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[redacted]

6th July 2021

Subject: **Ground Investigation Report – St Neots Fire Station, Huntingdon Street, St Neots, Cambridgeshire, PE19 1DU**
EPS Ref: **UK21.5432**

Dear Simon,

As you will be aware, EPS were recently commissioned by Ingleton Wood to undertake a ground investigation on land at St Neots Fire Station, Huntingdon Street, St Neots, Cambridgeshire, PE19 1DU ('the site').

The aim of these works was to investigate ground conditions for the development of two new extensions to the existing fire station in the south west and an area of car parking to the north east.

Objectives

The scope of works was to perform an exploratory assessment of the site in accordance with the principles and requirements of BS5930:2015 *'Code of Practice for Ground Investigation'* and BS EN 1997:2007 *'Geotechnical Design'*, and therefore, the following tasks were undertaken:

- Site walkover, inspection and obtaining photographic records.
- Health and safety briefing / site supervision.
- Drilling of four window sample boreholes to a maximum depth of 4.0m below ground level (bgl), using a track-mounted percussive rig.
- In-situ testing, to assist with geotechnical design.
- Completion of two falling head infiltration tests.
- Excavation of two hand-dug foundation exposure pits.
- Logging of ground conditions and laboratory analysis of selected soil samples, including Waste Acceptance Criteria (WAC) testing, to classify materials for future off-site disposal.

Project Limitations and Constraints

The purpose of this report is to present the findings of a ground investigation conducted at the location(s) specified. When examining the data collected from the investigations made during the assessment, Environmental Protection Strategies Ltd (EPS) makes the following statements:

No investigation method is capable of completely identifying all the ground conditions that might be present beneath a site. Where outlined in our report, we have examined the ground beneath a site by constructing a number of boreholes / trial pits to recover soil samples. The locations of these excavations and sampling points are considered to be representative of the condition of the whole site subsurface. However, it should be appreciated that ground conditions are naturally variable. For this reason, it is possible that samples collected during the investigation may not represent the conditions across the entire site.

If third parties have been contracted / consulted during compilation of this report, the validity of any data they may have supplied, and which are included in the report, have been assessed as far as possible by EPS. However, EPS cannot guarantee the validity of this data.

The report has been prepared for the client(s) listed on the first page and has been subject to standard internal EPS review procedures.

EPS accepts no liability or responsibility for use of, or reliance upon, this report and / or the information contained within it by third parties.

No part of this report, or references to it, may be included in published documents of any kind without prior approval from EPS.

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Site Location and Description

St Neots Fire Station is located to the east of Huntingdon Road, roughly 0.2km north east of St Neots town centre, Cambridgeshire. Levels lie between 17-18m above ordnance datum (AOD) and appear to slope gently to the north east.

A walkover survey was completed by EPS on the 11th June 2021 with access gained from Huntingdon Road in the west. The fire station was found to comprise an irregular shaped plot of land with access to the areas of investigation gained by an asphalt surfaced visitor car park in the west leading to a concrete surfaced drill area that ran around the north and east of the fire station building, separating it from an adjacent, centrally located, training building and tower in the east. The main fire station building was found towards the south west with an undeveloped area of grass surfaced soft landscaping comprising the east of the site. The investigation was split between two areas. The first area of investigation was focused towards the south west and south east of the fire station building, which are the intended locations of the two new proposed extensions. The second area was focused towards the north east of the site, within the undeveloped area of grass surfaced soft landscaping, which is the intended location of the new proposed car park.

Vegetation in the immediate surrounding area predominantly comprised several semi-mature to mature trees that lined sections of the north, east and south boundaries of the property as well as in the south east of the site (within the undeveloped area of grass surfaced soft landscaping).

The fire station grounds are predominantly surrounded by residential properties and associated domestic gardens in all directions with an ambulance service also found immediately north.

Summary of Investigations

The intrusive investigation was undertaken on the 11th June 2021 in accordance with EPS standard operating procedures, copies of which will be made available on request. A summary of all site activities is presented below.

Borehole locations were selected through consideration of the proposed development layout, the location of below ground utilities as well as operational and health & safety considerations.

Four window sample boreholes (WS1 – WS4) were drilled in the area of the proposed new extensions and car parking in order to assess the nature and strength of underlying soils to a maximum depth of 4.0m bgl.

The overall objective in terms of borehole locations was to provide an appropriate lateral and vertical coverage of the soils underlying the site in order to provide information relating to their quality and nature.

Standard or cone penetration tests (SPT / CPT) were carried out in all of the boreholes using an automatic trip hammer. The number of blows required to advance a standard split spoon, (or solid 60° nose cone for the CPT test) over the final 300mm of a 450mm total drive was recorded, and is shown on the borehole record at the penetration resistance ("N" value).

Hand shear vane tests, indicated as HVP on the formal logs, were undertaken in cohesive throughout the window sampler boreholes and the peak undrained shear strength for each test is presented in kPa on the records.

Falling head infiltration tests were completed in WS3 and WS4, to initially assess the permeability of the underlying soils.

Two foundation exposure pits (TP1-TP2) were excavated to assess the nature of the existing foundations along the south west and south east wall of the current fire station building.

The results of this work, in the form of borehole and foundation exposure pit logs, are attached in Appendix A and an intrusive investigation location plan is included as Appendix B.

Ground Conditions

Geological mapping of the area suggests the ground conditions to comprise superficial River Terrace Deposits (sand and gravel), overlying bedrock of the Oxford Clay Formation, although there may well be secondary geological unit between these layers. The ground conditions encountered during the intrusive investigation have been interpreted to consist of the following:

- Topsoil
- River Terrace Deposits
- Glacial Till

A summary of the general strata encountered across the site is provided in the table below, with more detailed description given in the following sub-sections.

Geological Strata	Maximum Depth to Base of Strata (m bgl)	Range of Strata Thickness (m)
Topsoil	0.5	0.2-0.5
River Terrace Deposits	2.7 (Where proven)	>0.6-2.5 (Not proven)
Glacial Till	>4.0 (Not proven)	>1.3->1.7 (Not proven)

Topsoil

A consistent layer of topsoil described as a dark brown, slightly gravelly, sandy silt was encountered from the surface at all locations and extended to a maximum depth of 0.5m at WS3.

It should be noted that all of the boreholes were formed in areas of existing soft landscaping, immediately south west and south east of the fire station building and within the undeveloped area of grass surfacing in the north east.

River Terrace Deposits (RTD)

Soils considered representative of superficial River Terrace Deposits were recorded beneath the topsoil at all locations and progressed to a maximum depth of 2.7m at WS2 as well as beyond the formation depth of WS3 (>2.0m) and WS4 (>1.0m).

These materials were predominantly found to comprise a firm, friable, brown, slightly gravelly, sandy, silty clay with brown, black and white, fine to coarse, angular to subrounded chert gravel that extended to a maximum depth of 1.5m at WS1. Beneath this shallow, friable clay at WS1 in particular, was a layer of firm, brownish yellow, slightly gravelly sandy silty clay with occasional light bluish grey and orange mottling that extended to a maximum depth of 2.3m.

However, at WS2-WS4, a layer of medium dense to dense, black, brown and white, angular to subrounded, slightly sandy, silty chert and chalk gravel (sand was pale brown and yellowish brown) was encountered to a maximum depth of 2.7m at WS2 as well as beyond the formation depth of WS3 (>2.0m) and WS4 (>1.0m).

Glacial Till

Directly beneath the River Terrace Deposits at WS1-WS2 only, were soils interpreted as Glacial Till.

These soils were recorded as stiff, dark grey and olive, slightly gravelly, sandy, silty clay with fine to medium chalk and chert gravel which naturally progressed beyond the maximum depth of investigation.

Groundwater

Groundwater was only encountered at 1.80m in WS2 during the intrusive investigation.

Physical Evidence of Contamination

No palpable evidence of contamination was encountered at any of the boreholes formed during the ground investigation. These soils also did not include any notable evidence of waste or putrefiable material, with hydrocarbon staining/odours also absent.

Laboratory Analysis

Analysis for selected typical contaminants has been undertaken in order to confirm the suitability of the soil and to identify the waste characteristics of the different soil types encountered.

All environmental sample results obtained from the laboratory are included as Appendix C.

The key results of laboratory testing on environmental soil samples are summarised as follows:

Contaminant	No. of Samples	No of Detections	Range of Detections (mg/kg)		Highest Location & Depth (m bgl)
			Min	Max	
Arsenic	3	3	9	16.1	WS2 (0.8-2.7)
Cadmium	3	1	0.1		WS2 (2.7-4.0)
Chromium III	3	3	30.9	70.1	WS2 (0.2-0.8)
Chromium VI	3	0	-		
Copper	3	3	9	17	WS2 (0.2-0.8)
Lead	3	3	8	31	WS2 (0.2-0.8)
Mercury	3	0	-		
Nickel	3	3	18.7	23.1	WS2 (2.7-4.0)
Selenium	3	0	-		
Zinc	3	3	33	64	WS2 (0.2-0.8)
Benzo(a)pyrene	3	1	0.09		WS2 (0.2-0.8)
Dibenzo(ah)anthracene	3	0	-		
Naphthalene	3	0	-		
PAH (Total of 16)	3	1	1.0		WS2 (0.2-0.8)
Total TPH	3	0	-		
MTBE	3	0	-		
BTEX	3	0	-		
PCB's	3	0	-		
ACM (mass %)	3	0	-		

Notes:

-	Contaminant not identified above MDL	PAH	Polycyclic Aromatic Hydrocarbons
TPH	Total Petroleum Hydrocarbons	MTBE	Methyl Tertiary Butyl Ether
BTEX	Benzene, Toluene, Ethylbenzene & Xylenes	PCB	Polychlorinated biphenyls
ACM	Asbestos Containing Material		

Waste Classification

Waste classification has been undertaken on shallow soils recovered from beneath the site, using software provided by HazWaste OnlineTM. Waste Acceptance Criteria (WAC) testing was subsequently undertaken on two samples of River Terrace Deposits and one of Glacial Till, to provide information on the most appropriate method of off-site disposal for these soils; which are anticipated to be generated in the largest volumes through future groundworks.

The results of this process, together with the results of the WAC testing, are summarised within the table below and presented as part of Appendix C and the Waste Classification Report output from the HazWaste OnlineTM software are included as Appendix D.

Waste Stream	Typical Depth (m bgl) and Description	Is it Hazardous?	Waste Code	Waste Acceptance Criteria	Appropriate Landfill
River Terrace Deposits	0.2-0.8m Friable, brown, gravelly, sandy, silty clay.	No	17 05 04	Passed Criteria for Inert Landfill	**INERT**
	0.8-2.7m Sandy, silty chert and chalk gravel (sand is pale brown and yellowish brown).	No	17 05 04	Passed Criteria for Inert Landfill	**INERT**
Glacial Till	2.7->4.0m Dark grey and olive, gravelly, sandy, silty clay.	No	17 05 04	Passed Criteria for Inert Landfill	**INERT**

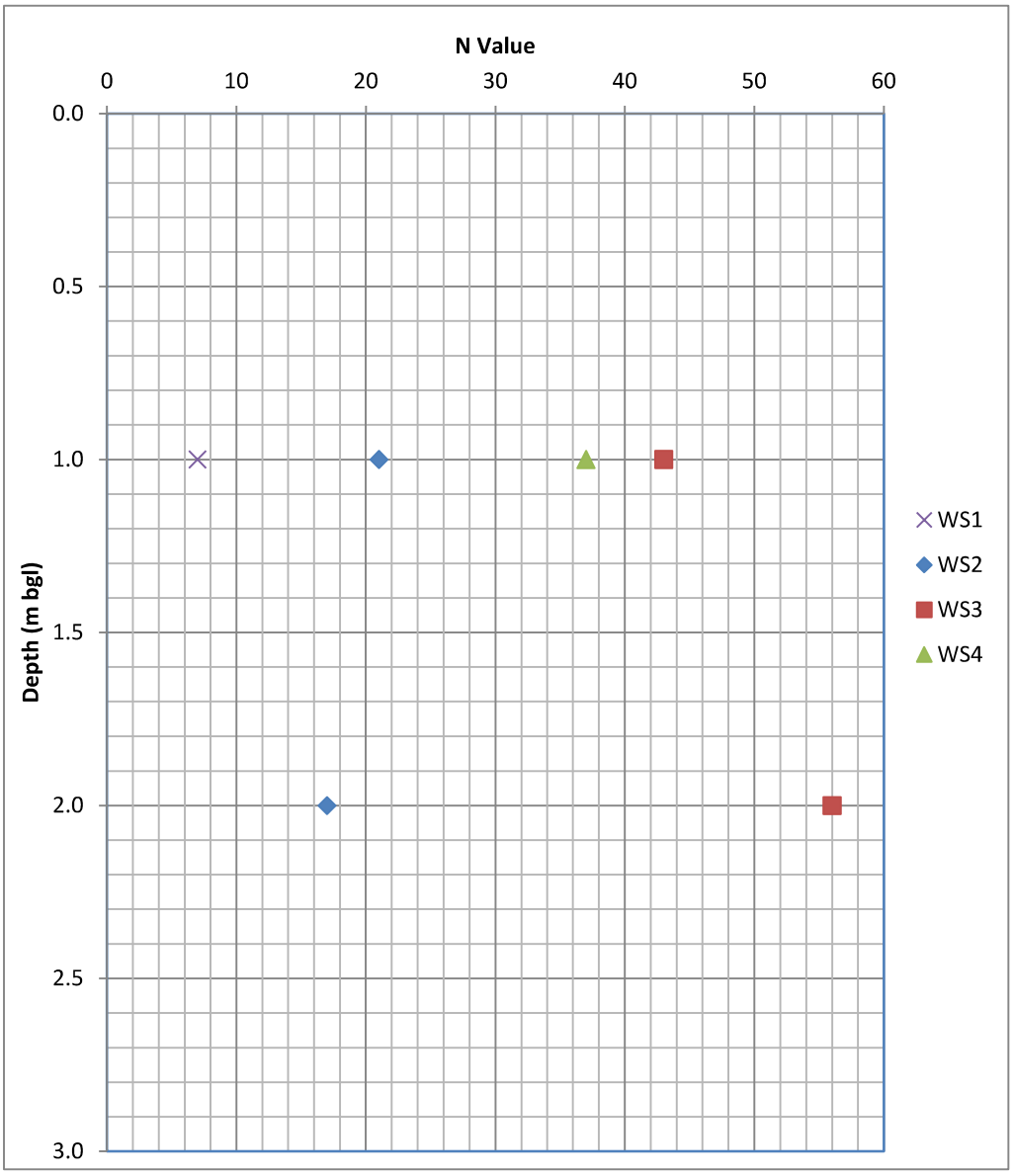
Underlying natural soils considered representative of River Terrace Deposits and Glacial Till should be classified as **Inert** for the purposes of off-site disposal. However, the ultimate decision should remain that of the waste receiver/ landfill facility.

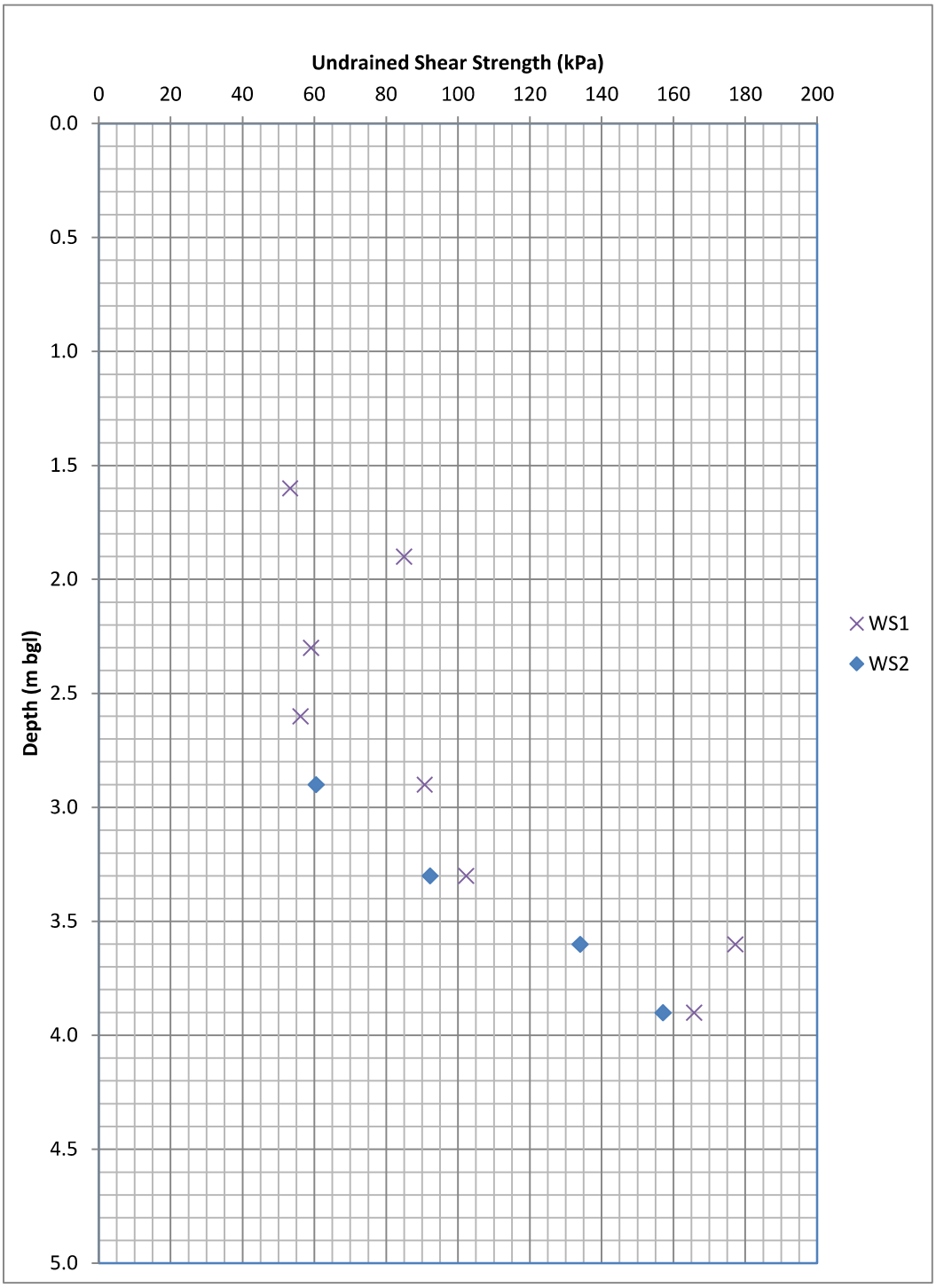
Although the soil sampling process did not identify Asbestos Containing Material (ACM) within the soil, it must be acknowledged that the material may exist within areas which were not sampled or accessible during the investigation. Any visually identifiable fragments of ACM can invalidate any non-hazardous waste classification, as such, the above waste classifications are made on the proviso that any visually identifiable fragments of ACM are removed from the material prior to its disposal off-site. The subsequent ACM must then be disposed of in accordance with the *Control of Asbestos Regulations 2012*.

Geotechnical Testing

In-Situ Geotechnical Testing

The results of in-situ geotechnical testing, as predominantly applicable to the natural soils of the top 4.0m profile, are summarised in the graphs below.




Undrained Shear Strength (kPa)
0
20
40
60
80
100
120
140
160
180
200
Depth (m bgl)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
WS1
WS2

Laboratory Geotechnical Testing

The results of geotechnical laboratory testing are summarised in the table below.

Strata	Range of Parameters							
	Moisture Content (%)		Plasticity Index (%)		Undrained Shear Strength (kPa)		CBR Value (%)	
	Min	Max	Min	Max	Min	Max	Min	Max
River Terrace Deposits	8	12	7 (3)	15 (9)	53	85	24	51
Glacial Till	16	19	20 (18)	24 (22)	56	177	-	

() indicates plasticity index modified for granular content

Strata	Soil Fraction (%)					
	Gravel		Sand		Silt/Clay	
	Min	Max	Min	Max	Min	Max
River Terrace Deposits	54	63	34	43	3	

The water content, liquid and plastic limits and plasticity and liquidity indexes were established for six samples of cohesive soils, tested in line with BS EN ISO: 17892-1: 2014 & BS 1377: Part 2:1990:3.2, 4.4, 5.3 and 5.4.

Particle Size Distribution (PSD) tests were carried out on two samples of predominantly granular soils in accordance with the test BS1377: Part2: 1990: 9.2.

Laboratory California Bearing Ratio (CBR) tests were scheduled for two samples of shallow soil tested in accordance with BS1377: Part 4: 1990: 7.

Sulphate contents and pH values determinations were carried out by the geotechnical laboratory for natural soils, the results of which are summarised later in this report.

All geotechnical sample results obtained from the laboratory are included as Appendix E.

Geotechnical Appraisal

The ground conditions have been found to predominantly comprise gravelly, sandy, silty clay overlying clayey, sandy, silty gravel (River Terrace Deposits), underlain by Oxford Clay Formation. Groundwater was encountered at one location during the intrusive investigation at 1.80m but could become shallower in the winter and spring months or during periods of heavy / sustained rainfall.

Geotechnical Category

Geotechnical Category (BS EN 1997-1:2004)	Definition
GC1	Geotechnical Category 1 (GC1) should only include small and relatively simple structures for which it is possible to ensure that the fundamental requirements will be satisfied on the basis of experience and qualitative geotechnical investigations with negligible risk in terms of overall stability or ground movements and in ground conditions which are known.
GC2	Geotechnical Category 2 (GC2) should include conventional types of structure and foundation with no exceptional risk or difficult or loading conditions. Designs for structures in Geotechnical Category 2 should normally include quantitative geotechnical data and analysis.
GC3	Geotechnical Category 3 (GC3) should include structures or parts of structures, which fall outside the limits of Geotechnical Categories 1 and 2. This may include very large or unusual structures, structures involving abnormal risks, or unusual or exceptionally difficult ground or loading conditions, or structures in areas of probable site instability or persistent ground movements that require separate investigation or special measures.

The proposed development comprises two new extensions to the existing fire station in the south west and car parking to the north east and therefore the below assessment has been undertaken in accordance with Geotechnical Category 2 (GC2), including conventional types of structure and foundation with no exceptional risk or difficult ground or loading conditions, as defined by BS EN 1997-1:2004.

Structural Foundations

As detailed above, the development is anticipated to include two new extensions to the existing fire station in the south west and car parking to the north east, with foundations being vertically loaded. The foundation assessment has therefore been undertaken in accordance with BS EN 1997-1:2004, to take in to account;

- Bearing Pressure (Ultimate Limit State)
- Settlement (Serviceability Limit State)

Spread Foundations

The site and ground conditions are considered suitable for the use of conventional spread foundations, either strips or pads, bearing upon the River Terrace Deposits, recorded either side of the proposed development area.

Strata	Allowable Bearing Capacity (kN/m²)	
	Strip footings	Pad footings
River Terrace Deposits (Cohesive)	80	100
River Terrace Deposits (Granular)	115	125

At the above allowable bearing capacities, total settlements are considered unlikely to exceed roughly 20-25mm. Settlements in cohesive soils will likely comprise a small amount of immediate settlement and a larger proportion of consolidation settlement, which will occur over a long period of time, whilst settlements in granular soils will occur rapidly as loadings increase.

Where foundations cross a change in strata, from cohesive to granular, it would be prudent to incorporate nominal reinforcement to control the effects of differential settlements.

A minimum foundation depth of 0.9m, below existing or proposed ground level is considered suitable for any new buildings, subject to the following provisos:

a) All foundations should fully penetrate any made ground or disturbed ground and extend a minimum of 150mm into undisturbed natural strata. If areas of loose or soft natural soils are encountered in areas of proposed buildings, it is recommended that when being formed the foundations be deepened locally into higher strength soils. Any infilled material recorded at the site is also not suitable as a bearing strata and will need to be fully penetrated if/where encountered.

b) The cohesive soil (clays) will be subject to volume change, (subsidence and / or heave) due to the presence of trees. Foundation design will therefore need to take into account the presence of trees, both those to remain and those to be planted as well as to be removed from site. The cohesive River Terrace Deposits should be considered as having a low volume change potential whilst the underlying Glacial Till should be considered as having a medium volume change potential in accordance with NHBC Standards Chapter 4.2 'Building Near Trees'.

c) Whilst foundations are anticipated to terminate around 1.0m, it is worth noting that any excavations formed below groundwater (encountered at 1.80m) will lead to significant loosening of the granular soils at this depth through the 'running sand' effect, therefore significant lowering of the allowable bearing capacity and some form of support would be required at this depth in order to prevent the collapse of excavations as will groundwater control.

Groundworks

Whilst excavations in the cohesive soils may remain stable for short periods during construction, the stability of infilled soils and/ or granular soils should not be relied upon, particularly when influenced by the presence of groundwater where loosening of soils and 'running sand' effects can be created.

Heavy plant and stockpiles of materials should not be permitted close to the edges of unsupported excavations. Further reference may be made to CIRIA Report No. 97 '*Trenching Practice*' 1992.

Groundwater was encountered at one location during the intrusive investigation at 1.80m (but could feasibly be shallower during different seasons/ periods of calendar year). Therefore, depending on the rate of inflow of the groundwater and the specific ground conditions, some level of excavation support and semi-permanent groundwater control is likely to be required in all, but the shallowest excavations formed during the groundworks phase.

Concrete Grade

Sulphate contents and pH values determinations were carried out by the geotechnical laboratory, the results of which are also included within Appendix E. Results for concrete grade testing are summarised within the following table:

Strata	Water soluble Sulphate (g/l SO_4)		pH	
	Min	Max	Min	Max
River Terrace Deposits	<0.01	0.05	7.5	7.6
Glacial Till	0.07		7.5	

In accordance with Part 1 of the BRE Special Digest 1 *'Concrete in Aggressive Ground'* 2005, a design sulphate class of DS-1 is considered suitable for concrete in direct contact with the River Terrace Deposits and Glacial Till at the site, with an aggressive chemical environment for concrete (ACEC) of AC-1.

Pavement Design

Laboratory CBR testing was undertaken on two shallow samples representative of sub-grade in predetermined locations and gave varied CBR values between 24% and 51%. The results of these tests are included in Appendix E.

Therefore, given the nature of the soils encountered and the results of the laboratory testing, a design CBR value of 20% is considered suitable for the natural shallow cohesive soils at the site.

Once the formation level for the new pavement has been achieved, proof rolling should be carried out using a heavy roller, and any soft or loose areas revealed should be excavated and a greater depth of sub-base provided.

Exposed subgrades will likely deteriorate rapidly on exposure to wet weather and should be shaped to shed water. Sub-base should be placed as soon as possible to minimise the exposure of the subgrade to adverse weather conditions.

Infiltration Testing

Falling head infiltration tests were undertaken at two locations across the site to give an initial indication of infiltration characteristics of the underlying soils.

Infiltration rates are summarised in the table below:

Infiltration Test ID & Depth (m bgl)	Approximate Infiltration Rate (m/s)
FH1 at 2.0m (in WS3)	$5.74E^{-06}$
FH2 at 1.0m (in WS4)	$7.08E^{-06}$

Tests were attempted for WS3 and WS4, which were intentionally limited to 2.0m and 1.0m in depth respectively, to give an idea of permeability throughout the shallow profile. However, the change in water level in both locations was small during the testing period and therefore the results are considered to be indicative of 'low' permeability conditions. These calculated infiltration rates should not be used in isolation during the final drainage design for the development and instead should be used as initial indications of the potential drainage characteristics of the underlying soils.

It should be appreciated that 'falling head' infiltration testing typically allow for slightly more favourable (higher) infiltration rates to be calculated than the more thorough and accepted method of infiltration testing; soakaway testing completed in accordance with BRE Digest 365.

Existing Foundations

Two hand-dug, foundation exposure pits (TP1-TP2), were excavated as part of this investigation to assess the nature of the existing building foundations and how this might impact the proposed development. These were located along the south western wall (TP1) and south eastern wall (TP2) of the existing fire station building and were formed to a maximum depth of roughly 0.9m.

At TP1, the brick base of the building was found to extend to a depth of 0.75m where a concrete section was identified that extended 0.10m out from the building line and progressed a further 0.15m in depth.

At TP2, the brick base of the building was found to extend to a depth of 0.70m where a concrete section was identified that extended 0.15m out from the building line and progressed a further 0.10m in depth. It is worth noting that a number of utilities were found at the surface at this location.

Upon completion, the foundation exposure pits were backfilled with arisings. Illustrations of the foundation exposure pits are included within Appendix A and the locations of the excavations are detailed on Appendix B.

Environmental Recommendations

Whilst on the basis of the findings of the investigation the likelihood of encountering significant contamination is considered unlikely, additional precautionary measures to reduce the risk of exposure to contamination, should it be encountered are detailed below: -

a) All construction workers operating at the site should be advised of the potential for contact with potential made ground in the sub-surface. Appropriate health and safety precautions should be adopted during any excavation works to avoid exposure to soils. Reference should be made to relevant health & safety guidance including the following CIRIA document: *R132 Guide to Safe Working on Contaminated Sites*.

b) Should any palpable evidence of unexpected contamination be encountered during the redevelopment work, it should be reported to EPS so that an inspection can be made, and appropriate sampling and assessment work carried out. A method statement for encountering any unexpected contamination is included as Appendix F of this report.

Enclosed

The following information is enclosed with this report:

Appendix A	Site Specific Borehole & Foundation Exposure Pit Logs
Appendix B	Intrusive Investigation Location Plan
Appendix C	Environmental Laboratory Analysis
Appendix D	Waste Classification Report
Appendix E	Geotechnical Lab Data
Appendix F	Method Statement for Unexpected Contamination

We trust that the above is clear, but if you have any questions, please don't hesitate to ask.

EPS Ltd

Author	Reviewed / Authorised
[redacted]	[redacted]
Consultant	Director

APPENDIX A

Site Specific Borehole & Foundation Exposure Pit Logs

Borehole Log

Borehole No. **WS1**

Sheet 1 of 1

Project Name:	St Neots Fire Station	Project No. UK21.5432	Co-ords: -29370.98 - 6842159.60	Hole Type WLS
Location:	PE19 1DU		Level: 18.00	Scale 1:20
Client:	Ingleton Wood		Dates: 11/06/2021 - 11/06/2021	Logged By SC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								TOPSOIL: Dark brown slightly gravelly sandy SILT
					0.30	17.70		Firm friable brown slightly gravelly sandy silty CLAY with frequent recently active and decayed roots. Gravel is brown black and white fine to coarse angular to subrounded chert (RTD)
		1.00		N=7 (1,1/1,2,2,2)				
					1.50	16.50		Firm brownish yellow slightly gravelly sandy silty CLAY with occasional light bluish grey and orange mottling. Gravel is fine to coarse chalk and chert (RTD)
		1.60 - 1.80	D	HVP=53				
				HVP=85				
				HVP=59	2.30	15.70		Stiff olive slightly gravelly sandy silty CLAY with occasional grey mottling. Gravel is fine to medium chalk and chert (TILL)
		2.30 - 2.50	D	HVP=56				
				HVP=91				
		3.30 - 3.50	D	HVP=102				
				HVP=177				
				HVP=166				
					4.00	14.00		End of borehole at 4.00 m

1 2 3 4

Remarks
Groundwater not encountered
RTD = River Terrace Deposits
TILL = Glacial Till

Borehole Log

Borehole No. **WS2**

Sheet 1 of 1

Project Name:	St Neots Fire Station	Project No. UK21.5432	Co-ords: -29343.04 - 6842128.34	Hole Type WLS
Location:	PE19 1DU		Level: 18.00	Scale 1:20
Client:	Ingleton Wood		Dates: 11/06/2021 - 11/06/2021	Logged By SC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.80	ES		0.20	17.80		TOPSOIL: Dark brown slightly gravelly sandy SILT
		0.80 - 1.00	D		0.80	17.20		Firm friable brown slightly gravelly sandy silty CLAY with frequent recently active and decayed roots. Gravel is brown black and white fine to coarse angular to subrounded chert (RTD)
		0.80 - 2.70	ES					
		1.00		N=21 (5,7/6,5,5,5)				Medium dense black brown and white angular to subrounded slightly sandy silty GRAVEL. Sand is yellowish brown (RTD)
		1.30 - 1.50	D					
	▼							
		2.00		N=17 (4,4/5,4,4,4)				
		2.30 - 2.50	D					
		2.70 - 4.00	ES		2.70	15.30		Stiff dark grey slightly gravelly sandy silty CLAY. Gravel is fine to medium chalk and chert (TILL)
				HVP=61				
				HVP=92				
		3.30 - 3.50	D					
				HVP=134				
				HVP=157				
					4.00	14.00		End of borehole at 4.00 m

1 2 3 4

Remarks

Groundwater encountered at 1.80m

RTD = River Terrace Deposits

TILL = Glacial Till

Borehole Log

Borehole No. **WS3**

Sheet 1 of 1

Project Name:	St Neots Fire Station	Project No. UK21.5432	Co-ords: -29267.90 - 6842167.96	Hole Type WLS
Location:	PE19 1DU		Level: 18.00	Scale 1:20
Client:	Ingleton Wood		Dates: 11/06/2021 - 11/06/2021	Logged By SC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50 - 1.50	B		0.50	17.50		TOPSOIL: Dark brown slightly gravelly sandy SILT
					0.80	17.20		Firm friable brown slightly gravelly sandy silty CLAY with frequent recently active and decayed roots. Gravel is brown black and white fine to coarse angular to subrounded chert (RTD)
		1.00		N=43 (8,8/8,11,12,12)				Dense pale brown fine to coarse slightly clayey SAND and brown black and white fine to coarse angular to subrounded chert and chalk GRAVEL with occasional firm clayey lumps (RTD)
		1.80 - 2.00	D					
		2.00		N=56 (6,14/15,13,13,15)	2.00	16.00		End of borehole at 2.00 m

1
2
3
4

Remarks
Groundwater not encountered
RTD = River Terrace Deposits

Borehole Log

Borehole No. **WS4**

Sheet 1 of 1

Project Name:	St Neots Fire Station	Project No. UK21.5432	Co-ords: -29261.11 - 6842193.59	Hole Type WLS
Location:	PE19 1DU		Level: 17.00	Scale 1:20
Client:	Ingleton Wood		Dates: 11/06/2021 - 11/06/2021	Logged By SC

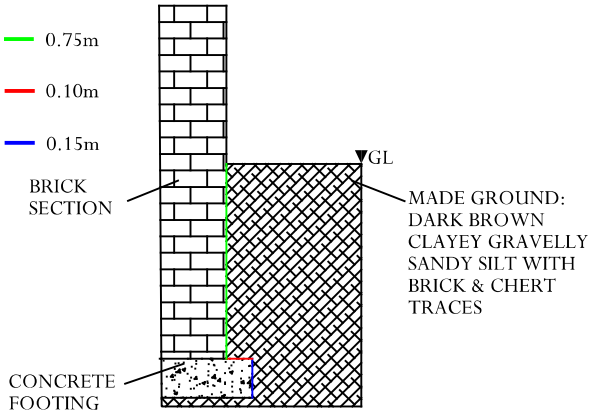
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00 - 1.00	B					TOPSOIL: Dark brown slightly gravelly sandy SILT
					0.40	16.60		Firm friable brown slightly gravelly sandy silty CLAY with frequent recently active and decayed roots. Gravel is brown black and white fine to coarse angular to subrounded chert (RTD)
					0.60	16.40		Dense pale brown fine to coarse slightly clayey SAND and brown black and white fine to coarse angular to subrounded chert and chalk GRAVEL with occasional firm clayey lumps (RTD)
		1.00		N=37 (5,6/7,10,10,10)	1.00	16.00		End of borehole at 1.00 m

Remarks

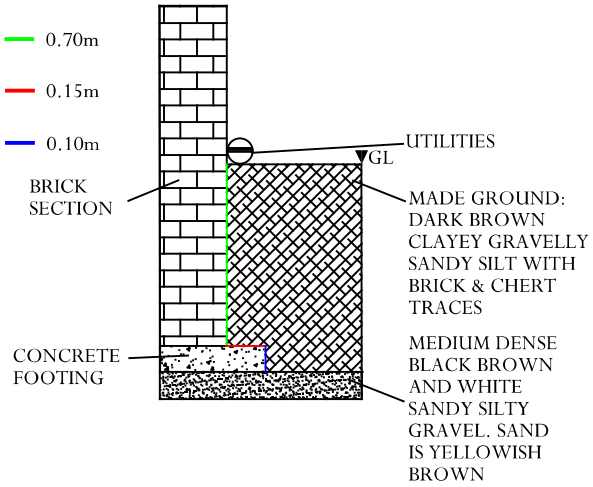
Groundwater not encountered

RTD = River Terrace Deposits

TP1



TP2



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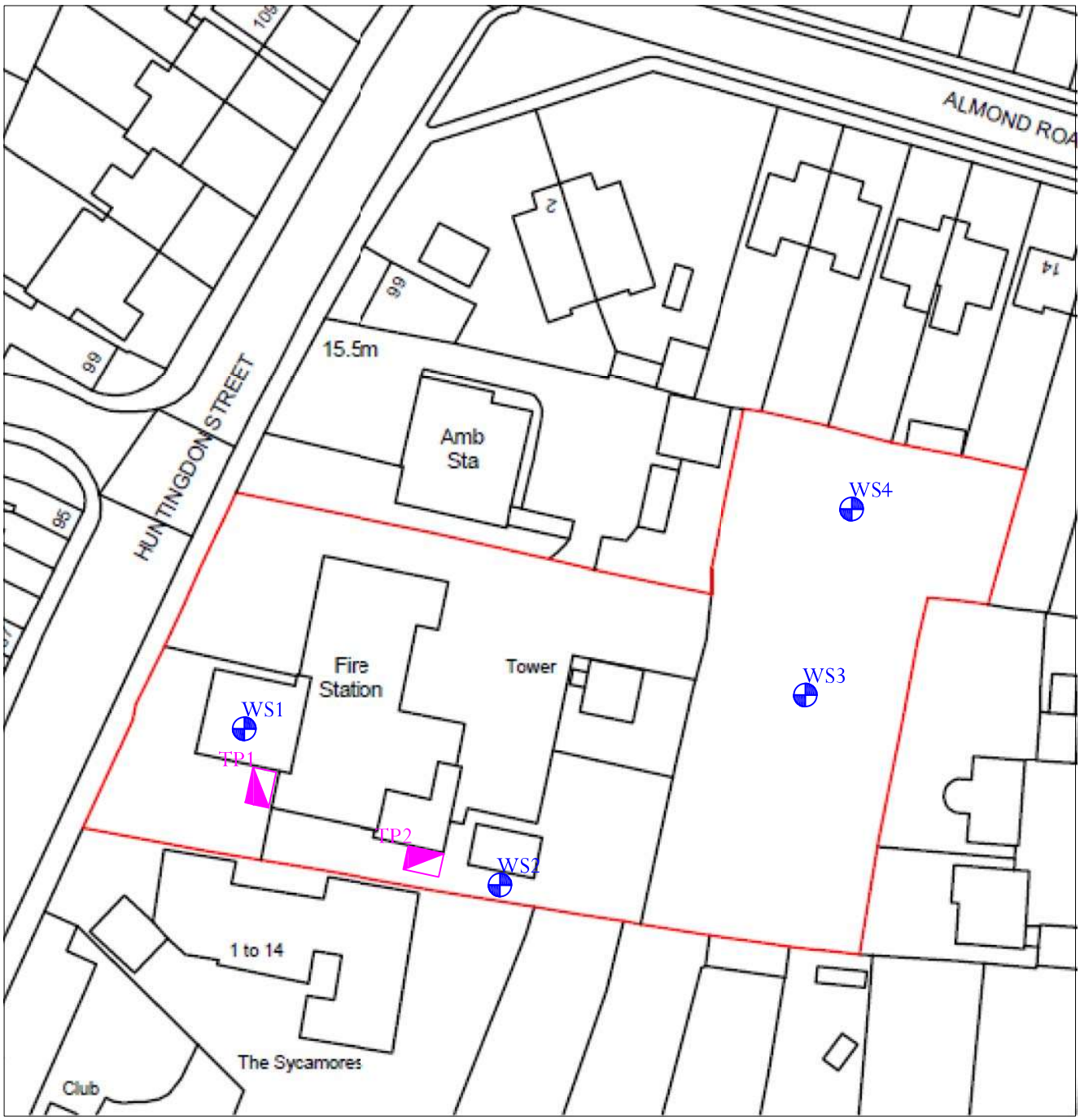
Title: Foundation Exposure Pit Logs

Project: St Neots Fire Station, Huntingdon Street, PE19 1DU

Scale:	Scale as shown
Drawn By:	SC
Approved By:	SB
Job No:	UK21.5432
Dwg No:	Cambridgeshire/0621/A
Date:	June 2021

APPENDIX B

Intrusive Investigation Location Plan



- Approximate Site Boundary
- Approximate Borehole Location
- Approximate Foundation Exposure Pit Location

Please note: Image supplied by client

Title: Intrusive Investigation Location Plan

Project: St Neots Fire Station, Huntingdon Street, PE19 1DU

Appendix: B

Scale:	NTS
Drawn By: SC	Approved By: SB
Job No:	UK21.5432
Dwg No:	Cambridgeshire/0621/B
Date:	June 2021

APPENDIX C

Environmental Laboratory Analysis

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

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W: www.element.com

EPS Ltd
7B Caxton House
Broad Street
Cambourne
Cambridgeshire
CB23 6JN

Attention :	[redacted]
Date :	23rd June, 2021
Your reference :	UK21.5432
Our reference :	Test Report 21/9005 Batch 1
Location :	St Neots Fire Station
Date samples received :	15th June, 2021
Status :	Final report
Issue :	1

Three samples were received for analysis on 15th June, 2021 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

[redacted]

Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: EPS Ltd
Reference: UK21.5432
Location: St Neots Fire Station
Contact: Shaun Cahill
EMT Job No: 21/9005

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	4-6	7-9									
Sample ID	WS2	WS2	WS2									
Depth	0.20-0.80	0.80-2.70	2.70-4.00									
COC No / misc												
Containers	V J T	V J T	V J T									
Sample Date	11/06/2021	11/06/2021	11/06/2021									
Sample Type	Clay	Clayey Sand	Clay									
Batch Number	1	1	1									
Date of Receipt	15/06/2021	15/06/2021	15/06/2021									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Arsenic #M	14.9	16.1	9.0								<0.5	mg/kg	TM30/PM15
Cadmium #M	<0.1	<0.1	0.1								<0.1	mg/kg	TM30/PM15
Chromium #M	70.1	63.5	30.9								<0.5	mg/kg	TM30/PM15
Copper #M	17	9	14								<1	mg/kg	TM30/PM15
Lead #M	31	8	8								<5	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM30/PM15
Nickel #M	19.8	18.7	23.1								<0.7	mg/kg	TM30/PM15
Selenium #M	<1	<1	<1								<1	mg/kg	TM30/PM15
Zinc #M	64	33	43								<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03								<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05								<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.06	<0.03	<0.03								<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.16	<0.03	<0.03								<0.03	mg/kg	TM4/PM8
Pyrene #	0.14	<0.03	<0.03								<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.09	<0.06	<0.06								<0.06	mg/kg	TM4/PM8
Chrysene #M	0.12	<0.02	<0.02								<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.18	<0.07	<0.07								<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.09	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.06	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.06	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
PAH 16 Total	1.0	<0.6	<0.6								<0.6	mg/kg	TM4/PM8
PAH 17 Total	0.96	<0.64	<0.64								<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.13	<0.05	<0.05								<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.05	<0.02	<0.02								<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	89	90	72								<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	<30	<30	<30								<30	mg/kg	TM5/PM8/PM16

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: EPS Ltd
Reference: UK21.5432
Location: St Neots Fire Station
Contact: Shaun Cahill
EMT Job No: 21/9005

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	4-6	7-9								LOD/LOR	Units	Method No.
Sample ID	WS2	WS2	WS2										
Depth	0.20-0.80	0.80-2.70	2.70-4.00										
COC No / misc													
Containers	V J T	V J T	V J T										
Sample Date	11/06/2021	11/06/2021	11/06/2021										
Sample Type	Clay	Clayey Sand	Clay										
Batch Number	1	1	1										
Date of Receipt	15/06/2021	15/06/2021	15/06/2021										
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #M	<0.2	<0.2	<0.2								<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #M	<4	<4	<4								<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #M	<7	<7	<7								<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #M	<7	<7	<7								<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	<19	<19	<19								<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR) #	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	<0.2	<0.2	<0.2								<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	<4	<4	<4								<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	<7	<7	<7								<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	<7	<7	<7								<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR) #	<19	<19	<19								<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	<38	<38	<38								<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #	<5	<5	<5								<5	ug/kg	TM36/PM12
Benzene #	<5	<5	<5								<5	ug/kg	TM36/PM12
Toluene #	<5	<5	<5								<5	ug/kg	TM36/PM12
Ethylbenzene #	<5	<5	<5								<5	ug/kg	TM36/PM12
m/p-Xylene #	<5	<5	<5								<5	ug/kg	TM36/PM12
o-Xylene #	<5	<5	<5								<5	ug/kg	TM36/PM12
PCB 28 #	<5	<5	<5								<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5								<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5								<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5								<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5								<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5								<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5								<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35								<35	ug/kg	TM17/PM8
Natural Moisture Content	15.1	7.5	17.0								<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3								<0.3	mg/kg	TM38/PM20
Chromium III	70.1	63.5	30.9								<0.5	mg/kg	NONE/NONE
Total Organic Carbon #	0.82	0.06	0.62								<0.02	%	TM21/PM24

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Element Materials Technology

Client Name: EPS Ltd
Reference: UK21.5432
Location: St Neots Fire Station
Contact: Shaun Cahill
EMT Job No: 21/9005

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	4-6	7-9								LOD/LOR	Units	Method No.
Sample ID	WS2	WS2	WS2										
Depth	0.20-0.80	0.80-2.70	2.70-4.00										
COC No / misc													
Containers	V J T	V J T	V J T										
Sample Date	11/06/2021	11/06/2021	11/06/2021										
Sample Type	Clay	Clayey Sand	Clay										
Batch Number	1	1	1										
Date of Receipt	15/06/2021	15/06/2021	15/06/2021										
Loss on Ignition #	3.9	1.2	2.5								<1.0	%	TM22/PM0
pH #M	8.21	8.93	8.47								<0.01	pH units	TM73/PM11
Sample Type	Clay	Clayey Sand	Clay									None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Medium Brown									None	PM13/PM0
Other Items	stones	stones	stones, chalk									None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	12.2
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	89.1
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**21/9005**			
Sample No	**3**			
Client Sample No	**WS2**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.20-0.80**			
Sample Date	**11/06/2021**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.82	3	5	6
Loss on Ignition (%)	3.9	-	-	10
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30	500	-	-
PAH Sum of 17(mg/kg)	0.96	100	-	-
pH (pH Units)	8.21	-	>6	-
ANC to pH 7 (mol/kg)	-	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	-	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0069	0.069	0.5	2	25
Barium	<0.003	<0.03	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	<0.002	<0.02	0.5	10	30
Nickel	0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	0.5	5	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	2.8	28	1000	20000	50000
Total Dissolved Solids	47	470	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	7	70	500	800	1000

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	12.7
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	88.7
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**21/9005**			
Sample No	**6**			
Client Sample No	**WS2**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.80-2.70**			
Sample Date	**11/06/2021**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.06	3	5	6
Loss on Ignition (%)	1.2	-	-	10
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30	500	-	-
PAH Sum of 17(mg/kg)	<0.64	100	-	-
pH (pH Units)	8.93	-	>6	-
ANC to pH 7 (mol/kg)	-	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	-	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	<0.003	<0.03	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.002	0.02	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	<0.3	<3	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	<0.5	<5	1000	20000	50000
Total Dissolved Solids	<35	<350	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	<2	<20	500	800	1000

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	19.0
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	84.0
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**21/9005**			
Sample No	**9**			
Client Sample No	**WS2**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**2.70-4.00**			
Sample Date	**11/06/2021**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.62	3	5	6
Loss on Ignition (%)	2.5	-	-	10
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30	500	-	-
PAH Sum of 17(mg/kg)	<0.64	100	-	-
pH (pH Units)	8.47	-	>6	-
ANC to pH 7 (mol/kg)	-	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	-	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.022	0.22	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.007	0.07	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	0.005	0.05	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	7.0	70	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	22.5	225	1000	20000	50000
Total Dissolved Solids	70	700	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	3	30	500	800	1000

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: EPS Ltd

Matrix : Solid

Reference: UK21.5432

Location: St Neots Fire Station

Contact: [redacted]

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	EPH Interpretation
21/9005	1	WS2	0.20-0.80	1-3	No interpretation possible
21/9005	1	WS2	0.80-2.70	4-6	No interpretation possible
21/9005	1	WS2	2.70-4.00	7-9	No interpretation possible

Client Name: EPS Ltd
Reference: UK21.5432
Location: St Neots Fire Station
Contact: [redacted]

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
21/9005	1	WS2	0.20-0.80	2	18/06/2021	**General Description (Bulk Analysis)**	Soil/Stones
					18/06/2021	**Asbestos Fibres**	NAD
					18/06/2021	**Asbestos ACM**	NAD
					18/06/2021	**Asbestos Type**	NAD
					18/06/2021	**Asbestos Level Screen**	NAD
21/9005	1	WS2	0.80-2.70	5	18/06/2021	**General Description (Bulk Analysis)**	Soil/Stone
					18/06/2021	**Asbestos Fibres**	NAD
					18/06/2021	**Asbestos ACM**	NAD
					18/06/2021	**Asbestos Type**	NAD
					18/06/2021	**Asbestos Level Screen**	NAD
21/9005	1	WS2	2.70-4.00	8	18/06/2021	**General Description (Bulk Analysis)**	Soil/Stones
					18/06/2021	**Asbestos Fibres**	NAD
					18/06/2021	**Asbestos ACM**	NAD
					18/06/2021	**Asbestos Type**	NAD
					18/06/2021	**Asbestos Level Screen**	NAD

Client Name: EPS Ltd
Reference: UK21.5432
Location: St Neots Fire Station
Contact: [redacted]

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 21/9005						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 21/9005

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample

OC	Outside Calibration Range

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 21/9005

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes

EMT Job No: 21/9005

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	No
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM17	Modified method BS EN12457-2:2002 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

EMT Job No: 21/9005

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 First edition (2006)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AD	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	

APPENDIX D

Waste Classification Report

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.

682UF-3TFHE-MJS8S

Job name

UK21.5432 St Neots Fire Station

Description/Comments

Samples collected during a site investigation

Project

UK21.5432

Site

St. Neots Fire Station

Classified by

Name: [redacted]

Company:
Environmental Strategies Ltd EPS

Date:
29 Jun 2021 10:53 GMT

Telephone:

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: CERTIFIED

Course	Date
Hazardous Waste Classification	03 Dec 2020

Next 3 year Refresher due by Dec 2023

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS2-11/06/2021-0.20-0.80m	0.20-0.80	Non Hazardous		2
2	WS2-11/06/2021-0.80-2.70m	0.80-2.70	Non Hazardous		4
3	WS2-11/06/2021-2.70-4.00m	2.70-4.0	Non Hazardous		6

Related documents

#	Name	Description
1	EMT-21-9005-Batch-1-File-1.hwol	.hwol file used to create the Job

Report

Created by: Lee Anderson

Created date: 29 Jun 2021 10:53 GMT

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	8
Appendix B: Rationale for selection of metal species	9
Appendix C: Version	10

Classification of sample: WS2-11/06/2021-0.20-0.80m

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

Sample details

Sample name:
WS2-11/06/2021-0.20-0.80m
Sample Depth:
0.20-0.80 m
Moisture content:
15.1%
(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: 15.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
2	benzene	601-020-00-8	200-753-7	71-43-2		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
3	toluene	601-021-00-3	203-625-9	108-88-3		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
4	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		70.1 mg/kg	1.462	89.014 mg/kg	0.0089 %	✓	
6	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<35 µg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
7	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1				14.9 mg/kg	1.895	24.525 mg/kg	0.00245 %	✓	
8	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	copper { copper(II) chloride; copper dichloride }		231-210-2	7447-39-4		17 mg/kg	2.116	31.25 mg/kg	0.00313 %	✓	
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	31 mg/kg		26.933 mg/kg	0.00269 %	✓	
11	mercury { mercury difulminate }	080-005-00-2	211-057-8	628-86-4		<0.1 mg/kg	1.419	<0.142 mg/kg	<0.0000142 %		<LOD
12	nickel { nickel diiodide }	028-029-00-4	236-666-6	13462-90-3		19.8 mg/kg	5.324	91.591 mg/kg	0.00916 %	✓	
13	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
14		zinc { zinc oxide }				64 mg/kg	1.245	69.211 mg/kg	0.00692 %	✓	
		030-013-00-7	215-222-5	1314-13-2							
15		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
		024-001-00-0	215-607-8	1333-82-0							
16		naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3							
17	•	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8							
18	•	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9							
19	•	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7							
20	•	phenanthrene				0.06 mg/kg		0.0521 mg/kg	0.00000521 %	✓	
			201-581-5	85-01-8							
21	•	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7							
22	•	fluoranthene				0.16 mg/kg		0.139 mg/kg	0.0000139 %	✓	
			205-912-4	206-44-0							
23	•	pyrene				0.14 mg/kg		0.122 mg/kg	0.0000122 %	✓	
			204-927-3	129-00-0							
24		benzo[a]anthracene				0.09 mg/kg		0.0782 mg/kg	0.00000782 %	✓	
		601-033-00-9	200-280-6	56-55-3							
25		chrysene				0.12 mg/kg		0.104 mg/kg	0.0000104 %	✓	
		601-048-00-0	205-923-4	218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene				0.09 mg/kg		0.0782 mg/kg	0.00000782 %	✓	
		601-032-00-3	200-028-5	50-32-8							
27	•	indeno[123-cd]pyrene				0.06 mg/kg		0.0521 mg/kg	0.00000521 %	✓	
			205-893-2	193-39-5							
28		dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3							
29	•	benzo[ghi]perylene				0.06 mg/kg		0.0521 mg/kg	0.00000521 %	✓	
			205-883-8	191-24-2							
30	•	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1							
31		benzo[b]fluoranthene				0.13 mg/kg		0.113 mg/kg	0.0000113 %	✓	
		601-034-00-4	205-911-9	205-99-2							
32		benzo[k]fluoranthene				0.05 mg/kg		0.0434 mg/kg	0.00000434 %	✓	
		601-036-00-5	205-916-6	207-08-9							
33	•	TPH (C6 to C40) petroleum group				<38 mg/kg		<38 mg/kg	<0.0038 %		<LOD
				TPH							
34	•	pH				8.21 pH		8.21 pH	8.21 pH		
				PH							
35		xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
								Total:	0.0375 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS2-11/06/2021-0.80-2.70m

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

Sample details

Sample name:
WS2-11/06/2021-0.80-2.70m
Sample Depth:
0.80-2.70 m
Moisture content:
7.5%
(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: 7.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
2	benzene	601-020-00-8	200-753-7	71-43-2		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
3	toluene	601-021-00-3	203-625-9	108-88-3		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
4	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		63.5 mg/kg	1.462	86.334 mg/kg	0.00863 %	✓	
6	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<35 µg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
7	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1				16.1 mg/kg	1.895	28.374 mg/kg	0.00284 %	✓	
8	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	copper { copper(II) chloride; copper dichloride }		231-210-2	7447-39-4		9 mg/kg	2.116	17.714 mg/kg	0.00177 %	✓	
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	8 mg/kg		7.442 mg/kg	0.000744 %	✓	
11	mercury { mercury difulminate }	080-005-00-2	211-057-8	628-86-4		<0.1 mg/kg	1.419	<0.142 mg/kg	<0.0000142 %		<LOD
12	nickel { nickel diiodide }	028-029-00-4	236-666-6	13462-90-3		18.7 mg/kg	5.324	92.618 mg/kg	0.00926 %	✓	
13	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		zinc { zinc oxide }				33	mg/kg	1.245	38.21	mg/kg	0.00382 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
15		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
23		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		TPH (C6 to C40) petroleum group				<38	mg/kg		<38	mg/kg	<0.0038 %		<LOD
				TPH									
34		pH				8.93	pH		8.93	pH	8.93 pH		
				PH									
35		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
										Total:	0.0313 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS2-11/06/2021-2.70-4.00m

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

Sample details

Sample name:
WS2-11/06/2021-2.70-4.00m
Sample Depth:
2.70-4.0 m
Moisture content:
17%
(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: 17% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
2	benzene	601-020-00-8	200-753-7	71-43-2		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
3	toluene	601-021-00-3	203-625-9	108-88-3		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
4	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<5 µg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		30.9 mg/kg	1.462	38.6 mg/kg	0.00386 %	✓	
6	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<35 µg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
7	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1				9 mg/kg	1.895	14.573 mg/kg	0.00146 %	✓	
8	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	0.1 mg/kg		0.0855 mg/kg	0.00000855 %	✓	
9	copper { copper(II) chloride; copper dichloride }		231-210-2	7447-39-4		14 mg/kg	2.116	25.318 mg/kg	0.00253 %	✓	
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	8 mg/kg		6.838 mg/kg	0.000684 %	✓	
11	mercury { mercury difulminate }	080-005-00-2	211-057-8	628-86-4		<0.1 mg/kg	1.419	<0.142 mg/kg	<0.0000142 %		<LOD
12	nickel { nickel diiodide }	028-029-00-4	236-666-6	13462-90-3		23.1 mg/kg	5.324	105.121 mg/kg	0.0105 %	✓	
13	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		zinc { zinc oxide }				43	mg/kg	1.245	45.746	mg/kg	0.00457 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
15		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18	•	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19	•	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21	•	anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
23	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30	•	coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33	•	TPH (C6 to C40) petroleum group				<38	mg/kg		<38	mg/kg	<0.0038 %		<LOD
				TPH									
34	•	pH				8.47	pH		8.47	pH	8.47 pH		
				PH									
35		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
										Total:	0.0278 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non CLP determinands

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

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

- **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

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

CLP 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.
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

- **cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex**

CLP index number: 048-001-00-5
Description/Comments: Worst Case: IARC considers cadmium compounds Group 1; Carcinogenic to humans
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

- **copper(II) chloride; copper dichloride** (EC Number: 231-210-2, CAS Number: 7447-39-4)

Description/Comments:
Data source: https://echa.europa.eu/substance-information/-/substanceinfo/100.028.373
Data source date: 03 Nov 2016
Hazard Statements: Skin Irrit. 2 H315 , Acute Tox. 4 H302 , Eye Dam. 1 H318 , Acute Tox. 4 H312 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 3 H301 , Acute Tox. 4 H332 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

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

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

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

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

- **acenaphthene** (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

- **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

- **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

- **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

- **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

- **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

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

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

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

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

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2 H371

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

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

- **pH** (CAS Number: PH)

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

Appendix B: Rationale for selection of metal species

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

Standard Aproach

arsenic {arsenic acid and its salts with the exception of those specified elsewhere in this Annex}

Worst Case

cadmium {cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex}

Standard Approach

copper {copper(II) chloride; copper dichloride}

Standard Approach

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

Standard Approach

mercury {mercury difulminate}

Worst Case

nickel {nickel diiodide}

Worst Case

selenium {nickel selenate}

Worst Case

zinc {zinc oxide}

Standard Approach

chromium in chromium(VI) compounds {chromium(VI) oxide}

Standard Approach

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2021.162.4804.9151 (21 Jun 2021)
HazWasteOnline Database: 2021.162.4804.9151 (21 Jun 2021)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of 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 2019 - UK: 2019 No. 720 of 27th March 2019
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
POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

APPENDIX E

Geotechnical Lab Data

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 24/06/2021

0998

Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

Client:

Environmental Protection Strategies Ltd
Unit 7
Caxton House
Broad Street
Great Cambourne
Cambridge
CB23 6JN

Soil Property Testing Ltd

15, 16, 18 Halcyon Court, St Margaret's Way, Stukeley Meadows, Huntingdon, Cambridgeshire, PE29 6DG

Tel: 01480 455579
Email: enquiries@soilpropertytesting.com
Website: www.soilpropertytesting.com

Samples Submitted By:

Environmental Protection Strategies Ltd

Samples Labelled:

UK21.5432 - St Neots Fire Station

Approved Signatories:

☑ [redacted]
Technical Director & Quality Manager

☐ [redacted]
Materials Lab Manager

☐ [redacted]
Operations Manager

[redacted]

Date Received: 14/06/2021

Samples Tested Between: 14/06/2021 **and** 24/06/2021

Remarks:

For the attention of Shaun Cahill
Your Reference No: UK21.5432
Your Order No: 26767

Notes:

1. All remaining samples or remnants from this contract will be disposed of after 21 days from today, unless we are notified to the contrary.
2. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
3. Tests marked "NOT UKAS ACCREDITED" in this test report are not included in the UKAS Accreditation Schedule for this testing laboratory.
4. This test report may not be reproduced other than in full except with the prior written approval of the issuing laboratory.
5. The results within this report only relate to the items tested or sampled.

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 24/06/2021

0998

Contract	**UK21.5432 - St Neots Fire Station**		
Serial No.	**38907_1**	**Target Date**	28/06/2021
Scheduled By	Environmental Protection Strategies Ltd		
Schedule Remarks			

Bore Hole No.	Type	Sample Ref.	Top Depth	Water Content (BSEN)	Liquid/Plastic Limits	Wet Sieve Preparation	Sulphate Content/pH Value	Particle Size Distribution (BS1377)	California Bearing Ratio Test												Sample Remarks
WS1	D	1	1.60	1	1	1	1														
WS1	D	2	2.30	1	1	1	1														
WS1	D	3	3.30	1	1	1															
WS2	D	4	0.80				1	1													
WS2	D	6	2.30					1													
WS2	D	7	3.30	1	1	1															
WS3	B	1	0.50	1	1	1			1												
WS4	B	2	0.00	1	1	1			1												
Totals				**6**	**6**	**6**	**3**	**2**	**2**												**End of Schedule**

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 24/06/2021

0998

Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

SUMMARY OF WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole /Pit No.	Depth (m)	Type	Ref.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasti-city Index (%)	Liquid-ity Index	Sample Preparation				Description	Class
									Method	Ret'd 0.425mm (%)	Corr'd W/C <0.425mm	Curing Time (hrs)		
WS1	1.60 - 1.80	D	1	**11.6**	29	14	15	-0.16	Wet Sieved	40 (M)	19.3*	25	Stiff brownish yellow slightly gravelly slightly sandy silty CLAY with occasional light bluish grey and orange mottling, and rare decayed roots. Gravel is fine to coarse chalk and chert.	CL
WS1	2.30 - 2.50	D	2	**19.2**	40	16	24	0.13	Wet Sieved	8 (M)	20.9*	28	Stiff olive slightly gravelly slightly sandy silty CLAY with occasional grey mottling, and decayed roots. Gravel is fine to medium chalk and chert.	CI
WS1	3.30 - 3.50	D	3	**15.9**	35	15	20	0.04	Wet Sieved	9 (M)	17.5*	26	Very stiff slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium chalk, and rare chert.	CL/CI
WS2	3.30 - 3.50	D	7	**17.0**	36	15	21	0.10	Wet Sieved	10 (M)	18.9*	28	Very stiff dark grey slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium chalk, and rare chert.	CI
WS3	0.50 - 1.50	B	1	**7.5**	20	13	7	-0.79	Wet Sieved	56 (M)	16.9*	26	Pale brown fine to coarse slightly clayey SAND and brown, black and white fine to coarse angular to subrounded chert and chalk GRAVEL with occasional firm clayey lumps, and rare recently active roots.	CL
WS4	0.00 - 1.00	B	2	**9.9**	29	17	12	-0.59	Wet Sieved	46 (M)	18.4*	26	Friable brown slightly gravelly sandy silty CLAY with frequent recently active and decayed roots. Gravel is brown, black and white fine to coarse angular to subrounded chert.	CL

Method Of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2:1990:4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2:1990:3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter
Comments:	*Corrected water content assume material greater than 0.425mm is non-porous. See BS1377: Part 2: 1990 Clause 3 Note 1.
Table Notation:	Ret'd 0.425mm: (A) = Assumed, (M) = Measured

TEST REPORT

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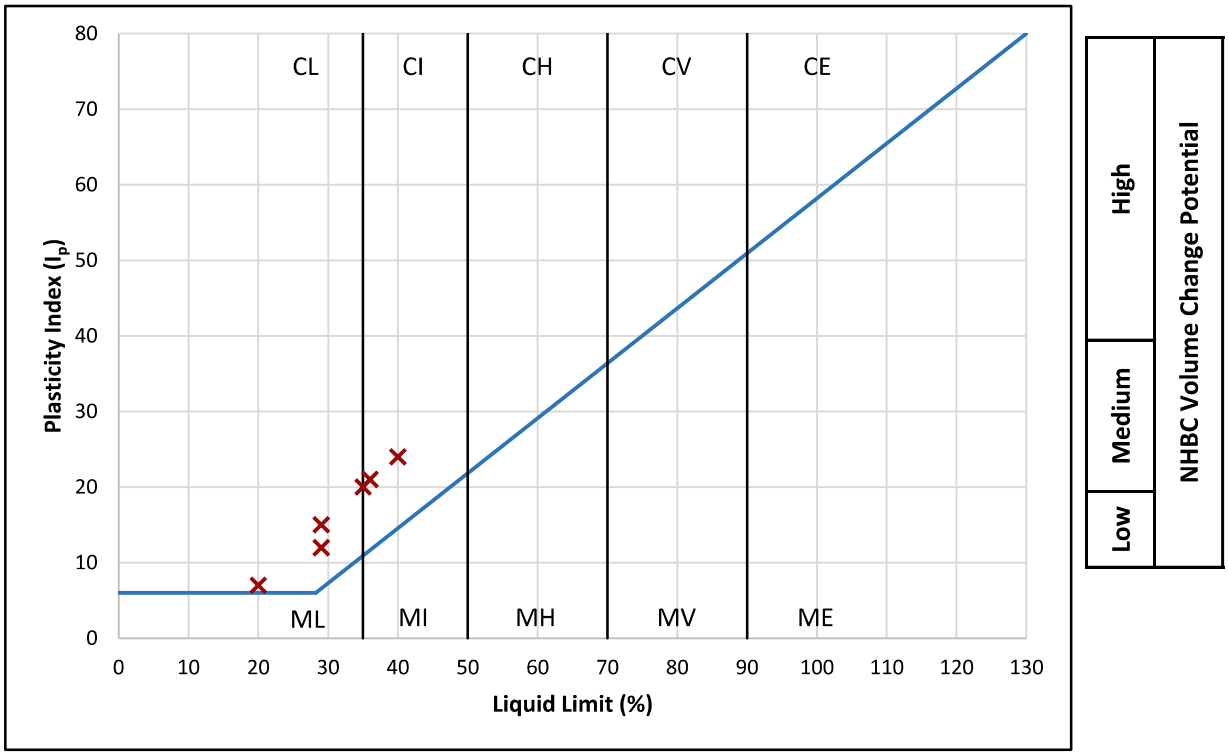
Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT USING CASAGRANDE CLASSIFICATION CHART

Plasticity				
Low	Medium	High	Very High	Extremely High



NHBC Volume Change Potential
High
Medium
Low

Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS 1377: Part 2: 1990: 4.2
Method of Test:	BS1377: Part 2: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter
Comments:	Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 24/06/2021

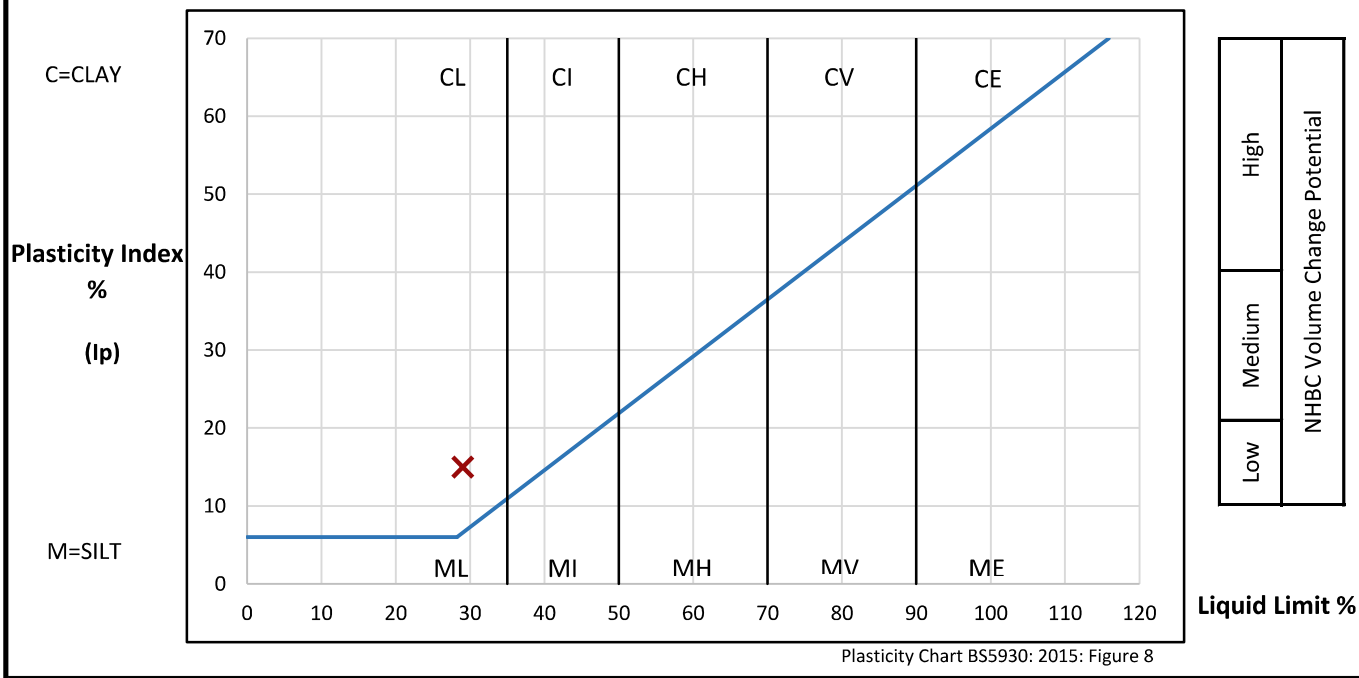
0998

Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS1	1.60 - 1.80	D	1	11.6	Stiff brownish yellow slightly gravelly slightly sandy silty CLAY with occasional light bluish grey and orange mottling, and rare decayed roots. Gravel is fine to coarse chalk and chert.	

PREPARATION				Liquid Limit	29 %
Method of preparation		Wet sieved over 0.425mm sieve		Plastic Limit	14 %
Sample retained 0.425mm sieve	(Measured)	40 %		Plasticity Index	15 %
Corrected water content for material passing 0.425mm		19.3 %		Liquidity Index	-0.16
Sample retained 2mm sieve	(Measured)	28 %		NHBC Modified (I'p)	9 %
Curing time	25 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 24/06/2021

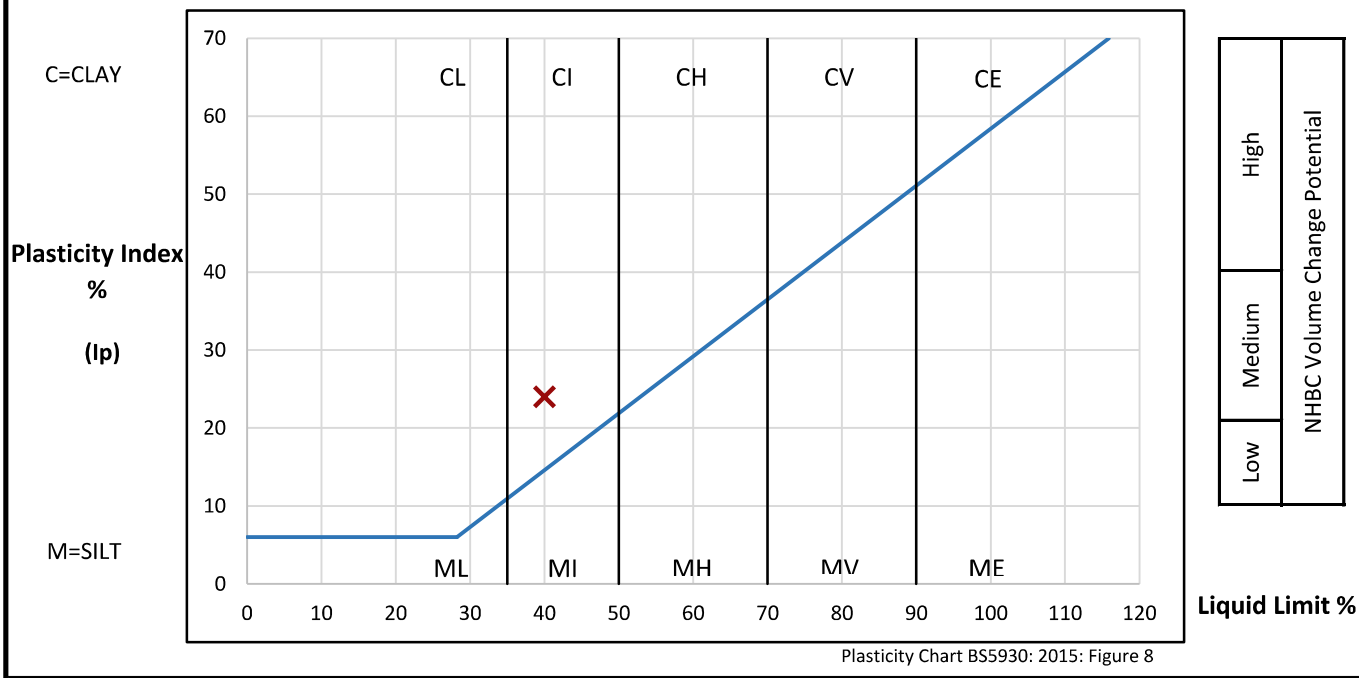
0998

Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS1	2.30 - 2.50	D	2	19.2	Stiff olive slightly gravelly slightly sandy silty CLAY with occasional grey mottling, and decayed roots. Gravel is fine to medium chalk and chert.	

PREPARATION				Liquid Limit	40 %
Method of preparation		Wet sieved over 0.425mm sieve		Plastic Limit	16 %
Sample retained 0.425mm sieve	(Measured)	8 %		Plasticity Index	24 %
Corrected water content for material passing 0.425mm		20.9 %		Liquidity Index	0.13
Sample retained 2mm sieve	(Measured)	6 %		NHBC Modified (I'p)	22 %
Curing time	28 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

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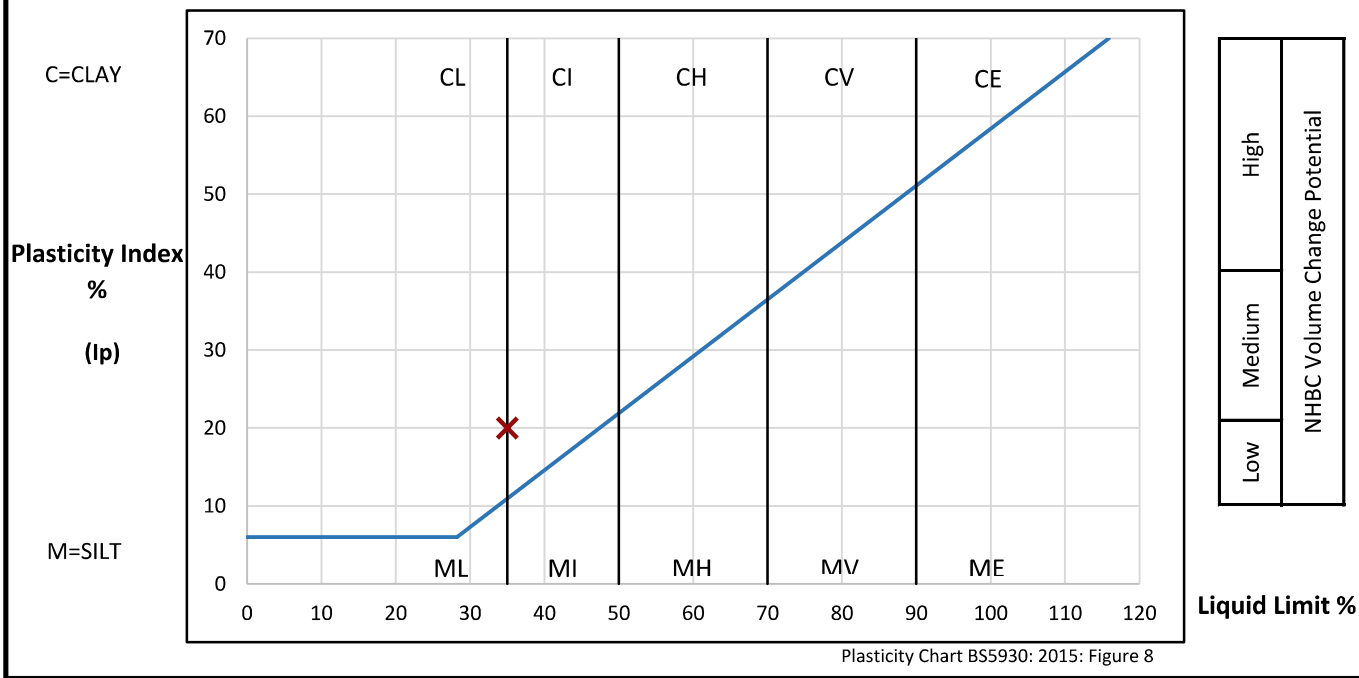
Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS1	3.30 - 3.50	D	3	15.9	Very stiff slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium chalk, and rare chert.	

PREPARATION			Liquid Limit	35 %
Method of preparation	Wet sieved over 0.425mm sieve		Plastic Limit	15 %
Sample retained 0.425mm sieve	(Measured)	9 %	Plasticity Index	20 %
Corrected water content for material passing 0.425mm		17.5 %	Liquidity Index	0.04
Sample retained 2mm sieve	(Measured)	7 %	NHBC Modified (I'p)	18 %
Curing time	26 hrs	Clay Content: Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 24/06/2021

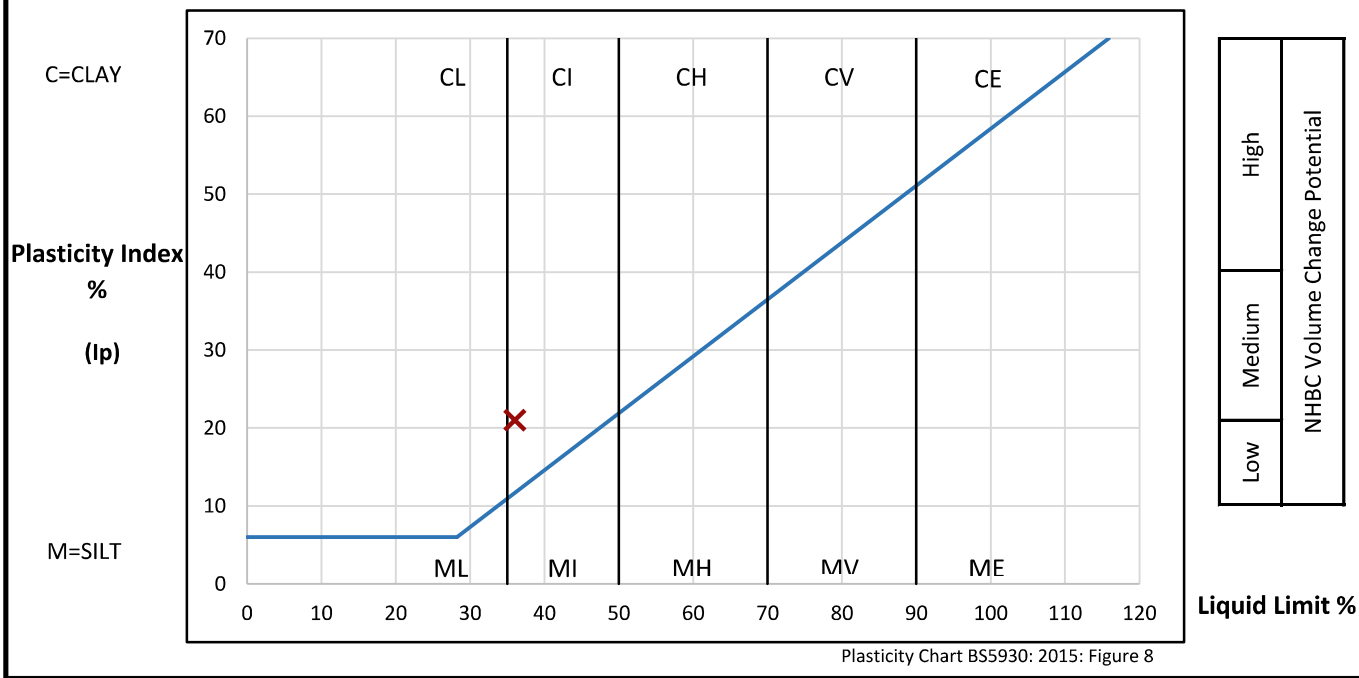
0998

Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS2	3.30 - 3.50	D	7	17.0	Very stiff dark grey slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium chalk, and rare chert.	

PREPARATION			Liquid Limit	36 %
Method of preparation	Wet sieved over 0.425mm sieve		Plastic Limit	15 %
Sample retained 0.425mm sieve	(Measured)	10 %	Plasticity Index	21 %
Corrected water content for material passing 0.425mm		18.9 %	Liquidity Index	0.10
Sample retained 2mm sieve	(Measured)	7 %	NHBC Modified (I'p)	19 %
Curing time	28 hrs	Clay Content: Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

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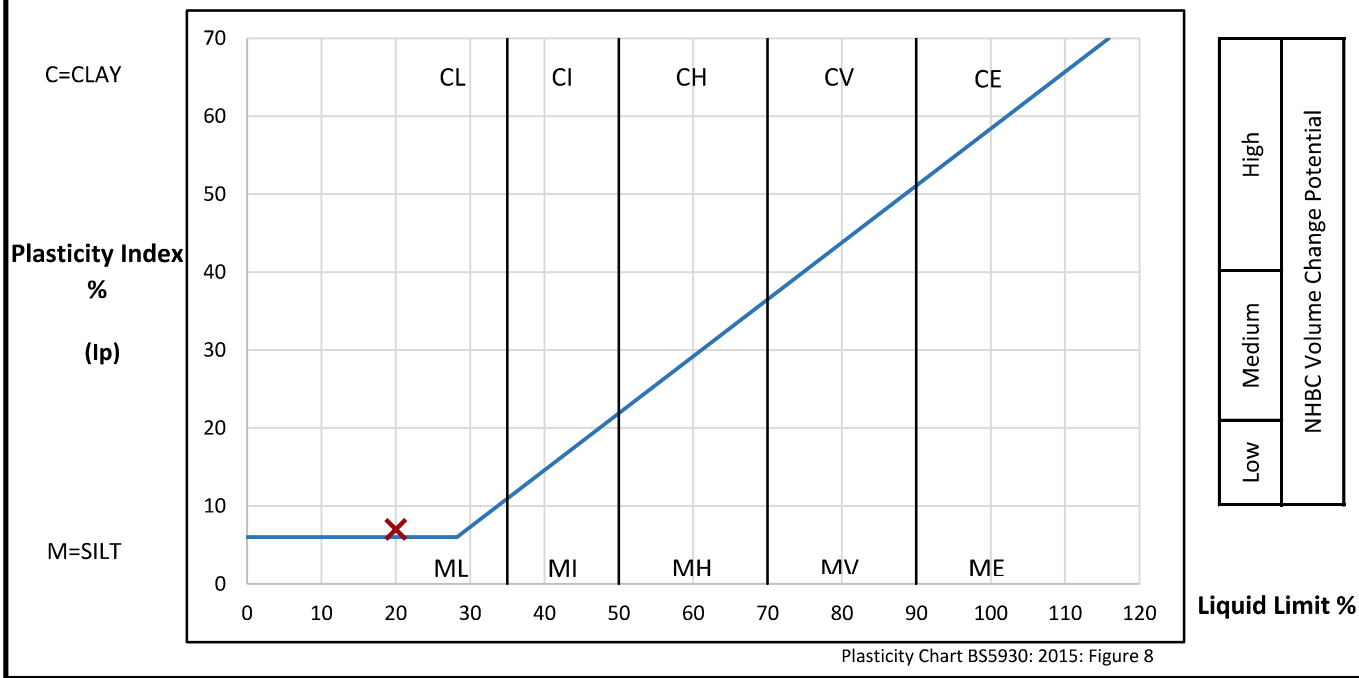
DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS3	0.50 - 1.50	B	1	7.5	Pale brown fine to coarse slightly clayey SAND and brown, black and white fine to coarse angular to subrounded chert and chalk GRAVEL with occasional firm clayey lumps, and rare recently active roots.	

PREPARATION				Liquid Limit	20 %
Method of preparation		Wet sieved over 0.425mm sieve		Plastic Limit	13 %
Sample retained 0.425mm sieve	(Measured)	56 %		Plasticity Index	7 %
Corrected water content for material passing 0.425mm		16.9 %		Liquidity Index	-0.79
Sample retained 2mm sieve	(Measured)	40 %		NHBC Modified (I'p)	3 %
Curing time	26 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

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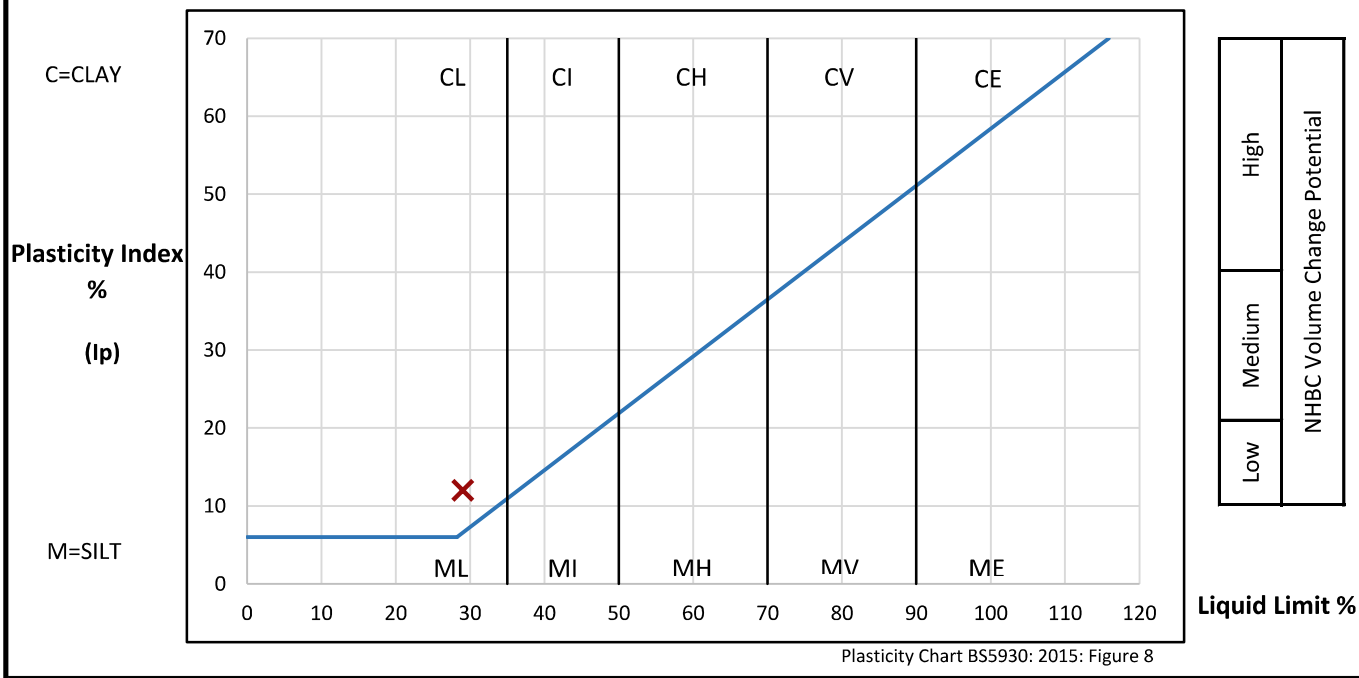
DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS4	0.00 - 1.00	B	2	9.9	Friable brown slightly gravelly sandy silty CLAY with frequent recently active and decayed roots. Gravel is brown, black and white fine to coarse angular to subrounded chert.	

PREPARATION				Liquid Limit	29 %
Method of preparation	Wet sieved over 0.425mm sieve			Plastic Limit	17 %
Sample retained 0.425mm sieve	(Measured)	46 %		Plasticity Index	12 %
Corrected water content for material passing 0.425mm		18.4 %		Liquidity Index	-0.59
Sample retained 2mm sieve	(Measured)	29 %		NHBC Modified (I'p)	6 %
Curing time	26 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 24/06/2021

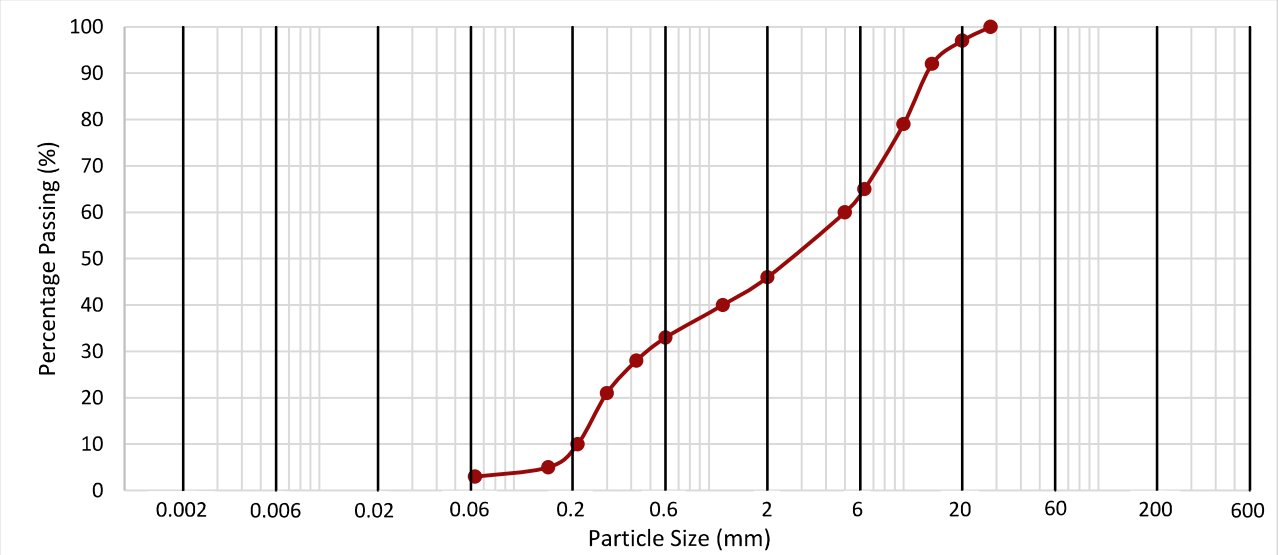
0998

Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
WS2	0.80 - 1.00	D	4	Black, brown and white angular to subrounded very sandy slightly silty chert GRAVEL. Sand is yellowish brown.	

Method of Test:	Wet Sieve	Method of Pretreatment:	Not required



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

Hydrometer

Particle Size (mm)	Passing (%)	**Silt by Dry Mass (%)**
		Clay by Dry Mass (%)

Sieve Size (mm)	Passing (%)	**Sand By Dry Mass (%)**
2.00	46	**43**
1.18	40	
0.600	33	
0.425	28	
0.300	21	
0.212	10	
0.150	5	
0.063	3	

Fines By Dry Mass (%)	
<0.063mm	**3**

Sieve Size (mm)	Passing (%)	**2mm+ By Dry Mass (%)**
300		**54**
125		
90		
63		
50		
37.5		
28	100	
20	97	
14	92	
10	79	
6.3	65	
5	60	

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5
Method of test: BS1377: Part 2: 1990: 9.2
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 24/06/2021

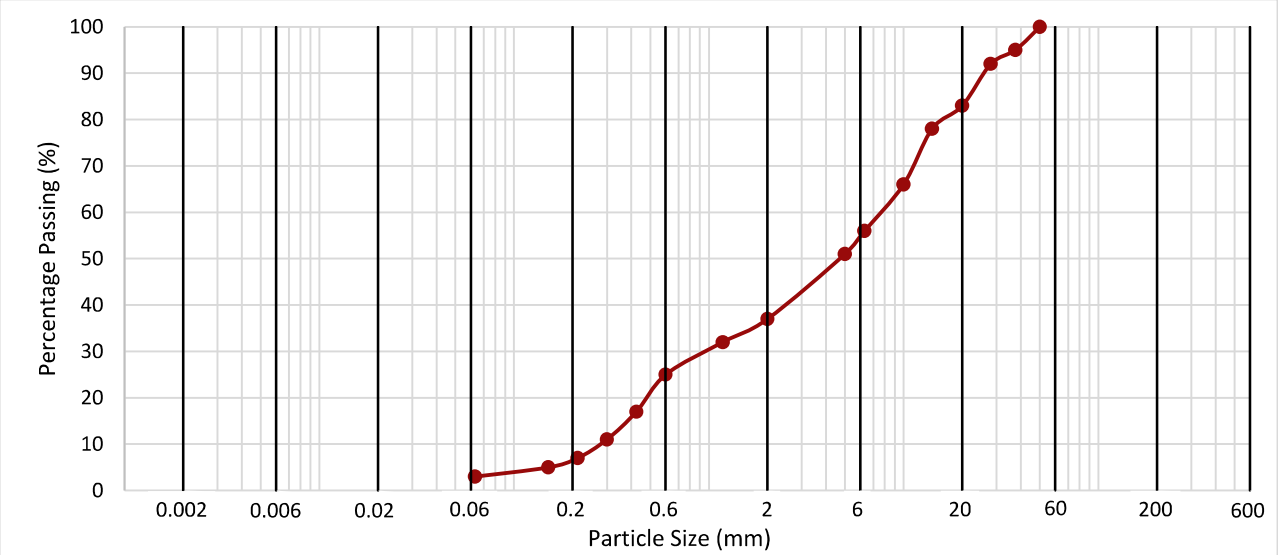
0998

Contract	**UK21.5432 - St Neots Fire Station**
Serial No.	**38907_1**

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
WS2	2.30 - 2.50	D	6	Black, brown and white angular to subrounded chert, and occasional yellowish brown quartzite very sandy slightly silty GRAVEL. Sand is yellowish brown.	Dry mass of sample required 2kg. Mass of sample submitted 1.442kg. Sample Unrepresentative BS1377:Part 2:1990 Table 3.

Method of Test:	Wet Sieve	Method of Pretreatment:	Not required



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

Hydrometer

Particle Size (mm)	Passing (%)	**Silt by Dry Mass (%)**
		Clay by Dry Mass (%)

Sieve Size (mm)	Passing (%)	**Sand By Dry Mass (%)**
2.00	37	**34**
1.18	32	
0.600	25	
0.425	17	
0.300	11	
0.212	7	
0.150	5	
0.063	3	

Fines By Dry Mass (%)	
<0.063mm	**3**

Sieve Size (mm)	Passing (%)	**2mm+ By Dry Mass (%)**
300		**63**
125		
90		
63		
50	100	
37.5	95	
28	92	
20	83	
14	78	
10	66	
6.3	56	
5	51	

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5
Method of test: BS1377: Part 2: 1990: 9.2
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:

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LABORATORY CALIFORNIA BEARING RATIO TESTS ADJUSTED FOR SEASONAL WATER CONTENT CHANGES

Due to seasonal variations of water content in near surface soils, many clients require CBR test samples to be subjected to sample preparation in the laboratory before testing. With Clay soils, liquid and plastic limits and water contents are carried out to classify them on material passing 20mm. The plastic limit is then compared against the water content with due regard to the proportion of material then retained on a 0.425mm sieve. If the water content is already 2% or more above the plastic limit, compaction may take place immediately. If this is not the case a calculated amount of water is added to the sample and cured for 24 hours before compaction. The samples are then cured for a further 24 hours before CBR tests are carried out at both the top and bottom of the sample.

Calculation of Adjusted Water Content for CBR testing

When a significant proportion of a basically clay material is >0.425mm, the adjusted water content (WC) for test shall be derived as follows:

Obtain test specimens for CBR, Limits and Water Content from Material Passing 20mm. (If the sample is large enough a water content may also be carried out on a representative portion of the whole sample including material greater than 20mm, and reported for information)

The Plastic Limit (PL) for the fine fraction is obtained by testing material passing the 0.425mm sieve. A notional 5% Water Content is to be allowed for material passing 20mm, and retained on the 0.425mm sieve. The proportion passing the 0.425mm is obtained by the wet sieve preparation method.

If X% passes 0.425mm, (100-X) % is retained on 0.425mm and with the 5% WC required to be incorporated for the retained 0.425mm portion, the adjusted WC for test shall be at least:

$$\frac{X(PL+2) + (100-X)5}{100} \%$$ for the sample passing 20mm

BH/ TP No.	Depth (m)	Type	Reference	WC as received* (%)	Plastic Limit (%)	Passing 0.425mm (%)	>20mm excluded (%)	WC req. for CBR (%)	WC after CBR Test (%)	Remarks
WS3	0.50 - 1.50	B	1	7.5	13	44	3.6		7.4	I'p = 3. No adjustment req.
WS4	0.00 - 1.00	B	2	9.9	17	54	4.0		9.7	I'p = 6. No adjustment req.

* Water content excluding material +20mm

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

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CALIFORNIA BEARING RATIO TEST

Borehole /Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
WS3	0.50 - 1.50	B	1	Pale brown fine to coarse slightly clayey SAND and brown, black and white fine to coarse angular to subrounded chert and chalk GRAVEL with occasional firm clayey lumps, and rare recently active roots.	

Specimen Preparation

Condition	Remoulded
Details	Recompacted with specified standard effort using 2.5kg rammer

Material Retained on 20mm Sieve Removed		3.6	%
Initial Specimen Details:	Bulk Density	2.18	Mg/m³
	Dry Density	2.03	Mg/m³

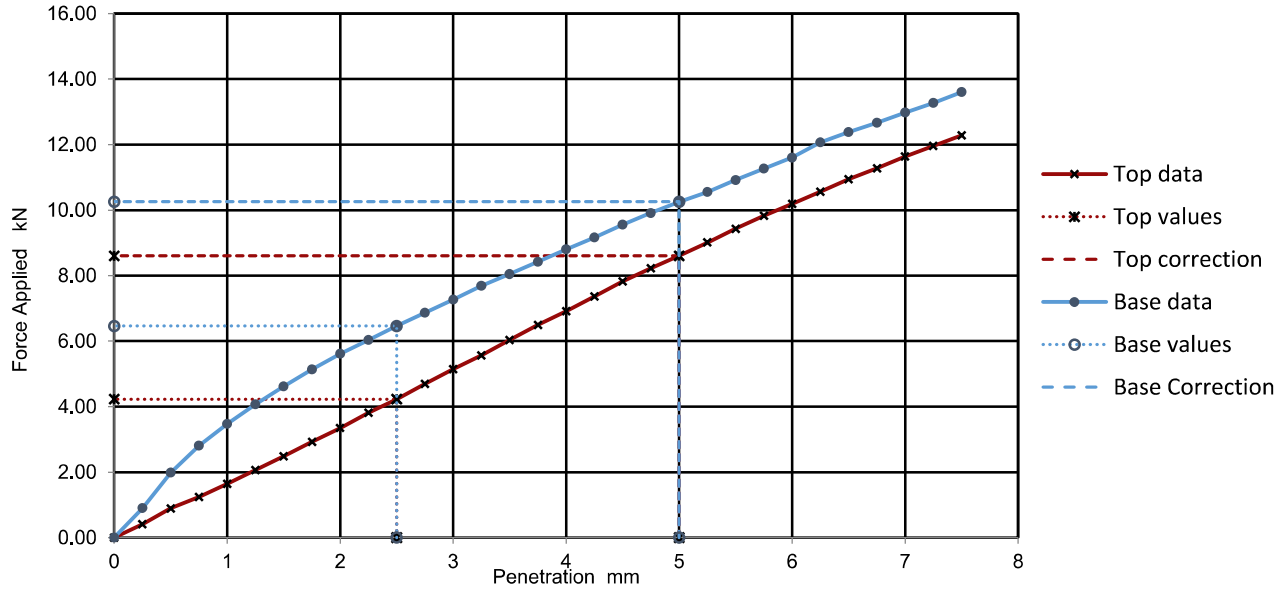
Soaking Details	Not Soaked	
Period of Soaking		days
Time to Surface		days
Amount of Swell Recorded		mm
Initial Water Content		%

Surcharge Applied	15	kg

Test Results

	Curve Correction	CBR Values (%) 2.5mm	5.0mm	Highest	Mean*	Water Content (%)
TOP	No	32	43	43	47	7.3
BASE	No	49	51	51		7.4

Force v Penetration Plots



Method of Preparation:	BS1377: Part1: 2016 & BS1377: Part 4: 1990: 7.2.4.4
Method of Test:	BS 1377: Part 4: 1990: 7
Type of Sample Key	U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT= Split Spoon Sample, C = Core Cutter
Comments:	*Only reported if the results from each end of the sample are within ±10% of the mean value. Note:- CBR Results are water content dependent - an increase in water content will result in a decrease of CBR value.
Remarks to Include:	Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample, oven drying temperature if not 105-110°C.

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CALIFORNIA BEARING RATIO TEST

Borehole /Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
WS4	0.00 - 1.00	B	2	Friable brown slightly gravelly sandy silty CLAY with frequent recently active and decayed roots. Gravel is brown, black and white fine to coarse angular to subrounded chert.	

Specimen Preparation

Condition	Remoulded
Details	Recompacted with specified standard effort using 2.5kg rammer

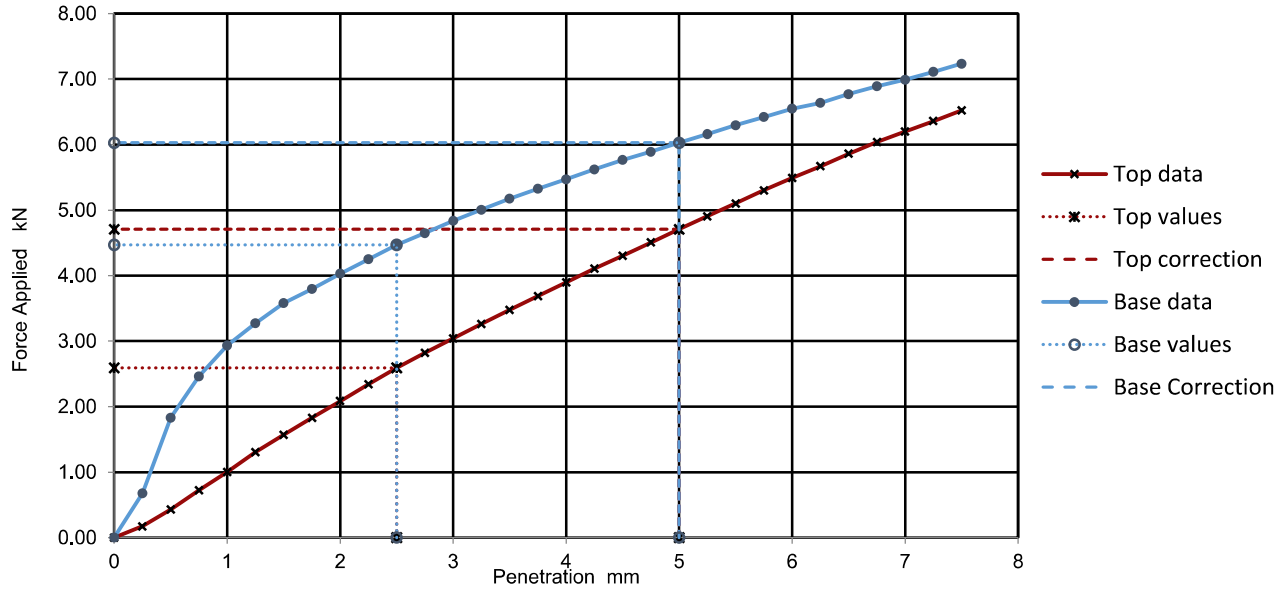
Material Retained on 20mm Sieve Removed		4.0	%
Initial Specimen Details:	Bulk Density	2.00	Mg/m³
	Dry Density	1.82	Mg/m³

Soaking Details	Not Soaked		
Period of Soaking			days
Time to Surface			days
Amount of Swell Recorded			mm
Initial Water Content			%
Surcharge Applied	15	kg	

Test Results

	Curve Correction	CBR Values (%) 2.5mm	5.0mm	Highest	Mean*	Water Content (%)
TOP	No	20	24	24		9.7
BASE	No	34	30	34		9.6

Force v Penetration Plots



Method of Preparation:	BS1377: Part1: 2016 & BS1377: Part 4: 1990: 7.2.4.4
Method of Test:	BS 1377: Part 4: 1990: 7
Type of Sample Key	U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT= Split Spoon Sample, C = Core Cutter
Comments:	*Only reported if the results from each end of the sample are within ±10% of the mean value. Note:- CBR Results are water content dependent - an increase in water content will result in a decrease of CBR value.
Remarks to Include:	Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample, oven drying temperature if not 105-110°C.

TEST REPORT

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Contract:	**UK21.5432 - St Neots Fire Station**
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DETERMINATION OF THE SULPHATE CONTENT AND pH OF SOIL AND GROUNDWATER

Borehole / Pit No.	Depth (m)	Sample		Conc. of Soluble SO3		Calc'd Conc. Of SO4 (g/L)	pH Value	% Sample Passing 2mm Sieve	Description	Remarks
		Type	Ref.	Water Soluble 2:1 (g/L)	Ground Water (g/L)					
WS1	1.60 - 1.80	D	1	<0.01		<0.01	7.6	72	Stiff brownish yellow slightly gravelly slightly sandy silty CLAY with occasional light bluish grey and orange mottling, and rare decayed roots. Gravel is fine to coarse chalk and chert.	
WS1	2.30 - 2.50	D	2	0.06		0.07	7.5	94	Stiff olive slightly gravelly slightly sandy silty CLAY with occasional grey mottling, and decayed roots. Gravel is fine to medium chalk and chert.	
WS2	0.80 - 1.00	D	4	0.04		0.05	7.5	46	Black, brown and white angular to subrounded very sandy slightly silty chert GRAVEL. Sand is yellowish brown.	

Method of Preparation:	BS1377: Part 1: 2016: 8.5, BS1377: Part 3: 1990: 5.3 Soil/Water Extract, 5.4 Groundwater
Method of Test:	BS1377: Part 3: 1990: 5.5
Type of Sample Key:	U= Undisturbed, B= Bulk, D= Disturbed, J= Jar, W= Water, SPT= Split Spoon Sample, C= Core Cutter
Comments:	**Test not UKAS accredited**
Remarks to Include:	Sample disturbance, loss of moisture, variation from test procedure, location, and origin of test specimen within original sample. Oven drying temperature if not 105-110C.

APPENDIX F

Method Statement for Unexpected Contamination

METHOD STATEMENT

ACTIONS TO BE TAKEN IN THE EVENT OF DISCOVERING UNEXPECTED CONTAMINATION DURING INTRUSIVE GROUNDWORKS

If at any point during intrusive groundworks at a site, evidence of unforeseen contamination is encountered in the form of significant noxious odours, discolouration, or instability within soils or sheen/ discolouration in groundwater, the following actions will be taken:

- Intrusive works in the immediate area of the impacted ground will be suspended and the continuation of work in other areas of the site will be considered within the context of the site specific health & safety plan.
- Environmental Protection Strategies Ltd (EPS) will be contacted and appraised of the situation so that arrangements can be made to characterise the impact and determine what action may be necessary in addition to the scheduled site works. Where possible / health & safety plan permits, digital photographs of the impacted ground will be taken and emailed to EPS at the address below to assist in the initial assessment
- It may well be necessary for EPS to attend site to undertake visual inspection and obtain samples for field and/or laboratory analysis, although the actions taken will be dependent on the nature of what is encountered
- In cases where EPS consider the unforeseen contamination likely to pose a significant risk of significant harm to adjacent site users or local environmental receptors, the local authority and the Environment Agency will be informed of the situation and the actions being taken
- Once appropriate action has been agreed and undertaken, a written summary will be produced by EPS for submission to the Local Authority, (and where relevant, the Environment Agency) in accordance with planning requirements. The submission will include details of work undertaken, analytical results of investigative and validation samples obtained and conclusions and recommendations for any further actions considered necessary
- Where regulatory bodies have been involved, site works should only recommence following their agreement and in all cases should only recommence when the site manager considers it safe to do so within the context of the site specific health & safety plan.

EPS Contact Details:

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