 The proposed earthworks will mean that building floor slabs will span both weathered bedrock and up to 3m of engineered fill with varying stiffness. This could pose a risk of differential movement across the slab:

- A suspended slab may be more appropriate which will transfer floor loads through piles or deep pads or strips down to the bedrock.
- Alternatively, approaches to addressing differential settlement concerns under ground bearing slabs should be addressed and clearly communicated in earthworks and design specifications/drawings.

Treatment of Ground Prior to Slab Casting

6.19 The gas assessment in the existing LKC report concludes no gas protection measures are needed.

Roads and Pavements

6.20 Given earthworks cut and fill proposed, subgrade soils are likely to be either firm to stiff engineered very gravelly sandy silty clays of low plasticity or extremely weak weathered siltstone with fair to poor drainage characteristics, and prone to deterioration during inclement weather.

6.21 The earthworks to be carried out to achieve a minimum subgrade CBR of 5%.

6.22 Considering a low water table, and adequate drainage of surface water a long-term California bearing ratio CBR of 3% is considered appropriate for design.

Drainage

6.23 Soakaway testing has been undertaken. See Table 5-2.

6.24 Infiltration rates within natural subsoils and weathered bedrock are on the order of 10^{-5} m/s to 10^{-5} m/s, (low degree of permeability) according to classification of Terzaghi and Peck 1967. This is in general agreement with the LKC findings. The recent soakaway test has been carried out after a particularly wet winter and spring of 2023 to 2024.

6.25 According to proprietary guidance from soakaway suppliers, the infiltration rates given above are within the range that will allow for a total infiltration system, However, detail design should be undertaken by a competent designer.

Excavations

Ease of Excavation

6.26 Conventional plant equipment is expected to be suitable for excavations at the site although it is anticipated that standard breaker plant equipment may be required in areas of the site where obstructions are encountered.

Stability of Excavation

6.27 Excavations in loose filled (non-engineered) anthropogenic ground displayed poor stability during the site investigation.

6.28 Excavations for footings within engineered fill and bedrock are likely to be stable over the short period. However, should these be left exposed for any significant periods they may become unstable and temporary support will be required.

6.29 Where personnel entry is required for inspection excavations should be sufficiently enlarged, and an assessment of safe temporary angles should be made. Alternatively, temporary shoring should be provided.

Legislation on Personnel Entry to Excavations

6.30 It is recommended that no excavations should be entered without appropriate support and a full risk assessment should be completed prior to entry. Mitigation measures to protect from accumulating ground gases should be implemented.

Groundwater

6.31 Groundwater monitoring identified that the wells largely remained dry during the monitoring period with only minor accumulations of eluate at the base of the wells, for short periods, likely associated with rainfall. Groundwater is therefore anticipated to be below the depth of influence of proposed earthworks and structures for the purposes of construction and operation.

Chemical Attack on Buried Concrete

6.32 Five samples from Made Ground and natural soils were tested for water soluble sulphates by 2:1 soil water extract and pH (see **Appendix 6**). The highest value of 445mg/l sulphate is taken as a characteristic value. The results of an assessment for

concrete in aggressive ground give a Design sulphate class of DS-1, ACEC AC-1s class in accordance with BRE Digest SD-1:2005.

6.33 The ground investigation by LKG recorded two outliers in Made Ground with results equivalent to DS-3, which related to water soluble sulphate in soils of 1770mg/l and 1810mg/l.

6.34 For the purposes of this development, the following should be adopted:

- Made Ground and reworked Made Ground: DS-3, AC-3.
- Natural Soils/Rock and reworked natural materials: DS-1, AC-1s.

Expansive Shale

6.35 Burnt shale was noted below floor slabs and pavement layers on site used as a sub-base material.

6.36 Red (burnt) shale was used extensively as a sub-base material in the 1950s to the 1970s, Use ceased when it was found to be unsuitable as a sub-base material due to its associated geotechnical properties (poor freeze–thaw characteristics) and contamination issues.

6.37 A further potential problem described in Winter's paper on use of burnt colliery wastes 2000, is that burnt shale may contain high concentrations of water-soluble sulphate due to the oxidation of the pyrites during combustion. These Sulphates may cause problems by reacting with lime, concrete, cement bound and other cementitious materials.

6.38 A single sample of this red shale was tested for water soluble sulphates from location DS209 and returned 0.4g/l. Inspection of concrete cores resting upon this material has shown no visible signs corrosion or expansion. It is also noted that this material is likely a small proportion of the volume of material on site. Therefore, we consider this material is suitable to reuse as a general fill for this scheme.

Earthworks

6.39 An earthworks exercise will be required at the site to create a suitable development platform. An earthworks specification will be provided under separate cover in due course. As noted, it will need to demonstrate how earthworks will address potential transition zones between areas of cut and areas of fill to limit potential differential movements under structures.

6.40 Site-won materials were typically wet of optimum moisture content for compaction, and control of water content through drying or addition of lime or cement may be required.

8. HUMAN HEALTH RISK ASSESSMENT

8.1 Soil contaminant data from eight samples have been compared against Generic Site Assessment Criteria (GSAC) developed by BWB using the CLEA model 1.06 and the updated CLEA framework (2009) for assessing risk from soil contamination to human health. Details of the derivation of the GSACs are presented in **Appendix 8**. The results of the soil chemical laboratory results are provided within **Appendix 6** with a table summarising the results presented as **Appendix 8**.

8.2 The GSACs have been developed with the following assumptions which have been changed from the CLEA default parameter set. Soil type is a sandy loam with an organic matter content of 1%. This is considered to be more representative of shallow Made Ground found on most Brownfield sites than the CLEA default of 6% organic matter.

Pathways

8.3 Contamination data have been compared to generic site assessment criteria (GSAC) for a residential end use with home grown produce (i.e. using all pathways for that end use) based on an organic matter content of 1%. Details of the derivation of the GSACs are presented in **Appendix 8**.

8.4 Exposure pathways considered in this assessment are presented in **Table 8-1**.

Table 8-1 : Residual Exposure Pathways

Source:	Shallow Soils			Deep Soils
Pathway	Residential housing with private gardens	Residential housing with communal landscaped areas	Residential housing with hard standing areas	Residential housing
Ingestion of Soil	✓	✓	×	×
Ingestion of site derived household dust	✓	✓	×	×
Ingestion of contaminated vegetables	✓	×	×	×
Ingestion of soil attached to vegetables	✓	×	×	×
Dermal contact with Soil	✓	✓	×	×
Dermal contact with site derived household dust	✓	✓	×	×
Inhalation of fugitive soil dust	✓	✓	×	×
Inhalation of fugitive site derived household dust	✓	✓	×	×
Inhalation of vapours outside	✓	✓	✓	✓
Inhalation of vapours inside	✓	✓	✓	✓

Sources

8.5 No visual or olfactory evidence sources of contamination was notes during the GI.

8.6 No exceedances of the GSAC for heavy metals, non-metallic elements, total phenols, total cyanide, free cyanide, complex cyanide, Boron, and organic compounds PAH and TPH were recorded.

8.7 Asbestos screening of samples from DS201 and DS202 adjacent to LKC WS113 returned no fibres.

8.8 Elevated PAHs Benzo(a)pyrene coal tar at TP202 at (0.5m) of 0.85mg/kg has been recorded. This was in a natural subsoil in which charcoal was noted on the log. At this location the TPH was 23mg/kg. This result is probably from former burning with charcoal evidence and is not considered to represent a risk to human health.

8.9 An analysis of benzo(a)pyrene at TP204 at 1.0m returned 0.66mg/kg. No trial pit was excavated close to the LKC WS108 where elevated benzo(a)pyrene was noted due to live services.

8.10 Three samples of the tarmac to assess the potential presence of coal tar identified none.

9. WASTE MANAGEMENT

Waste Classification

9.1 Soil samples have not/have been characterised against hazardous waste criteria using Hazwasteonline. The results of the waste classification are presented in **Appendix 9**. The assessment indicates that the soils analysed are likely to be classified as non-hazardous. The waste classification assessment only applies to those soils that have been tested. If other soils are to be disposed of off-site then further analysis may be required. Testing of samples of tarmac has not identified any coal tar containing bitumen.

9.2 Asbestos has been detected at the site at the site, but only at trace levels which would not render the soil as hazardous. However, the presence of visible asbestos containing materials in waste or at concentrations exceeding 0.1% by weight will classify the waste as mixed and require disposal as hazardous waste irrespective of the chemical properties of the waste.

9.3 Should any soils require disposal off site an assessment of waste classification of the soils for disposal should be made by a competent person. Further chemical analysis may be required to fully characterise waste soils for disposal to landfill or re-use off site. WAC analysis may be required for disposal of soils as inert or hazardous.

10. CONCLUSION AND RECOMMENDATIONS

Conclusions

Environmental

10.1 No visual or olfactory evidence of contamination was noted during the investigation, with no asbestos fibres recorded from five samples including from adjacent to the LKC location WS113 where fibres were previously detected. This indicates that the risk is negligible. No contaminant concentrations were reported above the GSAC.

10.2 Based in the additional GI BWB considered that there is a LOW risk to Human health.

10.3 LK Group have previously assessed the site as not requiring ground gas protection.

10.4 A waste assessment of samples recovered from the site has indicated that soils would be classified as non-hazardous. Samples obtained from tarmac at the site have been analysed which indicate that the material is not coal tar containing.

Geotechnical

10.5 Weathered siltstone bedrock will provide adequate bearing support for foundation loads. Traditional spread pad or strips footings bearing upon the weathered bedrock at shallow depth <1.0m is likely to be the most economical solution in the west of the building where earthworks are to lower site levels. A safe bearing capacity of 350kN/m^2 on bedrock will be satisfactory given the proposed development but should be confirmed during detail design.

10.6 At the east and north of the proposed building footprint, increasing site levels above current levels will mean bedrock is perhaps up to 3m below finished earthworks levels. Safe bearing capacities up to 120kN/m^2 are anticipated on new fill, subject to specification and detailed design.

10.7 Potential differential settlement risks between areas founded on bedrock and areas founded on fill should be addressed during design and specification. Specifications will need to demonstrate how earthworks will address potential transition zones between areas of cut and areas of fill to limit potential differential movements under structures.

10.8 Earthworks materials will be won from both cut and arisings from foundations are drainage excavations. Classification testing of site soils shows them to conform to general earthworks Class 1 and 2 of the highway's classification scheme. Moisture contents are generally wet of optimum.

10.9 Red shale present at this site is a small proportion of site-won material, and is unlikely to present a significant risk to the scheme. We concluded this material could be used as general earthworks fill material within the earthworks proposed.

10.10 Soakaway infiltration rates for natural weathered subsoils and bedrock of 10^{-5} to 10^{-6} have been recorded by BWB. No significant potential for re-emergence has been identified.

Recommendations

Environmental

10.11 A Material Management Plan (MMP) will need to be lodged with CL:AIRE to demonstrate the suitable reuse of materials at the site. This will need to be supported by a Remediation Strategy. The MMP needs to be declared before any earthworks take place.

Geotechnical

10.12 Foundations options need to be considered and finalized in consideration of the proposed development layout and earthworks levels. The approach to differential settlement mitigation needs to be clearly demonstrated through design drawings and specifications.

10.13 Assessment of design options for site surface drainage needs to be carried out by the drainage team.

11. REFERENCES

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DRAWINGS

Drawing 1: Exploratory Hole Location Plan

NOTES

1. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS MUST BE VERIFIED ON SITE. IF IN DOUBT ASK

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS

3. ALL DIMENSIONS IN METERS UNLESS NOTED OTHERWISE.

4. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

LEGEND

- Foundation Pit
- Dynamic Sampling
- Soakaway
- Trial Pit

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Client:

Frank Shaw Associates

Project Title:

Fernside SEND School, Huddersfield

Drawing Title:

Drawing 1 - Exploratory Hole Location Plan

Scale @A3: 1:1300	Date: 11/04/24	Drawn: OS	Approved: SS

Drawing Status: FINAL	Drawing Number: 01	Drawing Revision: 01

Sources:
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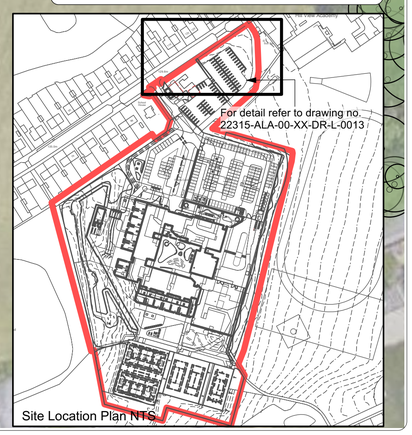
APPENDICES

Appendix 1 : Masterplan

KEY CONTINUED

- **(A) Main Visitor Entrance**
  Direct pedestrian route through visitor car park to main reception.
- **(B) Visitor Car Park (Total Bays: 30 Bays)**
  - 24no. Car Parking Bays
  - 3no. Accessible Parking Bays (Incuding 1 EV Charging Point)
  - 3no. EV Parking Bays
- **(C) Staff Garden**
  Staff breakout space incorporating seating / tables and planting to buffer the car park.
- **(D) Staff Car Park (Total Bays: 120 excluding mini bus bays)**
  - 111 Standard Parking Bays
  - 2no. Mini Bus Parking Bays
  - 3no. Accessible Parking Bays
  - 6no. Standard EV Bays
- **(E) Student Drop-Off / External Play**
  Informal drop-off loop for 30no. vehicles, designed to be utilised as soft and hard external play when not in use as a drop-off space. This is secured via fence and gates from the staff car park and gives direct access into the courtyard.
- **(F) 6no.Existing MUGA Courts**
  Courts to be retained and resurfaced as required. 1no. Court to be used for fixed play equipment.
- **(G) Proposed Woodland Buffer Planting**
  Woodland whip buffer planting to be planted around the outside of the school boundary to mitigate overlooking.
- **(H) Forest School**
  Fenced off forest school play space set across the western side of the site incorporating the existing slopes as well as flat plateaus and winding footpath routes.
- **(I) Fixed Play Equipment including Swings**
- **(J) KS1 / 2 External Play Space**
  Fenced hard play associated with each classroom.
- **(K) Bin store (Location TBC)**
  Capacity for 8no. eurobins (as per existing number)
- **(L) External Courtyard**
- **(M) KS3 / 4 External Play Space**
  Fenced hard play associated with each classroom.
- **(N) Forest Hub**
  Existing Forest School classroom relocated. Horticultural garden including raised beds and greenhouse adjacent.
- **(O) Chickens**
  Secure fenced area.
- **(P) Seating Terraces**
  Terraced seating making key level changes usable.
- **(Q) Potential Substation Location**
- **(R) Existing Main Entrance**
  Entrance road widened with new gates and fenceline as required.
- **(S) Proposed Main Entrance**
  Gates and secondary secure line.
- **(T) Fire Pit**
- **(U) Water Feature**
- **(V) 10no. Covered Cycle Spaces**
- **(W) Sports Equipment Storage**
- **(X) Existing Pre-School Demolished and replaced with grass. Existing parking retained.**
- **(Y) Covered outdoor dining area**
- **(Z) Covered seating area**
- **(AA) Signage Board**
- **(BB) Area identified as potential petting zoo location**
- **(CC) Post 16 External garden space**
- **(DD) Swale**
  Refer to drainage plan by others for details.
- **(EE) Existing playing field retained**



Site Location Plan NTS

Note

1. Do not scale from this drawing
2. To be read in conjunction with Project Risk Register REF: XXX
3. To be read in conjunction with all other Landscape Architect's drawings

KEY

Site Planning Boundary

ID	RISK	MITIGATION	DATE MITIGATED

RESIDUAL PROJECT RISKS

DATE	REV	DESCRIPTION OF REVISION	DRAWN BY	APPROVED BY
17/06/2024	P04	Issued for Planning.	MM	RS
18/04/2024	P03	Updated as per email NP (17.04.2024)	AT	RS

REVISIONS

STATUS
S2 - *For Planning*

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CLIENT :
Kirklees Council

PROJECT TITLE :
Woodley School and College

DRAWING TITLE :
Landscape Illustrative Masterplan

DRAWING SCALE :	DRAWN BY :	DRAWN DATE :
1:500	AT	19/01/2023
PAPER SIZE :	APPROVED BY :	ALA PROJECT CODE:
A1	RS	ALA 823

DRAWING NUMBER :	STATUS :	REVISION :
22315-ALA-00-XX-DR-L-0001	S2	P04

Appendix 2 : Exploratory Hole Records

BOREHOLE LOG

Scale 1:20

LOCATION ID	Project Name:	New Woodley School & College	Ground Level (m AOD):	134.51
DS201	Project Number:	221770	Eastings:	416873.05
	Client:	Frank Shaw Associates Ltd	Northings:	415836.20
Hole Type: WLS	Rig: Premier 110PR	Start & End Date: 21/02/2024	Engineer: OS	Checker: RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.05]	Tarmac		0.05	ES1	0.05	0.05				
		134.46 [0.05]	(Made Ground)		0.10							
		134.41 [0.05]	Black to whitish grey angular to subangular fine to coarse Gravel of concrete and limestone aggregate.		0.15	ES2	0.15	0.15				
		134.36 [0.15]	(Made Ground)		0.30							
		134.21 [0.30]	Yellowish brown sandy angular fine to coarse Gravel of mudstone.									
			(Made Ground)									
		133.91	Stiff yellowish brown very gravelly CLAY. Gravel is angular to subangular of Mudstone.		0.60				SPT	0.60	0 (50 for 50mm/0 for 0mm)	
			(Subsoil)									
			weathered Mudstone									
			(Pennine Lower Coal Measures Formation)									

Hole Terminated at 0.60m bgl.

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

SPT refusal

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

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BOREHOLE LOG

Scale 1:20

LOCATION ID	Project Name:	New Woodley School & College	Ground Level (m AOD):	134.44
DS202	Project Number:	221770	Eastings:	416879.36
	Client:	Frank Shaw Associates Ltd	Northings:	415833.84
Hole Type: WLS	Rig: Premier 110PR	Start & End Date: 21/02/2024	Engineer: OS	Checker: RTR

Boring

Strike	Well

Strata

Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)
[0.05] 134.39	Tarmac		0.05
[0.05] 134.34	(Made Ground)		0.10
[0.20]	Yellow brown sandy gravel of concrete (Made Ground)		
134.14 [0.60]	Stiff blackish grey sandy CLAY relic reworked (Subsoil)		0.30
	Stiff yellowish brown very gravelly CLAY. Gravel is angular to subangular fine to coarse of mudstone. (Subsoil)		
133.54 [0.60]	Weathered MUDSTONE. (Pennine Lower Coal Measures Formation)		0.90
132.94	Hole Terminated at 1.50m bgl.		1.50

Samples

Type (Ublows)	From (m)	To (m)
ES1	0.05	0.10
ES2	0.20	0.20
B1	0.30	1.50

In-Situ Tests

Type	Depth (m)	Result	Casing Depth & (Water Level)
SPT	1.50	0 (50 for 45mm/0 for 0mm)	

Chiseling

From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added

From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

SPT refusal

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

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BOREHOLE LOG

Scale 1:20

LOCATION ID				
DS203	**Project Name:** New Woodley School & College		**Ground Level (m AOD):** 134.44	
	Project Number: 221770		**Eastings:** 416887.00	
	Client: Frank Shaw Associates Ltd		**Northings:** 415829.82	
Hole Type: WLS	**Rig:** Premier 110PR	**Start & End Date:** 21/02/2024	**Engineer:** OS	**Checker:** RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.10]	Tarmac									
		134.34 [0.05]	(Made Ground)		0.10	ES1	0.10	0.10				
		134.29 [0.15]	Brownish red angular to subangular fine to coarse Gravel of red (burnt) shale.		0.15							
		134.14 [1.15]	(Made Ground)		0.30							
			Stiff yellowish brown CLAY. (Pennine Lower Coal Measures Formation)									
			Weathered yellowish brown MUDSTONE. (Pennine Lower Coal Measures Formation)						SPT	1.20	50 (12,17/50 for 135mm)	
		132.99	Hole Terminated at 1.45m bgl.		1.45				SPT	1.45	0 (50 for 95mm/0 for 0mm)	

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

SPT refusal

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

BOREHOLE LOG

Scale 1:20

LOCATION ID	Project Name:	New Woodley School & College	Ground Level (m AOD):	132.30
DS204	Project Number:	221770	Eastings:	416917.46
	Client:	Frank Shaw Associates Ltd	Northings:	415788.09
Hole Type: WLS	Rig: Premier 110PR	Start & End Date: 21/02/2024	Engineer: OS	Checker: RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.05] 132.25	Tarmac		0.05							
		[0.05] 132.20	(Made Ground)		0.10							
		[0.10] 132.10	Black to whitish grey angular to subangular fine to coarse Gravel of limestone. (Made Ground)		0.20							
		[0.50]	Firm blackish brown CLAY; relic. (Subsoil)									
			Weathered Sandstone (Pennine Lower Coal Measures Formation)						SPT	0.50	0 (50 for 145mm/0 for 0mm)	
		131.60	Hole Terminated at 0.70m bgl.		0.70				SPT	0.70	0 (50 for 85mm/0 for 0mm)	

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

SPT refusal

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

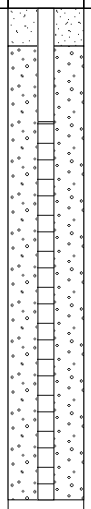
BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

BOREHOLE LOG

Scale 1:20

LOCATION ID	Project Name:	New Woodley School & College	Ground Level (m AOD):	128.83
DS205	Project Number:	221770	Eastings:	417007.26
	Client:	Frank Shaw Associates Ltd	Northings:	415911.83
Hole Type: WLS	Rig: Premier 110PR	Start & End Date: 23/02/2024	Engineer: PM	Checker: RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.60]	Dark brown slightly gravelly slightly clayey silty fine to medium SAND. Gravel is angular to subangular fine to coarse siltstone and occasional brick. (Topsoil)									
		128.23 [0.40]	Soft locally firm slightly sandy silty CLAY. (Subsoil)		0.60							
		127.83 [0.30]	Extremely weak thinly laminated brown SILTSTONE recovered as a brown, orangish brown and light grey mottled slightly gravelly clayey silty fine sand. Gravel is angular to subangular fine to coarse siltstone. (Pennine Lower Coal Measures Formation)		1.00							
		127.53	Hole Terminated at 1.30m bgl.		1.30							

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

Terminated due to hard ground (bedrock).

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Installed with 50mm HDPE well screen, gas tap and flush cover. 3. SPT calibration ratio: .

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

BOREHOLE LOG

Scale 1:20

LOCATION ID				
DS206	**Project Name:** New Woodley School & College		**Ground Level (m AOD):** 129.10	
	Project Number: 221770		**Eastings:** 417010.19	
	Client: Frank Shaw Associates Ltd		**Northings:** 415886.88	
Hole Type: WLS	**Rig:** Premier 110PR	**Start & End Date:** 23/02/2024	**Engineer:** PM	**Checker:** RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.70]	Dark brown slightly gravelly slightly clayey silty fine to medium SAND. Gravel is angular to subangular fine to coarse siltstone and occasional brick. (Topsoil)									
		128.40 [1.10]	Extremely weak thinly laminated brown SILTSTONE recovered as a brown, orangish brown and light grey mottled slightly gravelly clayey silty fine sand. Gravel is angular to subangular fine to coarse siltstone. (Pennine Lower Coal Measures Formation)		0.70							
		127.30	Hole Terminated at 1.80m bgl.		1.80							

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

Terminated due to hard ground (bedrock).

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Installed with 50mm HDPE well screen, gas tap and flush cover. 3. SPT calibration ratio: .

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

BOREHOLE LOG

Scale 1:20

LOCATION ID	Project Name:	New Woodley School & College	Ground Level (m AOD):	129.27
DS207	Project Number:	221770	Eastings:	417002.15
	Client:	Frank Shaw Associates Ltd	Northings:	415857.72
Hole Type: WLS	Rig: Premier 110PR	Start & End Date: 23/02/2024	Engineer: PM	Checker: RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (U/blows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.85]	Dark brown slightly gravelly slightly clayey silty fine to medium SAND. Gravel is angular to subangular fine to coarse siltstone and occasional brick. (Topsoil)									
		128.42 [0.45]	Extremely weak thinly laminated brown SILTSTONE recovered as a brown, orangish brown and light grey, mottled slightly, gravelly clayey silty fine sand. Gravel is angular to subangular fine to coarse siltstone. (Pennine Lower Coal Measures Formation)		0.85							
		127.97	Hole Terminated at 1.30m bgl.		1.30							

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

Terminated due to hard ground (bedrock).

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Installed with 50mm HDPE well screen, gas tap and flush cover. 3. SPT calibration ratio: .

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AGS REGISTERED USER 2023

BOREHOLE LOG

Scale 1:20

LOCATION ID				
DS208	**Project Name:** New Woodley School & College		**Ground Level (m AOD):** 129.46	
	Project Number: 221770		**Eastings:** 416996.24	
	Client: Frank Shaw Associates Ltd		**Northings:** 415833.18	
Hole Type: WLS	**Rig:** Premier 110PR	**Start & End Date:** 23/02/2024	**Engineer:** PM	**Checker:** RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.50]	Dark brown slightly gravelly slightly clayey silty fine to medium SAND. Gravel is angular to subangular fine to coarse siltstone and occasional brick. (Topsoil)									
		128.96 [0.30]	Soft locally firm slightly sandy silty CLAY. (Subsoil)		0.50							
		128.66 [0.90]	Extremely weak thinly laminated brown SILTSTONE recovered as a brown, orangish brown and light grey mottled slightly gravelly clayey silty fine sand. Gravel is angular to subangular fine to coarse siltstone. (Pennine Lower Coal Measures Formation)		0.80							
		127.76	Hole Terminated at 1.70m bgl.		1.70							

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

Terminated due to hard ground (bedrock).

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Installed with 50mm HDPE well screen, gas tap and flush cover. 3. SPT calibration ratio: .

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AGS REGISTERED USER 2023

BOREHOLE LOG

Scale 1:20

LOCATION ID				
DS209	**Project Name:** New Woodley School & College		**Ground Level (m AOD):**	
	Project Number: 221770		**Eastings:**	
	Client: Frank Shaw Associates Ltd		**Northings:**	
Hole Type: WLS	**Rig:** Premier 100 Modular Rig	**Start & End Date:** 19/03/2024 - 20/03/2024	**Engineer:** SS	**Checker:** RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.07]	Concrete 5-10mm aggregate over plastic membrane.									
		[0.14]	(Made Ground)		0.07							
			Concrete 10mm re-bar at top. 20mm Aggregate.									
		[0.14]	(Made Ground)		0.21							
			Brown sandy Gravel of Sandstone (Sub Base)									
		[0.10]	(Made Ground)		0.35							
		[0.40]	Brown clayey sandy Gravel of concrete, brick, sandstone, some burnt shale.		0.45							
			(Made Ground)									
			Brown sandy silty Gravel of siltstone. Reworked natural									
			(Made Ground)									
		[0.35]	Very Stiff grey slightly sandy gravelly Clay of mudstone, with sandstone cobble and brick.		0.85							
			(Made Ground)			ES1	1.00	1.30	SPT	1.00	N=16 (2,4/4,4,4,4)	
		[0.10]	Sandy Gravel of burnt red shale.		1.20							
		[0.10]	(Made Ground)		1.30							
		[0.05]	Brown slightly sandy Clay with bricks.		1.40							
		[0.30]	(Made Ground)		1.45							
			Black organic slightly sandy silty CLAY with rootlets.									
			(Topsoil)									
			Stiff yellow brown slightly sandy slightly gravelly silty CLAY.									
			(Subsoil)									
		[0.25]	Extremely weak moderately weathered brown thinly laminated micaceous very fine sandy SILTSTONE.		1.75							
			(Pennine Lower Coal Measures Formation)									
			Hole Terminated at 2.00m bgl.		2.00				SPT	2.00	50 (25 for 40mm/50 for 10mm)	

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

SPT Refusal In bedrock

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

BOREHOLE LOG

Scale 1:20

LOCATION ID				
DS210	**Project Name:** New Woodley School & College		**Ground Level (m AOD):**	
	Project Number: 221770		**Eastings:**	
	Client: Frank Shaw Associates Ltd		**Northings:**	
Hole Type: WLS	**Rig:** Premier 100 Modular Rig	**Start & End Date:** 19/03/2024 - 20/03/2024	**Engineer:** SS	**Checker:** RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (Ublows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.04]	Screed.		0.04							
		[0.10]	(Made Ground)									
		[0.07]	Concrete with 20mm aggregate and 10mm re-bar mesh. Over		0.14							
		[0.34]	plastic membrane.		0.21							
			(Made Ground)			ES1	0.30	0.50				
			Concrete with 10mm aggregate.									
			(Made Ground)									
		[0.80]	Sandy Gravel of red shale. (Sub base)		0.55							
			(Made Ground)									
			Brown slightly sandy slightly gravelly silty Gravel of micaceous siltstone (reworked natural) with a cobble of sandstone. (Made Ground)						SPT	1.00	N=36 (2,3/6,8,10,12)	
		[0.15]	Extremely weak moderately weathered brown thinly laminated micaceous very fine sandy SILTSTONE.		1.35							
			(Pennine Lower Coal Measures Formation)		1.50				SPT	1.50	50 (10,12/50 for 180mm)	
			Hole Terminated at 1.50m bgl.									

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

SPT Refusal In bedrock

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

BOREHOLE LOG

Scale 1:20

LOCATION ID				
DS212	**Project Name:** New Woodley School & College		**Ground Level (m AOD):**	
	Project Number: 221770		**Eastings:**	
	Client: Frank Shaw Associates Ltd		**Northings:**	
Hole Type: WLS	**Rig:** Premier 100 Modular Rig	**Start & End Date:** 19/03/2024 - 20/03/2024	**Engineer:** SS	**Checker:** RTR

Boring		Strata				Samples			In-Situ Tests			
Strike	Well	Level (m AOD) & [Thickness (m)]	Description	Legend	Depth (m bgl)	Type (U/blows)	From (m)	To (m)	Type	Depth (m)	Result	Casing Depth & (Water Level)
		[0.04]	Screed		0.04							
		[0.10]	(Made Ground)									
		[0.16]	Concrete 10-20mm aggregate, 10mm re-bar.		0.14							
			(Made Ground)									
		[0.10]	Concrete 10mm aggregate.		0.30							
		[0.20]	(Made Ground)		0.40							
			Sandy Gravel of red shale.									
			(Made Ground)									
		[0.10]	Brown silty sandy Gravel of siltstone reworked natural.		0.60	ES1	0.60	0.60				
			(Made Ground)									
		[0.20]	10mm of ash over stiff brown slightly sandy slightly gravelly		0.70							
			Clay (possible reworked disturbed ground).									
			(Made Ground)									
		[0.10]	Moderately strong weathered yellow brown sandstone		0.90							
			(possible boulder or masonry?) or natural sandstone bed ?		1.00				SPT	1.00	50 (25 for 20mm/50 for 10mm)	
			(Made Ground)									
			Extremely weak moderately weathered brown thinly laminated micaceous very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)									
			Hole Terminated at 1.00m bgl.									

Chiseling		
From (m bgl)	To (m bgl)	Time (hh:mm)

Water Added		
From (m bgl)	To (m bgl)	Volume (l)

Remarks

Reason for Termination:

SPT Refusal In bedrock

Groundwater Remarks:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College	1.20
FP101	Project Number:	221770	0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd	
	Plant: JCB 3CX	Start & End Date: 22/02/2024	Stability: Standing Open
Ground Level (m AOD): 134.44	Eastings & Northings:	416885E 415871N	Engineer: SS / Checker: RTR

Strata						Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.05m 134.39	Paving Flags. (Made Ground)		0.05						
		0.10m 134.29	Limestone aggregate. (Made Ground)		0.15						
		0.35m	Brown slightly sandy gravelly Clay of reworked natural, with occasional gravel sized red shale and coal fragments. (Made Ground)								
		133.94 0.10m 133.84	Concrete strip footing on weathered bedrock. (Made Ground)		0.50 0.60						
		0.30m	Extremely weak moderately weathered brown thinly laminated micaceous very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)								
		133.54	Hole Terminated at 0.90m bgl.		0.90						

Remarks

Reason for Termination:

Terminated by engineer at bedrock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Concrete strip Foundation at 0.5m.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20 | Sheet 1 of 1

LOCATION ID:	Project Name:	New Woodley School & College	1.20
FP102	Project Number:	221770	0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd	
	Plant: JCB 3CX	Start & End Date: 22/02/2024	Stability: Standing Open
Ground Level (m AOD): 133.16	Eastings & Northings:	416902E 415816N	Engineer: SS / Checker: RTR

Strata

Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)
		0.05m	Paving flags		0.05
		133.11	(Made Ground)		0.10
		0.05m	Gravel of red shale		
		133.06	(Made Ground)		
		0.35m	Brown slightly sandy silty gravelly Clay of reworked natural. (Made Ground)		
		132.71			0.45
		0.10m	Concrete strip foundation		
		132.61	(Made Ground)		0.55
		0.30m	Extremely weak moderately weathered brown thinly laminated micaceous very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)		
		132.31	Hole Terminated at 0.85m bgl.		0.85

Samples

Type	From (m)	To (m)

In-Situ Tests

Type	Depth (m)	Result

Remarks

Reason for Termination:

Terminated by engineer at bedrock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Concrete strip Foundation at 0.45m.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College	1.70
FP103	Project Number:	221770	0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd	
	Plant: JCB 3CX	Start & End Date: 22/02/2024	Stability: Made ground loose and collapsing
Ground Level (m AOD): 133.29	Eastings & Northings:	416936E 415806N	Engineer: SS / Checker: RTR

Strata					Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend / Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			Dark brown slightly sandy silty topsoils with some gravel of red shale, glass fragments, concrete cobble. Plastic gully drain at 0.4m. (Made Ground)							
		0.50m								
		132.79	Loose brown slightly sandy silty gravelly clay of reworked natural backfill. Collapsing (Made Ground)	0.50	B1 D1	0.50 0.50	1.00 1.00			
		0.60m								
		132.19 0.10m	Concrete footing against weathered siltstone bedrock. (Made Ground)	1.10						
		132.09	Hole Terminated at 1.20m bgl.	1.20						

Remarks

Reason for Termination:

Unable to extend Trial hole due to services and concrete footing restricted room.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Concrete Foundation at 1.1m.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	**Project Name:**	New Woodley School & College	1.40
FP104	**Project Number:**	221770	0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd	
	Plant: JCB 3CX	**Start & End Date:** 22/02/2024	Stability: Made ground loose and collapsing
Ground Level (m AOD): 131.14	**Eastings & Northings:**	416969E 415847N	Engineer: SS / Checker: RTR

Strata

Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)
			Dark brown slightly sandy silty topsoil. Two 30mm wire cables present. (Made Ground)		
		0.50m			
		130.64	Loose collapsing brown slightly sandy silty gravelly Clay backfill of reworked natural. (Made Ground)		0.50
		1.00m			
		129.64	Concrete footing. (Made Ground)		1.50
		0.05m 129.59	Hole Terminated at 1.55m bgl.		1.55

Samples

Type	From (m)	To (m)
B1	0.80	1.00
D1	0.80	1.00

In-Situ Tests

Type	Depth (m)	Result

Remarks

Reason for Termination:

Unable to extend Trial hole due to services and concrete footing restricted room.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Concrete Foundation at 1.5m.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20 Sheet 1 of 1

LOCATION ID:	Project Name:	New Woodley School & College		1.40	
FP105	Project Number:	221770		0.60 Pit Dimensions (m)	Orientation: °
	Client:	Frank Shaw Associates Ltd			
	Plant: JCB 3CX	Start & End Date:	22/02/2024	Stability: Made ground loose and collapsing	
Ground Level (m AOD): 130.80		Eastings & Northings:	416990E 4155887N	Engineer: SS	Checker: RTR

Strata

Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)
		0.10m	Tarmac		
		130.70	(Made Ground)		0.10
		0.10m	Limestone Aggregate		
		130.60	(Made Ground)		0.20
			Loose collapsing brown slightly sandy silty gravelly Clay backfill of reworked natural. Rare brick. (Made Ground)		
		1.50m			
		129.10			1.70
		0.10m	Concrete footing from 1.7m against relic topsoil and subsoil.		
		129.00	(Made Ground)		1.80
		0.20m	Extremely weak moderately weathered brown thinly laminated micaceous very fine sandy SILTSTONE.		
		128.80	(Pennine Lower Coal Measures Formation)		2.00

Hole Terminated at 2.00m bgl.

Samples

Type	From (m)	To (m)
B1	1.00	1.00
D1	1.00	1.00

In-Situ Tests

Type	Depth (m)	Result

Remarks

Reason for Termination:

Terminated by engineer at bedrock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered. 2. Concrete Foundation at 1.7m.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College		1.70
SA201	Project Number:	221770	0.60	Pit Dimensions (m) — Orientation: °
	Client:	Frank Shaw Associates Ltd		
	Plant: JCB 3CX	Start & End Date: 26/02/2024	Stability:	Standing open
Ground Level (m AOD): 136.06	Eastings & Northings:	416852E 415831N	Engineer: SS	Checker: RTR

Strata					Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend / Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			Grass over dark brown slightly sandy silty topsoil (Made Ground)							
		0.30m		0.30						
		135.76	Sandy Gravel of red (burnt) shale (Made Ground)							
		0.10m								
		135.66	Extremely weak to very weak highly to moderately weathered yellow brown thinly laminated very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)	0.40						
		1.10m								
		134.56	Hole Terminated at 1.50m bgl.	1.50						

Remarks

Reason for Termination:

Terminated in bedrock

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College		1.80
SA202	Project Number:	221770		0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd		
	Plant: JCB 3CX	Start & End Date:	26/02/2024	Stability: Standing Open
Ground Level (m AOD): 134.60		Eastings & Northings:	416868E 415852N	Engineer: SS / Checker: RTR

Strata					Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend / Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
		0.30m	Grass over dark brown slightly sandy slightly gravelly silty topsoil (Made Ground)	0.30						
		134.30 / 0.10m / 134.20	Yellowish brown slightly sandy gravelly silty CLAY subsoil (Subsoil)	0.40						
		1.10m	Extremely weak to very weak highly to moderately weathered yellow brown thinly laminated very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)							
		133.10	Hole Terminated at 1.50m bgl.	1.50						

Remarks

Reason for Termination:

Terminated in bedrock

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	**Project Name:**	New Woodley School & College	2.10
SA203	**Project Number:**	221770	0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd	
	Plant: JCB 3CX	**Start & End Date:** 26/02/2024	Stability: Some spalling
Ground Level (m AOD): 130.80	**Eastings & Northings:**	416995E 415882N	Engineer: SS / Checker: RTR

Strata					Samples			In-Situ Tests		
Groundwater Strike	Backfill	Level (m AOD)	Description	Legend / Depth (m bgl)	Type	From (m)	To (m)	Type	Depth (m)	Result
			Grass over dark brown slightly sandy slightly gravelly silty topsoil. (Made Ground)							
		0.40m								
		130.40	Loose brown sandy slightly gravelly silty Clay fill of reworked natural. Concrete boulder noted at 1.8m. (Made Ground)	0.40						
		2.60m								
		127.80	Hole Terminated at 3.00m bgl.	3.00						

Remarks

Reason for Termination:

Terminated at 3.0m by engineer

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College		2.10
SA204	Project Number:	221770	0.60	Pit Dimensions (m) — Orientation: °
	Client:	Frank Shaw Associates Ltd		
	Plant: JCB 3CX	Start & End Date: 26/02/2024	Stability:	Loose over upper 1.0m
Ground Level (m AOD): 130.95		Eastings & Northings: 416975E 415829N	Engineer: SS	Checker: RTR

Strata

Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)
		0.40m	Grass over Dark brown slightly sandy slightly gravelly silty topsoil. (Made Ground)		
		130.55	Yellowish brown slightly sandy gravelly Clay fill of reworked natural. (Made Ground)		0.40
		0.70m			
		129.85	Yellowish brown slightly sandy gravelly silty Clay of probable subsoil over weathered siltstone bedrock at 2.0m (Subsoil)		1.10
		0.90m			
		128.95	Hole Terminated at 2.00m bgl.		2.00

Samples

Type	From (m)	To (m)

In-Situ Tests

Type	Depth (m)	Result

Remarks

Reason for Termination:

Terminated by engineer in bedrock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College		1.70
TP201	Project Number:	221770		0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd		
	Plant: JCB 3CX	Start & End Date:	23/02/2424	Stability: Standing open
Ground Level (m AOD): 131.25		Eastings & Northings:	416954E 415787N	Engineer: SS / Checker: RTR

Strata

Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)
		0.40m	Grass over dark brown slightly sandy silty topsoil (Made Ground)		
		130.85	Extremely weak to very weak highly to moderately weathered yellow brown thinly laminated very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)		0.40
		0.50m			
		130.35	Hole Terminated at 0.90m bgl.		0.90

Samples

Type	From (m)	To (m)
ES1	0.20	0.20
B1	0.50	0.50

In-Situ Tests

Type	Depth (m)	Result

Remarks

Reason for Termination:

Terminated by engineer at bedrock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College		1.70
TP202	Project Number:	221770	0.60	Pit Dimensions (m) — Orientation: °
	Client:	Frank Shaw Associates Ltd		
	Plant: JCB 3CX	Start & End Date: 23/02/2024	Stability: Standing open	
Ground Level (m AOD): 128.83	Eastings & Northings:	417000E 415826N	Engineer: SS	Checker: RTR

Strata

Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)
		0.35m	Grass over dark brown slightly sandy silty topsoil (Topsoil)		
		128.48	Stiff yellow brown slightly sandy slightly gravelly silty CLAY with some charcoal fragments (subsoil). (Subsoil)		0.35
		0.60m			
		127.88	Extremely weak to very weak highly to moderately weathered yellow brown thinly laminated very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)		0.95
		0.05m 127.83	Hole Terminated at 1.00m bgl.		1.00

Samples

Type	From (m)	To (m)
ES1	0.20	0.20
B1	0.50	0.50
ES2	0.50	0.50

In-Situ Tests

Type	Depth (m)	Result

Remarks

Reason for Termination:

Terminated by engineer at bedrock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College		1.80
TP203	Project Number:	221770		0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd		
	Plant: JCB 3CX	Start & End Date:	23/02/2024	Stability: Standing Open
Ground Level (m AOD): 134.68		Eastings & Northings:	416881E 415807N	Engineer: SS / Checker: RTR

Strata

Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)
			Grass over Dark brown slightly sandy silty topsoil with some bricks and concrete. (Made Ground)		
		0.40m / 134.28	Extremely weak to very weak highly to moderately weathered yellow brown thinly laminated very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)		0.40
		1.10m / 133.18	Hole Terminated at 1.50m bgl.		1.50

Samples

Type	From (m)	To (m)
ES1	0.20	0.20
B1	1.00	1.00

In-Situ Tests

Type	Depth (m)	Result

Remarks

Reason for Termination:

Terminated by engineer at bedrock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

TRIAL PIT LOG

Scale: 1:20

LOCATION ID:	Project Name:	New Woodley School & College		1.80
TP204	Project Number:	221770		0.60 Pit Dimensions (m) Orientation: °
	Client:	Frank Shaw Associates Ltd		
	Plant: JCB 3CX	Start & End Date:	23/02/2024	Stability: Standing open
Ground Level (m AOD): 131.43		Eastings & Northings:	416920E 415892N	Engineer: SS / Checker: RTR

Strata

Groundwater Strike	Backfill	Level (m AOD)	Description	Legend	Depth (m bgl)
		0.20m	Grass over dark brown slightly sandy silty gravelly topsoil. Gravel is angular fine to coarse of red shale, brick sandstone, concrete. (Made Ground)		
		131.23	Stiff brownish grey slightly sandy gravelly Clay with cobbles of brick, concrete sandstone. (Made Ground)		0.20
		0.70m			
		130.53	Compact sandy Gravel of red (burnt) shale. (Made Ground)		0.90
		0.20m			
		130.33	Very stiff yellowish brown slightly sandy slightly gravelly silty CLAY with some charcoal fragments. (Subsoil)		1.10
		0.10m			
		130.23			1.20
		0.20m	Extremely weak moderately weathered brown thinly laminated micaceous very fine sandy SILTSTONE. (Pennine Lower Coal Measures Formation)		
		130.03			1.40

Hole Terminated at 1.40m bgl.

Samples

Type	From (m)	To (m)
ES1	0.10	0.10
B1	1.00	1.00
ES2	1.00	1.00
ES3	1.10	1.10

In-Situ Tests

Type	Depth (m)	Result

Remarks

Reason for Termination:

Terminated by engineer at bedrock.

Groundwater Notes:

No groundwater encountered.

Other Remarks:

1. No olfactory or visual evidence of contamination encountered.

BWB A CAF GROUP COMPANY

AGS REGISTERED USER 2023

Appendix 3 : SPT Calibration Certificate

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dynamic SAMPLING UK LTD

Dynamic Sampling Uk Ltd
Unit 8 Victory Park
Victory Road
Derby
DE248ZF

SPT Hammer Ref:	110.50
Test Date:	13/09/2023
Report Date:	13/09/2023
File Name:	110.50.spt
Test Operator:	B.HUNTER

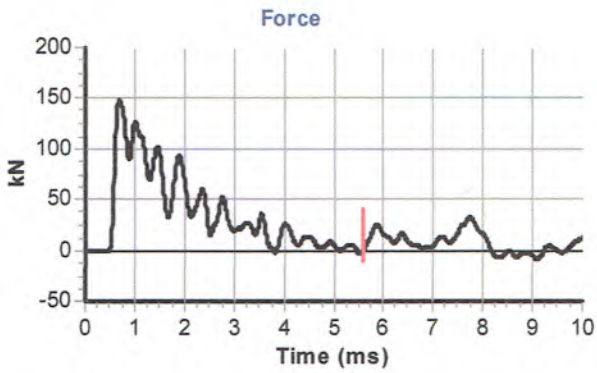
Instrumented Rod Data

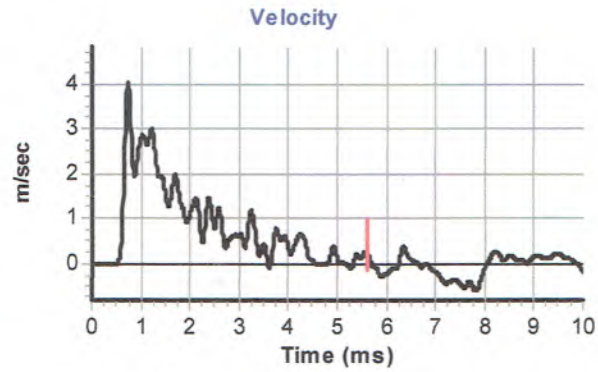
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.6
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	62901
Accelerometer No.2:	62902

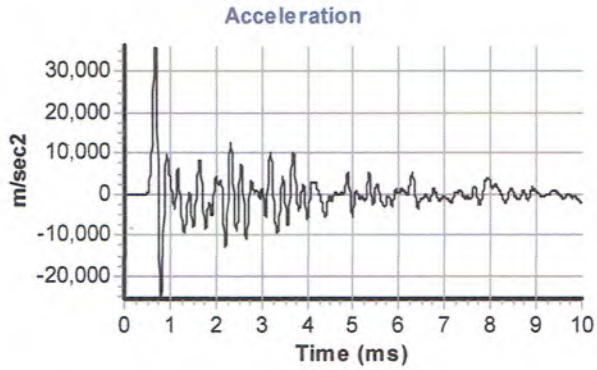
SPT Hammer Information

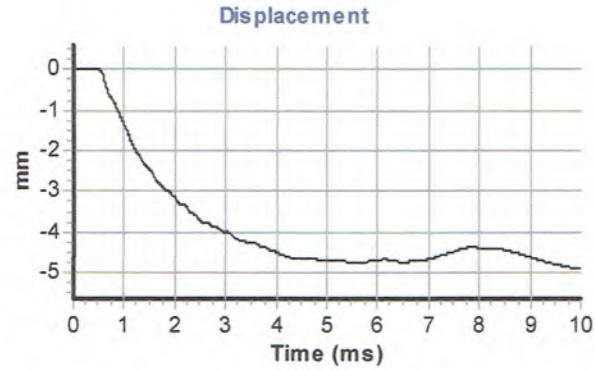
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

Comments / Location









Calculations

Area of Rod A (mm2):	983
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	353

Energy Ratio E_r (%): **75**

Signed: B.Hunter

Title: Operations Manager

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Appendix 4 : Photographs

24/02/22 Photo 1 FP102. Looking East. Concrete strip footing at 0.45m depth. On bedrock.

24/02/22 Photo 2 Looking Southwest. Weathered Siltstone thinly laminated bedrock.

24/02/22 Photo 3 Looking Southwest. FP102 0.8m Depth.

24/02/22 Photo 4 Looking Southeast. FP103. Concrete Strip footing at 1.10m on bedrock .Plastic Gully pipe at 0.4m at right.

24/02/22 Photo 5 Looking ESE. FP103. 0.5m topsoil over Loose Made ground backfill. Footing at 1.1m

24/02/22 Photo 6 Looking east. FP103. Made ground fill reworked natural with some brick and concrete.

24/02/22 Photo 7 Looking East. FP103.

24/02/22 Photo 8 FP104. Loose made ground of reworked natural backfill below topsoil to 1.5m depth.

24/02/22 Photo 9 Looking west. FP104. Concrete footing at 1.5m depth below loose backfill.

24/02/22 Photo 10 Looking west. FP104 Arisings.

24/02/22 Photo 11 Looking ESE. Concrete footing at 1.7m depth below loose backfill.

24/02/22 Photo 12 Looking Northwest. FP105 wrongly labelled 106.Note dark layer on arisings is top of buried former soil from 1.8m depth.

24/02/22 Photo 13 Looking WNW. FP105.

24/02/22 Photo 14 Looking West. FP101. Strip Footing at 0.5m depth on bedrock.

24/02/22 Photo 15 Looking West. FP101. Strip Footing at 0.5m depth on bedrock. 2" Paving flags over limestone aggregate over gravelly clay backfill to 0.5m.

24/02/22 Photo 16 FP101. Arisings gravelly clay

24/02/23 Photo 17 TP203. Moved due to drainage services. Adjacent to swimming pool.

24/02/23 Photo 18 TP203. Arisings weathered thinly laminated siltstone bedrock.

24/02/23 Photo 19 TP203. Topsoil with sone bricks over Weathered bedrock

24/02/23 Photo 20 TO203. Topsoil over weathered laminated siltstone bedrock

24/02/23 Photo 21 TP201. Topsoil over weathered thinly laminated siltstone bedrock

24/02/23 Photo 22 TP201. Topsoil 0.4m over weathered laminated siltstone bedrock

24/02/23 Photo 23 TP201. Topsoil 0.4m over weathered laminated siltstone bedrock

24/02/23 Photo 24 TP202. Topsoil 0.35m over Stiff gravelly Clay subsoil over weathered laminated siltstone bedrock at 0.95m

24/02/23 Photo 25 TP201.

24/02/23 Photo 26 TP204. Topsoil 0.2m over gey made ground (gravelly clay with demo brick and concrete) over compact red shale 0.9m over stiff subsoils 1.1m and weathered laminated siltstone bedrock 1.2m.

24/02/23 Photo 27 TP204.

24/02/23 Photo 28 TP204. Arisings

24/02/23 Photo 29 TP204. Arisings Stiff Subsoil with charcoal fragments (black)

24/02/23 Photo 30 TP204. Arisings red shale

24/02/26 Photo 31 SA204. width 600mm x length 2100mm Topsoil 0.4m over made ground reworked natural with some brick to 1.1m over subsoil? To 2.0m over laminated siltstone bedrock.

24/02/26 Photo 32 SA204. width 600mm x length 2100mm Arisings.

24/02/26 Photo 31 SA204. width 600mm x length 2100mm Gravel from 1.1m to 2.0m depth.

24/02/26 Photo 33 SA203. width 600mm x length 2100mm Topsoil 0.4m over made ground reworked natural with some brick to 1m over subsoil? To 2.9m

24/02/26 Photo 34 SA201. width 600mm x length 1700mm Topsoil 0.3m over made ground red shale to 0.4m over laminated siltstone bedrock to 1.5m.

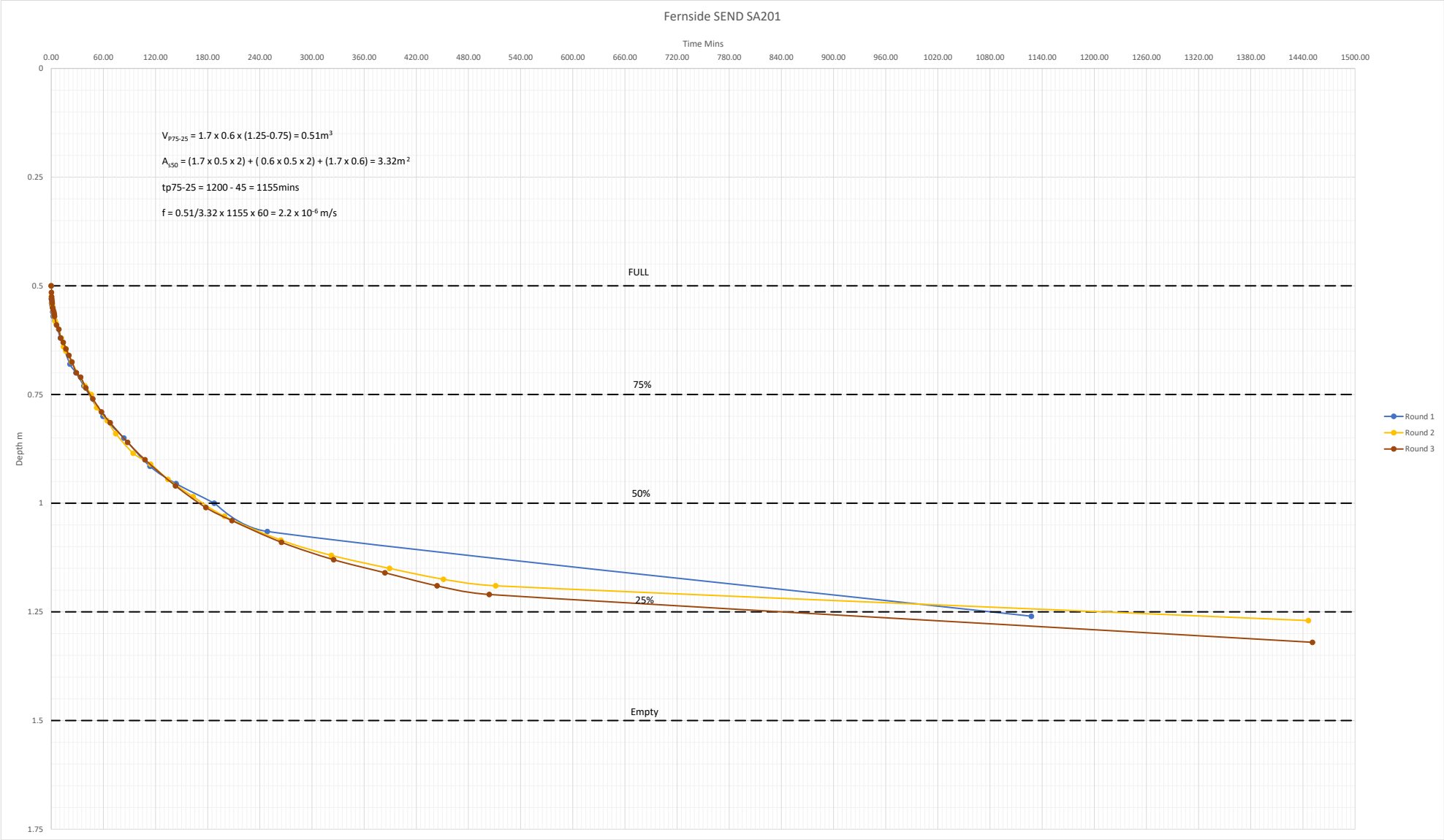
24/02/26 Photo 35 SA201. width 600mm x length 1700mm Topsoil 0.3m over made ground red shale to 0.4m over laminated siltstone bedrock to 1.5m.

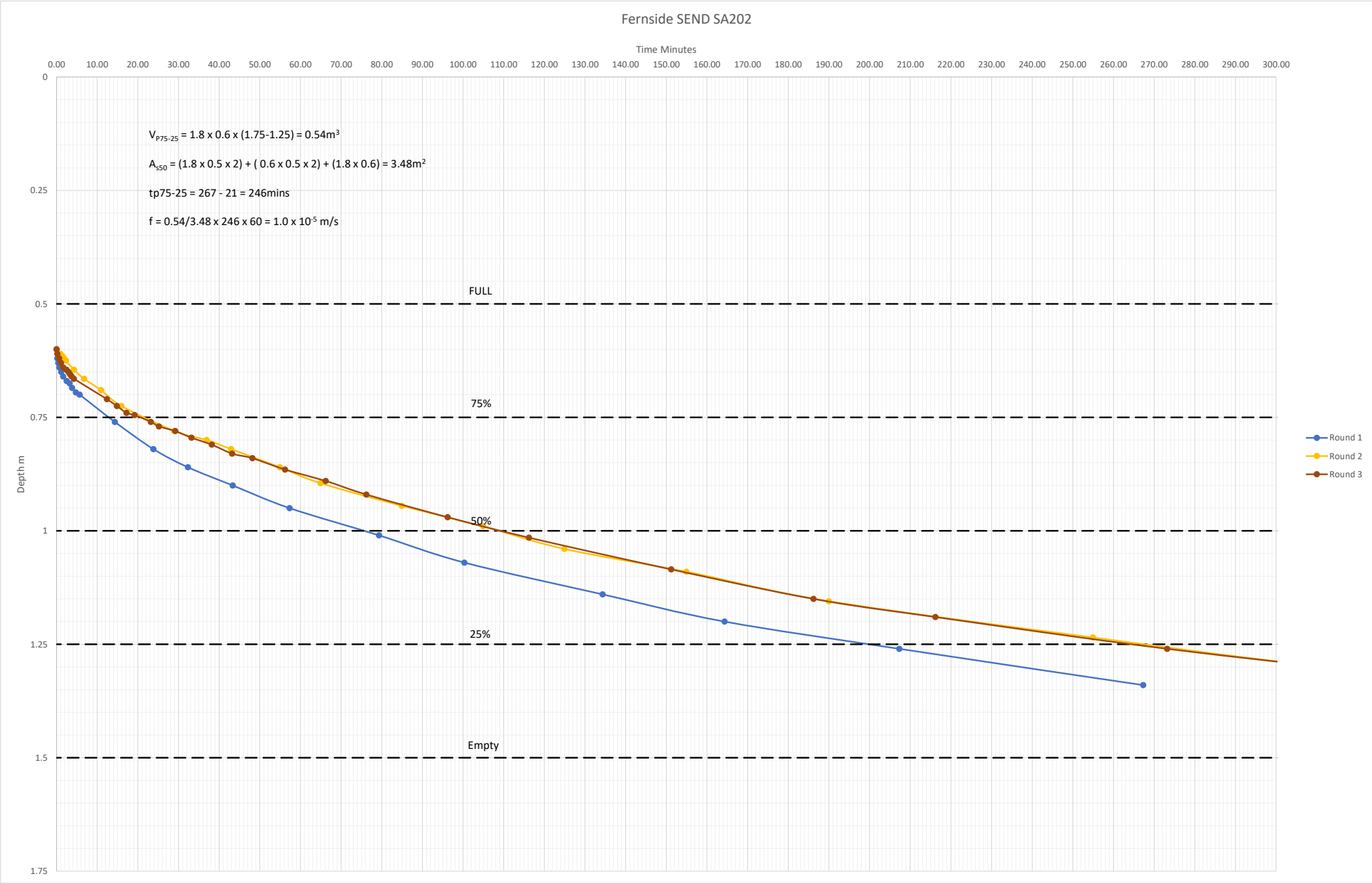
24/02/26 Photo 36 SA202. width 600mm x length 1800mm Topsoil 0.3m over subsoil to 0.4m over laminated siltstone bedrock to 1.5m.

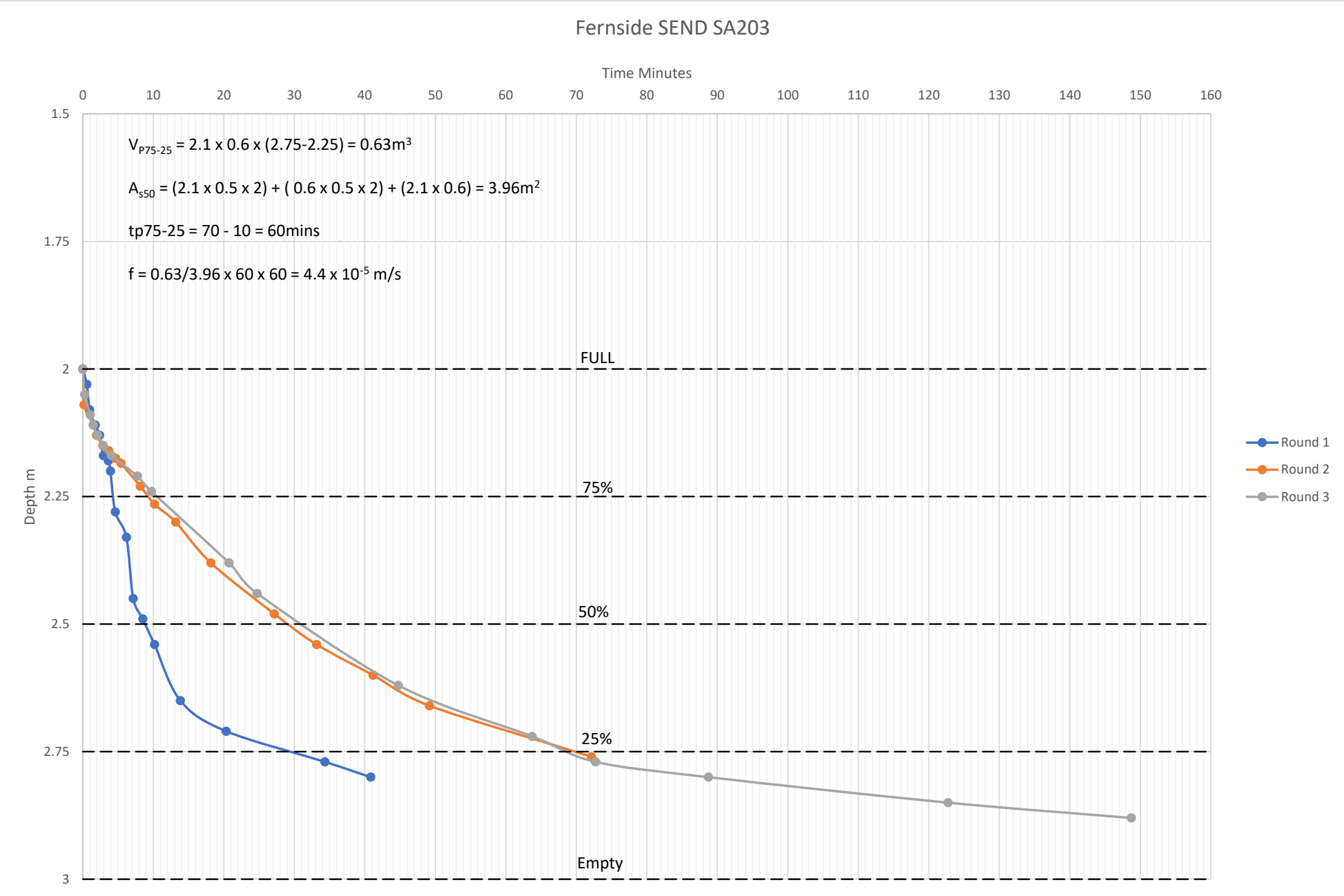
24/02/26 Photo 37 SA202. width 600mm x length 1800mm Topsoil 0.3m over subsoil to 0.4m over laminated siltstone bedrock to 1.5m.

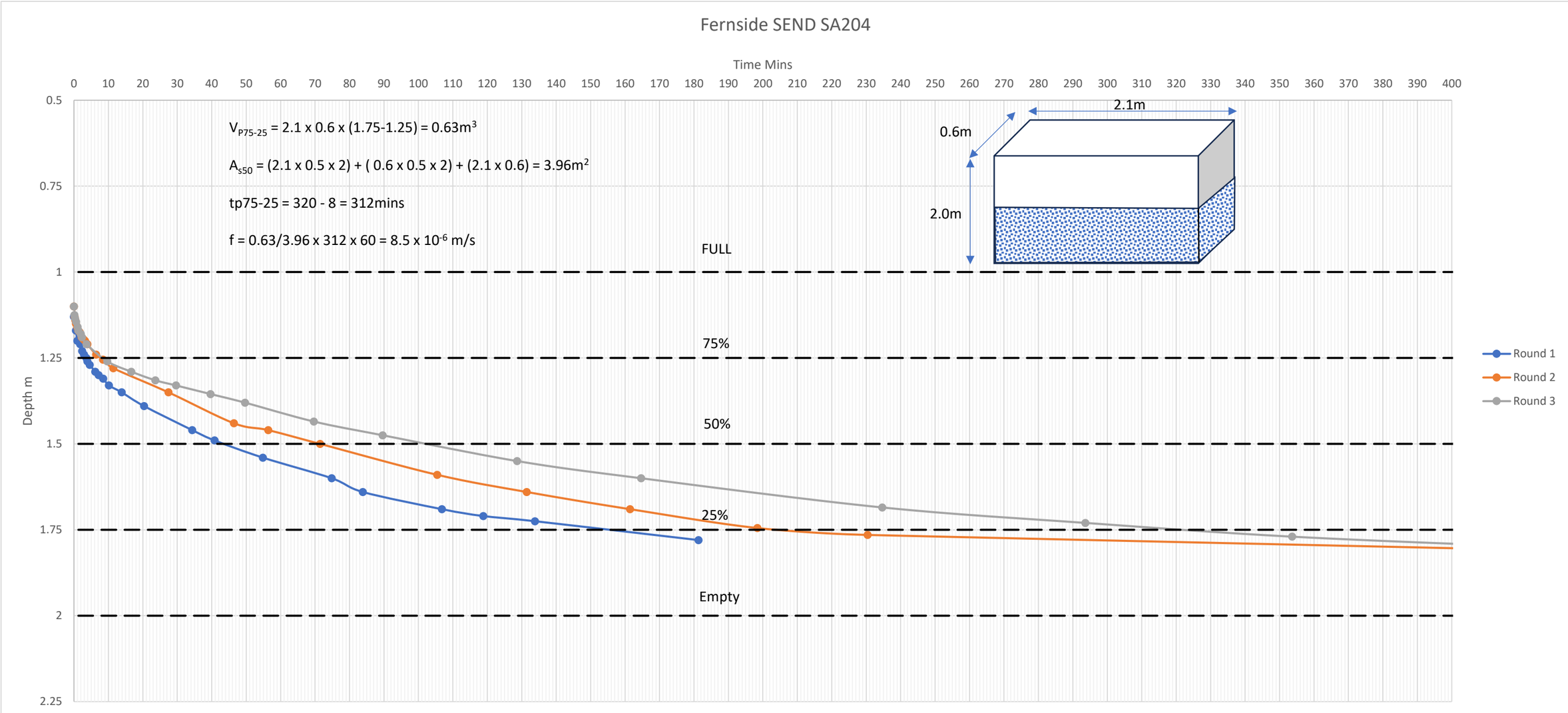
24/02/26 Photo 38 SA202. width 600mm x length 1800mm Arisings.

Appendix 5 : Soakaway Results


Fernside SEND SA201
Time Mins
0.00
60.00
120.00
180.00
240.00
300.00
360.00
420.00
480.00
540.00
600.00
660.00
720.00
780.00
840.00
900.00
960.00
1020.00
1080.00
1140.00
1200.00
1260.00
1320.00
1380.00
1440.00
1500.00
Depth m
0
0.25
0.5
0.75
1
1.25
1.5
1.75
V_{P75-25} = 1.7 x 0.6 x (1.25-0.75) = 0.51m³
A_{s50} = (1.7 x 0.5 x 2) + (0.6 x 0.5 x 2) + (1.7 x 0.6) = 3.32m²
tp75-25 = 1200 - 45 = 1155mins
f = 0.51/3.32 x 1155 x 60 = 2.2 x 10^{-6} m/s
FULL
75%
50%
25%
Empty
Round 1
Round 2
Round 3


Fernside SEND SA202
Time Minutes
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
100.00
110.00
120.00
130.00
140.00
150.00
160.00
170.00
180.00
190.00
200.00
210.00
220.00
230.00
240.00
250.00
260.00
270.00
280.00
290.00
300.00
Depth m
0
0.25
0.5
0.75
1
1.25
1.5
1.75
V_{P75-25} = 1.8 x 0.6 x (1.75-1.25) = 0.54m^3
A_{s50} = (1.8 x 0.5 x 2) + (0.6 x 0.5 x 2) + (1.8 x 0.6) = 3.48m^2
tp75-25 = 267 - 21 = 246mins
f = 0.54/3.48 x 246 x 60 = 1.0 x 10^{-5} m/s
FULL
75%
50%
25%
Empty
Round 1
Round 2
Round 3


Fernside SEND SA203
Time Minutes
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
1.5
1.75
2
2.25
2.5
2.75
3
Depth m
V_{P75-25} = 2.1 x 0.6 x (2.75-2.25) = 0.63m^3
A_{s50} = (2.1 x 0.5 x 2) + (0.6 x 0.5 x 2) + (2.1 x 0.6) = 3.96m^2
tp75-25 = 70 - 10 = 60mins
f = 0.63/3.96 x 60 x 60 = 4.4 x 10^{-5} m/s
FULL
75%
50%
25%
Empty
Round 1
Round 2
Round 3


Fernside SEND SA204
Time Mins
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400
Depth m
0.5
0.75
1
1.25
1.5
1.75
2
2.25
V_{P75-25} = 2.1 x 0.6 x (1.75-1.25) = 0.63m^3
A_{s50} = (2.1 x 0.5 x 2) + (0.6 x 0.5 x 2) + (2.1 x 0.6) = 3.96m^2
tp75-25 = 320 - 8 = 312mins
f = 0.63/3.96 x 312 x 60 = 8.5 x 10^{-6} m/s
2.1m
0.6m
2.0m
FULL
75%
50%
25%
Empty
Round 1
Round 2
Round 3

Appendix 6 : Soil Chemical Analysis Results

BWB Consulting Limited
Whitehall Waterfront
2 Riverside Way
Leeds
LS1 4EH

e: oliver.stewart@bwbconsulting.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-005221-2

Replaces Analytical Report Number: 24-005221, issue no. 1
Client references/information amended.
Sampled ID's amended on the last 3 samples as per client request

Project / Site name:	Fernside School	**Samples received on:**	23/02/2024
Your job number:	221770	**Samples instructed on/ Analysis started on:**	23/02/2024
Your order number:	7582	**Analysis completed by:**	29/02/2024
Report Issue Number:	2	**Report issued on:**	12/04/2024
Samples Analysed:	7 soil samples		

Signed: JSzwagrak

Joanna Szwagrzak
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 24-005221
Project / Site name: Fernside School
Your Order No: 7582

Lab Sample Number				126983	126984	126985	126986	126987
Sample Reference				DS202	DS201	DS201	DS202	TP204
Sample Number				D1	D1	D2	D2	D1
Depth (m)				0.20	0.05	0.15	0.05-0.10	0.10
Date Sampled				21/02/2024	21/02/2024	21/02/2024	21/02/2024	23/02/2024
Time Taken				1100	1100	1100	1100	1100
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	-	-	-	-	23.4
Moisture Content	%	0.01	NONE	-	-	-	-	15
Total mass of sample received	kg	0.1	NONE	-	-	-	-	0.4

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	EWS	EWS	EWS	EWS	-

Speciated PAHs

Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	1.1

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 24-005221
Project / Site name: Fernside School
Your Order No: 7582

Lab Sample Number				126988	126989
Sample Reference				TP204	TP204
Sample Number				D2	D3
Depth (m)				1.00	1.10
Date Sampled				23/02/2024	23/02/2024
Time Taken				1100	1100
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Stone Content	%	0.1	NONE	45.9	< 0.1
Moisture Content	%	0.01	NONE	11	10
Total mass of sample received	kg	0.1	NONE	0.5	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-

Speciated PAHs

Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.66	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 24-005221
Project / Site name: Fernside School

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation.
The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
126987	TP204	D1	0.1	Brown loam and clay with stones and vegetation
126988	TP204	D2	1	Brown loam and sand with stones and gravel
126989	TP204	D3	1.1	Brown clay and sand with gravel

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Analytical Report Number : 24-005221
Project / Site name: Fernside School

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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Analytical Report Number : 24-011223

Project / Site name:	Fernside School	**Samples received on:**	22/03/2024
Your job number:	221770	**Samples instructed on/ Analysis started on:**	27/03/2024
Your order number:		**Analysis completed by:**	05/04/2024
Report Issue Number:	1	**Report issued on:**	05/04/2024
Samples Analysed:	8 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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Analytical Report Number: 24-011223
Project / Site name: Fernside School

Lab Sample Number				156324	156325	156326	156327	156328
Sample Reference				TP203 D1	TP202 D2	TP201 D1	DS204 Tarmac	DS209
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.50	0.20	0.00	1.00-1.30
Date Sampled				23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	7.7	13	21	0.98	11
Total mass of sample received	kg	0.1	NONE	1.3	1.3	1.4	1	0.9
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	SPU	-	-	-	-
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	7.9	7.7	6.9	-	10.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	9.1	24	34	-	890
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.00455	0.01205	0.01712	-	0.44474
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.55	12.1	17.1	-	445
Total Sulphur	mg/kg	50	MCERTS	< 50	180	300	-	580
Organic Matter (automated)	%	0.1	MCERTS	0.9	2.6	4.2	-	0.6
Fraction Organic Carbon (FOC) Automated	%	0.001	MCERTS	0.0051	0.015	0.025	-	0.0037
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.68	0.13	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.37	0.12	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.29	0.12	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	2.8	0.93	0.22	0.1
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.74	0.2	0.07	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.07	2.8	1.4	0.38	0.11
Pyrene	mg/kg	0.05	MCERTS	0.06	2.6	1.3	0.33	0.12
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.2	0.64	0.16	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	1.2	0.7	0.23	0.06
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	1	0.71	0.26	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.43	0.37	0.09	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.85	0.53	0.18	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.3	0.31	0.11	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.35	0.31	0.19	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	15.7	7.76	2.22	< 0.80

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Analytical Report Number: 24-011223
Project / Site name: Fernside School

Lab Sample Number				156324	156325	156326	156327	156328
Sample Reference				TP203 D1	TP202 D2	TP201 D1	DS204 Tarmac	DS209
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.50	0.20	0.00	1.00-1.30
Date Sampled				23/02/2024	23/02/2024	23/02/2024	23/02/2024	23/02/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.7	15	23	-	4.9
Barium (aqua regia extractable)	mg/kg	1	MCERTS	59	85	100	-	77
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	0.91	1.2	-	0.71
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	-	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	24	28	-	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	24	25	51	-	99
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	53	79	-	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	1.3	1.5	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	31	21	25	-	29
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	25	32	38	-	21
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	76	83	130	-	68
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	< 1.0
TPH (C10 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	23	25	-	37
Miscellaneous Organics								
Coal Tar		N/A	NONE	-	-	-	Not Identified	-
Total Residue	mg/kg	10	NONE	-	-	-	1200	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number: 24-011223
Project / Site name: Fernside School

Lab Sample Number				156329	156330	156331
Sample Reference				DS212	FP105 Tarmac	North Playground
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.00	0.00
Date Sampled				23/02/2024	23/02/2024	23/02/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	0.1	0.96
Total mass of sample received	kg	0.1	NONE	1.1	0.6	0.3

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.3	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	-
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	-	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	-
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	420	-	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.20991	-	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	210	-	-
Total Sulphur	mg/kg	50	MCERTS	460	-	-
Organic Matter (automated)	%	0.1	MCERTS	3.4	-	-
Fraction Organic Carbon (FOC) Automated	%	0.001	MCERTS	0.02	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.15	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.06	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.09	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.63	0.69	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.12	0.46	0.08
Fluoranthene	mg/kg	0.05	MCERTS	1.1	1.6	0.22
Pyrene	mg/kg	0.05	MCERTS	0.96	1.6	0.57
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.45	0.53	0.3
Chrysene	mg/kg	0.05	MCERTS	0.57	1	1.4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.59	0.65	0.76
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.21	0.24	0.26
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.44	0.35	0.71
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.23	0.16	0.25
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.31	0.27	0.44

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	5.68	7.72	5.03

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Analytical Report Number: 24-011223
Project / Site name: Fernside School

Lab Sample Number				156329	156330	156331
Sample Reference				DS212	FP105 Tarmac	North Playground
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.00	0.00
Date Sampled				23/02/2024	23/02/2024	23/02/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	33	-	-
Barium (aqua regia extractable)	mg/kg	1	MCERTS	110	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.4	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	44	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	64	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	38	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	100	-	-
Petroleum Hydrocarbons						
Petroleum Range Organics (C6 - C10) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0	-	-
TPH (C10 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	32	-	-
Miscellaneous Organics						
Coal Tar		N/A	NONE	-	Not Identified	Not Identified
Total Residue	mg/kg	10	NONE	-	8600	11000

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Analytical Report Number : 24-011223
Project / Site name: Fernside School

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
156324	TP203 D1	None Supplied	0.2	Brown clay and loam with vegetation
156325	TP202 D2	None Supplied	0.5	Brown clay with vegetation
156326	TP201 D1	None Supplied	0.2	Brown loam and sand with vegetation
156327	DS204 Tarmac	None Supplied	0	Brown tar *b
156328	DS209	None Supplied	1.00-1.30	Brown sand with gravel
156329	DS212	None Supplied	0.6	Brown clay and sand
156330	FP105 Tarmac	None Supplied	0	Brown tar *b
156331	North Playgroun	None Supplied	0	Brown tar *b

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Analytical Report Number : 24-011223
Project / Site name: Fernside School

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Coal Tar in soil	In-house method by GC-MS, by calculation of discrete polyaromatic content	In-house method by calculation	L064B	D	NONE
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

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Analytical Report Number : 24-011223
Project / Site name: Fernside School

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate	In-house method	L009B	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

*b - Unaccredited sample matrix.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 24-011223
Project / Site name: Fernside School

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
DS204 Tarmac	N/A	S	156327	bc	Coal Tar in soil	L064B	bc
DS204 Tarmac	N/A	S	156327	bc	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	bc
DS209	N/A	S	156328	c	Complex Cyanide in soil	L080	c
DS209	N/A	S	156328	c	Fraction Organic Carbon FOC Automated	L009B	c
DS209	N/A	S	156328	c	Free cyanide in soil	L080	c
DS209	N/A	S	156328	c	Hexavalent chromium in soil	L080	c
DS209	N/A	S	156328	c	Monohydric phenols in soil	L080	c
DS209	N/A	S	156328	c	Organic matter (Automated) in soil	L009B	c
DS209	N/A	S	156328	c	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	c
DS209	N/A	S	156328	c	Total cyanide in soil	L080	c
DS209	N/A	S	156328	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
DS209	N/A	S	156328	c	pH in soil (automated)	L099	c
DS212	N/A	S	156329	c	Complex Cyanide in soil	L080	c
DS212	N/A	S	156329	c	Fraction Organic Carbon FOC Automated	L009B	c
DS212	N/A	S	156329	c	Free cyanide in soil	L080	c
DS212	N/A	S	156329	c	Hexavalent chromium in soil	L080	c
DS212	N/A	S	156329	c	Monohydric phenols in soil	L080	c
DS212	N/A	S	156329	c	Organic matter (Automated) in soil	L009B	c
DS212	N/A	S	156329	c	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	c
DS212	N/A	S	156329	c	Total cyanide in soil	L080	c
DS212	N/A	S	156329	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
DS212	N/A	S	156329	c	pH in soil (automated)	L099	c
FP105 Tarmac	N/A	S	156330	bc	Coal Tar in soil	L064B	bc
FP105 Tarmac	N/A	S	156330	bc	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	bc
North Playground	N/A	S	156331	bc	Coal Tar in soil	L064B	bc
North Playground	N/A	S	156331	bc	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	bc
TP201 D1	N/A	S	156326	c	Complex Cyanide in soil	L080	c
TP201 D1	N/A	S	156326	c	Fraction Organic Carbon FOC Automated	L009B	c
TP201 D1	N/A	S	156326	c	Free cyanide in soil	L080	c
TP201 D1	N/A	S	156326	c	Hexavalent chromium in soil	L080	c
TP201 D1	N/A	S	156326	c	Monohydric phenols in soil	L080	c
TP201 D1	N/A	S	156326	c	Organic matter (Automated) in soil	L009B	c
TP201 D1	N/A	S	156326	c	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP201 D1	N/A	S	156326	c	Total cyanide in soil	L080	c
TP201 D1	N/A	S	156326	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP201 D1	N/A	S	156326	c	pH in soil (automated)	L099	c
TP202 D2	N/A	S	156325	c	Complex Cyanide in soil	L080	c
TP202 D2	N/A	S	156325	c	Fraction Organic Carbon FOC Automated	L009B	c
TP202 D2	N/A	S	156325	c	Free cyanide in soil	L080	c
TP202 D2	N/A	S	156325	c	Hexavalent chromium in soil	L080	c
TP202 D2	N/A	S	156325	c	Monohydric phenols in soil	L080	c
TP202 D2	N/A	S	156325	c	Organic matter (Automated) in soil	L009B	c
TP202 D2	N/A	S	156325	c	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP202 D2	N/A	S	156325	c	Total cyanide in soil	L080	c
TP202 D2	N/A	S	156325	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP202 D2	N/A	S	156325	c	pH in soil (automated)	L099	c
TP203 D1	N/A	S	156324	c	Complex Cyanide in soil	L080	c
TP203 D1	N/A	S	156324	c	Fraction Organic Carbon FOC Automated	L009B	c
TP203 D1	N/A	S	156324	c	Free cyanide in soil	L080	c
TP203 D1	N/A	S	156324	c	Hexavalent chromium in soil	L080	c
TP203 D1	N/A	S	156324	c	Monohydric phenols in soil	L080	c
TP203 D1	N/A	S	156324	c	Organic matter (Automated) in soil	L009B	c
TP203 D1	N/A	S	156324	c	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP203 D1	N/A	S	156324	c	Total cyanide in soil	L080	c
TP203 D1	N/A	S	156324	c	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088	c
TP203 D1	N/A	S	156324	c	pH in soil (automated)	L099	c

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The results included within the report are representative of the samples submitted for analysis.

Appendix 7 : Soil Geotechnical Analysis Results

LABORATORY REPORT

Contract Number: PSL24/1624

Report Date: 16 April 2024

Client's Reference: 221770

Client Name: BWB Consulting
11 Portland Street
Aytoun St Side
Manchester
M1 3HU

For the attention of: Simon Steel

Contract Title: Fernside SEND

Date Received: 4/3/2024
Date Commenced: 4/3/2024
Date Completed: 16/4/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Managing Director)	R Berriman (Associate Director)	S Royle (Laboratory Manager)
L Knight (Assistant Laboratory Manager)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

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awatkins@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP203		BD	1.00	-	Brown sandy silty GRAVEL with cobbles.
FP103		BD	0.50	1.00	Brown sandy silty GRAVEL.
FP105		BD	1.00	-	Brown very gravelly very sandy CLAY.
T204		BD	1.00	-	Brown very gravelly very sandy CLAY.

UKAS TESTING 4043 PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	Fernside SEND	Contract No: PSL24/1624 Client Ref: 221770

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP203		BD	1.00		9.7		2.65		NP			
FP103		BD	0.50	1.00	11				NP			
FP105		BD	1.00		17		2.68	34	17	17	51	Low Plasticity CL
T204		BD	1.00		15			32	16	16	44	Low Plasticity CL

SYMBOLS : NP : Non Plastic *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

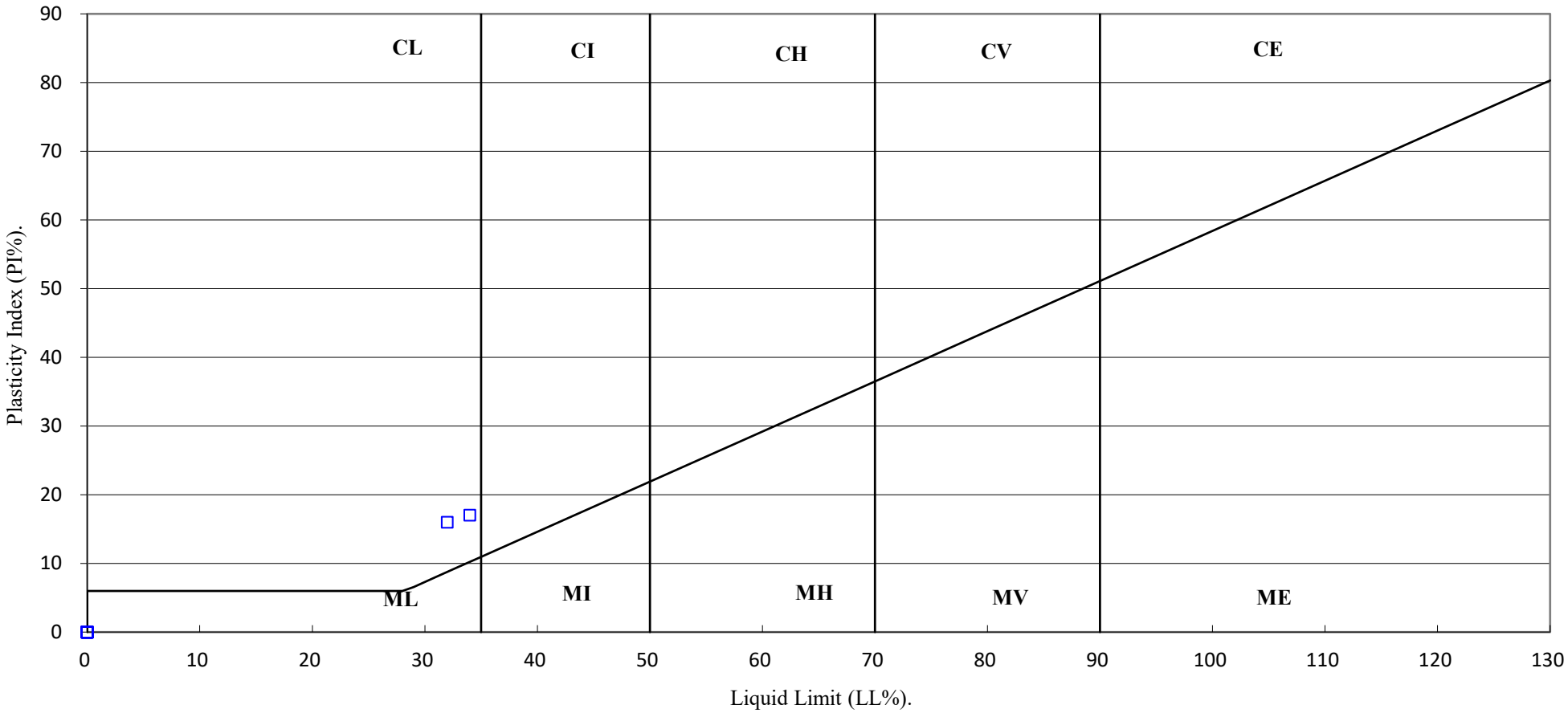
PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Fernside SEND

Contract No: PSL24/1624

Client Ref: 221770

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043 / PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	Fernside SEND	Contract No: PSL24/1624
		Client Ref: 221770

PARTICLE SIZE DISTRIBUTION TEST

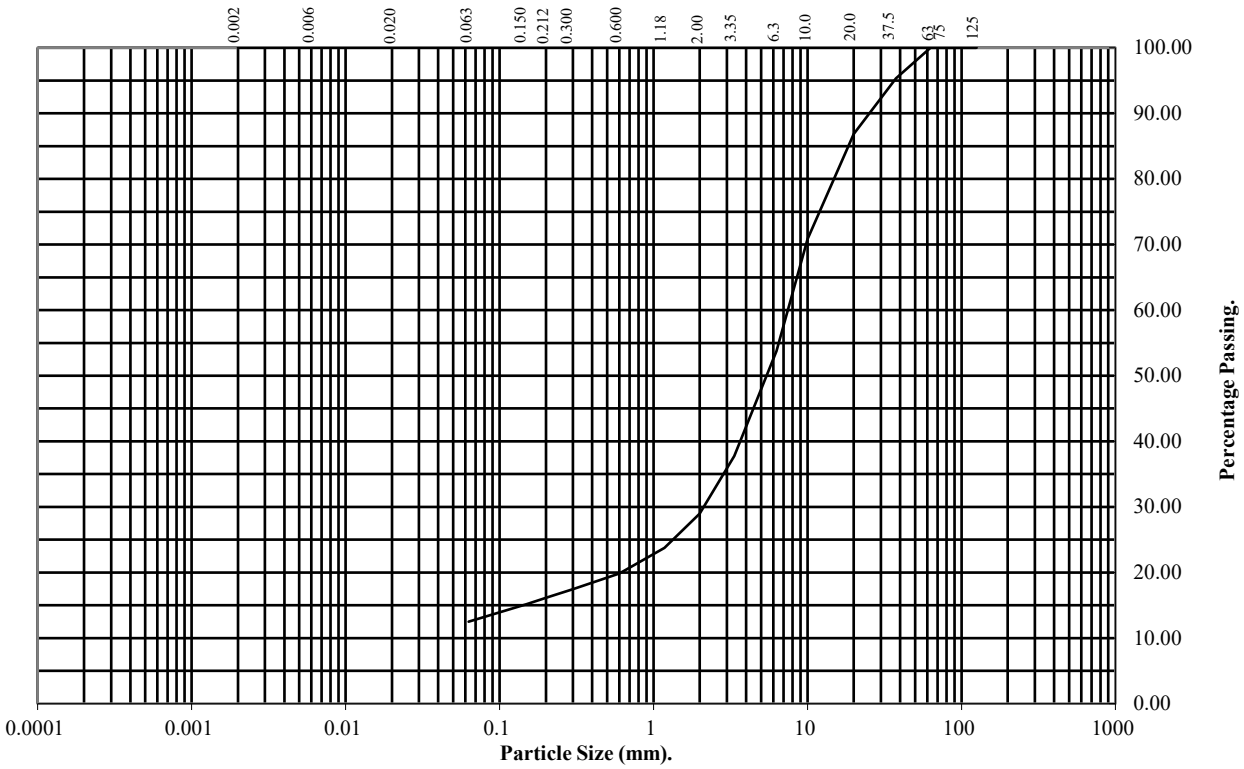
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **FP103** **Top Depth (m):** **0.50**

Sample Number: **Base Depth(m):** **1.00**

Sample Type: **BD**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	95
20	87
10	71
6.3	54
3.35	38
2	29
1.18	24
0.6	20
0.3	17
0.212	16
0.15	15
0.063	13

Soil Fraction	Total Percentage
Cobbles	0
Gravel	71
Sand	16
Silt/Clay	13

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Fernside SEND

Contract No: **PSL24/1624**

Client Ref: **221770**

PARTICLE SIZE DISTRIBUTION TEST

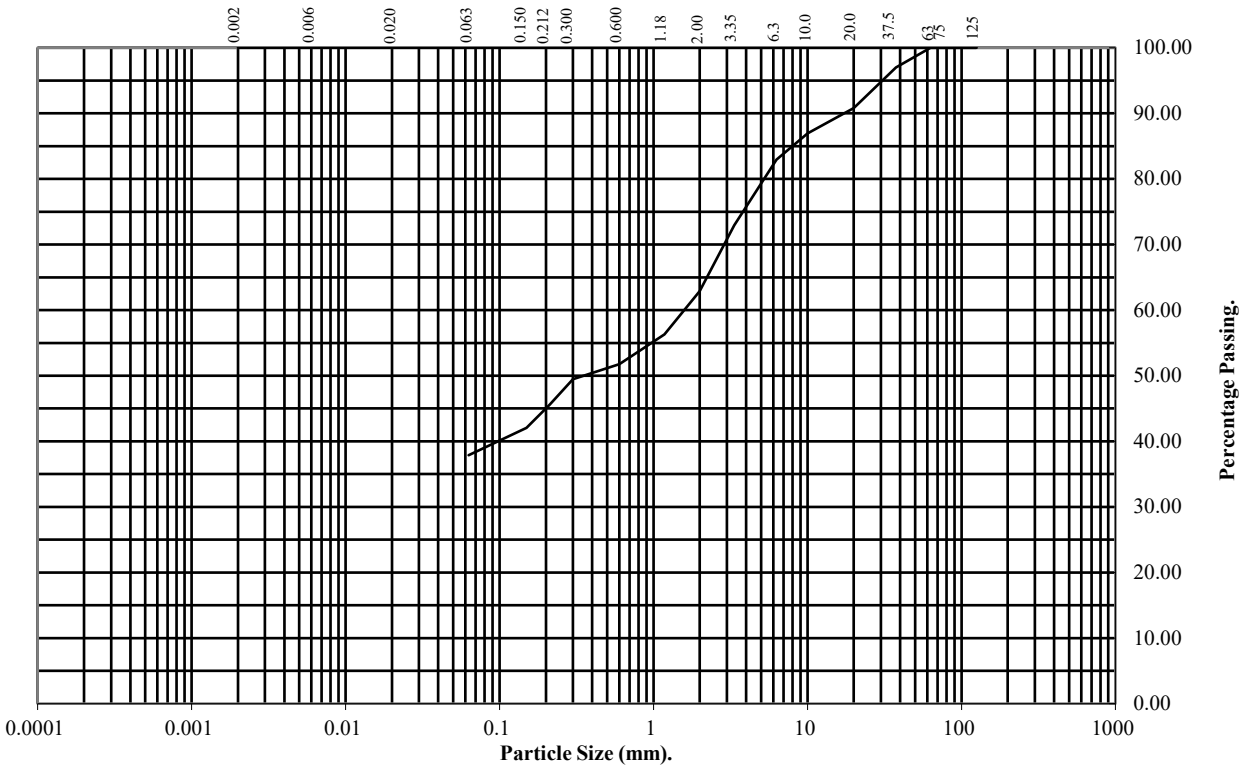
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **FP105** **Top Depth (m):** **1.00**

Sample Number: **Base Depth(m):**

Sample Type: **BD**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	97
20	91
10	87
6.3	83
3.35	73
2	63
1.18	56
0.6	52
0.3	49
0.212	46
0.15	42
0.063	38

Soil Fraction	Total Percentage
Cobbles	0
Gravel	37
Sand	25
Silt/Clay	38

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Fernside SEND

Contract No: **PSL24/1624**

Client Ref: **221770**

PARTICLE SIZE DISTRIBUTION TEST

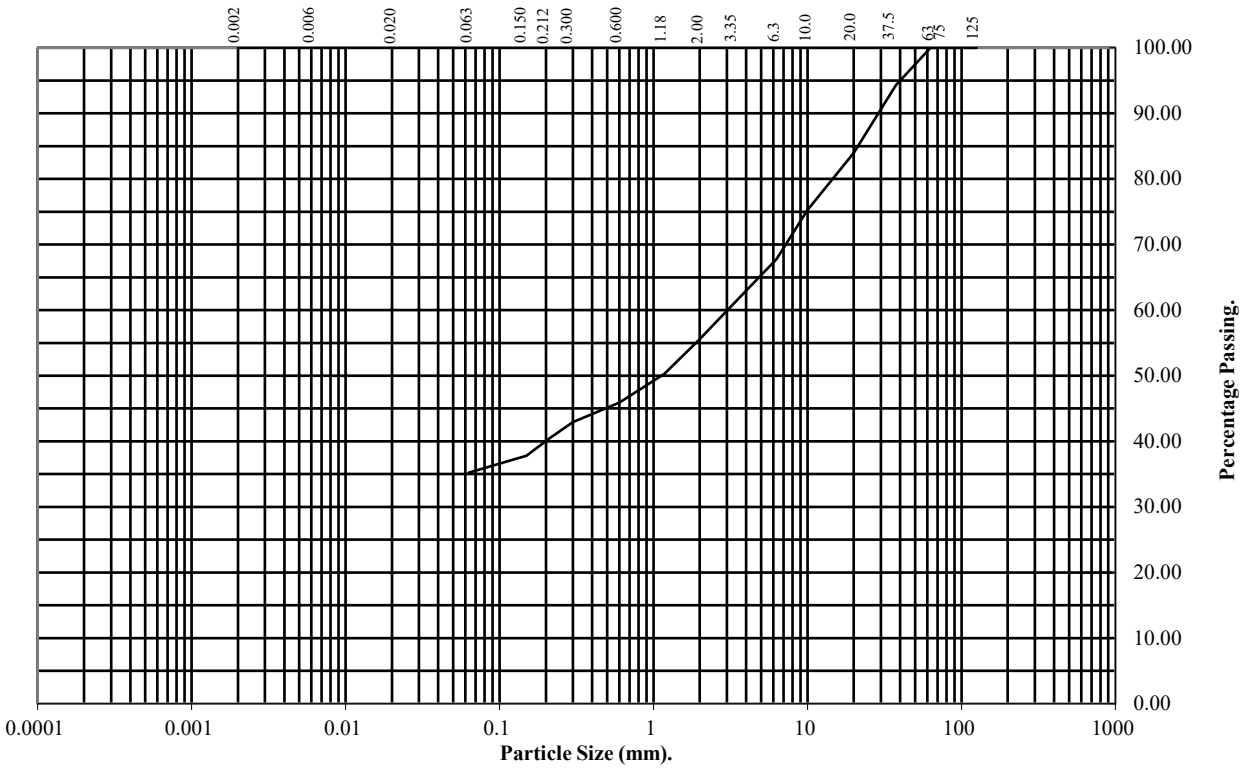
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **T204** **Top Depth (m):** **1.00**

Sample Number: **Base Depth(m):**

Sample Type: **BD**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	84
10	75
6.3	68
3.35	61
2	56
1.18	50
0.6	46
0.3	43
0.212	40
0.15	38
0.063	35

Soil Fraction	Total Percentage
Cobbles	0
Gravel	44
Sand	21
Silt/Clay	35

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Fernside SEND

Contract No: **PSL24/1624**

Client Ref: **221770**

PARTICLE SIZE DISTRIBUTION TEST

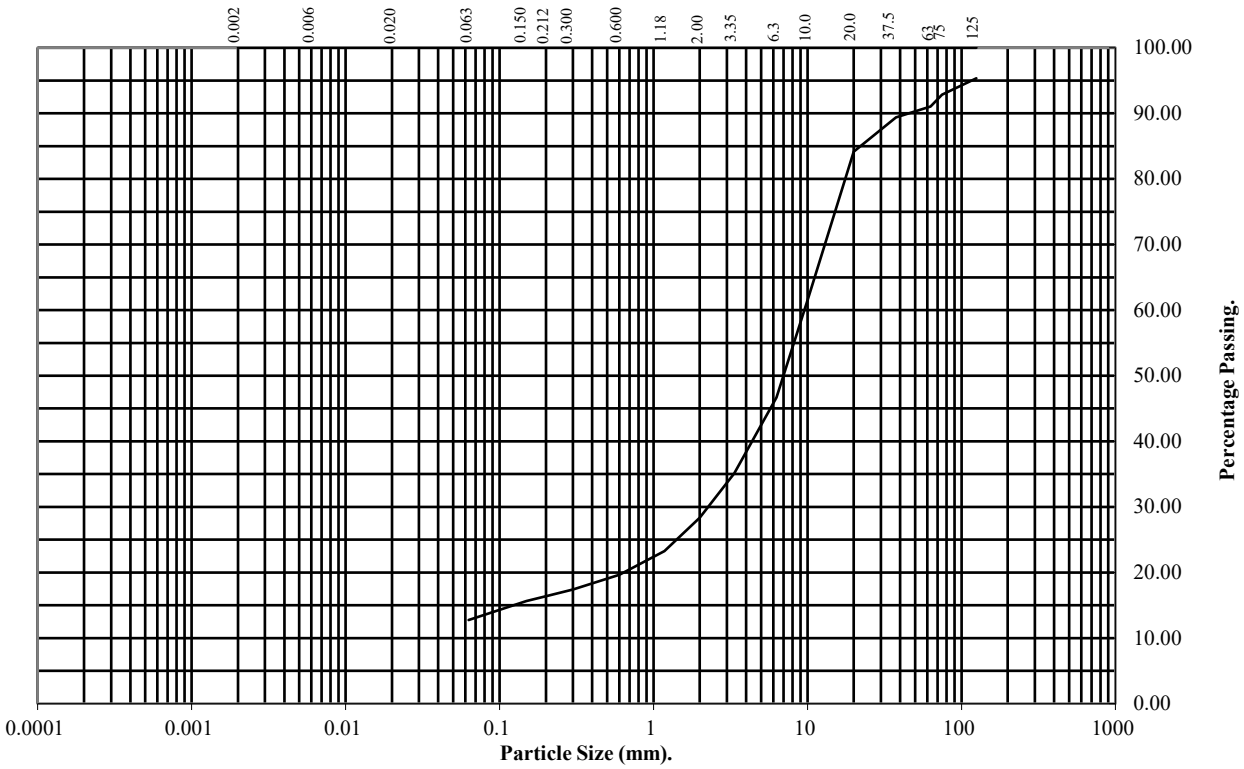
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **TP203** **Top Depth (m):** **1.00**

Sample Number: **Base Depth(m):**

Sample Type: **BD**



BS Test Sieve (mm)	Percentage Passing
125	95
75	93
63	91
37.5	89
20	84
10	62
6.3	47
3.35	35
2	28
1.18	23
0.6	20
0.3	17
0.212	17
0.15	16
0.063	13

Soil Fraction	Total Percentage
Cobbles	9
Gravel	63
Sand	15
Silt/Clay	13

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Fernside SEND

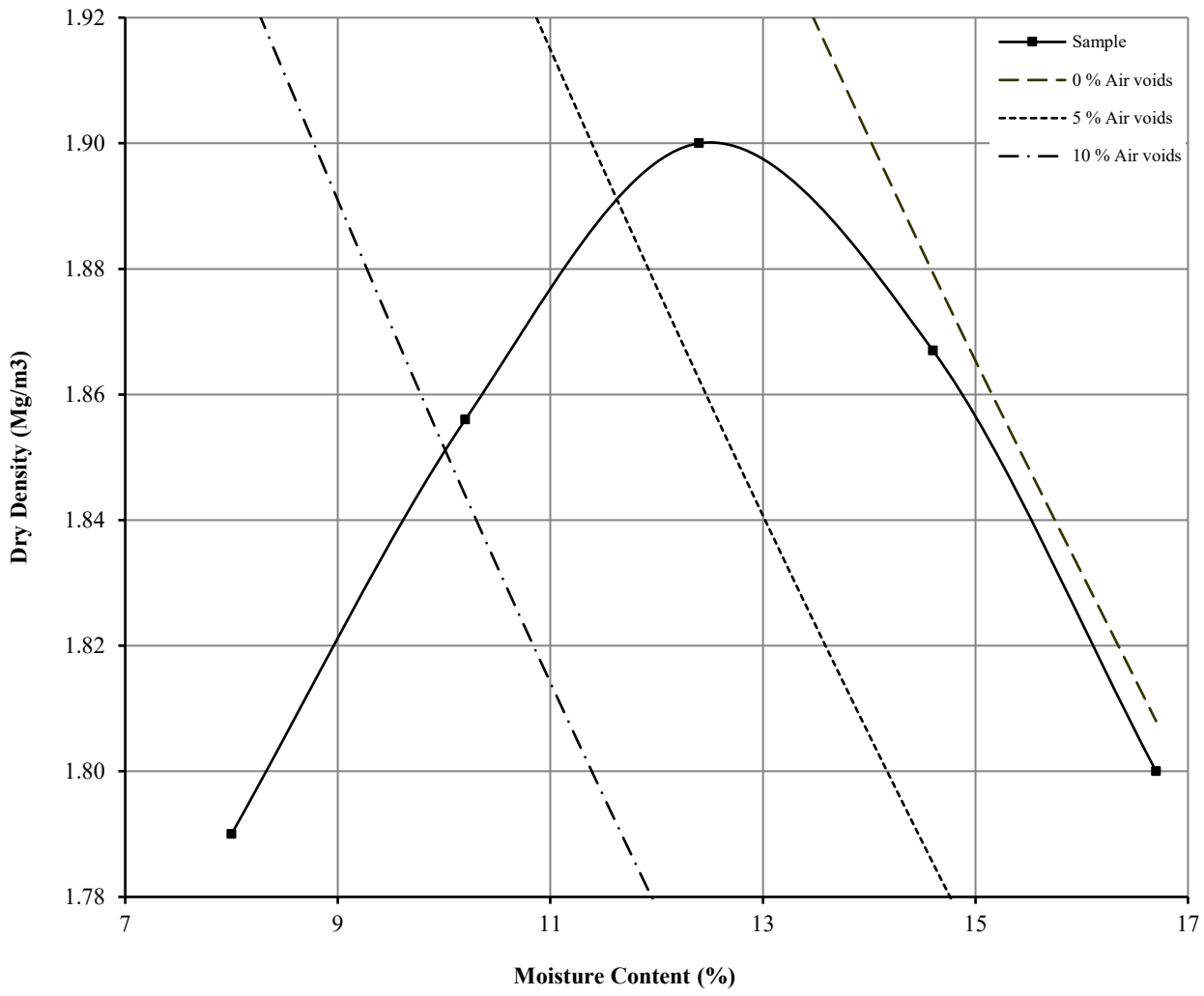
Contract No: **PSL24/1624**

Client Ref: **221770**

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number:	**FP103**	**Top Depth (m) :**	**0.50**
Sample Number:		**Base Depth (m) :**	**1.00**
Sample Type:	**BD**		



Initial Moisture Content:		15	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.59	Assumed	Material Retained on 37.5 mm Test Sieve (%):		5
Maximum Dry Density (Mg/m3):		1.90	Material Retained on 20.0 mm Test Sieve (%):		8
Optimum Moisture Content (%):		12			
Remarks See summary of soil descriptions					

UKAS TESTING 4043 / PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	**Fernside SEND**	**Contract** PSL24/1624 **Client Ref** 221770

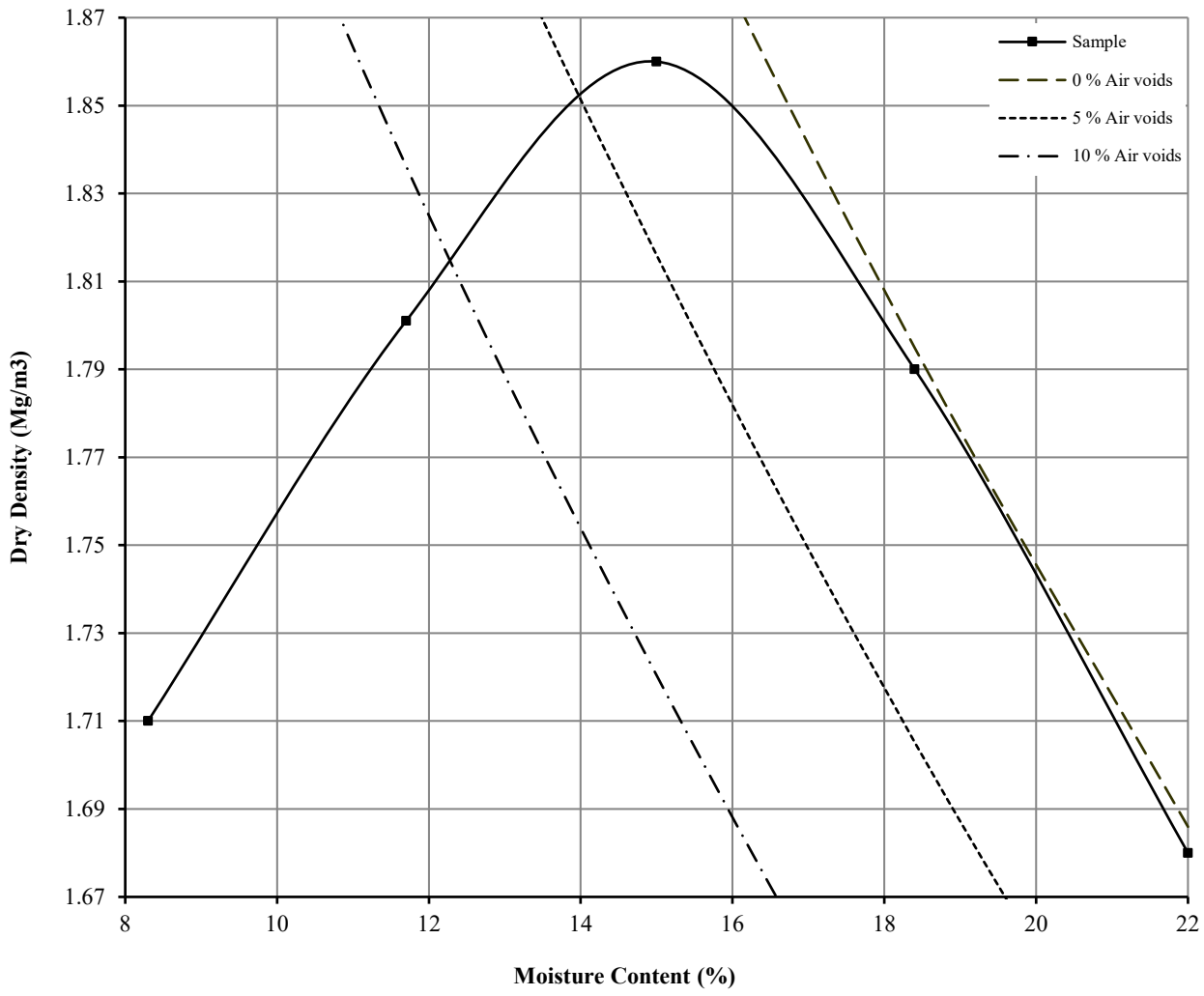
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number: FP105 **Top Depth (m) :** 1.00

Sample Number: **Base Depth (m) :**

Sample Type: BD



Initial Moisture Content:		18	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.68	Measured	Material Retained on 37.5 mm Test Sieve (%):		3
Maximum Dry Density (Mg/m3):		1.86	Material Retained on 20.0 mm Test Sieve (%):		6
Optimum Moisture Content (%):		15			
Remarks See summary of soil descriptions					

UKAS TESTING 4043 PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	Fernside SEND	Contract PSL24/1624 Client Ref 221770

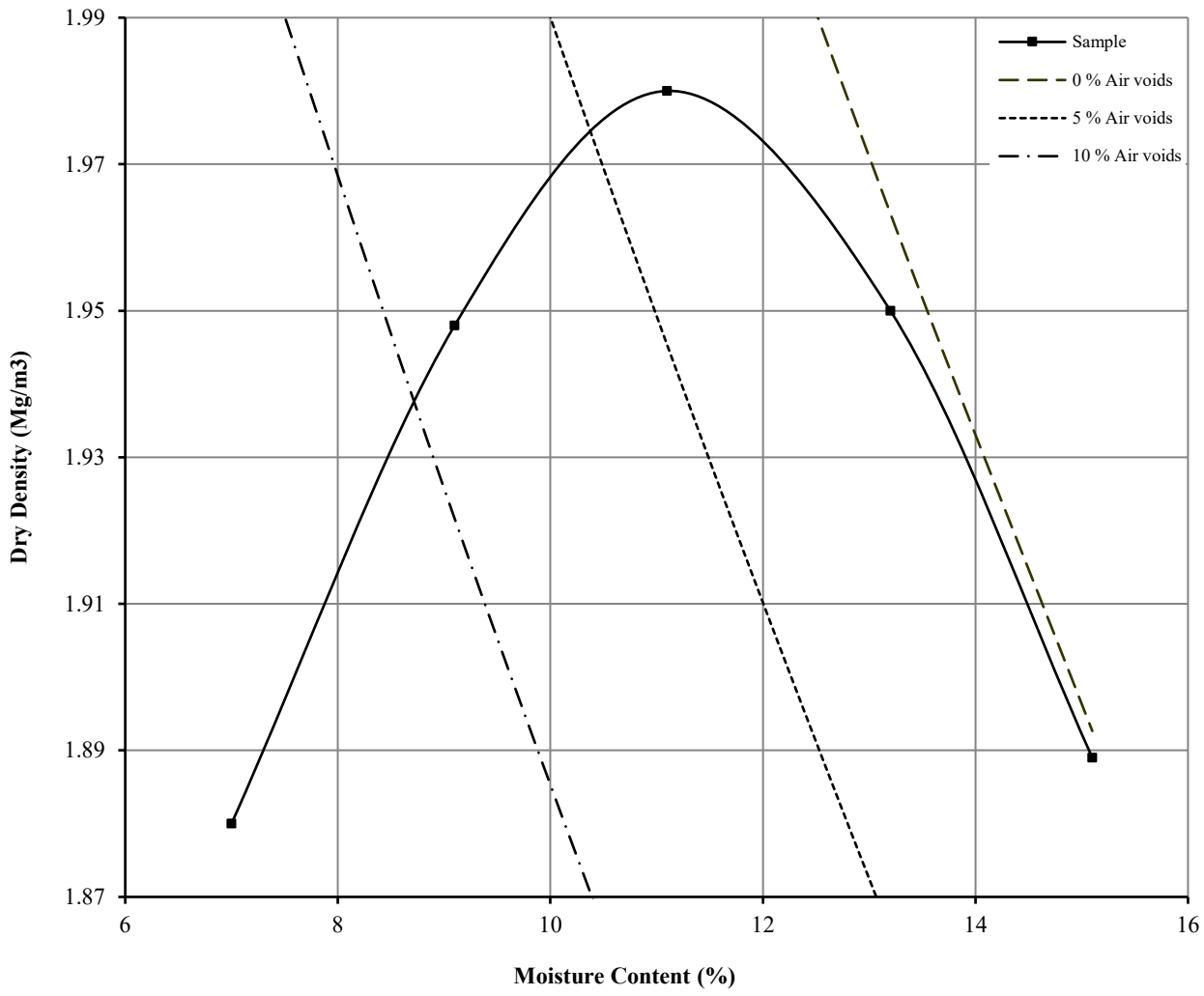
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number: TP203 **Top Depth (m) :** 1.00

Sample Number: **Base Depth (m) :**

Sample Type: BD



Initial Moisture Content:		11	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.65	Measured	Material Retained on 37.5 mm Test Sieve (%):		11
Maximum Dry Density (Mg/m3):		1.98	Material Retained on 20.0 mm Test Sieve (%):		5
Optimum Moisture Content (%):		11			
Remarks See summary of soil descriptions					

UKAS TESTING 4043 PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	Fernside SEND	Contract PSL24/1624 Client Ref 221770

Appendix 8 : Chemical Analysis Assessment Sheets

Location	Sample depth	Strata Type	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium VI	Chromium III	Copper	Lead	Inorganic Mercury	Nickel	Selenium	Vanadium	Zinc	pH	Cyanide (free)	Cyanide (Complex)
Detection Limit			0.5	0.5	0.5	0.4	0.1	0.5	0.5	0.5	0.5	0.05	0.5	0.25	0.5	0.5	4	0.5	0.5
GSAC			37	1350	1.7	290	11	6	910	2400	200	40	180	250	410	3700	<4.5 >9.5	43	213
TP203 D1	0.20		10	59	1.1	0.2	0.2	1.8	28	24	15	0.30	31	1	25.0	76		1	1
TP202 D2	0.50		15	85	0.9	0.2	0.2	1.8	24	25	53	1.30	21	1	32.0	83		1	1
TP201 D1	0.20		23	100	1.2	0.2	0.2	1.8	28	51	79	1.50	25	1	38.0	130		1	1
DS204 Tarmac	0.00																		
DS209	1.00-1.30		5	77	0.7	0.2	0.2	1.8	25	99	13	0.30	29	1	21.0	68		1	1
DS212	0.60		33	110	1.4	0.2	0.2	1.8	28	44	64	0.30	26	1	38.0	100		1	1
FP105 Tarmac	0.00																		
North Playground	0.00																		

Location	Sample depth	Phenol	Benzene	Toluene	Ethylbenzene	Total Xylene	TPH (EC5-6) aliphatic	TPH (>EC6-8) aliphatic	TPH (>EC8-10) aliphatic	TPH (>EC10-12) aliphatic	TPH (>EC12-16) aliphatic	TPH (>EC16-21) aliphatic	TPH (>EC35-44) aliphatic	TPH (>EC6-7) aromatic (benzene)	TPH (>EC7-8) aromatic (toluene)	TPH (>EC8-10) aromatic	TPH (>EC10-12) aromatic	TPH (>EC12-16) aromatic	TPH (>EC16-21) aromatic
Detection Limit		0.1	1	1	1	0.001	1	1	1	1	1	1	1	1	1	1	1	1	1
GSAC		1.20E+05	8.70E+01	1.30E+05	4.70E+04	56	42	100	27	130	1100	65000	65000	70	130	34	74	140	260
TP203 D1	0.20	1																	
TP202 D2	0.50	1																	
TP201 D1	0.20	1																	
DS204 Tarmac	0.00																		
DS209	1.00-1.30	1																	
DS212	0.60	1																	
FP105 Tarmac	0.00																		
North Playground	0.00																		

Location	Sample depth	TPH (>EC21-35) aromatic	TPH (>EC35-44) aromatic	Total TPH	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(123-cd)pyrene	Dibenzo(ah)anthracene	Benzo(g,h,i)perylene	Coal Tar (B(a)P as surrogate marker)
Detection Limit		1	1	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GSAC		1100	1100	500	2.3	170	210	170	95	2400	280	620	7.2	15	2.6	77	2.2	27	0.24	320	0.79
TP203 D1	0.20				0.05	0.05	0.05	0.05	0.05	0.05	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TP202 D2	0.50				0.68	0.05	0.37	0.29	2.8	0.74	2.8	2.6	1.2	1.2	1	0.43	0.85	0.3	0.05	0.35	*0.85*
TP201 D1	0.20				0.13	0.05	0.12	0.12	0.93	0.2	1.4	1.3	0.64	0.7	0.71	0.37	0.53	0.31	0.05	0.31	0.53
DS204 Tarmac	0.00				0.05	0.05	0.05	0.05	0.22	0.07	0.4	0.3	0.16	0.23	0.26	0.09	0.18	0.11	0.05	0.19	0.18
DS209	1.00-1.30				0.05	0.05	0.05	0.05	0.1	0.05	0.11	0.12	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05
DS212	0.60				0.05	0.05	0.09	0.05	0.63	0.12	1.1	0.96	0.45	0.57	0.59	0.21	0.44	0.23	0.05	0.31	0.44
FP105 Tarmac	0.00				0.15	0.06	0.05	0.05	0.69	0.46	1.6	1.6	0.53	1	0.65	0.24	0.35	0.16	0.05	0.27	0.35
North Playground	0.00				0.05	0.05	0.05	0.05	0.05	0.08	0.22	0.57	0.3	1.4	0.76	0.26	0.71	0.25	0.05	0.44	0.71

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Appendix 9 : Hazwaste Online Assessment

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HazWasteOnline™

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

TI4UG-BBPFE-UO2MK

Job name

221770 Fernside SEND School

Description/Comments

Project

221770 Fernside SEND School

Site

221770 Fernside SEND School

Classified by

Name:
Richard Robinson
Date:
23 Apr 2024 08:13 GMT
Telephone:
0115 924 1100

Company:
BWB Consulting Ltd
Waterfront House, Station Street
Nottingham
NG2 3DQ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: -

Course	Date
Hazardous Waste Classification	08 Dec 2016
3 year Refresher overdue	-

Purpose of classification

2 - Material Characterisation

Address of the waste

Fernside SEND School, Huddersfield **Post Code** n/a

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Construction

Description of the specific process, sub-process and/or activity that created the waste

Construction

Description of the waste

Soils

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP203 D1	0.20	Non Hazardous		3
2	TP202 D2	0.50	Non Hazardous		5
3	TP201 D1	0.20	Non Hazardous		7
4	DS204 Tarmac	0.00	Non Hazardous		10
5	DS209	1.00-1.30	Non Hazardous		12
6	DS212	0.60	Non Hazardous		14
7	FP105 Tarmac	0.00	Non Hazardous		17
8	North Playground	0.00	Non Hazardous		19

Related documents

#	Name	Description
1	BWB Contaminated Land Suite WM3	waste stream template used to create this Job

Report

Created by: Richard Robinson

Created date: 23 Apr 2024 08:13 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	21
Appendix B: Rationale for selection of metal species	22
Appendix C: Version	23

Classification of sample: TP203 D1

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

Sample details

Sample name:
TP203 D1
Sample Depth:
0.20 m
Moisture content:
7.7%
(dry weight 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: 7.7% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		confirm TPH has NOT arisen from diesel or petrol					☑							
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9.7	mg/kg	1.32	11.892	mg/kg	0.00119 %	✓	
3		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1	mg/kg	2.775	2.835	mg/kg	0.000283 %	✓	
4		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		**<LOD**
5		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
6		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28	mg/kg	1.462	37.998	mg/kg	0.0038 %	✓	
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24	mg/kg	1.126	25.089	mg/kg	0.00251 %	✓	
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	15	mg/kg	1.56	21.724	mg/kg	0.00139 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
10		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		31	mg/kg	1.579	45.464	mg/kg	0.00455 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		76	mg/kg	2.774	195.762	mg/kg	0.0196 %	✓	
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
15	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
16	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
17		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
18		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
19		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
20	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
21		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
22		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
23		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
24	•	fluoranthene				0.07	mg/kg		0.065	mg/kg	0.0000065 %	✓	
			205-912-4	206-44-0									
25	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
26	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
28	•	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-581-5	85-01-8									
29	•	pyrene				0.06	mg/kg		0.0557	mg/kg	0.00000557 %	✓	
			204-927-3	129-00-0									
30		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0341 %		

Key

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

Classification of sample: TP202 D2

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

Sample details

Sample name:
TP202 D2
Sample Depth:
0.50 m
Moisture content:
13%
(dry weight 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: 13% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		confirm TPH has NOT arisen from diesel or petrol					☑							
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15	mg/kg	1.32	17.526	mg/kg	0.00175 %	✓	
3		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.91	mg/kg	2.775	2.235	mg/kg	0.000224 %	✓	
4		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		**<LOD**
5		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
6		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	31.042	mg/kg	0.0031 %	✓	
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25	mg/kg	1.126	24.909	mg/kg	0.00249 %	✓	
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	53	mg/kg	1.56	73.159	mg/kg	0.00469 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.3	mg/kg	1.353	1.557	mg/kg	0.000156 %	✓	
10		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		21	mg/kg	1.579	29.354	mg/kg	0.00294 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		83	mg/kg	2.774	203.765	mg/kg	0.0204 %	✓	
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14	•	acenaphthene				0.37	mg/kg		0.327	mg/kg	0.0000327 %	✓	
			201-469-6	83-32-9									
15	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
16	•	anthracene				0.74	mg/kg		0.655	mg/kg	0.0000655 %	✓	
			204-371-1	120-12-7									
17		benzo[a]anthracene				1.2	mg/kg		1.062	mg/kg	0.000106 %	✓	
		601-033-00-9	200-280-6	56-55-3									
18		benzo[a]pyrene; benzo[def]chrysene				0.85	mg/kg		0.752	mg/kg	0.0000752 %	✓	
		601-032-00-3	200-028-5	50-32-8									
19		benzo[b]fluoranthene				1	mg/kg		0.885	mg/kg	0.0000885 %	✓	
		601-034-00-4	205-911-9	205-99-2									
20	•	benzo[ghi]perylene				0.35	mg/kg		0.31	mg/kg	0.000031 %	✓	
			205-883-8	191-24-2									
21		benzo[k]fluoranthene				0.43	mg/kg		0.381	mg/kg	0.0000381 %	✓	
		601-036-00-5	205-916-6	207-08-9									
22		chrysene				1.2	mg/kg		1.062	mg/kg	0.000106 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
24	•	fluoranthene				2.8	mg/kg		2.478	mg/kg	0.000248 %	✓	
			205-912-4	206-44-0									
25	•	fluorene				0.29	mg/kg		0.257	mg/kg	0.0000257 %	✓	
			201-695-5	86-73-7									
26	•	indeno[123-cd]pyrene				0.3	mg/kg		0.265	mg/kg	0.0000265 %	✓	
			205-893-2	193-39-5									
27		naphthalene				0.68	mg/kg		0.602	mg/kg	0.0000602 %	✓	
		601-052-00-2	202-049-5	91-20-3									
28	•	phenanthrene				2.8	mg/kg		2.478	mg/kg	0.000248 %	✓	
			201-581-5	85-01-8									
29	•	pyrene				2.6	mg/kg		2.301	mg/kg	0.00023 %	✓	
			204-927-3	129-00-0									
30		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0378 %		

Key

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

Classification of sample: TP201 D1

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

Sample details

Sample name:
TP201 D1
Sample Depth:
0.20 m
Moisture content:
21%
(dry weight 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: 21% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		confirm TPH has NOT arisen from diesel or petrol					☑							
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		23	mg/kg	1.32	25.097	mg/kg	0.00251 %	✓	
3		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.2	mg/kg	2.775	2.752	mg/kg	0.000275 %	✓	
4		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		**<LOD**
5		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
6		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28	mg/kg	1.462	33.821	mg/kg	0.00338 %	✓	
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		51	mg/kg	1.126	47.455	mg/kg	0.00475 %	✓	
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	79	mg/kg	1.56	101.839	mg/kg	0.00653 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.5	mg/kg	1.353	1.678	mg/kg	0.000168 %	✓	
10		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		25	mg/kg	1.579	32.634	mg/kg	0.00326 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		130	mg/kg	2.774	298.049	mg/kg	0.0298 %	✓	
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		benzene	601-020-00-8	200-753-7	71-43-2		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
15	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
16		toluene	601-021-00-3	203-625-9	108-88-3		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
18	●	acenaphthene		201-469-6	83-32-9		0.12	mg/kg		0.0992	mg/kg	0.00000992 %	✓	
19	●	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20	●	anthracene		204-371-1	120-12-7		0.2	mg/kg		0.165	mg/kg	0.0000165 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.64	mg/kg		0.529	mg/kg	0.0000529 %	✓	
22		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.53	mg/kg		0.438	mg/kg	0.0000438 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.71	mg/kg		0.587	mg/kg	0.0000587 %	✓	
24	●	benzo[ghi]perylene		205-883-8	191-24-2		0.31	mg/kg		0.256	mg/kg	0.0000256 %	✓	
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.37	mg/kg		0.306	mg/kg	0.0000306 %	✓	
26		chrysene	601-048-00-0	205-923-4	218-01-9		0.7	mg/kg		0.579	mg/kg	0.0000579 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28	●	fluoranthene		205-912-4	206-44-0		1.4	mg/kg		1.157	mg/kg	0.000116 %	✓	
29	●	fluorene		201-695-5	86-73-7		0.12	mg/kg		0.0992	mg/kg	0.00000992 %	✓	
30	●	indeno[123-cd]pyrene		205-893-2	193-39-5		0.31	mg/kg		0.256	mg/kg	0.0000256 %	✓	
31		naphthalene	601-052-00-2	202-049-5	91-20-3		0.13	mg/kg		0.107	mg/kg	0.0000107 %	✓	
32	●	phenanthrene		201-581-5	85-01-8		0.93	mg/kg		0.769	mg/kg	0.0000769 %	✓	
33	●	pyrene		204-927-3	129-00-0		1.3	mg/kg		1.074	mg/kg	0.000107 %	✓	
34		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
35	●	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		**<LOD**
36		tetrachloroethylene	602-028-00-4	204-825-9	127-18-4		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
37		carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
38		trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
39		vinyl chloride; chloroethylene	602-023-00-7	200-831-0	75-01-4		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
											Total:	0.056 %		

Key

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

Classification of sample: DS204 Tarmac

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

Sample details

Sample name:
DS204 Tarmac
Sample Depth:
0.00 m
Moisture content:
0.98%
(dry weight 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: 0.98% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	●	confirm TPH has NOT arisen from diesel or petrol					☑							
2		benzene	601-020-00-8	200-753-7	71-43-2		<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
3	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
4		toluene	601-021-00-3	203-625-9	108-88-3		<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
5		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
6	●	acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
7	●	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8	●	anthracene		204-371-1	120-12-7		0.07	mg/kg		0.0693	mg/kg	0.00000693 %	✓	
9		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.16	mg/kg		0.158	mg/kg	0.0000158 %	✓	
10		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.18	mg/kg		0.178	mg/kg	0.0000178 %	✓	
11		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.26	mg/kg		0.257	mg/kg	0.0000257 %	✓	
12	●	benzo[ghi]perylene		205-883-8	191-24-2		0.19	mg/kg		0.188	mg/kg	0.0000188 %	✓	
13		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.09	mg/kg		0.0891	mg/kg	0.00000891 %	✓	
14		chrysene	601-048-00-0	205-923-4	218-01-9		0.23	mg/kg		0.228	mg/kg	0.0000228 %	✓	
15		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16	•	fluoranthene				0.38	mg/kg		0.376	mg/kg	0.0000376 %	✓	
			205-912-4	206-44-0									
17	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
18	•	indeno[123-cd]pyrene				0.11	mg/kg		0.109	mg/kg	0.0000109 %	✓	
			205-893-2	193-39-5									
19		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
20	•	phenanthrene				0.22	mg/kg		0.218	mg/kg	0.0000218 %	✓	
			201-581-5	85-01-8									
21	•	pyrene				0.33	mg/kg		0.327	mg/kg	0.0000327 %	✓	
			204-927-3	129-00-0									
22	•	polychlorobiphenyls; PCB				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
23		tetrachloroethylene				<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
		602-028-00-4	204-825-9	127-18-4									
24		carbon tetrachloride; tetrachloromethane				<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
		602-008-00-5	200-262-8	56-23-5									
25		trichloroethylene; trichloroethene				<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
		602-027-00-9	201-167-4	79-01-6									
26		vinyl chloride; chloroethylene				<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
		602-023-00-7	200-831-0	75-01-4									
										Total:	0.00425 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection

Classification of sample: DS209

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

Sample details

Sample name:
DS209
Sample Depth:
1.00-1.30 m
Moisture content:
11%
(dry weight 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: 11% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		confirm TPH has NOT arisen from diesel or petrol					☑							
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4.9	mg/kg	1.32	5.828	mg/kg	0.000583 %	✓	
3		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.71	mg/kg	2.775	1.775	mg/kg	0.000178 %	✓	
4		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		**<LOD**
5		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
6		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25	mg/kg	1.462	32.918	mg/kg	0.00329 %	✓	
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		99	mg/kg	1.126	100.417	mg/kg	0.01 %	✓	
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	13	mg/kg	1.56	18.268	mg/kg	0.00117 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
10		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		29	mg/kg	1.579	41.266	mg/kg	0.00413 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		68	mg/kg	2.774	169.948	mg/kg	0.017 %	✓	
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-469-6	83-32-9									
15	•	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-917-1	208-96-8									
16	•	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			204-371-1	120-12-7									
17		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
18		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
19		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
20	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-883-8	191-24-2									
21		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
22		chrysene				0.06	mg/kg		0.0541	mg/kg	0.00000541 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
24	•	fluoranthene				0.11	mg/kg		0.0991	mg/kg	0.00000991 %	✓	
			205-912-4	206-44-0									
25	•	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			201-695-5	86-73-7									
26	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
			205-893-2	193-39-5									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
28	•	phenanthrene				0.1	mg/kg		0.0901	mg/kg	0.00000901 %	✓	
			201-581-5	85-01-8									
29	•	pyrene				0.12	mg/kg		0.108	mg/kg	0.0000108 %	✓	
			204-927-3	129-00-0									
30		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0372 %		

Key

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

Classification of sample: DS212

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

Sample details

Sample name:
DS212
Sample Depth:
0.60 m
Moisture content:
16%
(dry weight 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: 16% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		confirm TPH has NOT arisen from diesel or petrol					☑							
2		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		33	mg/kg	1.32	37.561	mg/kg	0.00376 %	✓	
3		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.4	mg/kg	2.775	3.35	mg/kg	0.000335 %	✓	
4		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		**<LOD**
5		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		**<LOD**
6		chromium { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28	mg/kg	1.462	35.279	mg/kg	0.00353 %	✓	
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		44	mg/kg	1.126	42.706	mg/kg	0.00427 %	✓	
8		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	64	mg/kg	1.56	86.059	mg/kg	0.00552 %	✓	
9		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		**<LOD**
10		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		26	mg/kg	1.579	35.403	mg/kg	0.00354 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		**<LOD**
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100	mg/kg	2.774	239.151	mg/kg	0.0239 %	✓	
13		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		benzene	601-020-00-8	200-753-7	71-43-2		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
15	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
16		toluene	601-021-00-3	203-625-9	108-88-3		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
18	●	acenaphthene		201-469-6	83-32-9		0.09	mg/kg		0.0776	mg/kg	0.00000776 %	✓	
19	●	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
20	●	anthracene		204-371-1	120-12-7		0.12	mg/kg		0.103	mg/kg	0.0000103 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.45	mg/kg		0.388	mg/kg	0.0000388 %	✓	
22		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.44	mg/kg		0.379	mg/kg	0.0000379 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.59	mg/kg		0.509	mg/kg	0.0000509 %	✓	
24	●	benzo[ghi]perylene		205-883-8	191-24-2		0.31	mg/kg		0.267	mg/kg	0.0000267 %	✓	
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.21	mg/kg		0.181	mg/kg	0.0000181 %	✓	
26		chrysene	601-048-00-0	205-923-4	218-01-9		0.57	mg/kg		0.491	mg/kg	0.0000491 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
28	●	fluoranthene		205-912-4	206-44-0		1.1	mg/kg		0.948	mg/kg	0.0000948 %	✓	
29	●	fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
30	●	indeno[123-cd]pyrene		205-893-2	193-39-5		0.23	mg/kg		0.198	mg/kg	0.0000198 %	✓	
31		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
32	●	phenanthrene		201-581-5	85-01-8		0.63	mg/kg		0.543	mg/kg	0.0000543 %	✓	
33	●	pyrene		204-927-3	129-00-0		0.96	mg/kg		0.828	mg/kg	0.0000828 %	✓	
34		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
35	●	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		**<LOD**
36		tetrachloroethylene	602-028-00-4	204-825-9	127-18-4		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
37		carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
38		trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
39		vinyl chloride; chloroethylene	602-023-00-7	200-831-0	75-01-4		<5	mg/kg		<5	mg/kg	<0.0005 %		**<LOD**
											Total:	0.0501 %		

Key

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

Classification of sample: FP105 Tarmac

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

Sample details

Sample name:
FP105 Tarmac
Sample Depth:
0.00 m
Moisture content:
0.1%
(dry weight 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: 0.1% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	●	confirm TPH has NOT arisen from diesel or petrol					☑					
2	●	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		**<LOD**
3	●	acenaphthylene		205-917-1	208-96-8		0.06 mg/kg		0.0599 mg/kg	0.00000599 %	✓	
4	●	anthracene		204-371-1	120-12-7		0.46 mg/kg		0.46 mg/kg	0.000046 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.53 mg/kg		0.529 mg/kg	0.0000529 %	✓	
6		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.35 mg/kg		0.35 mg/kg	0.000035 %	✓	
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.65 mg/kg		0.649 mg/kg	0.0000649 %	✓	
8	●	benzo[ghi]perylene		205-883-8	191-24-2		0.27 mg/kg		0.27 mg/kg	0.000027 %	✓	
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.24 mg/kg		0.24 mg/kg	0.000024 %	✓	
10		chrysene	601-048-00-0	205-923-4	218-01-9		1 mg/kg		0.999 mg/kg	0.0000999 %	✓	
11		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		**<LOD**
12	●	fluoranthene		205-912-4	206-44-0		1.6 mg/kg		1.598 mg/kg	0.00016 %	✓	
13	●	fluorene		201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		**<LOD**
14	●	indeno[123-cd]pyrene		205-893-2	193-39-5		0.16 mg/kg		0.16 mg/kg	0.000016 %	✓	
15		naphthalene	601-052-00-2	202-049-5	91-20-3		0.15 mg/kg		0.15 mg/kg	0.000015 %	✓	
16	●	phenanthrene		201-581-5	85-01-8		0.69 mg/kg		0.689 mg/kg	0.0000689 %	✓	
17	●	pyrene		204-927-3	129-00-0		1.6 mg/kg		1.598 mg/kg	0.00016 %	✓	

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
								Total:	0.00079 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection

Classification of sample: North Playground

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

Sample details

Sample name:
North Playground
Sample Depth:
0.00 m
Moisture content:
0.96%
(dry weight 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: 0.96% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		confirm TPH has NOT arisen from diesel or petrol					☑							
2		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
3		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
4		anthracene		204-371-1	120-12-7		0.08	mg/kg		0.0792	mg/kg	0.00000792 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.3	mg/kg		0.297	mg/kg	0.0000297 %	✓	
6		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.71	mg/kg		0.703	mg/kg	0.0000703 %	✓	
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.76	mg/kg		0.753	mg/kg	0.0000753 %	✓	
8		benzo[ghi]perylene		205-883-8	191-24-2		0.44	mg/kg		0.436	mg/kg	0.0000436 %	✓	
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.26	mg/kg		0.258	mg/kg	0.0000258 %	✓	
10		chrysene	601-048-00-0	205-923-4	218-01-9		1.4	mg/kg		1.387	mg/kg	0.000139 %	✓	
11		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
12		fluoranthene		205-912-4	206-44-0		0.22	mg/kg		0.218	mg/kg	0.0000218 %	✓	
13		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
14		indeno[123-cd]pyrene		205-893-2	193-39-5		0.25	mg/kg		0.248	mg/kg	0.0000248 %	✓	
15		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
16		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
17		pyrene		204-927-3	129-00-0		0.57	mg/kg		0.565	mg/kg	0.0000565 %	✓	

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
								Total:	0.00052 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection

Appendix A: Classifier defined and non GB MCL determinands

confirm TPH has NOT arisen from diesel or petrol

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

boron tribromide/trichloride/trifluoride (combined) (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride
Data source: N/A
Data source date: 06 Aug 2015
Hazard Statements: EUH014 , Acute Tox. 2; H330 , Acute Tox. 2; H300 , Skin Corr. 1A; H314 , Skin Corr. 1B; H314

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

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
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

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

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on risk phrases

beryllium {beryllium oxide}

Worst case species based on risk phrases

boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on risk phrases

cadmium {cadmium sulfide}

Worst case species based on risk phrases

chromium {chromium(III) oxide (worst case)}

No chromium VI identified

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead chromate}

Worst case species based on risk phrases

mercury {mercury dichloride}

Worst case species based on risk phrases

nickel {nickel dihydroxide}

Worst case species based on risk phrases

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species based on risk phrases

zinc {zinc chromate}

Worst case species based on risk phrases

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

Worst case species

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.113.6026.11165 (22 Apr 2024)
HazWasteOnline Database: 2024.113.6026.11165 (22 Apr 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024

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