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Ground Investigation Report

Proposed LED Floodlit Artificial Grass Pitch

Dragon Park, Newport

December 2025



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Title	Produced by	Date	Reference
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Non-technical Summary

Topic	Commentary
Site description	The proposed AGP is currently used as a grassed sports pitch, associated with Newport International Sports village. Adjacent site to the north is an existing floodlit AGP and directly west is a carpark leading onto the Newport International Sports village. And associated velodrome. The wider area around the pitch generally comprises of grassed areas and mature trees up to ~15m tall.
Development proposals	11v11 3G LED Floodlit Artificial Grass Pitch (AGP).
Site history	Two surface drains/ditches existed from the late-1800s to mid-1900s on the eastern and western side of the site, running north to south. During the late-1900s to early-2000s a pavilion was present in the eastern part of the site, with car park extending into the southeast. The pavilion is demolished by 2006, with area including car park grubbed and topsoiled/grassed by 2009. The current grassed pitch present by 2013.
Ground conditions	Ground conditions comprised Topsoil to 0.10 m bgl. Made Ground was observed underlying the Topsoil to a typical depth of 0.35m and an addition deposit of Made Ground, containing a higher quantity of anthropogenic material, was observed in the eastern side of the site to depths ranging from 0.8 to 1.1m bgl. Underlying superficial Tidal Flat Deposits comprised soft to very soft sandy organic clay with bands of peat throughout. Groundwater was encountered between depths of 1.5m to 2.0m bgl upon completion of boreholes.
Floodlight foundation solution	The Tidal Flat deposits are not considered suitable to support concentrated loads on traditional shallow foundation solutions. As such an alternative solution is recommended, such as piled foundations or some form of ground improvement. A concrete class of DS-1 and AC-1s is required for Made Ground in the eastern part of the site. A concrete class of DS-4 and AC-3s is required for foundations extending into disturbed soils of the Tidal Flat Deposits. A classification of DS-1 AC-1s applies to all soils if undisturbed.
CBR assessment and pitch foundations	Based on the anticipated founding depth and DCP results, a CBR design value of 5% can be adopted for soils that are likely to be representative of those which remain at or near pitch formation levels. In addition, a geosynthetic reinforcement should be incorporated into the formation to prevent excessive levels of differential settlement manifesting in the pitch surfacing due to consolidation of the underlying soft Tidal Flat Deposits, and between the Made Ground and Tidal Flat deposits. Alternatively, increasing and homogenising the strength of the Tidal Flat Deposits through ground improvement techniques such as permeation grouting/lime & cement stabilisation could be undertaken.
Drainage potential	Tidal Flat deposits are considered to be effectively impermeable for the purposes of drainage design. On this basis, disposal of stormwater via a soakaway is not considered viable. As an alternative, it is possible that the AGP drainage could key into the existing surface water drainage system currently used by the adjacent AGP/sports village. Alternatively there are drainage ditches along the eastern and southern boundary of the proposed AGP which could be utilised as a surface water disposal point, subject to relevant permissions being sought.
Chemical contamination	Topsoil in-situ would be chemically suitable for reuse onsite, or offsite within a residential development. Topsoil/Made Ground deposits are not considered to present a significant contamination risk to construction operatives.
Waste characterisation	Made Ground in the eastern part of the site is characterised as hazardous waste due concentrations of TPH (HP7 and HP11) and exceeds the hazardous waste threshold for disposal to landfill due to elevated TOC. However, no visual or olfactory evidence of hydrocarbon contamination was noted, and TOC values over the limit value may be accepted as stable non-reactive hazardous waste (SNRHW) based on dissolved organic carbon (DOC) values falling below the respective limit value. Landfill operator should be contacted to determine acceptance. Natural soils can be disposed as inert waste. Topsoil is typically unsuitable for disposal to inert landfill sites due to high organic carbon content.
Recommendation for further works	If a piled foundation solution is adopted for the proposed floodlighting, deeper boreholes providing parameters to facilitate design and construction are likely to be required. Current waste characterisation is a preliminary assessment only and further testing would be prudent to determine more accurately the characterisation of the waste and landfill disposal options.

1 Introduction

1.1 Scheme Outline

- 1.1.1 The proposed development is for construction of an 11v11 3G LED Floodlit Artificial Grass Pitch (AGP). The approximate footprint of the proposed AGP is presented in Figure 2-A below.
- 1.1.2 The report is based on the project proposals and information outlined above; should the scheme change then it will be necessary to review the conclusions and recommendations presented in this report.

1.2 Brief

- 1.2.1 This report has been prepared following instructions received from our client, Sports Labs Ltd.
- 1.2.2 The principal objectives of the ground investigation are to establish ground conditions at the site sufficient to assess the infiltration potential and provide information necessary to allow design of the artificial sports pitch and floodlight foundations. The report will also advise on abnormal ground conditions and provide recommendations for further investigation works where applicable.
- 1.2.3 In addition to the above, a topographical survey has been commissioned for the project. A copy is presented in Appendix H.

1.3 Limitations

- 1.3.1 Soiltechnics disclaims any responsibility to our Client and others in respect of any matters outside the scope of this report. This report has been prepared with reasonable skill, care and diligence in accordance with the terms of our contract, taking account of the resources, investigations and testing devoted to it by agreement with our Client. This report is confidential to our Client and Soiltechnics accepts no responsibility of whatsoever nature to third parties to whom this report or any part thereof is made known. Any such party relies upon the report at their own risk.

2 Desk Study

2.1 Sources of Information

2.1.1 Reference has been made to the following sources of information:

- British Geological Survey (BGS) GeoIndex – Onshore database.
- BGS Sheet 249 (Scale 1:50 000) – Newport (1975).
- Ordnance Survey OpenData.
- Coal Authority Development and Specific Risk databases.
- Environment Agency open-source databases.
- Google mapping services.
- Interrogation of search engines for anecdotal information on the site history and other readily available online resources.

2.2 Site Location and Description

2.2.1 The proposed development lies within Newport, approximately 2.5km southeast of the town centre, at the following postal address:

Velodrome Way,
Newport
NP19 4RA

2.2.2 An aerial image showing the approximate site boundary and approximate development footprint is presented below, followed by a table summarising the key site features. A site plan is provided within Appendix A.



Figure 2-A: Aerial photograph of site boundary and proposed AGP footprint (red)

Theme	Feature
Current site use	The proposed AGP area is currently used as a grassed sports pitch, associated with Newport International Sports village. Directly north of the site is an existing floodlit AGP and directly west is a carpark leading onto a velodrome. The wider area around the pitch generally comprises of grassed areas and mature trees up to ~15m tall.
Local area land use	Adjacent sites to the north and south comprise residential estates, and in the east and west sites comprise commercial buildings, schools, supermarkets and industrial estates.
Topography	The topography of the surrounding area and onsite is generally relatively level, with a slight fall to the south.
Buildings, surfacing and other permanent features	School buildings/sports village a carpark and existing AGP are located in the west and north of the wider site. The proposed AGP location comprises grassed sports pitch.
Boundary features	The proposed AGP is defined by ball stop fencing.
Vegetation	No significant vegetation is present within the proposed AGP location. A bank of mature trees is present adjacent to the wider site's eastern and southern boundary.
On-site / adjacent surface water features	There are no water features onsite however a drainage ditch is present adjacent to the wider site's eastern and southern boundary. Great Spyty Reen is recorded ~130m north of site flowing east to west towards the River Usk located 1.2km west.
Injurious and invasive weeds	No invasive weeds were identified during the site reconnaissance.
Evidence for ground instability	None observed.

Table 2-A: Site Description

- 2.2.3 The observations provided above are made by a Geoenvironmental Engineer, who is not a specialist in asbestos surveying or invasive weed identification. Any associated comments are intended for use by this report only, and not for any other purpose.
- 2.2.4 A selection of site photographs are presented below.



Figure 2-B: Photograph of existing grass pitch looking southeast



Figure 2-C: Photograph of existing grass pitch looking northwest towards the velodrome

2.3 Site History

2.3.1 An attempt to trace the history of the site has been carried out by reviewing readily available ordnance survey maps. A chronological summary of the site’s history is provided below.

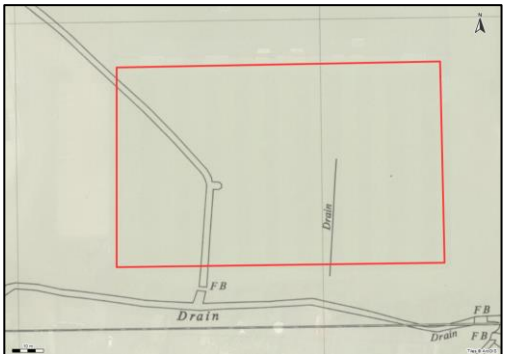
Date	On-site	Off-site
Late-1800s to early 1900s	Site recorded as agricultural land with a drainage ditch on the western side on the site running northwest to southeast/ south. 	The wider area generally comprises agricultural land separated by drainage ditches. Drainage ditches are recorded adjacent to the wider site’s eastern and southern boundary similar to present day.
Mid 1900s	An additional less prominent drain is recorded running north to south in the western half of the site. 	The wider area to the west makes up part of a recreation ground. Some residential development has taken place to the north and south and commercial development has taken place to the east and west. Commercial development comprises a a boat building yard recorded some 200m northeast of site and Newport College recorded some 110m southeast. Great Spytty Reen is recorded ~130m north of site flowing east to west, feeding into the River Usk.
Late 1900s to early 2000s	A pavilion is present in the eastern part of the site, with car park extending into the southeast. The rest of site makes up part of a grassed playing field. Drainage ditches are infilled. 	Further residential development has taken place in the wider area to the north and some in the south. Expansion of Newport College to the east and industrial estates some 450m to the west. A carpark and sports facilities including a running track and a velodrome are present by 2004 to the west of the site. Small pond recorded northwest some 45m of site.
2006 to Present day	The pavilion is demolished by 2006, with area including car park grubbed and grassed by 2009. The current grassed pitch is present by 2013.	The floodlit AGP directly north of the site is developed by ~2013 along with the carpark directly to the west of the site. The wider areas show some further development but remain largely unchanged.

Table 2-B: Summary of site history

2.4 Anticipated Geology and Hydrogeology

- 2.4.1 Based on a review of available records, the site is anticipated to be underlain by superficial deposits Tidal Flat Deposits (refer to Figure 2-D below).
- 2.4.2 Local BGS borehole records suggest the Tidal Flat Deposits comprise of soft to very soft silty organic clays with layers of peat.
- 2.4.3 Made Ground associated with the previous pavilion and carpark is expected in the eastern/southern-eastern part of the site.
- 2.4.4 The underlying bedrock is recorded as Mercia Mudstone Formation across the entirety of the site, comprising mudstone (refer to Figure 2-E below).

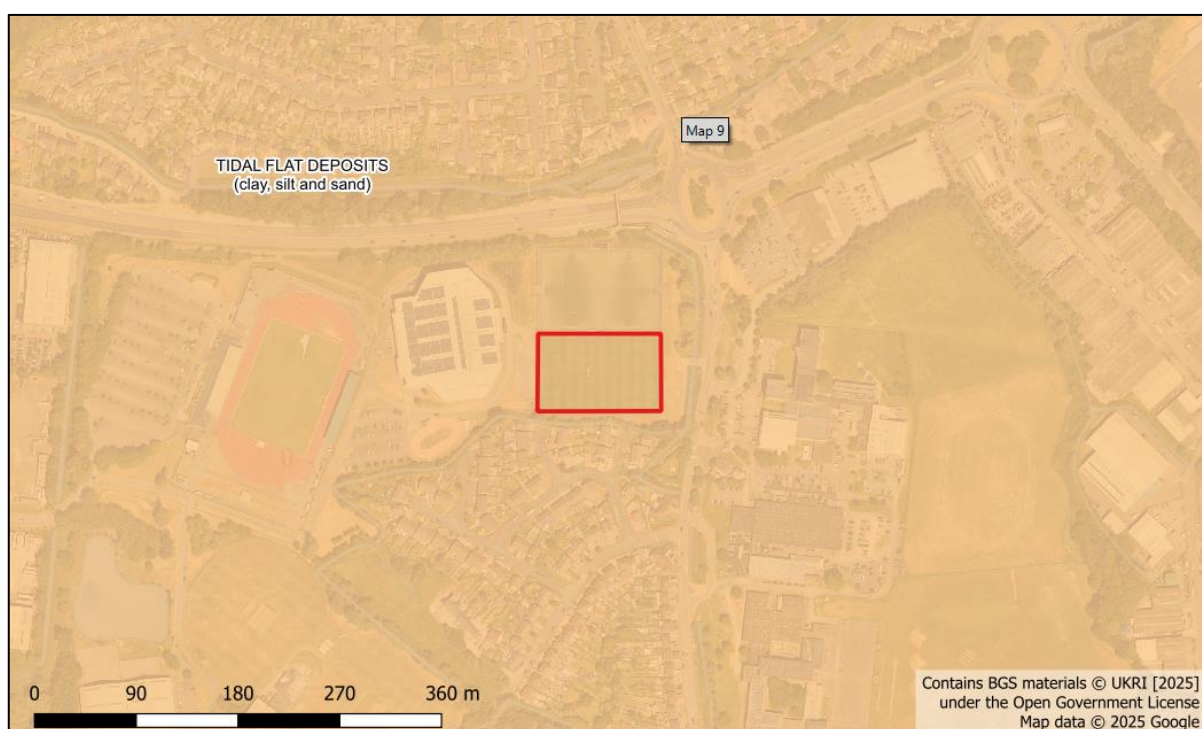


Figure 2-D: Extract from BGS showing superficial geology at the site



Figure 2-E: Extract from BGS showing bedrock geology at the site

2.4.5 A summary of the anticipated geology underlying the site is summarised as follows:

Stratum	Bedrock/ superficial	Approximate thickness (m)	Typical soil type	Aquifer Designation	Likely permeability
Topsoil	-	~0.3m	Organic soil	-	-
Made Ground (east /southeast of site)	-	Variable	Variable	-	Variable
Tidal Flat Deposits	Superficial	10m	Silt/ Clay/Peat	Unproductive	Low
Mercia Mudstone	Bedrock	Basal unit	Mudstone	Secondary B	Low

Table 2-C: Summary of anticipated geology and hydrogeology

2.4.6 The site is not located within a Source Protection Zone (SPZ).

2.5 Flood Risk

2.5.1 The site is recorded within a Flood Zone 3, associated with flooding from rivers or the sea and is in an area designated as benefiting from flood defences (refer to Figure 2-F below).

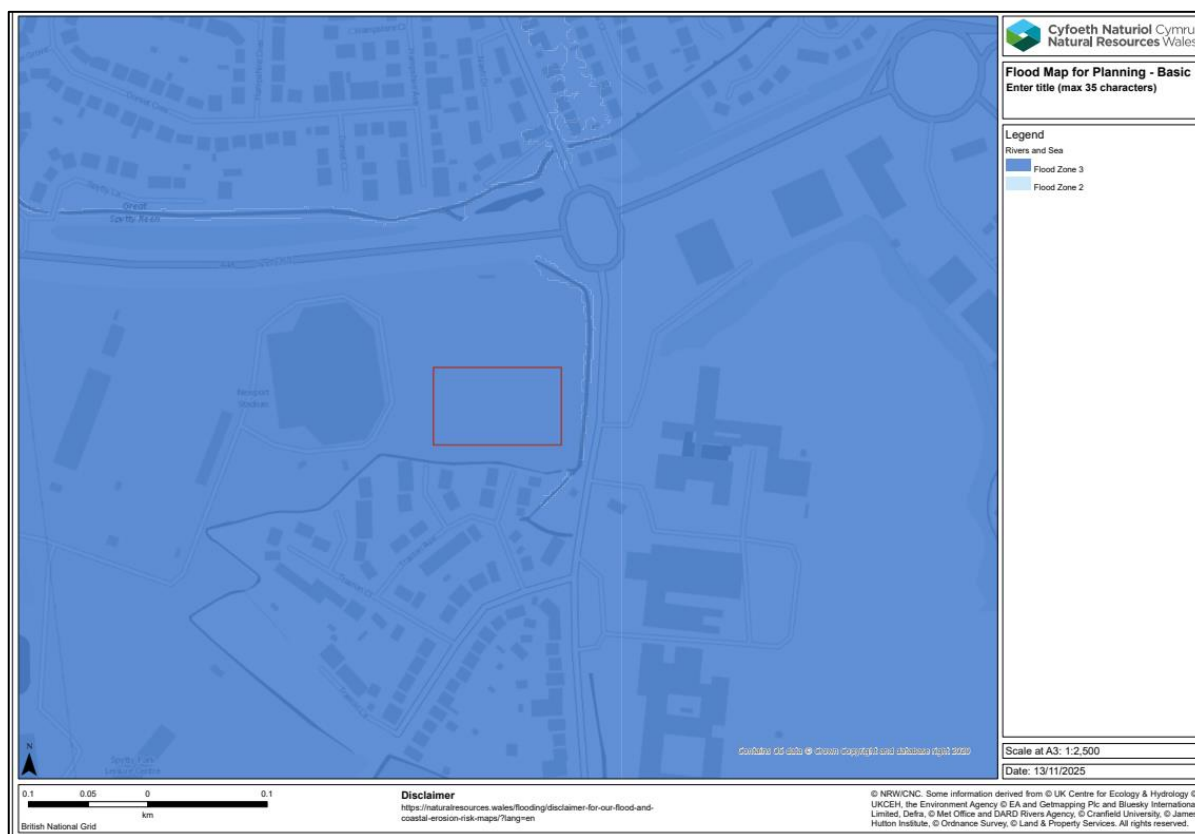


Figure 2-F: Extract of Natural Resources Wales flood risk mapping for the site

2.5.2 should be noted that this information does not constitute a site-specific Flood Risk Assessment and one may be required for the scheme.

2.6 Mining and Ground Stability

2.6.1 The site is not located within a Coal Mining Reporting Area. We, therefore, consider there to be a very low risk of land instability associated with coal mining legacy affecting the site.

2.7 Landfill and infilled ground

2.7.1 The site does not lie within 250m of a permitted or historical landfill site and there are no records of infilled ground based on historical mapping. Based on such, the risk of ground gases affecting the proposed development is very low.

2.8 Underground Infrastructure

2.8.1 Copies of all utility plans obtained are presented as Appendix I. The plans are provided for information only and should not be relied upon to be accurate. In addition, it is worth noting that the public utility plans provided by the asset owners typically exclude private service runs.

2.8.2 The plans do not show any mains services to cross the site, however, the site manager has provided information of a series of sprinklers running in a grid formation under the existing pitch.

2.9 Unexploded Ordnance (UXO) Hazard Screen

- 2.9.1 A preliminary risk review has been undertaken by a UXO specialist to assess the risk of encountering UXO during ground investigation works undertaken by Soiltechnics only and to identify any precautionary measures required. It should be noted that the risk assessment has not been carried out fully in accordance with CIRIA report C785 'Unexploded Ordnance (UXO) A guide for the construction Industry'.
- 2.9.2 The risk review concluded that there is a credible risk of encountering UXO during the ground investigation.

3 Ground Investigation

3.1 Objectives

- 3.1.1 The ground investigation scope and location of exploratory holes was determined by Soiltechnics Ltd, based upon the overall brief outlined in Section 1.
- 3.1.2 The objectives of the fieldwork were to:
- a) Establish ground and groundwater conditions at the site.
 - b) Obtain samples for subsequent laboratory testing.

3.2 Fieldwork Summary

- 3.2.1 Fieldwork was undertaken on 22nd October and 27th October 2025.
- 3.2.2 A summary of the works completed is set out in the table below, along with the location of the exploratory records. The exploratory hole location plan is presented within Appendix A.

Exploratory records	Method	Qty	Final Depth Range (m bgl)	Comments
Appendix C	Dynamic Cone Penetrometer Tests	4	0.85 – 0.86	DCP01 to DCP03, DCP05 Terminated at scheduled depth.
		1	0.48	DCP04 Terminated due to suspected cobble of concrete within Made Ground material.
Appendix B	Dynamic windowless sampling boreholes	4	3.00 – 5.45	WLS01 to WLS04 Boreholes terminated at scheduled depth.
		1	1.10	WLS05 Borehole terminated due to malfunction with UXO equipment preventing clearance past service avoidance pit.

Table 3-A: Summary of fieldwork undertaken

- 3.2.3 All soils encountered were described in accordance with BS EN ISO 14688 “Identification and Classification of soil”

3.3 Unexploded Ordnance (UXO)

- 3.3.1 Due to the risk identified during the risk review of the site, Soiltechnics commissioned a UXO specialist to supervise the intrusive works.
- 3.3.2 Anomalous readings, which may suggest the presence of UXO, were not identified during the surveys.

3.4 Sampling

- 3.4.1 During the fieldwork, sampling of soil for geotechnical purposes has been undertaken in accordance with BS EN ISO 22475-1 “Geotechnical Investigation and testing – sampling by drilling and excavation and groundwater measurements”.

- 3.4.2 Samples collected for chemical analysis have been taken and handled in accordance with BS ISO 18400-105:2017 “Soil quality — Sampling Part 105: Packaging, transport, storage and preservation of samples”.
- 3.4.3 Various sampling and sub-sampling methodologies have been adopted as appropriate, with the primary aim of obtaining the highest quality sample class practicable.
- 3.4.4 Untested chemical and geotechnical samples will be held for a period of 4 weeks from the date of the first report issue, after which they will be disposed of with no further notice.

3.5 In-situ Testing

- 3.5.1 The following table summarises the field testing carried out. The results are summarised on individual exploratory hole logs where appropriate and detailed within the Appendices indicated.

Tests	Qty	Applicable standard / guidance	Location of Results
Standard penetration test (SPT)	20	BS EN ISO 22476-3	Included within logs Detailed in Appendix C
Pocket penetrometer	30	Manufacturer’s instructions	Included within logs Detailed in Appendix C
Dynamic cone penetrometer (DCP) using TRL probe	5	DMRB: CS229	Detailed in Appendix C
Variable head permeability	1	BS EN ISO 22282-2	Detailed in Appendix C

Table 3-B: Summary of field testing undertaken

3.6 Investigation Constraints

- 3.6.1 During the fieldwork, the UXO engineer’s equipment malfunctioned preventing UXO clearance on the remainder of the planned exploratory locations. As a result, WLS05 was terminated short reducing the coverage of deep geological information in the centre of the site. A secondary visit to site was undertaken to complete the two boreholes to the scheduled depth in the eastern part of the site.

3.7 Topographical Survey

- 3.7.1 A topographical survey was commissioned for the proposed pitch and areas immediately adjacent. A copy is presented in Appendix H and has been issued under separate cover (including .dwg file).

4 Laboratory testing

4.1 Overview

- 4.1.1 Samples obtained from exploratory holes were sent to independent accredited laboratories for geotechnical and chemical testing.

4.2 Geotechnical Testing

- 4.2.1 The geotechnical testing schedule was prepared by Soiltechnics using a targeted and judgemental approach, based upon the scheme proposals and ground conditions encountered.
- 4.2.2 Geotechnical laboratory test results are presented in Appendix D, and the total number of geotechnical tests undertaken is summarised below:

Geological Unit	Test	Quantity
Tidal Flat Deposits	Moisture content	3
	Atterberg limits	3
	BRE SD1 Suite D	3

Table 4-A: Summary of geotechnical laboratory testing

4.3 Chemical Testing

- 4.3.1 The chemical testing schedule was prepared by Soiltechnics using a targeted and judgemental approach, based upon fieldwork observations.
- 4.3.2 Chemical laboratory test results are presented in Appendix E, and the total number of chemical tests undertaken is summarised below:

Geological Unit	Testing Suite	Quantity
Topsoil	ST Basic classification suite (Metals, inorganics, PAH, banded TPH, asbestos)	1
Made Ground in the eastern part of site.	ST Basic classification suite (Metals, inorganics, PAH, banded TPH, asbestos)	1
	Full WAC Suite (solid and 2-stage leachate)	1

Table 4-B: Summary of chemical laboratory testing

5 Ground Investigation Findings

5.1 Ground Model

5.1.1 Ground conditions encountered were relatively consistent across the site and were broadly in line with those anticipated from the desk study.

5.1.2 The table below interprets the geological conditions at the site. Unless otherwise stated in subsequent interpretive report sections, this represents the adopted ground model.

Stratum	Brief description	Top depth range (m bgl)	Adopted model top depth (m bgl)	Thickness (m)	Water (m bgl)
Soft surfacing	Topsoil	G.L	G.L.	0.10	-
Made Ground	Firm greyish brown becoming reddish brown sandy slightly gravelly clay. Gravel is fine to coarse concrete, sandstone, quartzite and fragments of animal bone.	0.10	0.10	0.25	-
Deeper Made Ground in the eastern areas of site	Soft to firm dark grey slightly sandy gravelly clay and medium dense gravelly sand. Gravels are fine to coarse brick, glass concrete and sandstone. Cobbles of sandstone observed in WS02.	0.30	0.30	0.70	-
Tidal Flat Deposits	Soft to very soft grey organic silty clay with bands of peat. Peat more prominent at depth.	0.40 to 1.10	0.70	Unproven	1.75 to 3.0

Table 5-A: Ground Model

5.1.3 Further detail about the ground conditions encountered is provided in the relevant sub-sections below.

5.2 Topsoil

5.2.1 Topsoil was encountered in all exploratory holes to a thickness of 0.1 m and was typically observed as a brownish grey slightly gravelly sandy clay with frequent rootlets. Gravels comprised of quartzite and sandstone.

5.2.2 A photograph of topsoil deposits encountered is presented below.



Figure 5-A: Topsoil from WLS04

5.3 Made Ground

- 5.3.1 Made ground was encountered in all exploratory locations across site however, at positions in the eastern part of the site, where the historic pavilion and carpark were located, an additional thicker deposit of Made Ground material was observed.
- 5.3.2 Made Ground material across site was observed to a depth of 0.3 m to 0.40 m bgl and generally comprised a firm greyish brown sandy slightly gravelly clay/ greyish brown clayey slightly gravelly sand with gravels comprising fine to coarse concrete, sandstone and quartzite. Fragments of animal bone were also observed.
- 5.3.3 Underlying this material at WLS04 and WLS05 a reddish brown clayey slightly gravelly fine to coarse sand was encountered, with gravels comprising of concrete, sandstone and quartzite. Base depth of this material ranged from 0.45 m to 0.65 m bgl.
- 5.3.4 Deeper Made Ground deposits from the locations in the eastern part of the site were observed as dark grey clayey gravelly sand with gravels of fine to coarse brick, glass, concrete and sandstone. The base depth of Made Ground observed the eastern part of the site ranged from 0.8 to 1.1 m bgl. Cobbles of sandstone were also noted in WLS02 at depth.
- 5.3.5 Photographs of the Made Ground encountered are presented below.



Figure 5-B: Made Ground from WLS05 between depths of 0.3 to 0.5 m bgl



Figure 5-C: Layer of reddish brown Made Ground observed insitu at WLS04



Figure 5-D: Made Ground at WLS02 between depths of 0.6 to 0.8m bgl

5.4 Tidal Flat Deposits

5.4.1 Superficial Tidal Flat Deposits were encountered underlying Made Ground across site from top depths ranging from 0.3 m to 1.2 m bgl. The deposit generally comprised a soft to very soft blueish grey slightly sandy silty organic clay/ slightly sandy clayey organic silt with relict plant matter and frequent thick layers of amorphous peat. Peat was also more prominent at depth in the deeper boreholes, particularly WLS01 where it was >1.45 m thick and extending beyond the base of the borehole.

5.4.2 Photographs of the Tidal Flat Deposits encountered are presented below.



Figure 5-E: Tidal Flat deposits at a depth of ~2.5m from WLS04



Figure 5-F: Amorphous Peat layer at a depth of 3.7m from WLS01

5.5 Groundwater

5.5.1 A summary of the groundwater level data obtained during the fieldworks phase is presented below.

Exploratory hole ID	Groundwater observation
WLS01	Groundwater strike at 3 m depth, standing at 1.9 m after 1 hour.
WLS02	Ground water strike at 1.8 m depth, standing at 3.5 m upon completion of borehole.
WLS03	Groundwater at 1.79 m.
WLS04	Groundwater strike at 2.0 m standing at 1.75 m upon completion of borehole.

Table 5-B: Summary of groundwater observations during the fieldworks

5.5.2 Groundwater levels are expected to vary seasonally and in response to recent weather conditions. Long term monitoring will provide a reasonable quantification of such variation.

5.6 Evidence of Possible Contamination

5.6.1 During the ground investigation works, no significant visual or olfactory evidence of contamination was noted.

5.7 Obstructions and Instability

5.7.1 The progress of the ground investigation works was not affected by below ground obstructions.

5.7.2 Significant instability of borehole sides was not experienced during the investigation.

6 Chemical Assessment

6.1 Topsoil Suitability

- 6.1.1 A composite sample of the Topsoil was obtained and tested for the sole purpose of assessing the suitability of such soils for either reuse onsite within the existing site or offsite, potentially within a residential development. As such generic screening values have been adopted based upon a 'residential with home grown produce' as a precaution.
- 6.1.2 Assessment of laboratory test data has been carried out using published generic assessment criteria (GACs). The GACs act as screening values to provide a 'trigger' to an assessor that soil concentrations above these limits might present an unacceptable risk. Specific details regarding the published GAC sources chosen and any parameter refinements made are summarised within Appendix F, along with the order of preference where multiple GAC sources are available.
- 6.1.3 Asbestos does not currently have published GACs which can be used for generic assessment purposes, at this stage a present / absent trigger limit has been adopted.
- 6.1.4 A table analysing the test data is presented in Appendix F, and the following table summarises the outcome of the analysis.

Receptor group	CLEA model	Inorganic contaminants	Organic contaminants
Residential users (child)	Residential with plant uptake	No exceedances	No exceedances

Table 6-A: Summary of chemical analysis

- 6.1.5 In addition, no asbestos was detected within the reworked Topsoil sample analysed and no suspected asbestos containing materials were observed during the site works.
- 6.1.6 Based on the above, the testing indicates that the Topsoil in-situ would be chemically suitable for reuse onsite, or offsite within a residential development.

6.2 Basic Construction Operative Risk Assessment

- 6.2.1 The Topsoil/Made Ground deposits are not considered to present a significant contamination risk to construction operatives.
- 6.2.2 Standard hygiene precautions and dust mitigation is, as is good practice on any redevelopment site, recommended throughout the construction phase.

6.3 Waste Disposal

- 6.3.1 Sampling has been undertaken to characterise the in-situ soils encountered on site for the potential disposal to landfill. The classification of soils for disposal to landfill is undertaken in accordance with WM3 (v1.2GB), and a Waste Acceptance Criteria assessment (WAC) undertaken in accordance with the limits in Annex II of the Landfill Directive (Directive 1999/31/EC).
- 6.3.2 A single composite sample of the Made Ground was obtained using soils from the eastern exploratory locations where a thicker deposit containing a higher quantity of anthropogenic material was observed. This composite sample has been referenced as WAC01.

- 6.3.3 The assessment sheets are enclosed within Appendix G, and a summary of the findings is presented in the table below.

Potential waste population	Hazardous classification (LoW code)	Landfill classification
Topsoil	Non-Hazardous	Topsoil is typically unsuitable for disposal to inert landfill sites due to high organic carbon content.
Made Ground (WAC01)	Hazardous (17-05-03*)	Soils characterised as hazardous waste due concentrations of TPH (HP7 and HP11) and exceed the hazardous waste threshold for disposal to landfill due to elevated TOC. However, no visual or olfactory evidence of hydrocarbon contamination was noted, and TOC values over the limit value may be accepted as stable non-reactive hazardous waste (SNRHW) based on dissolved organic carbon (DOC) values falling below the respective limit value. Landfill operator should be contacted to determine acceptance.
Natural soils	Non-Hazardous (17-05-04)	Inert based on soils being of natural origin and unaffected by artificial contamination.

Table 6-B: Summary of waste characterisation

- 6.3.4 It would be prudent to pass these results onto a landfill operator to determine acceptance at the earliest opportunity. This is a preliminary assessment only and further testing would be prudent to determine more accurately the characterisation of the waste and landfill disposal options.

6.4 Materials Management

- 6.4.1 In terms of the development, where reasonably practicable, landfill disposal should be minimised through the reuse of site-won materials on site, or off-site transfer of surplus soils to other development schemes or Soil Treatment Facilities. Early consideration of the site's overall material balance at the design stage is also critical in reducing the need for off-site disposal, limiting costs, and increasing the overall sustainability of the development.
- 6.4.2 Where Made Ground soils are to be reused onsite or materials transferred between sites, a Materials Management Plan (MMP) or Waste Exemption is recommended.
- 6.4.3 The process of an MMP allows soils that are suitable for reuse and have a certainty of use to not be considered a waste, and therefore not fall under the waste regulations. This scheme is self-regulated within the industry and is supported in principle by the Environment Agency.

7 Geotechnical Discussion

7.1 Scheme Overview

7.1.1 The following assessments are made on the investigatory data presented in the preceding sections of this report and are made with reference to the specific nature of the development. Should scheme proposals change then it is recommended that the validity of the conclusions of this report in relation to the revised scheme are checked.

7.1.2 The project will comprise construction of a 11v11 3G LED Floodlit Artificial Grassed Pitch (AGP). In view of the scheme proposals, the geotechnical elements considered in this report are outlined below:

- a) Floodlight and pitch foundations
- b) Drainage

7.2 Key Geotechnical Issues

7.2.1 In view of the ground conditions, the following list summarises the key geotechnical issues that may impact the scheme and will therefore need to be appropriately managed during the lifecycle of the project:

- Low strength ground
- Made Ground in the eastern part of site
- Groundwater

7.3 Made Ground

7.3.1 Made Ground deposit in the eastern part of the site is deeper than other areas of the site. Such deposits are not considered suitable for supporting concentrated foundation loads due to the variable composition/strength and compressible nature. Accordingly, foundations should extend, as a minimum, through such deposits.

7.4 Low Strength and Compressible Ground

7.4.1 In addition to the above, The Tidal Flat Deposits underlying the site are considered unsuitable for supporting concentrated foundation loads due to the low strength and compressible nature. Insitu SPT and shear strength testing within Tidal Flat deposits indicates the presence of very soft material, with frequent occurrences of the SPT test equipment sinking under self-weight of the equipment. Hand held shear strength testing was also unachievable in places within the very soft organic material.

7.4.2 As such, an alternative foundation solution comprising piles or utilising ground improvement techniques will be required.

7.5 Made Ground

7.5.1 Made Ground deposit in the eastern part of the site is deeper than other areas of the site. Such deposits are not considered suitable for supporting concentrated foundation loads due to the variable composition/strength and compressible nature. Accordingly, foundations should extend, as a minimum, through such deposits.

7.6 Groundwater

- 7.6.1 It is anticipated that groundwater will be encountered during excavations, with groundwater likely to be standing at approximately 1.5-2.0 m bgl.
- 7.6.2 Groundwater levels are expected to vary seasonally and in response to weather events.

7.7 Foundation Strategy

- 7.7.1 In view of the key geotechnical issues discussed above and anticipated loadings the following foundation types are considered suitable for the project;
- Piles
 - Ground improvement

7.8 Floodlight Foundations - Piling

- 7.8.1 Borehole investigations across the site suggest that underlying soft and compressible Tidal Flat Deposits extend beyond depths of 5.45 m. BGS data in the area suggests the underlying bedrock of the Mercia Mudstone is present around 10 m bgl. As such piled foundations would be necessary, or some form of ground improvement (such as dynamic compaction, rapid impact compaction or controlled modulus columns) in order to provide suitable support to the development and allowing adoption of shallow foundations for floodlights. The latter options would need specialist input.
- 7.8.2 A driven/bored piled solution would transmit superstructural loads down through the Made Ground and Tidal Flats into the underlying Mercia Mudstone Formation deposits at depth to obtain end bearing and shaft adhesion support.
- 7.8.3 It is recommended the type, design and installation of the piles are determined by a specialist piling contractor who has experience in pile installation in these or similar ground conditions and may be able to interpret the observed ground conditions in a different and potentially more beneficial manner.
- 7.8.4 Alternatively, ground improvement solutions could be considered to minimise settlement below floodlight foundations. Should an alternative approach to foundation design be considered, it is recommended the advice of a ground improvement specialist is sought ahead of design.
- 7.8.5 It is also possible that further site investigation would be required to facilitate design of a piled foundation or ground improvement solution, comprising of deeper boreholes to establish design parameters ahead of construction.

7.9 Artificial Pitch Foundations

- 7.9.1 It is anticipated the proposed AGP will be located at or about existing ground levels, with the formation spanning between naturally deposited Tidal Flat deposits to the west of the site, and Made Ground deposits to the east of the site, following removal of any Topsoil type material. Under applied loading, such soils may consolidate at differing rates.
- 7.9.2 CBR value has been determined for the proposed AGP using in-situ Dynamic Cone Penetrometer testing following the methodology defined by the Highways England Document CS229 Data for Pavement Assessment. The results are presented in Appendix C and the location of test positions are shown on Drawing 01.

- 7.9.3 Based on the anticipated founding depth and DCP results, a CBR design value of 5% can be adopted for soils that are likely to be representative of those which remain at or near pitch formation levels. It should be noted that values for Made Ground in the east of the site range from 12.6% to 39.8%.
- 7.9.4 It is recommended that the formation level is trimmed and rolled following the requirements outlined in the Specification for Highway Works Series 600. Such a process will identify any soft/loose areas, which should either be excavated out and backfilled with a suitable well compacted material similar to those exposed in the sides of the resulting excavation, or large cobbles of a good quality stone rolled into the formation to stabilise the 'soft/loose' area.
- 7.9.5 In addition, a geosynthetic reinforcement should be incorporated into the formation to prevent excessive levels of differential settlement manifesting in the pitch surfacing due to consolidation of the underlying soft Tidal Flat Deposits, particularly given the potentially shallow groundwater table at site (c.1.5-2.0 m bgl). This will also minimise the potential effects of differential settlement between the Made Ground and Tidal Flat deposits.
- 7.9.6 Alternatively, increasing and homogenising the strength of the Tidal Flat Deposits through ground improvement techniques such as permeation grouting/lime & cement stabilisation could be undertaken. These are notably expensive and would require specialist input at the feasibility stage.

7.10 Drainage

- 7.10.1 In situ permeability testing has been undertaken at the site in accordance with BS EN ISO 22282 Geotechnical investigation and testing – Geohydraulic testing (2012). The results are presented in Appendix C.
- 7.10.2 The Tidal Flat Deposits were encountered as a cohesive material. Indicative permeability testing (falling head test) was undertaken in WLS03 between depths of 1.18m and 3.0m, however, insufficient infiltration was observed over 95 minutes of monitoring to accurately calculate a soil infiltration rate.
- 7.10.3 As a result, such soils are considered to be effectively impermeable for the purposes of drainage design. On this basis, disposal of stormwater via a soakaway is not considered viable.
- 7.10.4 As an alternative, it is possible that the AGP drainage could key into the existing surface water drainage system currently used by the adjacent AGP/sports centre. If this is considered an option for the development a comprehensive drainage assessment will be required to determine the potential impact on the capacity of the existing systems, to identify the invert levels of existing features, and to confirm drainage gradients achievable across the proposed AGP area.
- 7.10.5 Drainage ditches exist along the eastern and southern boundary of the proposed AGP and could be utilised as a surface water disposal point, subject to relevant permissions being sought (refer to Figure 7-A).



Figure 7-A: Drainage ditch adjacent the southern boundary of the existing grassed pitch

7.11 Aggressiveness of the Ground to Buried Concrete

- 7.11.1 The aggressiveness of the ground with respect to buried concrete has been assessed in accordance with Building Research Establishment Special Digest 1: Concrete in Aggressive Ground Third Edition (2005).
- 7.11.2 The site is interpreted to be a brownfield site where pyrite is likely to be present.
- 7.11.3 The proposed foundations will extend into previously undisturbed soils that contain pyrite. Excavating to form a foundation does not create 'disturbed' ground as defined in BRE SD-1. However any arisings resulting from foundation excavation or replacement piling for example would be classified as 'disturbed' ground. Accordingly, the amount of oxidizable sulphides has also been considered when categorising the strata.
- 7.11.4 The classification of the strata is tabulated below:

Stratum	Disturbed / Undisturbed	Design sulphate class	Aggressive chemical environment for concrete class
Made Ground – eastern part of the site	Disturbed	DS-1	AC-1s
Tidal Flat Deposits	Disturbed	DS-4	AC-3s
	Undisturbed	DS-1	AC-1s

Table 7-A: Summary of the aggressiveness of the ground to buried concrete

- 7.11.5 It should be noted that where concrete is in contact with more than one soil type then the most onerous DS and ACEC classification should be adopted.

8 Recommendations for Further Works

- 8.1.1 If a piled foundation solution is adopted for the proposed floodlighting, it is recommended this investigation is supplemented with further onsite deeper boreholes providing parameters to facilitate design and construction.
- 8.1.2 If ground improvement (such as dynamic compaction, rapid impact compaction or controlled modulus columns) is utilised, potentially allowing adoption of shallow foundations, or lime/cement stabilisation is utilised below the proposed pitch/car park, specialist input at an early stage is recommended.
- 8.1.3 It would be prudent to pass the waste characterisation results onto a landfill operator to determine acceptance at the earliest opportunity. This is a preliminary assessment only and further testing would be prudent to determine more accurately the characterisation of the waste and landfill disposal options.

Appendix A Drawings



- Key:
- Site Boundary
 - Windowless Sampling Borehole
 - Dynamic Cone Penetrometer Test
 - Infiltration Test

Notes

- 1) Base image provided by Google.
- 2) All drawn features are approximate.

Contains OS data © Crown copyright [and database right] [2024]
Map data © 2024 Google

A	Dec 2025	First issue
REV	DATE	COMMENT ON VARIATION

soiltechnics
environmental • geotechnical • building fabric

PROJECT
Dragon Park, Newport

TITLE
Exploratory Hole Plan

DRAWING No.
STX7242-D01-A

Appendix B Exploratory Hole Logs

Key to legends

Composite materials, soils and lithology							
	Topsoil		Made Ground		Boulders		Chalk
	Clay		Coal		Cobbles		Concrete
	Gravel		Limestone		Mudstone		Peat
	Sand		Sandstone		Silt		Siltstone

Note: Composite soil types are signified by combined symbols.

Key to 'test results' and 'sampling' columns

Test result		From (m) To (m)	Records depth of sampling	
Depth	Records depth that the test was carried out (i.e.: at 2.10m or between 2.10m and 2.55m)		D	Disturbed sample
			B	Bulk disturbed sample
			ES	Environmental sample
			SPTLS	SPT liner sample
		Type	W	Water sample
			U	Undisturbed thick-walled sample 100mm diameter sampler
			UT	Undisturbed thin walled sample 100mm diameter sampler
			UTF	Failed undisturbed sample
Result	PP – Pocket penetrometer result reported as an equivalent undrained shear strength (kN/m²) by applying a factor of 50. SV – Hand held shear vane result reported as an undrained shear strength (kN/m²). Where multiple readings are taken at the same level the average value is shown on the log. * Signifies that instrument limit reached. SPT – Standard Penetration Test result (N value uncorrected)^{1,2,3} SPT(c) – Standard Penetration Test result (solid cone) (N value) (uncorrected)^{1,2,3} * Signifies that the test was terminated before full penetration was achieved. UT – Undisturbed sample 100mm diameter sampler with number of blows of driving equipment required to obtain sample			
Sampling				

Note 1: Total seating blows recorded in brackets.

Note 2: Casing depth records depth of casing when SPT or SPT(c) was carried out.

Note 3: Water depth records depth of water when SPT or SPT(c) was carried out.

Water observations

Described at foot of log and shown in the 'water strike' column.

▼ Water level observed after specified delay in drilling

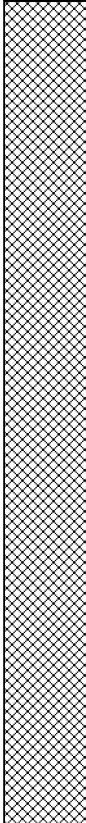
▽ Water strike

Density

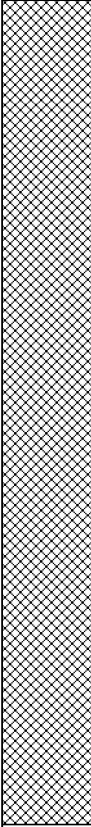
Density recorded in brackets determined by qualitative field assessment or inferred from density testing and soil descriptions from across the site (i.e.: [Medium dense]).

Installation details

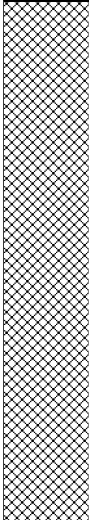
	Gravel filter		Bentonite
	Slotted pipe		Unslotted pipe
	Arisings		Grout
	Extensometer magnet		Vibrating wire piezometer

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING																																											
	DESCRIPTION	DEPTH (m)	REDUCED LVL (mOD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE																																									
	Grass onto brownish grey slightly gravelly sandy CLAY with frequent rootlets. Gravel is fine to medium subangular to subrounded quartzite and sandstone. (TOPSOIL)	0.10				S 1.20	(5) 11			PP 0.60	PP 92	0.25	1.30	ES																																									
	Firm grey mottled orangish brown slightly sandy slightly gravelly CLAY. gravel is fine to coarse concrete, sandstone, quartzite and fragments of animal bone. (MADE GROUND)	0.40													S 2.00	(2) 7	PP 1.20	PP 88	0.65	D																																			
	Firm grey mottled reddish brown slightly sandy CLAY. (TIDAL FLAT DEPOSITS)																				PP 1.50	PP 129	1.20	1.30	D																														
																										PP 1.70	PP 54	1.75																											
	Soft grey silty CLAY with occasional relict rootlets. Faint organic odour noted throughout strata. (TIDAL FLAT DEPOSITS)	1.75																													PP 1.90	PP 38	1.90																						
	...between 1.95m and 2m depth, band of amorphous PEAT																																			PP 2.20	PP 38	2.20	2.30	D															
																																									PP 2.55	PP 29	2.55												
	Soft blueish grey CLAY with relict plant matter. Organic odour throughout. (TIDAL FLAT DEPOSITS)	2.55																																												PP 2.85	PP 50	2.80	2.90	D					
	...between 2.95m and 3m depth, band of amorphous PEAT																																																		S 3.00	(3) 6			
																																																							
Very soft dark brown amorphous PEAT. Organic odour noted throughout strata. (TIDAL FLAT DEPOSITS)	3.65		S 5.00	(3) 6																																																			
Very soft blueish grey clayey slightly sandy SILT with relict plant matter. Organic odour noted throughout strata (TIDAL FLAT DEPOSITS)	4.00							4.80	4.90		D																																												
																																																							
																																																							
																																																							

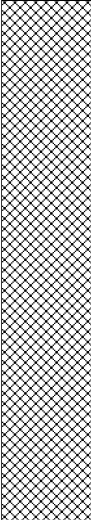
Notes Service avoidance pit excavated to 1.2 m depth. Terminated at scheduled depth.	Groundwater observations						Recovery details		Title		Date(s)
	Strike (m)	5mins	10mins	15mins	20mins	Comments	Range (m)	% Recv	Dynamic windowless sampling record		22/10/2025
	3.00					Standing at 1.9m after 1 hour	0.00 - 1.20	100	Method Dynamic windowless sample	Plant used Dando terrier	Sheet number Sheet 1 of 1
							1.20 - 2.00	100			Level (m OD) -
							2.00 - 3.00	95			
							3.00 - 4.00	75			
							4.00 - 5.00	50			
									Co-ordinates -	Status FINAL	WLS01

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (mOD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass onto brownish grey slightly gravelly sandy CLAY with frequent rootlets. Gravel is fine to medium subangular to subrounded quartzite and sandstone. (TOPSOIL)	0.10 0.30				S 1.00	(2) 6							
	[Medium dense] brownish grey slightly gravelly clayey fine to coarse SAND. Gravel is fine to coarse concrete, sandstone and quartzite. (MADE GROUND)									PP 1.00	PP 25	0.65		ES
	[Medium dense] dark grey clayey gravelly fine to coarse SAND. Gravels are fine to coarse angular to subrounded brick, glass, concrete and sandstone. (MADE GROUND)	1.10								PP 1.30	PP 25	1.30		D
	...at .8m depth, frequent cobbles of sandstone.									PP 1.60	PP 67			
	Soft to firm grey mottled orangish brown slightly sandy CLAY. (TIDAL FLAT DEPOSITS)									PP 1.80	PP 46			
	...between 1.8m and 1.9m depth, band of fine to medium sand and gravel	1.90				S 3.00	(1) 3			PP 2.30	PP 25			
	Very soft blueish grey slightly sandy silty CLAY with occasional relict rootlets. Faint organic odour noted throughout strata. (TIDAL FLAT DEPOSITS)									PP 2.60	PP 25	2.70	2.80	D
										PP 2.80	PP 25			
														
														
	Very soft blueish grey CLAY with relict plant matter and organic odour throughout. (TIDAL FLAT DEPOSITS)	3.50								PP 3.50	PP 21	3.80	3.90	D
	...between 3.5m and 3.6m depth, band of amorphous PEAT.													
	...between 4.25m and 4.35m depth, band of amorphous PEAT													
	Very soft dark brown amorphous PEAT. Organic odour noted throughout strata. (TIDAL FLAT DEPOSITS)	4.50										5.00	5.45	D
	BOREHOLE TERMINATED AT 5.45m	5.45												

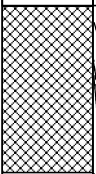
Notes Service avoidance pit excavated to 1.2 m depth. Terminated at scheduled depth.	Groundwater observations						Recovery details		Title		Date(s)
	Strike (m)	5mins	10mins	15mins	20mins	Comments	Range (m)	% Recv	Dynamic windowless sampling record		22/10/2025
	1.80					Water standing at 3.5m upon c	0.00 - 1.20	100	Method Dynamic windowless sample	Plant used Dando terrier	Sheet number Sheet 1 of 1
							1.20 - 2.00	95			
							2.00 - 3.00	90	Level (m OD) -	Logged by LE	Revision A
							3.00 - 4.00	100			
							4.00 - 5.00	55	Co-ordinates -	Status FINAL	WLS02

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (mOD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass onto brownish grey slightly gravelly sandy CLAY with frequent rootlets. Gravel is fine to medium subangular to subrounded quartzite and sandstone. (TOPSOIL)	0.10				S 1.20	(2) 4			PP 0.50 PP 0.90 PP 1.30 PP 1.50 PP 2.70	PP 92 PP 113 PP 46 PP 21	0.00 0.90 1.60 2.60	ES D D D	
	Firm grey mottled orangish brown slightly gravelly sandy CLAY. Gravel is fine to medium sandstone and quartzite. (MADE GROUND)	0.35												
	Firm grey mottled orangish brown slightly sandy CLAY with occasional relict rootlets. (TIDAL FLAT DEPOSITS)													
	...at 1.2m depth, slow water seepage at the base of service avoidance pit													
	Soft to very soft grey slightly sandy silty CLAY with occasional relict rootlets. Faint organic odour noted throughout strata. (TIDAL FLAT DEPOSITS)	1.65												
...between 2.8m and 2.9m depth, band of amorphous PEAT														
	BOREHOLE TERMINATED AT 3.45m	3.45					S 3.00	(3) 6						

Notes Service avoidance pit excavated to 1.2 m depth. Terminated at scheduled depth.	Groundwater observations						Recovery details		Title		Date(s)
	Strike (m)	5mins	10mins	15mins	20mins	Comments	Range (m)	% Recv	Dynamic windowless sampling record		22/10/2025
	1.79						0.00 - 1.20	100	Method Dynamic windowless sample	Plant used Dando terrier	Sheet number Sheet 1 of 1
							1.20 - 2.00	100			
							2.00 - 3.00	100	Level (m OD) -	Logged by LE	Revision A
									Co-ordinates -	Status FINAL	WLS03

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (mOD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass onto brownish grey slightly gravelly sandy CLAY with frequent rootlets. Gravel is fine to medium subangular to subrounded quartzite and sandstone. (TOPSOIL)	0.10												
		0.30												
	Firm greyish brown sandy slightly gravelly CLAY. Gravel is fine to coarse concrete, sandstone, quartzite. (MADE GROUND)	0.65										0.50		D
	[Medium dense] Reddish brown clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse concrete, sandstone, quartzite. (MADE GROUND)	0.80								PP 0.90	PP 92	0.90		D
		1.20								PP 1.10 PP 1.15	PP 117 PP 50			
	Soft to firm dark grey slightly sandy gravelly CLAY. Gravels are fine to coarse angular to subrounded brick, glass, concrete and sandstone. (MADE GROUND)									PP 1.40	PP 25			
												1.70	1.80	D
	Firm blueish grey mottled reddish brown slightly sandy CLAY. (TIDAL FLAT DEPOSITS)													
	Soft grey slightly sandy silty CLAY with occasional relict rootlets. (TIDAL FLAT DEPOSITS)	2.00				S 2.00	(1) 2							
	...between 1.5m and 1.75m depth, band of amorphous PEAT									PP 2.40	PP 25	2.40	2.50	D
	Very soft blueish grey silty CLAY with relict rootlets and faint organic odour throughout. (TIDAL FLAT DEPOSITS)									PP 2.60	PP 29			
						S 3.00	(1) 1					3.00	3.45	D
	BOREHOLE TERMINATED AT 3.45m	3.45												

Notes Service avoidance pit excavated to 1.2 m depth. Terminated at scheduled depth.	Groundwater observations						Recovery details		Title		Date(s)
	Strike (m)	5mins	10mins	15mins	20mins	Comments	Range (m)	% Recv	Dynamic windowless sampling record		22/10/2025
	2.00					Water standing at 1.75 upon c	0.00 - 1.20	100	Method Dynamic windowless sample	Plant used Dando terrier	Sheet number Sheet 1 of 1
							1.20 - 2.00	100			
							2.00 - 3.00	85	Level (m OD) -	Logged by LE	Revision A
									Co-ordinates -	Status FINAL	WLS04

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (MOD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass onto brownish grey slightly gravelly sandy CLAY with frequent rootlets. Gravel is fine to medium subangular to subrounded quartzite and sandstone. (TOPSOIL)	0.10												
	Firm grey mottled orangish brown sandy slightly gravelly CLAY. Gravel is fine to coarse concrete, sandstone, quartzite and fragments of animal bone. (MADE GROUND)	0.35 0.45												
	[Medium dense] reddish brown slightly clayey gravelly medium to coarse SAND. Gravel is fine to coarse angular to subrounded concrete, sandstone and rare bone. (MADE GROUND) ...between 0.35m and 0.45m depth, reddish brown and gravelly	1.10												
	Firm grey mottled reddish brown slightly sandy CLAY. (TIDAL FLAT DEPOSITS)													
	BOREHOLE TERMINATED AT 1.10m													

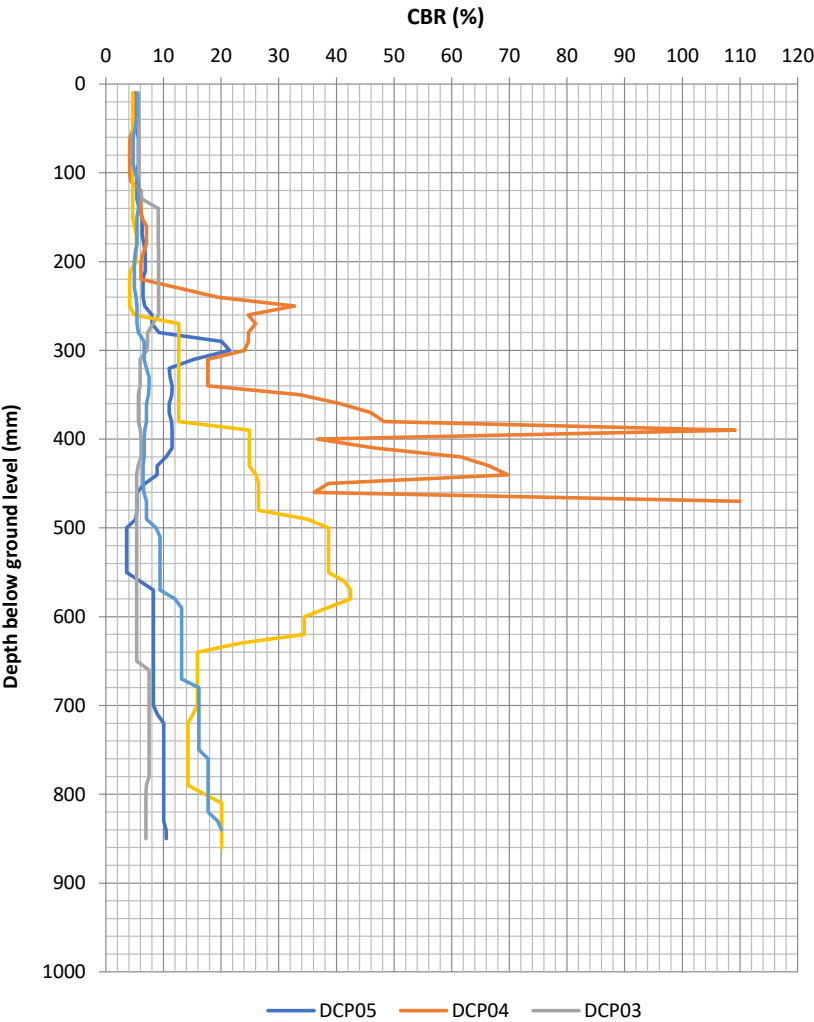
Notes Terminated due to inability to undertake UXO clearance.	Groundwater observations						Recovery details		Title		Date(s)
	Strike (m)	5mins	10mins	15mins	20mins	Comments	Range (m)	% Recv	Dynamic windowless sampling record		22/10/2025
							0.00 - 1.10	100	Method Hand tools	Plant used Hand excavated	Sheet number Sheet 1 of 1
									Level (m OD) -	Logged by LE	Revision A
	No groundwater strike recorded									Co-ordinates -	Status FINAL

Appendix C In Situ Test Results

Dynamic Cone Penetrometer (DCP) summary

Location	Layer No.	CBR (%)	Thickness (mm)	Start depth (mmBGL)	Base depth (mmBGL)
DCP05	1	6.0	240	10	250
DCP05	2	9.1	600	250	850
DCP04	1	5.5	200	20	220
DCP04	2	39.8	250	220	470
DCP03	1	7.5	290	10	300
DCP03	2	6.2	550	300	850
DCP02	1	4.7	250	10	260
DCP02	2	12.6	120	260	380
DCP02	3	24.7	480	380	860
DCP01	1	6.0	490	10	500
DCP01	2	14.4	340	500	840

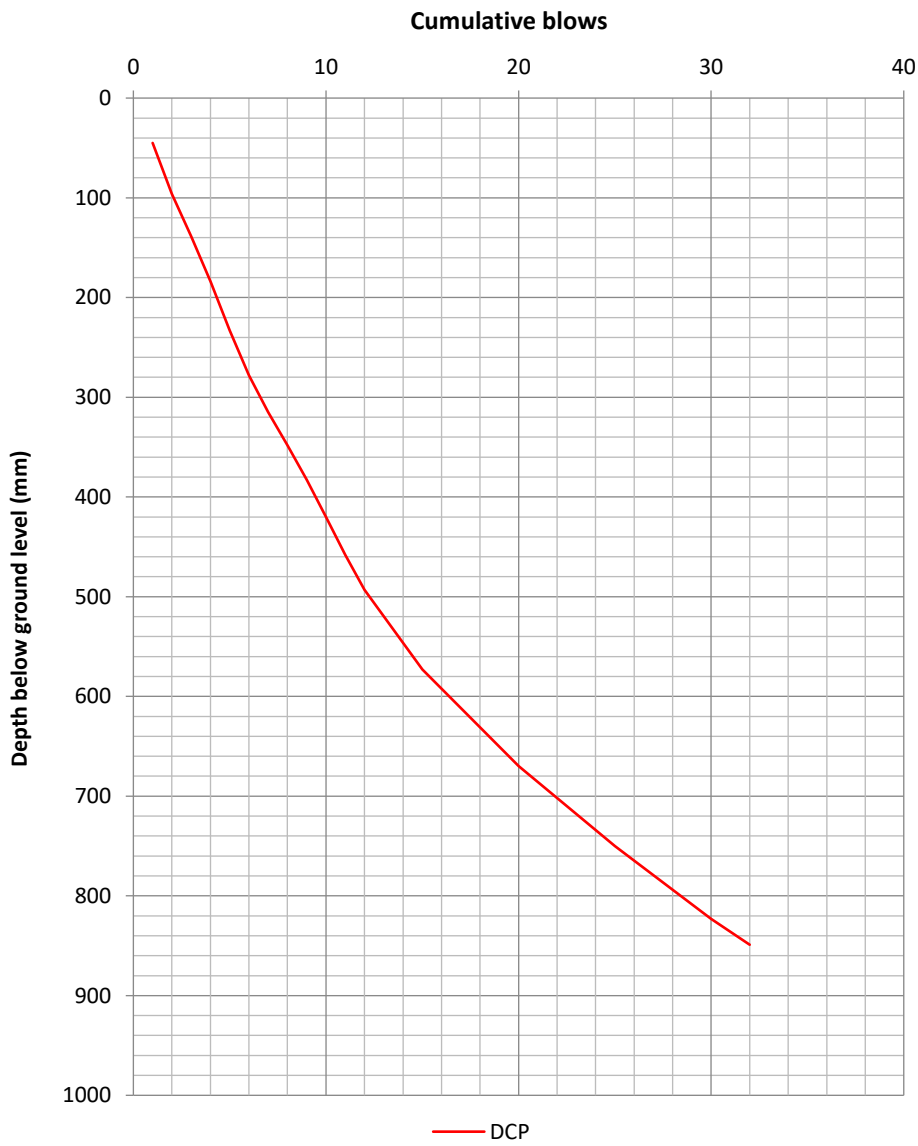
Plot showing CBR (%) against depth summary



Dynamic Cone Penetrometer (DCP) test

Location	Date of test	Start depth (mm)	Zero reading (mm)	Operator
DCP01	22/10/2025	0	60	

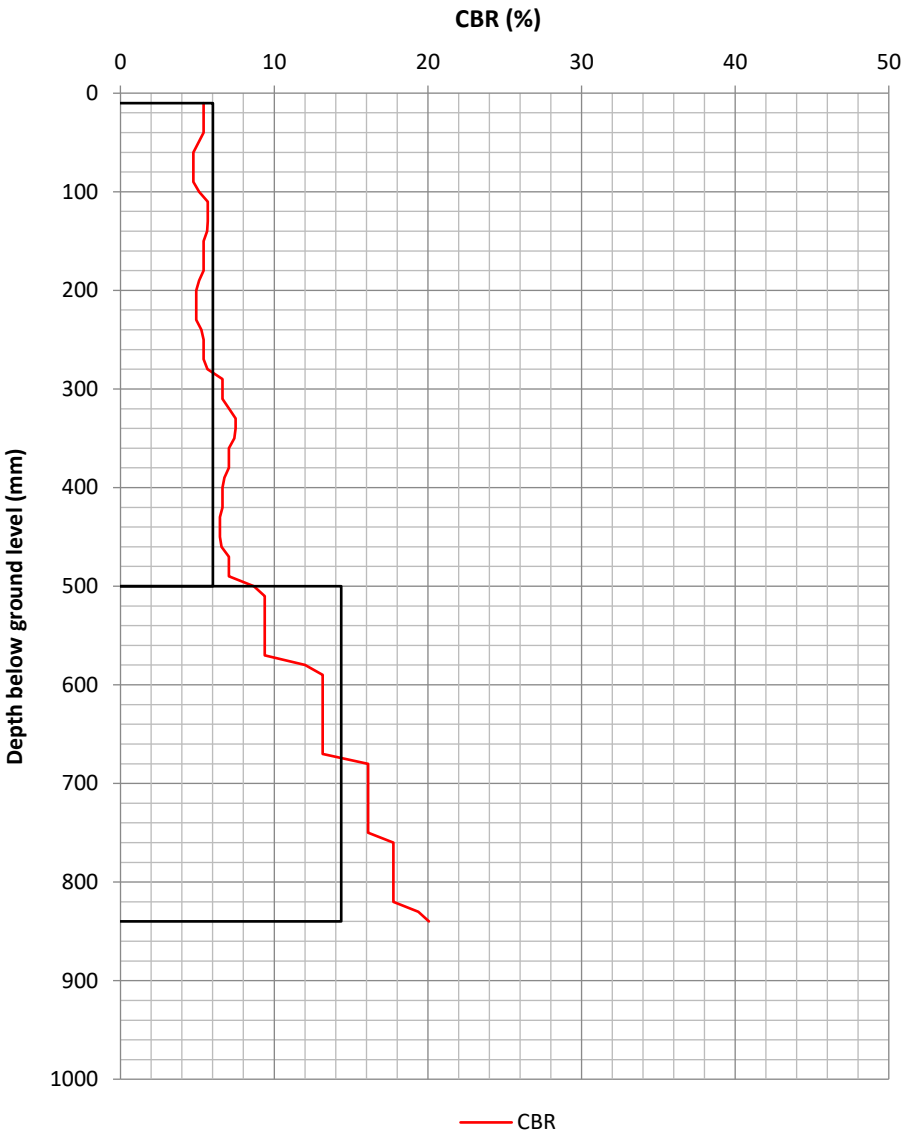
Plot showing number of blows against depth



Notes

1. Test procedure following Highways England Document CS229 Data for Pavement Assessment.

Plot showing CBR (%) against depth



Calculations

$\text{Log10 (Uncorrected (UC) CBR)} = 2.48 - 1.057\text{Log10}(\text{mm/blow})$

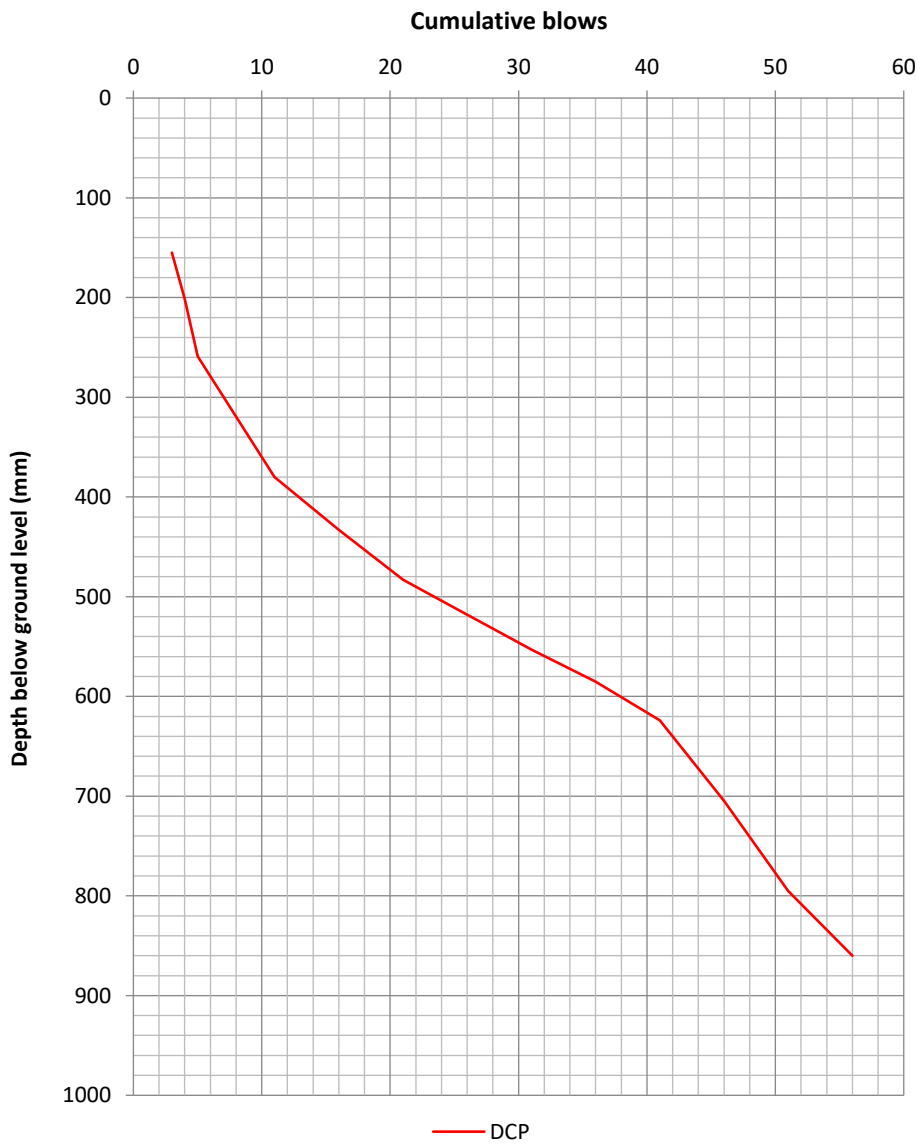
Layer properties

Layer No.	CBR (%)	Thickness (mm)	Start depth (mmBGL)	Base depth (mmBGL)
1	6.0	490	10	500
2	14.4	340	500	840

Dynamic Cone Penetrometer (DCP) test

Location	Date of test	Start depth (mm)	Zero reading (mm)	Operator
DCP02	22/10/2025	0	50	

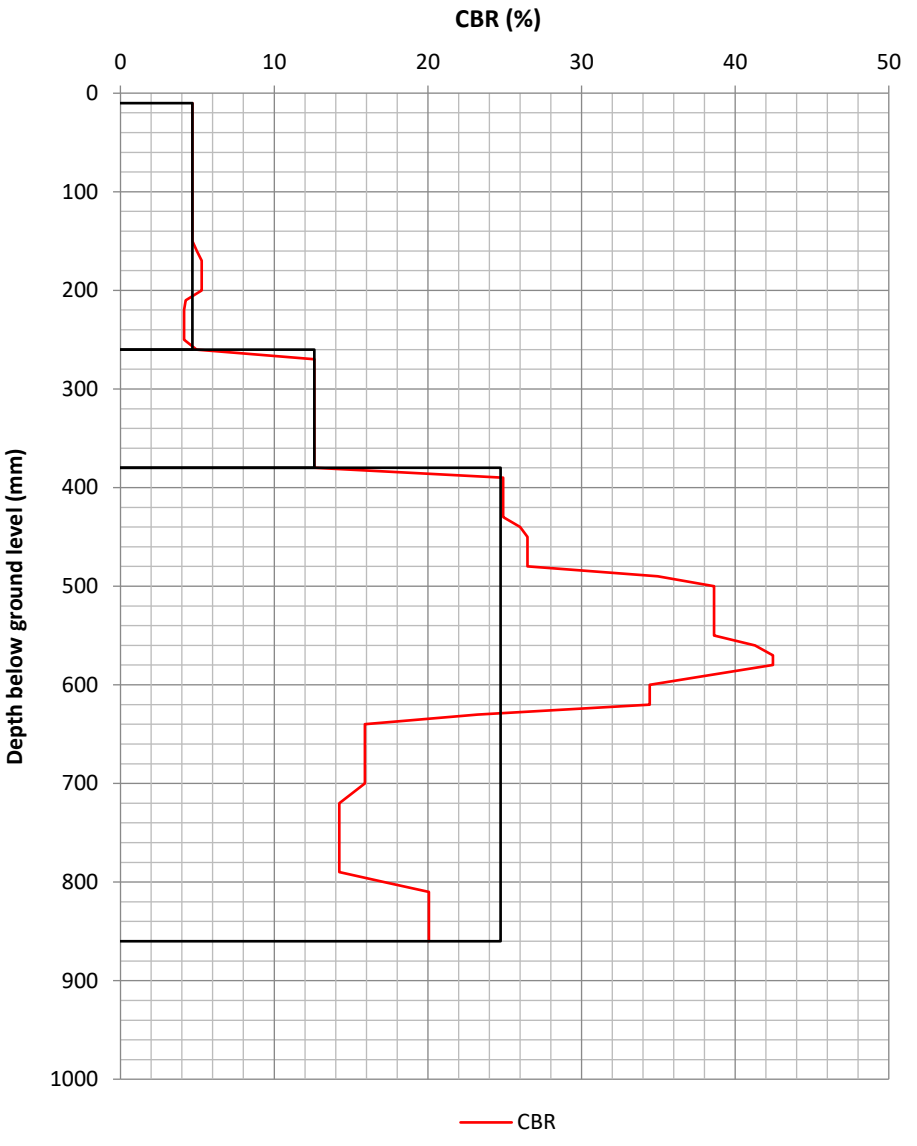
Plot showing number of blows against depth



Notes

1. Test procedure following Highways England Document CS229 Data for Pavement Assessment.

Plot showing CBR (%) against depth



Calculations

$\text{Log10 (Uncorrected (UC) CBR)} = 2.48 - 1.057\text{Log10}(\text{mm/blow})$

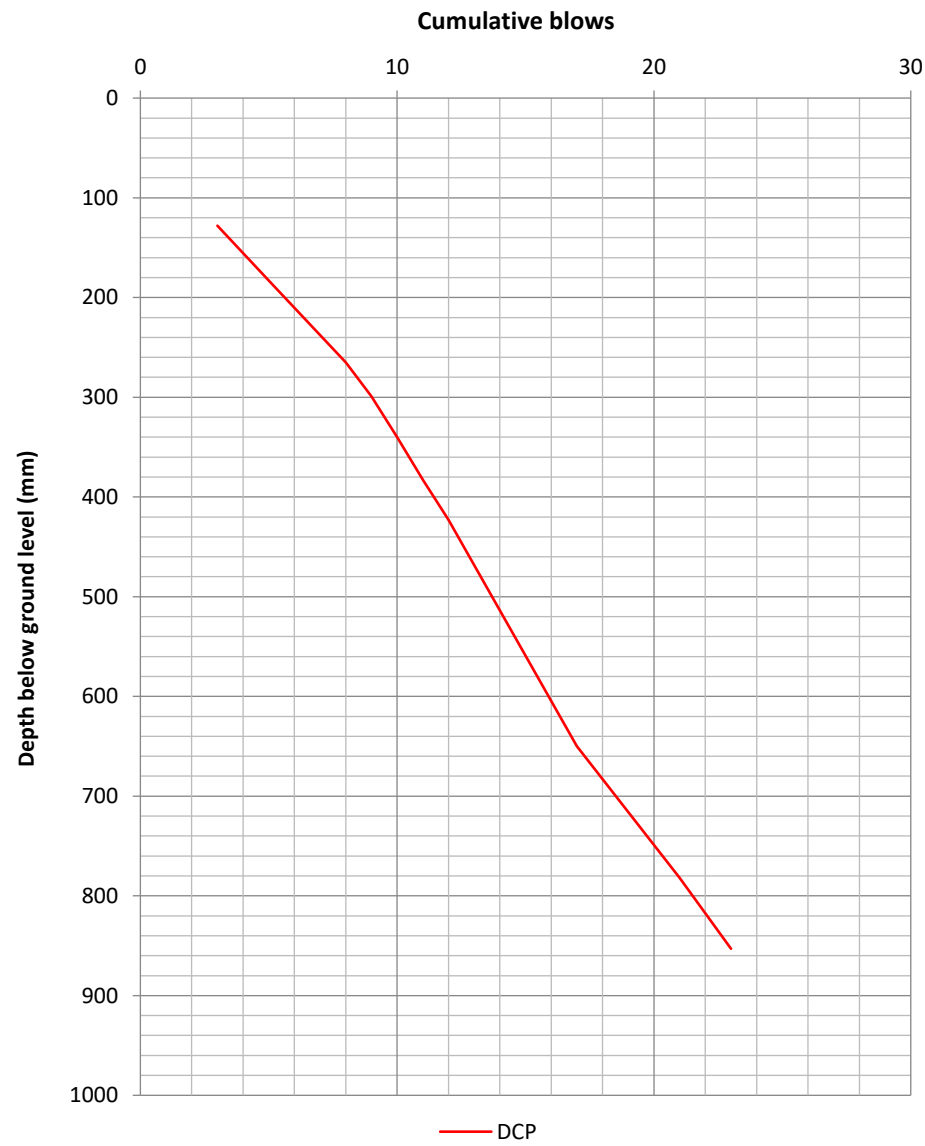
Layer properties

Layer No.	CBR (%)	Thickness (mm)	Start depth (mmBGL)	Base depth (mmBGL)
1	4.7	250	10	260
2	12.6	120	260	380
3	24.7	480	380	860

Dynamic Cone Penetrometer (DCP) test

Location	Date of test	Start depth (mm)	Zero reading (mm)	Operator
DCP03	22/10/2025	0	60	

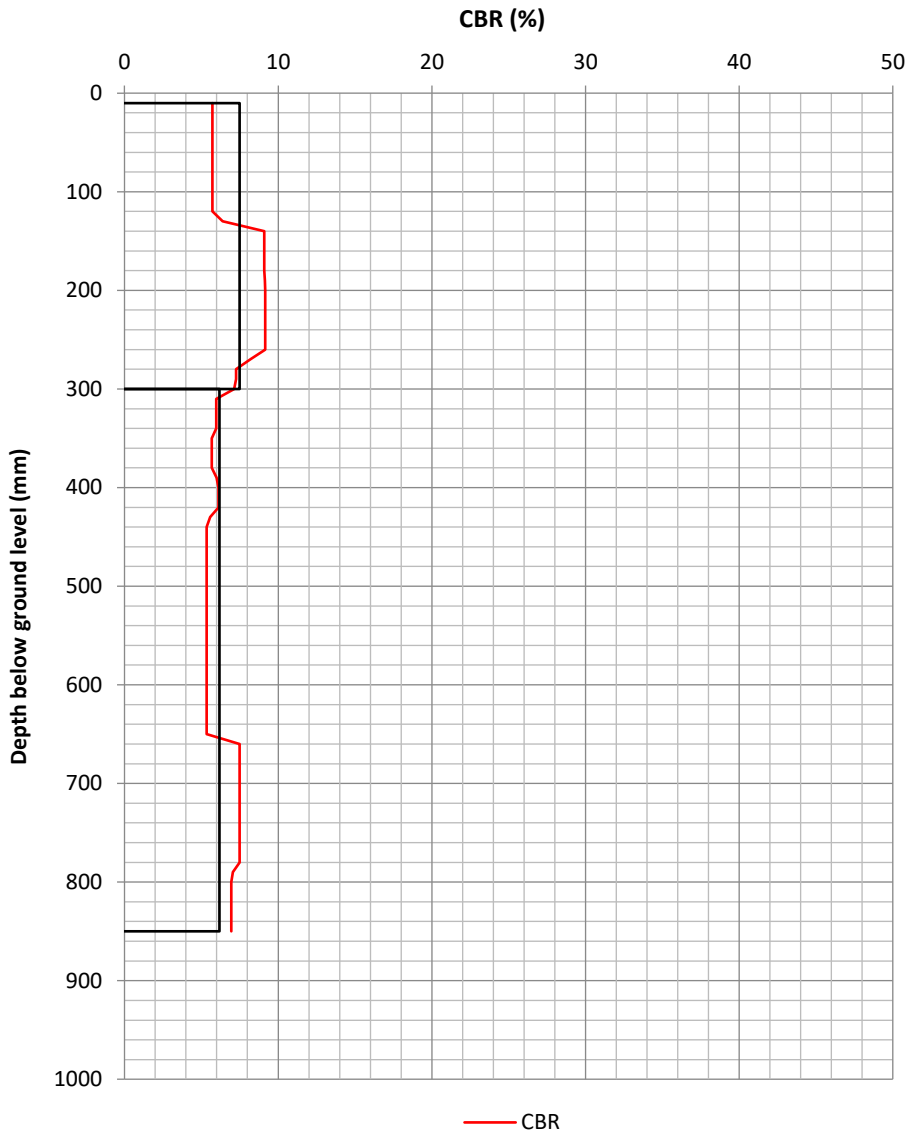
Plot showing number of blows against depth



Notes

1. Test procedure following Highways England Document CS229 Data for Pavement Assessment.

Plot showing CBR (%) against depth



Calculations

$\text{Log10 (Uncorrected (UC) CBR)} = 2.48 - 1.057\text{Log10}(\text{mm/blow})$

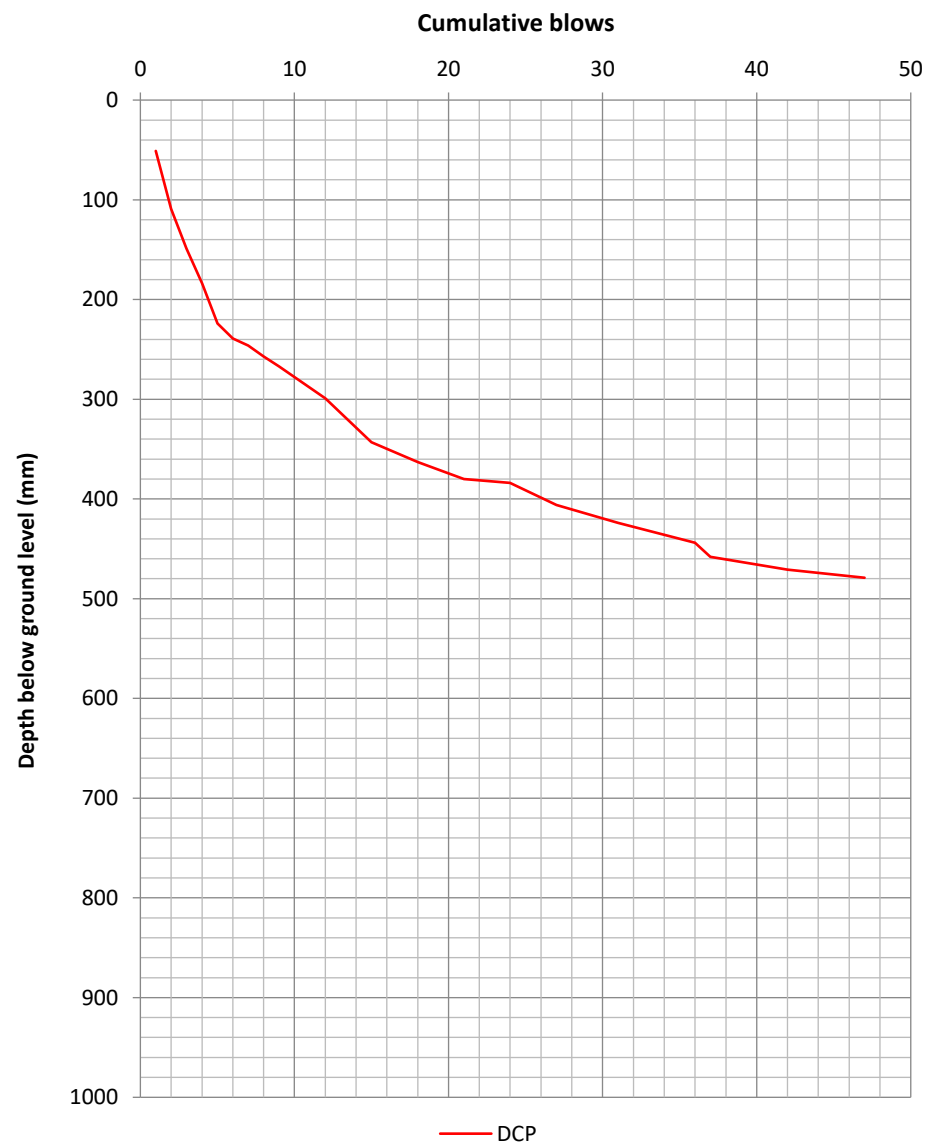
Layer properties

Layer No.	CBR (%)	Thickness (mm)	Start depth (mmBGL)	Base depth (mmBGL)
1	7.5	290	10	300
2	6.2	550	300	850

Dynamic Cone Penetrometer (DCP) test

Location	Date of test	Start depth (mm)	Zero reading (mm)	Operator
DCP04	22/10/2025	0	61	Engineer

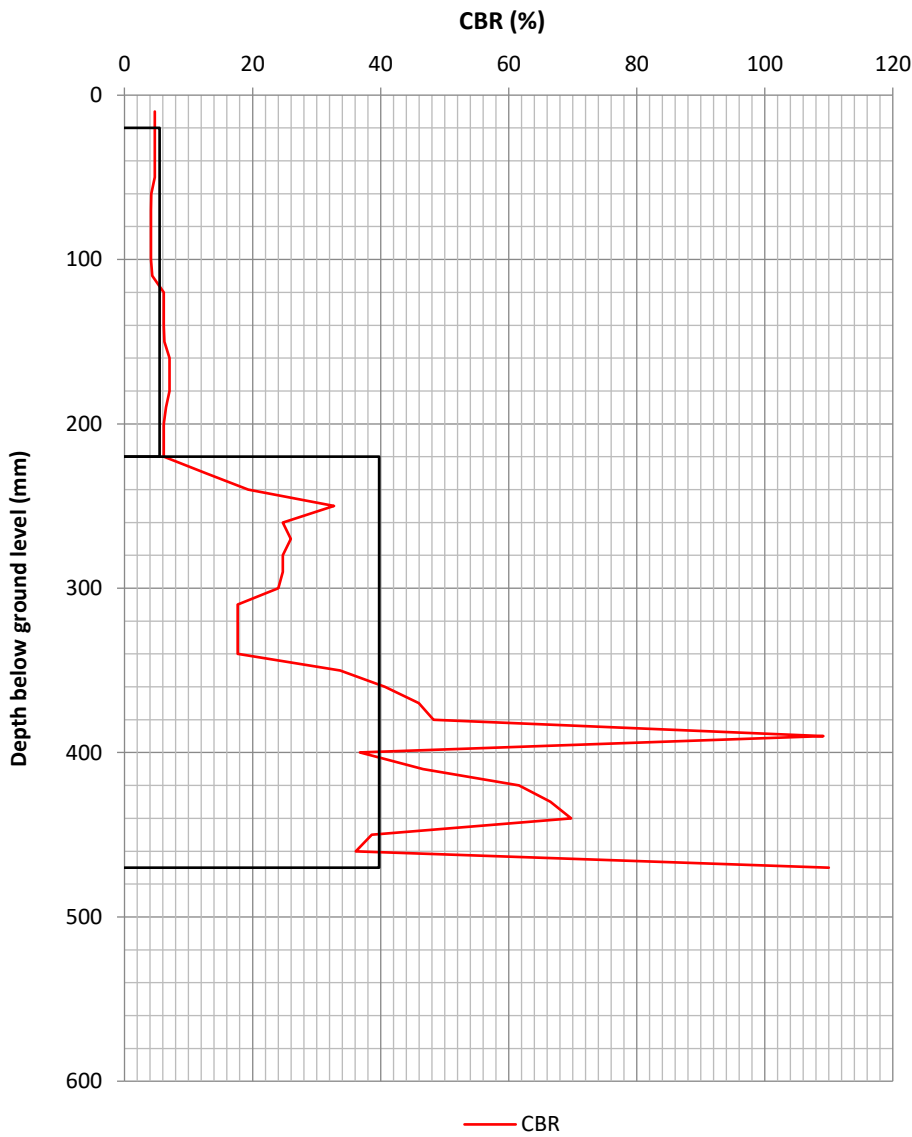
Plot showing number of blows against depth



Notes

1. Test procedure following Highways England Document CS229 Data for Pavement Assessment.

Plot showing CBR (%) against depth



Calculations

$\text{Log10 (Uncorrected (UC) CBR)} = 2.48 - 1.057\text{Log10}(\text{mm/blow})$

Layer properties

Layer No.	CBR (%)	Thickness (mm)	Start depth (mmBGL)	Base depth (mmBGL)
1	5.5	200	20	220
2	39.8	250	220	470

Dynamic Cone Penetrometer (DCP) test

Location	Date of test	Start depth (mm)	Zero reading (mm)	Operator
DCP05	22/10/2025	0	65	

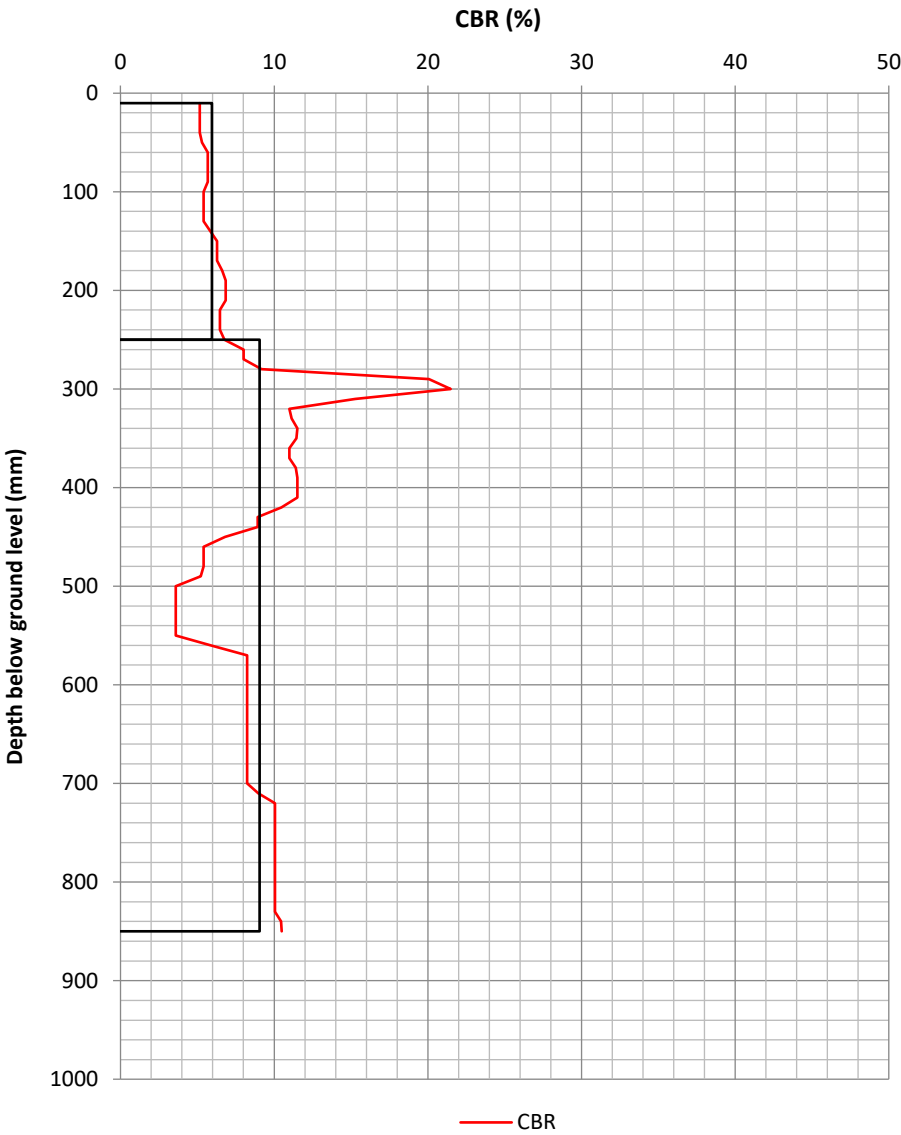
Plot showing number of blows against depth



Notes

1. Test procedure following Highways England Document CS229 Data for Pavement Assessment.

Plot showing CBR (%) against depth



Calculations

$\text{Log10 (Uncorrected (UC) CBR)} = 2.48 - 1.057\text{Log10}(\text{mm/blow})$

Layer properties

Layer No.	CBR (%)	Thickness (mm)	Start depth (mmBGL)	Base depth (mmBGL)
1	6.0	240	10	250
2	9.1	600	250	850

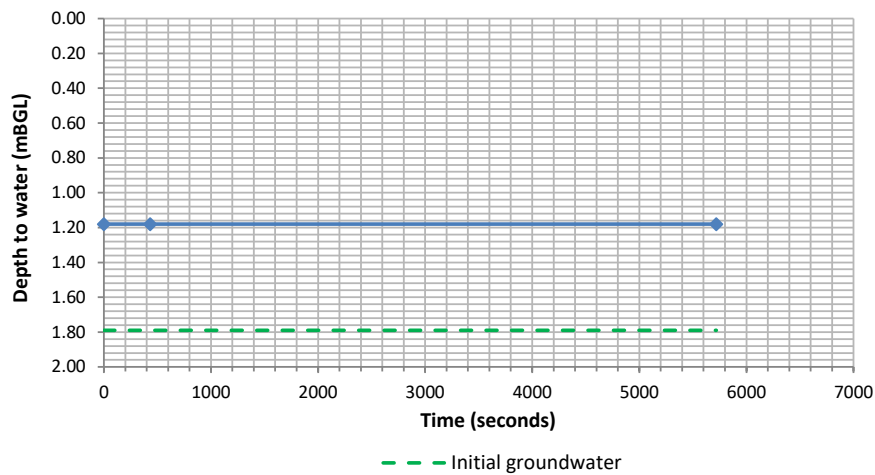
Permeability test in a borehole using open systems (BS EN ISO 22282-2:2012)

Location	Test number	Test method	Test system	Test date
WLS03	1	Falling Head	Open borehole	22/10/2025

Top of test section (m)	Bottom of test section (m)	Test section length (m)	Test diameter (m)
1.18	3.00	1.82	0.1

Variables at start of test

Groundwater (mBGL)	Water after injection (mBGL)	Change in head (m)
1.79	1.18	0.61



Insufficient infiltration over 95 minutes of monitoring, therefore unable to determine permeability.

Table summarising Pocket Penetrometer results

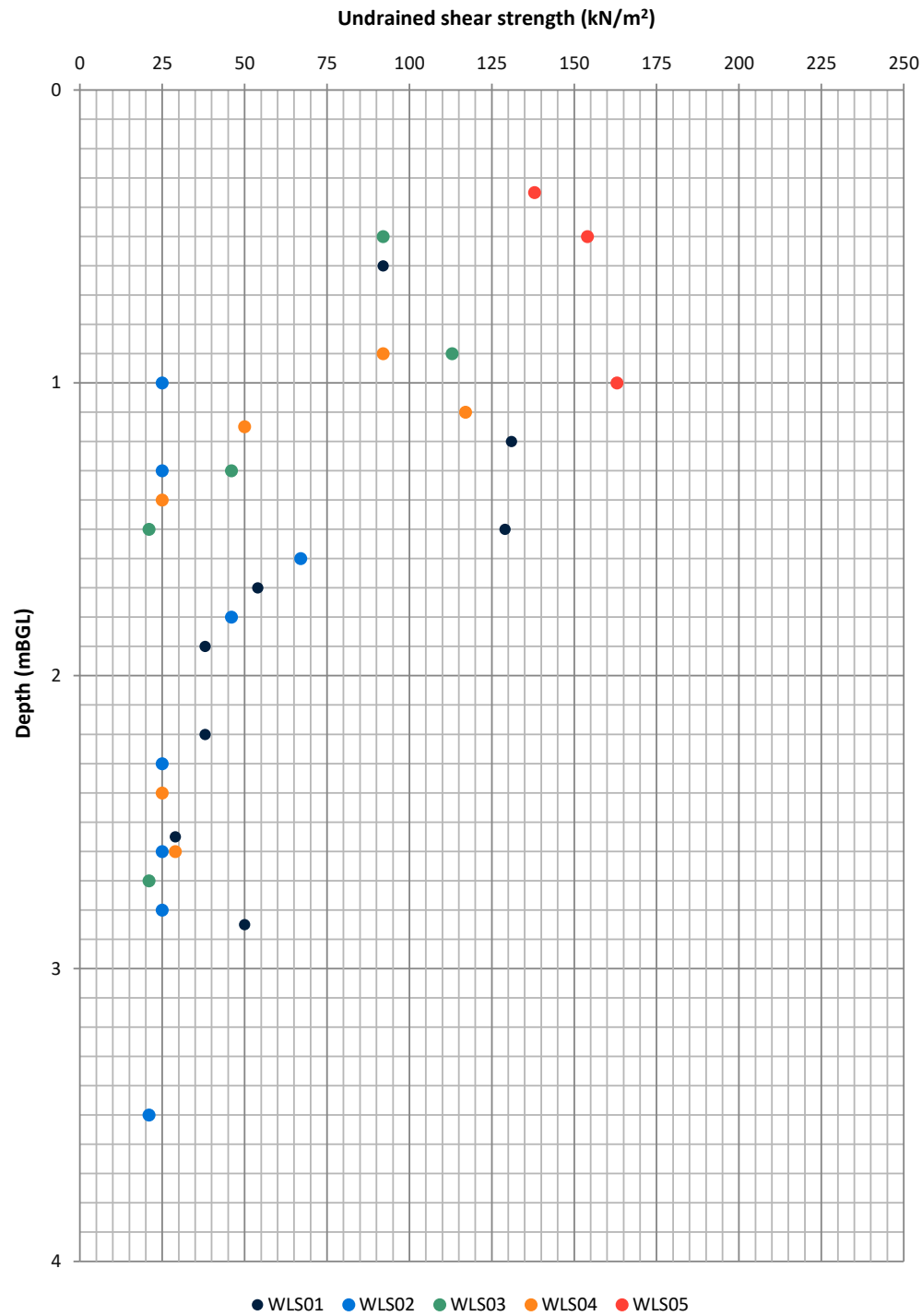
* Instrument limit reached.

Location	Start Depth (m)	Results 1-3	Average	Undrained Shear Strength (kN/m ²)
WLS01	0.60	2.25/1.5/1.75	1.83	92
WLS01	1.20	2.75/Q.5/2.5	2.63	131
WLS01	1.50	2.5/2.5/2.75	2.58	129
WLS01	1.90	0.75/0.75/0.75	0.75	38
WLS01	2.20	1/0.5/0.75	0.75	38
WLS01	1.70	1/1/1.25	1.08	54
WLS01	2.55	0.5/0.5/0.75	0.58	29
WLS01	2.85	1/1/1	1.00	50
WLS02	1.00	0.5/0.5/0.5	0.50	25
WLS02	1.30	0.5/0.5/0.5	0.50	25
WLS02	1.60	1.5/1.25/1.25	1.33	67
WLS02	1.80	1/0.5/1.25	0.92	46
WLS02	2.30	0.5/0.5/0.5	0.50	25
WLS02	2.60	0.5/0.5/0.5	0.50	25
WLS02	2.80	0.5/0.5/0.5	0.50	25
WLS02	3.50	0.5/0.25/0.5	0.42	21
WLS03	1.30	1/1/0.75	0.92	46
WLS03	1.50	0.5/0.25/0.5	0.42	21
WLS03	2.70	0.5/0.5/0.25	0.42	21
WLS03	0.50	1.75/2/1.75	1.83	92
WLS03	0.90	2.25/2/2.5	2.25	113
WLS04	0.90	2/1.5/2	1.83	92
WLS04	1.10	2/2.5/2.5	2.33	117
WLS04	1.15	1/1/1	1.00	50
WLS04	1.40	0.25/0.75/0.5	0.50	25
WLS04	2.40	0.5/0.5/0.5	0.50	25
WLS04	2.60	0.75/0.5/0.5	0.58	29
WLS05	0.35	2.75/2.5/3	2.75	138
WLS05	0.50	3/3.25/3	3.08	154
WLS05	1.00	3.25/3.25/3.25	3.25	163

Table summarising Standard Penetration Test (SPT) results

Location	Start Depth (m)	Penetration (mm)					
		Seating 1-2	Main 1-4	Total Seating	Total Main	Total Seating	Total Main
WLS01	1.20	2/3	2/4/3/2	5	11	150	300
WLS01	2.00	1/1	1/2/2/2	2	7	150	300
WLS01	3.00	1/2	1/1/2/2	3	6	150	300
WLS01	4.00	1/2	2/1/2/2	3	7	150	300
WLS01	5.00	1/2	2/1/1/2	3	6	150	300
WLS02	1.00	1/1	1/1/2/2	2	6	150	300
WLS02	3.00	1/0	1/0/1/1	1	3	150	300
WLS03	1.20	1/1	1/1/1/1	2	4	150	300
WLS03	2.00	1/2	1/1/3/1	3	6	150	300
WLS03	3.00	1/2	2/1/2/1	3	6	150	300
WLS04	2.00	1/0	1/0/0/1	1	2	150	300
WLS04	3.00	1/0	0/0/1/0	1	1	150	300

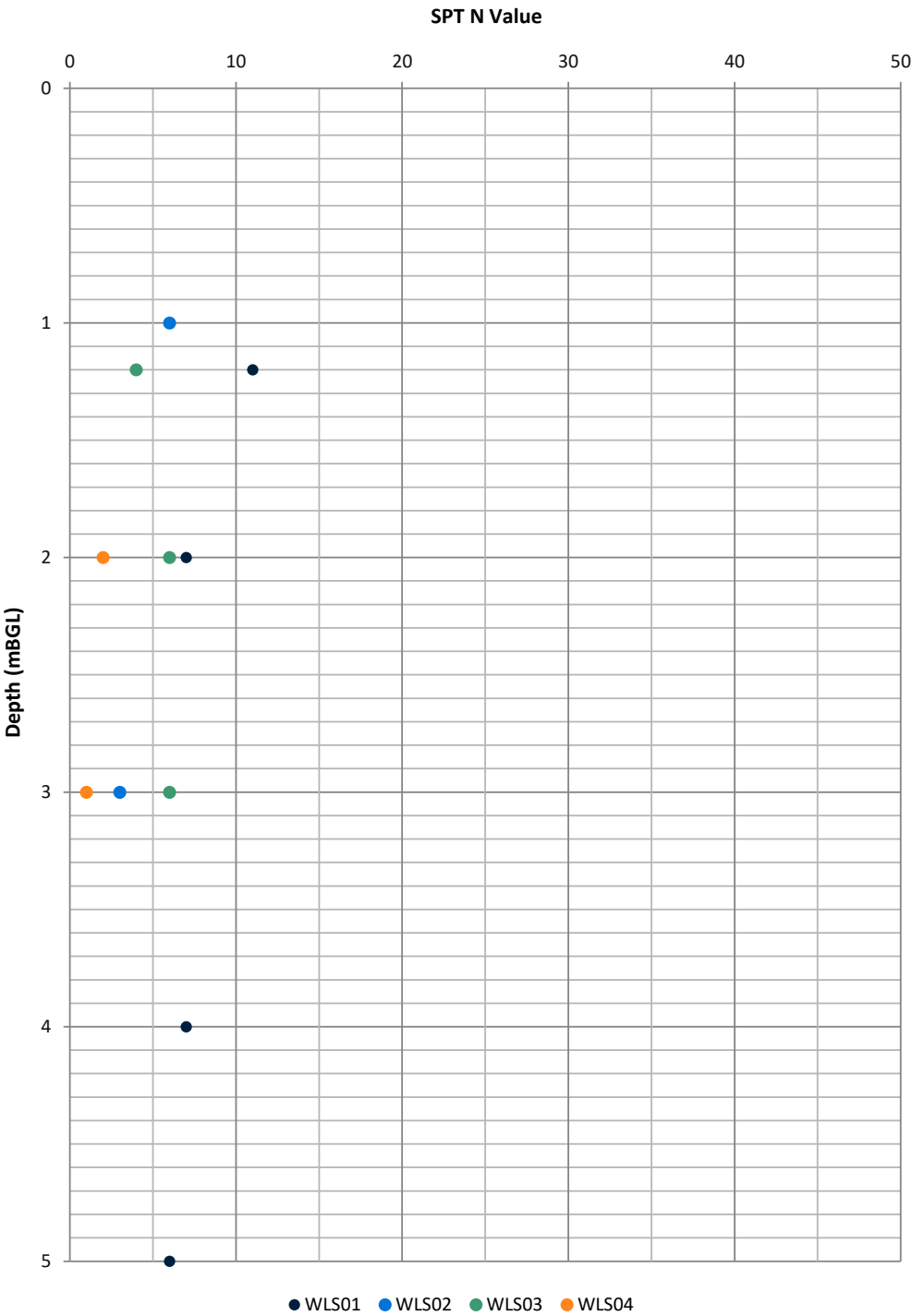
Plot summarising Pocket Penetrometer results versus depth filtered by location



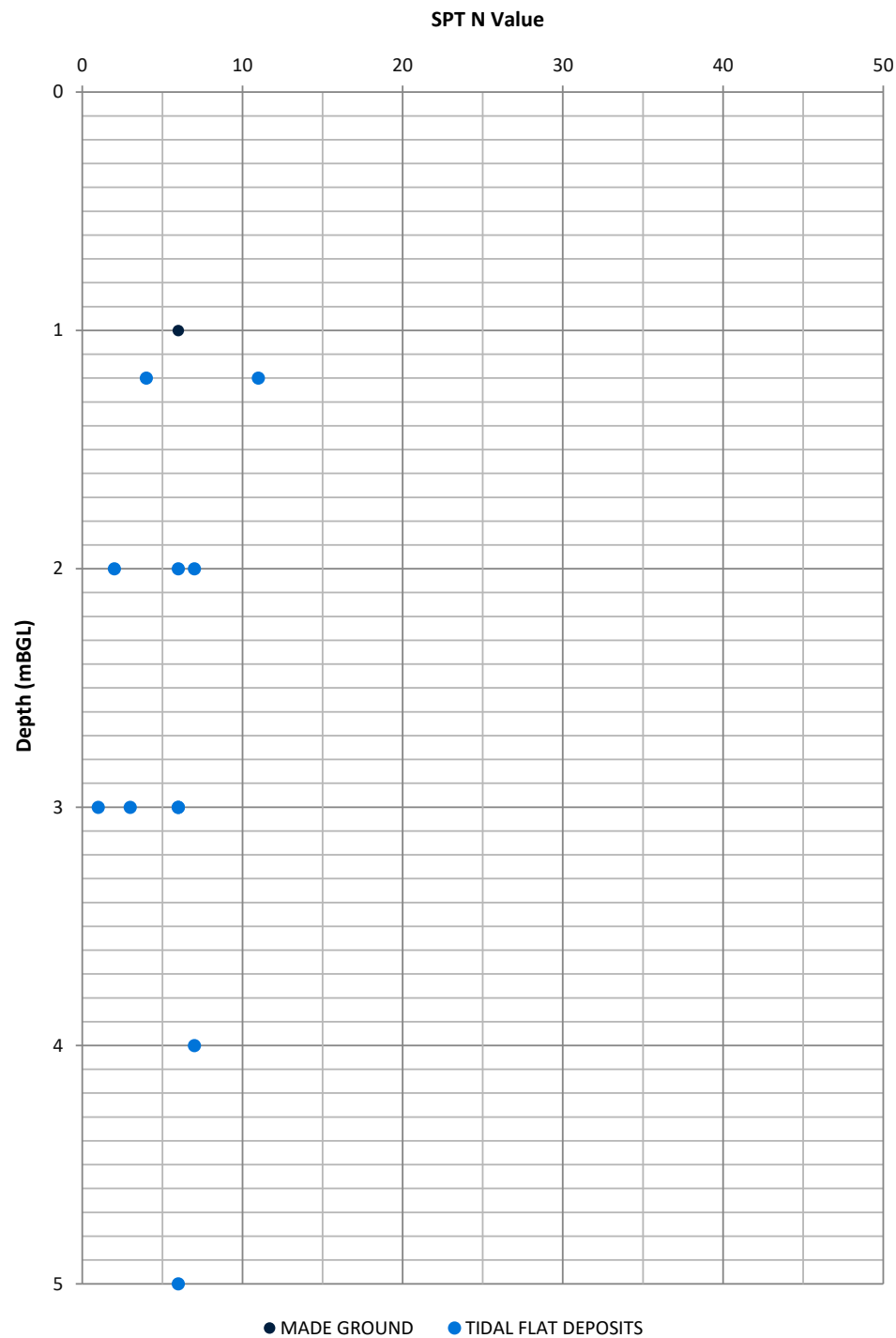
This scatter plot displays the undrained shear strength (kN/m²) on the x-axis (ranging from 0 to 250) against depth in meters below ground level (mBGL) on the y-axis (ranging from 0 to 4). The data is categorized into two types: MADE GROUND (black dots) and TIDAL FLAT DEPOSITS (blue dots). A vertical line is drawn at approximately 165 mBGL.

Depth (mBGL)	Undrained shear strength (kN/m²)	Category
0.0	160	MADE GROUND
0.0	155	TIDAL FLAT DEPOSITS
0.1	100	TIDAL FLAT DEPOSITS
0.2	115	TIDAL FLAT DEPOSITS
0.3	125	TIDAL FLAT DEPOSITS
0.4	135	TIDAL FLAT DEPOSITS
0.5	145	TIDAL FLAT DEPOSITS
0.6	155	TIDAL FLAT DEPOSITS
0.7	165	TIDAL FLAT DEPOSITS
0.8	175	TIDAL FLAT DEPOSITS
0.9	185	TIDAL FLAT DEPOSITS
1.0	195	TIDAL FLAT DEPOSITS
1.1	205	TIDAL FLAT DEPOSITS
1.2	215	TIDAL FLAT DEPOSITS
1.3	225	TIDAL FLAT DEPOSITS
1.4	235	TIDAL FLAT DEPOSITS
1.5	245	TIDAL FLAT DEPOSITS
1.6	255	TIDAL FLAT DEPOSITS
1.7	265	TIDAL FLAT DEPOSITS
1.8	275	TIDAL FLAT DEPOSITS
1.9	285	TIDAL FLAT DEPOSITS
2.0	295	TIDAL FLAT DEPOSITS
2.1	305	TIDAL FLAT DEPOSITS
2.2	315	TIDAL FLAT DEPOSITS
2.3	325	TIDAL FLAT DEPOSITS
2.4	335	TIDAL FLAT DEPOSITS
2.5	345	TIDAL FLAT DEPOSITS
2.6	355	TIDAL FLAT DEPOSITS
2.7	365	TIDAL FLAT DEPOSITS
2.8	375	TIDAL FLAT DEPOSITS
2.9	385	TIDAL FLAT DEPOSITS
3.0	395	TIDAL FLAT DEPOSITS
3.1	405	TIDAL FLAT DEPOSITS
3.2	415	TIDAL FLAT DEPOSITS
3.3	425	TIDAL FLAT DEPOSITS
3.4	435	TIDAL FLAT DEPOSITS
3.5	445	TIDAL FLAT DEPOSITS
3.6	455	TIDAL FLAT DEPOSITS
3.7	465	TIDAL FLAT DEPOSITS
3.8	475	TIDAL FLAT DEPOSITS
3.9	485	TIDAL FLAT DEPOSITS
4.0	495	TIDAL FLAT DEPOSITS

Plot summarising Standard Penetration Test (SPT) results versus depth filtered by location



Plot summarising Standard Penetration Test (SPT) results versus depth
filtered by geology



Appendix D Geotechnical Laboratory Test Results

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022,
cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022,
cl 5.3, 6

4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton, NN6 9PY

Contact: Admin
Site Address: Dragon Park, Newport

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: STX7242
Job Number: 25-058102-1
Date Sampled: 22/10/2025
Date Received: 27/10/2025
Date Tested: 03/11/2025
Sampled By: Not Given

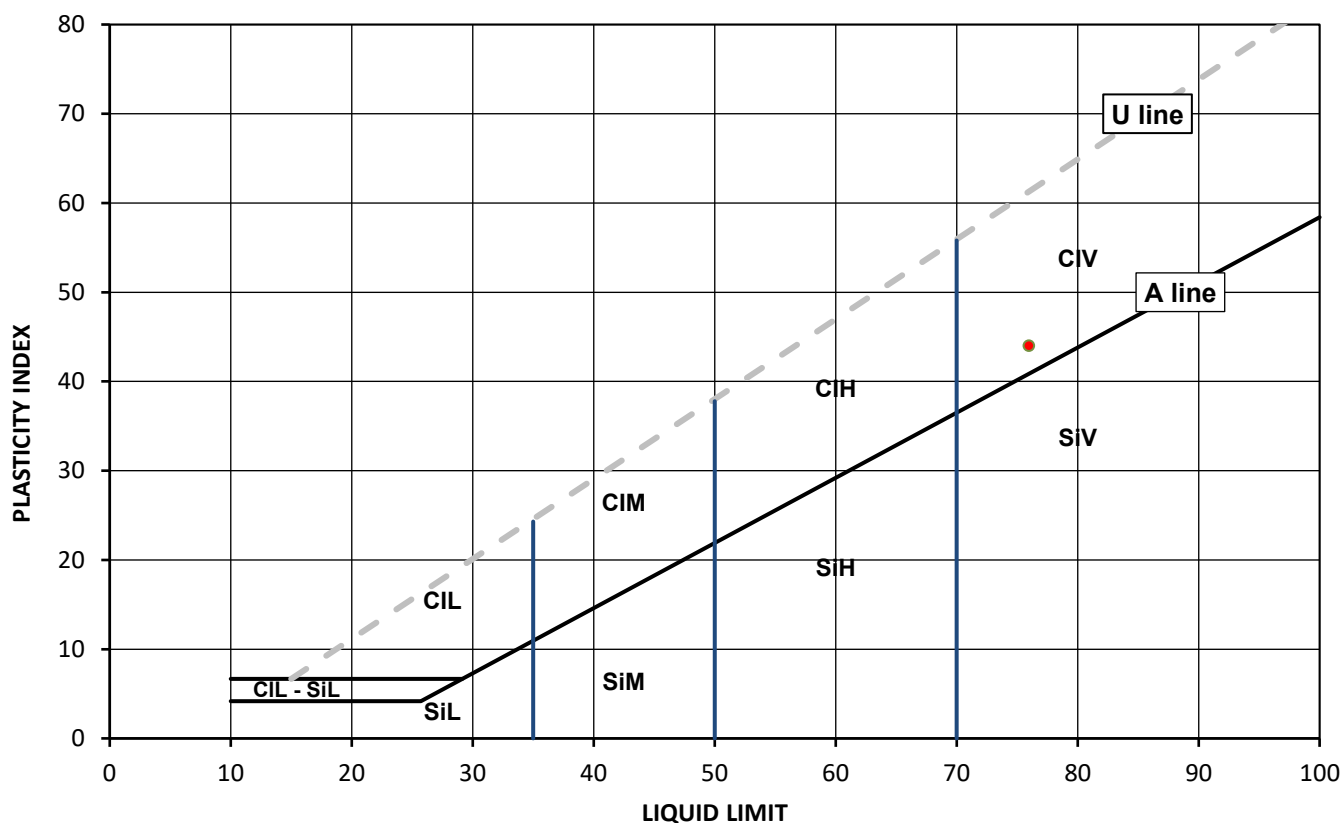
Test Results:

Laboratory Reference: 729889
Hole No.: WLS01
Sample Reference: WLS01-2.8-5
Sample Description: Grey CLAY

Depth Top [m]: 2.80
Depth Base [m]: 2.90
Sample Type: D

Sample Preparation: Tested in natural condition;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
49.9	76	1.055	32	44	0.41	0.59	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
		50 to 70
		exceeding 70
		append to classification for organic material (eg ClHO)

Note: Water Content by BS EN 17892-1:2014+A1:2022, BS 1377-2:2022; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

Signed:

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022,
cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022,
cl 5.3, 6

4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton, NN6 9PY

Contact: Admin
Site Address: Dragon Park, Newport

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: STX7242
Job Number: 25-058102-1
Date Sampled: 22/10/2025
Date Received: 27/10/2025
Date Tested: 03/11/2025
Sampled By: Not Given

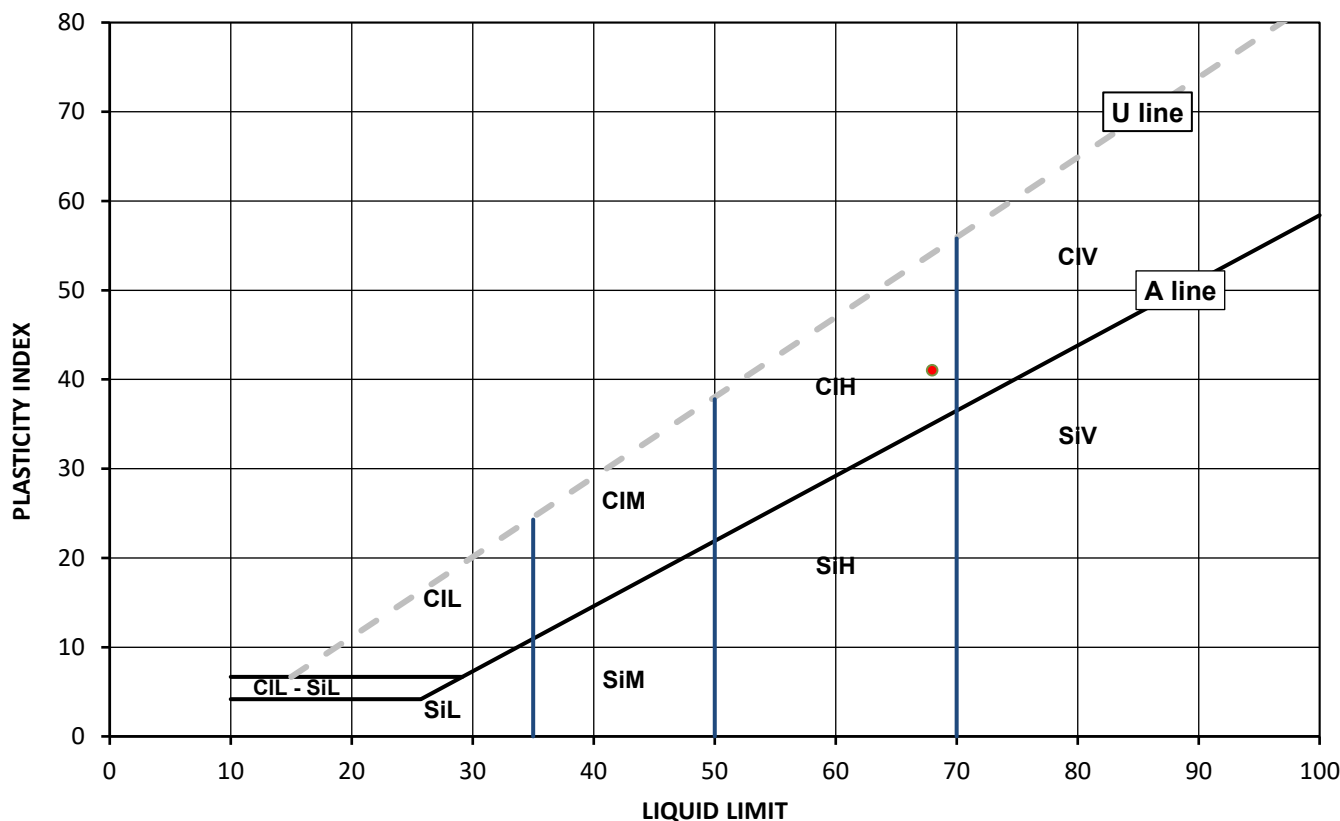
Test Results:

Laboratory Reference: 729890
Hole No.: WLS03
Sample Reference: WLS03-0.9-1
Sample Description: Brownish grey CLAY

Depth Top [m]: 0.90
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
27.0	68	1.018	27	41	0.00	1.00	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
		50 to 70
		exceeding 70
	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS EN 17892-1:2014+A1:2022, BS 1377-2:2022; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

Signed:

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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Page 1 of 1

Date Reported: 12/11/2025

GF 360.15



TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022,
cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022,
cl 5.3, 6



4041

Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton, NN6 9PY

Contact: Admin
Site Address: Dragon Park, Newport

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: STX7242
Job Number: 25-058102-1
Date Sampled: 22/10/2025
Date Received: 27/10/2025
Date Tested: 03/11/2025
Sampled By: Not Given

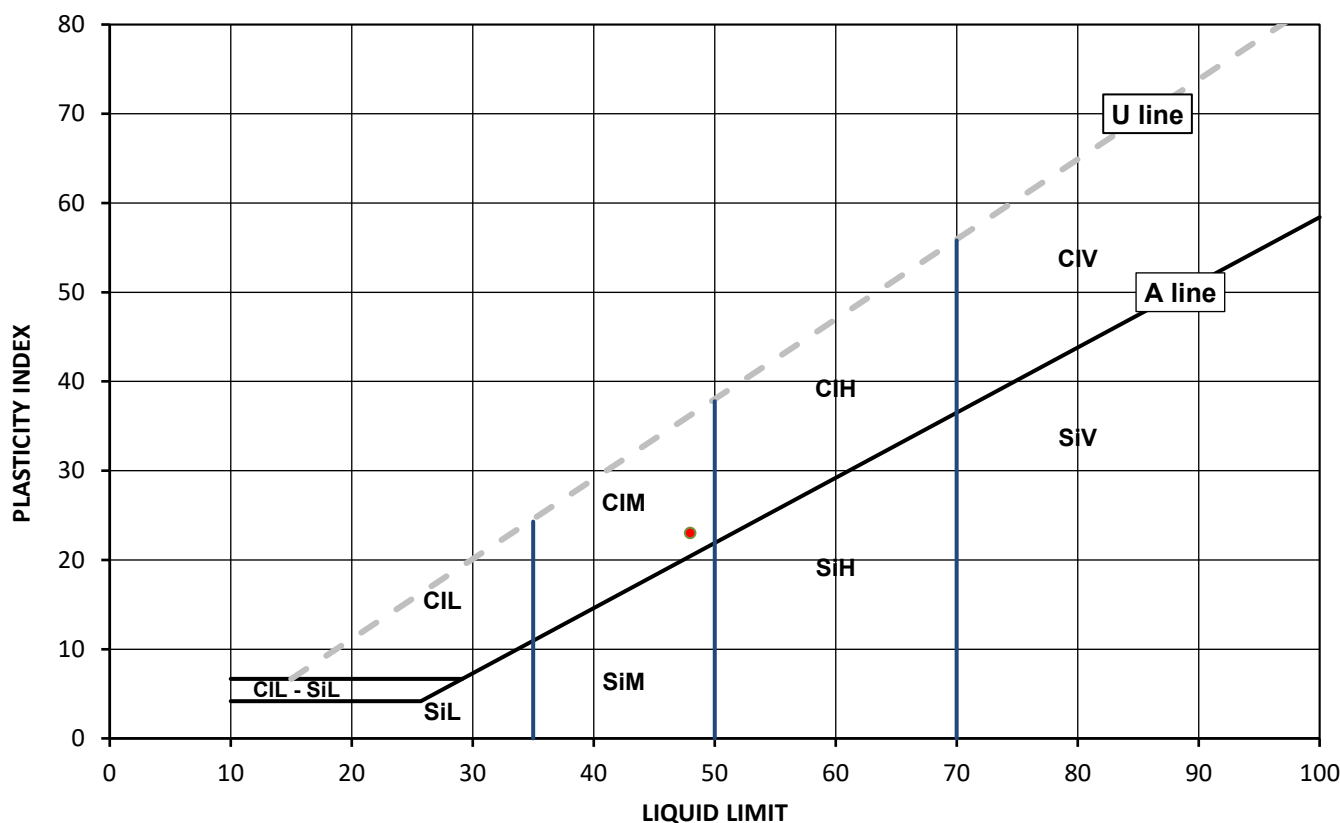
Test Results:

Laboratory Reference: 729891
Hole No.: WLS04
Sample Reference: WLS04-0.5-2
Sample Description: Brown slightly gravelly slightly sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
26.1	48	1.039	25	23	0.04	0.96	69



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity	Liquid Limit
Cl	Clay	L Low	below 35
Si	Silt	M Medium	35 to 50
		H High	50 to 70
		V Very high	exceeding 70
		O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS EN 17892-1:2014+A1:2022, BS 1377-2:2022; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

Signed:

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Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd



SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS



Tested in Accordance with:

4041

Client: Soiltechnics Limited

Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton, NN6 9PY

Contact: Admin

Site Address: Dragon Park, Newport

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

BS EN ISO 17892-12:2018+A2:2022, cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022, cl 5.3, 6. Correlation Factor by Clayton C.R.I and Jukes A.W (1978). W by BS EN ISO 17892-1:2014+A1:2022.

Client Reference: STX7242

Job Number: 25-058102-1

Date Sampled: 22/10/2025

Date Received: 27/10/2025

Date Tested: 03/11/2025

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	W	Liquid & Plastic Limit								Density		
		Reference	Depth Top	Depth Base	Type				% Passing 425um	WL*	Correlation Factor	Wp	Ip	Cone type	Sample Preparation	bulk	dry	PD	
			m	m															Mg/m3
729889	WLS01	WLS01-2.8-5	2.80	2.90	D	Grey CLAY	Atterberg 1 Point	49.9	100	76	1.055	32	44	80g/30 deg	N				
729890	WLS03	WLS03-0.9-1	0.90	Not Given	D	Brownish grey CLAY	Atterberg 1 Point	27.0	100	68	1.018	27	41	80g/30 deg	N				
729891	WLS04	WLS04-0.5-2	0.50	Not Given	D	Brown slightly gravelly slightly sandy CLAY	Atterberg 1 Point	26.1	69	48	1.039	25	23	80g/30 deg	WR				

Note: # Non accredited; NP - Non plastic; N - Tested in natural condition, R - Tested after >0.425mm removed by hand, WR - Tested after washing to remove >425mm; * - One point liquid limit corrected as per the report Correlation Factor by Clayton C.R.I and Jukes A.W (1978)

Comments:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS EN ISO 17892-1:2014+A1:2022, BS 1377-2: 2022, clause 4.1



4041
Client: Soiltechnics Limited
Client Address: Cedar Barn, White Lodge,
Walgrave, Northampton, NN6 9PY

Contact: Admin
Site Address: Dragon Park, Newport

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: STX7242
Job Number: 25-058102-1
Date Sampled: 22/10/2025
Date Received: 27/10/2025
Date Tested: 03/11/2025
Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC											
		Reference	Depth Top m	Depth Base m	Type														
729889	WLS01	WLS01-2.8-5	2.80	2.90	D	Grey CLAY		49.9											
729890	WLS03	WLS03-0.9-1	0.90	Not Given	D	Brownish grey CLAY		27.0											
729891	WLS04	WLS04-0.5-2	0.50	Not Given	D	Brown slightly gravelly slightly sandy CLAY		26.1											

Comments:

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Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

Appendix E Geoenvironmental Laboratory Test Results



Final Report

Report No.: 25-34536-1

Initial Date of Issue: 09-Nov-2025

Re-Issue Details:

Client *Soiltechnics Limited*

Client Address: *1st Floor Unit 9 Westpoint Enterprise
Park
Clarence Avenue
Trafford Park
Manchester
M17 1QS*

Contact(s): *Admin*

Project *STX7242 Dragon Park, Newport*

Quotation No.: **Date Received:** 27-Oct-2025

Order No.: POR023826 **Date Instructed:** 27-Oct-2025

No. of Samples: 5

Turnaround (Wkdays): 10 **Results Due:** 07-Nov-2025

Date Approved: 09-Nov-2025

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: STX7242 Dragon Park, Newport

Client: Soiltechnics Limited		Chemtest Job No.:					25-34536	25-34536	25-34536	25-34536	25-34536
Quotation No.:		Chemtest Sample ID.:					2045820	2045821	2045822	2045823	2045824
Order No.: POR023826		Client Sample Ref.:					1	1	4	7	1
		Client Sample ID.:					CS01-0-1	WAC02-0.6-1	WLS01-2.2-4	WLS01-4.8-7	WLS02-0.65-1
		Client Reference:					CS01	WAC02	WLS01	WLS01	WLS02
		Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):					0.00	0.60	2.20	4.80	0.65
		Bottom Depth (m):					0.15	1.00	2.30	4.90	
		Date Sampled:					22-Oct-2025	22-Oct-2025	22-Oct-2025	22-Oct-2025	22-Oct-2025
		Time Sampled:					12:24	17:36	13:25	13:51	17:37
		Asbestos Lab:					DURHAM	DURHAM			
Determinand	HWOL Code	Accred.	SOP	Units	LOD						
ACM Type		N	2192		N/A	-	-				
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected				
Moisture		N	2030	%	0.020	17	14	22	20	13	
Soil Colour		N	2030		N/A	Brown	Brown	Brown	Brown	Brown	
Other Material		N	2030		N/A	Stones and Roots	Stones	None	None	Stones	
Soil Texture		N	2030		N/A	Clay	Clay	Clay	Clay	Clay	
pH at 20C		M	2010		4.0	7.9	8.8				
pH (2.5:1) at 20C		N	2010		4.0			9.2	9.4	9.8	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010			0.082	0.082	0.37	
Total Sulphur		U	2175	%	0.010			0.065	0.75	0.17	
Chloride (Water Soluble)		M	2220	g/l	0.010			0.027	0.31	0.080	
Nitrate (Water Soluble)		N	2220	g/l	0.010			< 0.010	< 0.010	0.013	
Sulphate (Acid Soluble)		U	2430	%	0.010			0.075	0.11	0.23	
Arsenic		M	2455	mg/kg	0.5	21	11				
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10				
Chromium		M	2455	mg/kg	0.5	24	24				
Copper		M	2455	mg/kg	0.50	13	27				
Mercury		M	2455	mg/kg	0.05	< 0.05	0.17				
Nickel		M	2455	mg/kg	0.50	21	21				
Lead		M	2455	mg/kg	0.50	42	86				
Selenium		M	2455	mg/kg	0.25	0.63	0.74				
Zinc		M	2455	mg/kg	0.50	100	140				
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50				
Organic Matter		M	2625	%	0.40	2.1	12				
TPH >C6-C10	EH_1D_Total	N	2670	mg/kg	1.0	5.6	9.1				
TPH >C10-C21	EH_1D_Total	N	2670	mg/kg	1.0	7.9	20				
TPH >C21-C40	EH_1D_Total	N	2670	mg/kg	1.0	28	1300				
Total TPH >C6-C40	EH_1D_Total	U	2670	mg/kg	10	41	1300				
Naphthalene		M	2800	mg/kg	0.10	< 0.10	0.10				
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	0.20				
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10				
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10				

Results - Soil

Project: STX7242 Dragon Park, Newport

Client: Soiltechnics Limited		Chemtest Job No.:	25-34536	25-34536	25-34536	25-34536	25-34536
Quotation No.:		Chemtest Sample ID.:	2045820	2045821	2045822	2045823	2045824
Order No.: POR023826		Client Sample Ref.:	1	1	4	7	1
		Client Sample ID.:	CS01-0-1	WAC02-0.6-1	WLS01-2.2-4	WLS01-4.8-7	WLS02-0.65-1
		Client Reference:	CS01	WAC02	WLS01	WLS01	WLS02
		Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	0.00	0.60	2.20	4.80	0.65
		Bottom Depth (m):	0.15	1.00	2.30	4.90	
		Date Sampled:	22-Oct-2025	22-Oct-2025	22-Oct-2025	22-Oct-2025	22-Oct-2025
		Time Sampled:	12:24	17:36	13:25	13:51	17:37
		Asbestos Lab:	DURHAM	DURHAM			
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
Phenanthrene		M	2800	mg/kg	0.10	0.18	0.50
Anthracene		M	2800	mg/kg	0.10	< 0.10	0.14
Fluoranthene		M	2800	mg/kg	0.10	0.34	0.90
Pyrene		M	2800	mg/kg	0.10	0.24	0.70
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	0.47
Chrysene		M	2800	mg/kg	0.10	< 0.10	0.57
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	1.0
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	0.32
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	0.54
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	0.78
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	0.55
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	6.8

Results - 2 Stage WAC

Project: STX7242 Dragon Park, Newport

Chemtest Job No: 25-34536							Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 2045821							Limits			
Sample Ref: 1							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID: WAC02-0.6-1										
Client Reference: WAC02										
Top Depth(m): 0.60										
Bottom Depth(m): 1.00										
Sampling Date: 22-Oct-2025										
Determinand	SOP	Accred.	Units							
Total Organic Carbon	2625	M	%				6.7	3	5	6
Loss On Ignition	2610	M	%				6.6	--	--	10
Total BTEX	2760	M	mg/kg				< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.05	1	--	--
WAC Total C10-C40	2690	N	mg/kg				21	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg				5.9	100	--	--
pH at 20C	2010	M					8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate			
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1455	U	0.0051	0.0076	0.010	0.074	0.5	2	25	
Barium	1455	U	0.041	0.016	0.081	0.18	20	100	300	
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5	
Chromium	1455	U	0.0010	< 0.0005	0.0021	0.0010	0.5	10	70	
Copper	1455	U	0.0072	0.0057	0.014	0.0071	2	50	100	
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2	
Molybdenum	1455	U	0.013	0.0021	0.025	0.031	0.5	10	30	
Nickel	1455	U	0.0007	< 0.0005	0.0015	0.0007	0.4	10	40	
Lead	1455	U	0.0012	0.0008	0.0024	0.0083	0.5	10	50	
Antimony	1455	U	0.0035	0.0008	0.0070	0.010	0.06	0.7	5	
Selenium	1455	U	0.0012	0.0006	0.0024	0.0063	0.1	0.5	7	
Zinc	1455	U	0.004	0.004	0.008	0.039	4	50	200	
Chloride	1220	U	6.8	< 1.0	14	< 10	800	15000	25000	
Fluoride	1220	U	0.35	0.17	< 1.0	1.9	10	150	500	
Sulphate	1220	U	46	8.5	91	120	1000	20000	50000	
Total Dissolved Solids	1020	N	190	67	370	780	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-	
Dissolved Organic Carbon	1610	U	12	5.9	< 50	65	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	10
WAC Sample Weight	4146

Leachate Test Information	
Leachant volume 1st extract/l	0.330
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.172

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	TE LE SW GW
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos Quantification in Soils Sediments Ballast & Aggregate Crushed Concrete & Demolition Rubble	Asbestos	Polarised light microscopy / Gravimetry	
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching C2,C8,C10,WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Text example All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at $\leq 30^{\circ}\text{C}$ prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Where analysis is performed on a dried and crushed sample, it has been prepared by crushing all of the sample. If material has been removed prior to crushing, or by request of the client, this will be stated on the report.

NEW_ASB Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL

DURHAM Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - The required amount of sample for analysis was not received
- H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water (Non-Regulatory)
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

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 - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
cs@etuki.eurofins.com

Appendix F Contamination Assessment Screening

QRA Screening

Assessments	Status	Date	Created by	Reviewed By
Acute human health risk - Soils	Not undertaken			
Chronic human health risk - Soils	Complete	06.12.25	LE	SCD
Chronic human health risk - Groundwater vapour	Not undertaken			
Controlled waters risk - Surface water	Not undertaken			
Controlled waters risk - Drinking water	Not undertaken			
Controlled waters - Free phase indicator	Not undertaken			
Phytotoxicity	Not undertaken			
Ecotoxicity	Not undertaken			

Key

Assessment	Abbr.	QRA Source (in order of preference)	Last Update
All	NGA	No guideline value available	-
Chronic human health risk - Soils	C4SL	Category 4 Screening Levels (DEFRA)	May 2021
	S4UL	Suitable 4 Use Levels (LQM)	August 2015
	ATK	Atrisk Soil Screening Values (Atkins)	June 2017
	CL:AIRE	Generic Assessment Criteria (CL:AIRE)	Jan 2010

Chronic human health risk (soils)

Scenario	
End user	Current and proposed site user
Receptor	Residential with homegrown produce
SOM	1.00%
GAC Preference	C4SLs over S4ULs
Unspeciated TPH GAC	Worst-case aliphatic/aromatic

Contaminant	Guideline source	Guideline value (mg/kg)	Max value (mg/kg)	Location	CS01
				Depth (m)	0.00 - 0.15
				Date	22/10/25
Inorganics - Metals					
Arsenic	C4SL	37	21		21
Cadmium	C4SL	22	<LoD		< 0.10
Chromium (III)	S4UL	910	24		24
Chromium (VI)	C4SL	21	<LoD		< 0.50
Copper	S4UL	2400	13		13
Lead	C4SL	200	42		42
Mercury	S4UL	40	<LoD		< 0.05
Nickel	S4UL	130	21		21
Selenium	S4UL	250	0.63		0.63
Zinc	S4UL	3700	100		100
Inorganics - Asbestos					
Asbestos Type		N/A			-
Asbestos Screen		N/A			No Asbestos Detected
Inorganics - Soil Parameters					
Organic matter		N/A			2.1
Organics - PAH & Phenol					
Acenaphthene	S4UL	210	<LoD		< 0.10
Acenaphthylene	S4UL	170	<LoD		< 0.10
Anthracene	S4UL	2400	<LoD		< 0.10
Benzo(a)anthracene	S4UL	7.2	<LoD		< 0.10
Benzo(a)pyrene	C4SL	5	<LoD		< 0.10
Benzo(b)fluoranthene	S4UL	2.6	<LoD		< 0.10
Benzo(ghi)perylene	S4UL	320	<LoD		< 0.10
Benzo(k)fluoranthene	S4UL	77	<LoD		< 0.10
Chrysene	S4UL	15	<LoD		< 0.10
Dibenz(a,h)anthracene	S4UL	0.24	<LoD		< 0.10
Fluoranthene	S4UL	280	0.34		0.34
Fluorene	S4UL	170	<LoD		< 0.10
Indeno(1,2,3-cd)pyrene	S4UL	27	<LoD		< 0.10
Naphthalene	C4SL	15	<LoD		< 0.10
Phenanthrene	S4UL	95	0.18		0.18
Pyrene	S4UL	620	0.24	0.24	
Organics - Banded TPH (unspeciated)					
EC >6-EC10 (unspeciated)		S4UL	27	5.6	
EC >10-EC21 (unspeciated)		S4UL	74	7.9	
EC >21-EC40 (unspeciated)		S4UL	1100	28	

Appendix G Waste Characterisation Assessment

Waste Classification Assessment Summary

Waste population	Made Ground in the eastern part of the site
Hazard assessment	Hazardous waste*
List of waste code	17-05-03*
List of waste description	Soil and stones containing hazardous substances
Hazard property	Assessment
HP1 - Explosive	Not hazardous by HP1
HP2 - Oxidising	Not hazardous by HP2
HP3 - Flammable	Not hazardous by HP3
HP4 - Irritant	Not hazardous by HP4
HP5 - STOT & aspiration toxicity	Not hazardous by HP5
HP6 - Acute toxicity	Not hazardous by HP6
HP7 - Carcinogenic	Hazardous by HP7
HP8 - Corrosive	Not hazardous by HP8
HP9 - Infectious	Not hazardous by HP9
HP10 - Toxic for reproduction	Not hazardous by HP10
HP11 - Mutagenic	Hazardous by HP11
HP12 - Release of an acute toxic gas	Not hazardous by HP12
HP13 - Sensitising	Not hazardous by HP13
HP14 - Ecotoxic	Not hazardous by HP14

Waste classification

Overall assessment	
Waste population	Made Ground in the eastern part of the site
Hazard assessment	Hazardous waste*
List of Waste code	17-05-03*
List of waste description	Soil and stones containing hazardous substances
Is the statistical approach non-parametric, method B utilized?	No
Molssure content correction factor	No correction made

Asbestos assessment		
Query	Value	Assessment
Are bulk ACMs visually identifiable?	No	Non-hazardous
Have free fibres been detected?	No	Non-hazardous
What is the free fibre concentration (%)?	N/A	Non-hazardous

Flammability assessment	
Comment	Assessment
The waste is not considered flammable as it is a solid waste without a free draining liquid phase, and the TPH concentration and composition is not considered to present a likely flammable hazard.	Non-hazardous

Hydrocarbon assessment	
Query	Assessment
Is the origin of the oil contamination known?	Unknown oil
B(a)P : TPH ratio (%)	0.04
B(a)P marker assessment	WP7 and WP11

pH assessment		
Query	Value	Assessment
Are all substances present in the waste known?	No	See pH assessment below
pH - Min	7.90	Non-hazardous
pH - Max	8.80	Non-hazardous

Oxidising assessment	
Comment	Assessment
Cr (VI) is the only compound with an oxidising hazard statement (H271). On review, the concentration is considered too low to present a viable oxidising hazard in a waste soil	Non-hazardous

Economic assessment			
Equation	Sum	Criteria	Assessment
WM3, Eq. 2	0.00%	25%	Non-hazardous
WM3 Eq. 3	0.00%	25%	Non-hazardous
WM3 Eq. 4	0.00%	25%	Non-hazardous

Compound hazard assessments

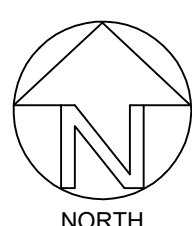
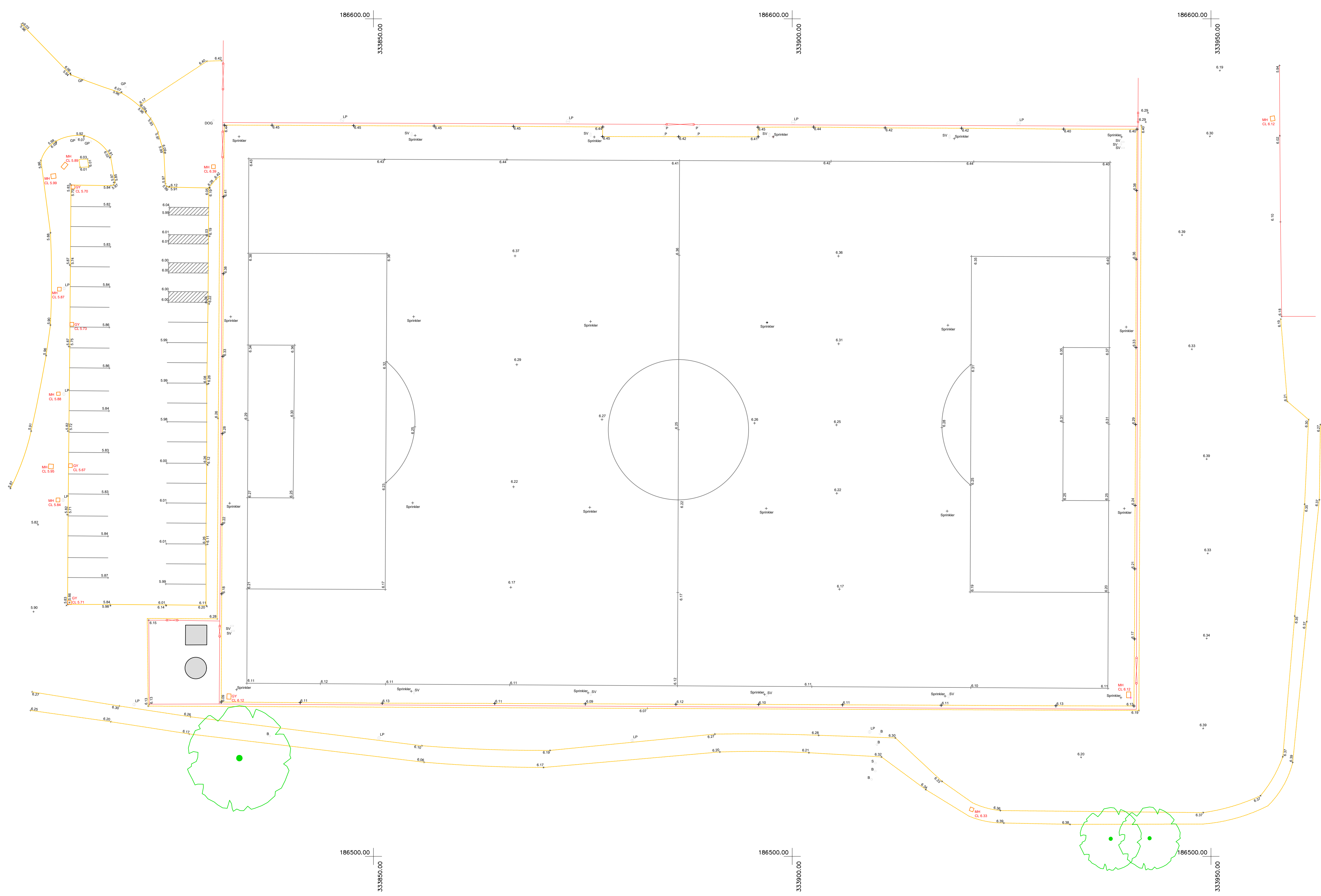
Substance specific concentration limits																																																									
Hazard Property Description					Irritant			Specific Target Organ Toxicity / Aspiration Toxicity				Acute Toxicity								Carcinogenic		Corrosive	Toxic for reproduction		Mutagenic		Sensitising		Ecotoxic				STOT				Carc.	Repr.																			
Hazard Property					HP4			HP5				HP6								HP7		HP8	HP10		HP11		HP13		HP14				HP5				HP7	HP10																			
Hazard Statement					H314	H315 and/or H319	H318	H304	H335	H372	H373	H300	H301	H302	H310	H311	H312	H330	H330	H331	H332	H350	H351	H314	H360	H361	H340	H341	H317	H334	H400	H410	H411	H413	H355 (C03)	H372 (C05)	H373 (C05)	H373 (P004)	H350 (B0P) (D0A0A)	H361 (P004)																	
Contaminant	Max. concentration (mg/kg)	Realistic worst case compound	Mass conversion factor	MC applied?	Hazard Class / Compound concentration (%)	Skin Corr.1A	Skin Irrit.2 Eye Irrit.2	Eye Dam.1	Asp.Tox.1	STOT SE.3	STOT RE.1	STOT RE.2	Acute Tox.2 (Oral)	Acute Tox.3 (Oral)	Acute Tox.4 (Oral)	Acute Tox.1 (Dermal)	Acute Tox.3 (Dermal)	Acute Tox.4 (Dermal)	Acute Tox.1 (Inhal.)	Acute Tox.2 (Inhal)	Acute Tox.3 (Inhal)	Acute Tox.4 (Inhal)	Carc.1A	Carc.1B	Carc.2	Skin Corr.1A Skin Corr.1B	Repr.1A	Repr.1B	Repr.2	Muta.1A	Muta.1B	Muta.2	Skin Sens.1	Resp. Sens. 1	Aquatic Acute.1	Aquatic Chronic.1	Aquatic Chronic.2	Aquatic Chronic.4	STOT SE.3	STOT RE.1	STOT RE.2	STOT RE.2	Carc.1B	Repr.2													
Cyanide - Total					Salts of hydrogen cyanide, using sodium cyanide					1.88	N/A																																														
Arsenic					21.0	Nickel darsenide	1.78	N	0.004	0.004																0.004		0.004										0.004		0.004																	
Arsenic (secondary)					21.0	Arsenic trioxide	1.32	N	0.003	0.003																0.003		0.003										0.003		0.003																	
Cadmium					0.1	Cadmium sulfide	1.29	N	0.000	See specific assessment																See specific assessment		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Cadmium (secondary)					0.1	Cadmium oxide	1.14	N	0.000	See specific assessment																See specific assessment		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Chromium (III)					24.0	Chromium (III) oxide	1.46	N	0.004	0.004																0.000		0.000		0.004										0.004		0.004		0.004				0.004		0.004							
Chromium (VI)					0.5	Chromium (VI) trioxide	1.92	N/A	0.000	See specific assessment																0.000		0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000					
Copper					27.0	Copper (I) oxide	1.25	N	0.003	See specific assessment																See specific assessment		0.000										0.000		0.000		0.000		0.000				0.003		0.003							
Copper (secondary)					27.0	Copper(II) oxide	1.13	N	0.003	0.003																0.003		0.003										0.013		0.013		See specific assessment		0.013		0.013		0.013				0.013		0.013			
Lead					86.0	Lead compounds, using lead sulphate	1.46	N	0.013	See specific assessment																0.013		0.013		0.013										0.013		See specific assessment		0.013		0.013		0.013				0.013		0.013			
Mercury					0.2	Mercury dichloride	1.35	N	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Nickel					21.0	Nickel carbonate	2.02	N	0.004	0.004																0.004		0.004										0.004		0.004		0.004		0.004		0.004				0.004		0.004					
Selenium					0.7	Selenium compounds, using selenium dioxide	1.41	N	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Zinc					140.0	Zinc sulphide	1.49	N	0.021	0.021																0.021		0.021										0.021		0.021		0.021		0.021				0.021		0.021							
Naphthalene					0.1	Naphthalene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Acenaphthylene					0.2	Acenaphthylene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Acenaphthene					0.1	Acenaphthene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Fluorene					0.1	Fluorene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Phenanthrene					0.5	Phenanthrene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Anthracene					0.1	Anthracene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Fluoranthene					0.9	Fluoranthene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Pyrene					0.7	Pyrene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Benzo(a)anthracene					0.5	Benzo(a)anthracene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Chrysene					0.6	Chrysene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Benzo(b)fluoranthene					1.0	Benzo(b)fluoranthene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Benzo(k)fluoranthene					0.3	Benzo(k)fluoranthene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Benzo(a)pyrene					0.5	Benzo(a)pyrene	1	N/A	0.000	See specific assessment																See specific assessment		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Indeno(1,2,3-cd)pyrene					0.8	Indeno(1,2,3-cd)pyrene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Diben(a,h)anthracene					0.1	Diben(a,h)anthracene	1	N/A	0.000	See specific assessment																See specific assessment		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Benzo(ghi)perylene					0.6	Benzo(ghi)perylene	1	N/A	0.000	0.000																0.000		0.000										0.000		0.000		0.000		0.000				0.000		0.000							
Total TPH					1300.0	Unknown oil	1	N/A	0.130	0.130																See specific assessment		0.130										See specific assessment		0.130																	
Note:																																																									
					Cut-off value (%)		1%	1%	1%	N/A	N/A	N/A	N/A	0.1%	0.1%	1%	0.1%	0.1%	1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A												
					Total (or greatest)		0.00%	0.00%	0.13%	[P1%]	[P1%]	[P1%]	[P1.13%]	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	[P1%]	[0.01%]	0.00%	[0.01%]	[P1%]	[0.02%]	[0.02%]	[0.02%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]	[P1%]									
					Hazard threshold		1%	20%	10%	10%	20%	1%	10%	0.25%	5%	25%	0.25%	15%	55%	0.1%	0.5%	3.5%	22.5%	0.1%	0.5%	3.5%	22.5%	0.1%	1%	5%	0.3%	3%	0.1%	1%	10%	10%	WM3 eq.1	WM3 eq.3 & eq.4	WM3 eq.4	1.0%	10.0%	0.1%	0.5%	0.01%	2.5%												
Hazardous					N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N											

Waste acceptance

Parameter	Inert waste landfill	Stable non-reactive hazardous waste in a non-hazardous landfill cell (SNRHW)	Hazardous waste landfill	Location	WAC02
				Depth (m)	0.60 - 1.00
				Date	22/10/25
Parameters determined on the waste					
Total organic carbon	3	5	6		6.7
Loss on ignition			10		6.6
BTEX	6				< 0.010
PCBs (7 congeners)	1				< 0.05
Mineral oil	500				21
PAH (17 congeners)	100				5.9
pH		6			8.8
Acid neutralisation capacity (pH 6)		To be evaluated	To be evaluated		< 0.0020
Limit values (mg kg ⁻¹) for compliance test using BN 12457-3 at L/S 10 l					
Arsenic	0.5	2	25		0.074
Barium	20	100	300		0.18
Cadmium	0.04	1	5		< 0.00011
Chromium (III)	0.5	10	70		0.001
Copper	2	50	100		0.0071
Mercury	0.01	0.2	2		< 0.00005
Molybdenum	0.5	10	30		0.031
Nickel	0.4	10	40		0.0007
Lead	0.5	10	50		0.0083
Antimony	0.06	0.7	5		0.01
Selenium	0.1	0.5	7		0.0063
Zinc	4	50	200		0.039
Chloride	800	15,000	25,000		< 10
Fluoride	10	150	500		1.9
Sulphate	1,000	20,000	50,000		120
Total dissolved solids	4,000	60,000	100,000		780
Phenol	1				< 0.50
Dissolved organic carbon	500	800	1000		65
Classifications					
Waste classification					Hazardous
Landfill type					Exceeds hazardous - requires treatment

- Key Notes:**
- 1) The values for total dissolved solids (TDS) can be used alternatively to the values for sulphate and chloride.
- 2) Soils with TOC values over the limit value may still be accepted provided the DOC value falls are below it's respective limit value.
- 3) In a hazardous waste, either the TOC or LOI must be used.
- 4) Where Notes 1, 2, and 3 can apply, the waste contractor or landfill operator should be contacted to determine acceptance.

Appendix H Topographical Survey



GENERAL NOTES

This drawing is to be read and printed in full colour.

SURVEY NOTES

1. This plan should only be used for its original purpose. Brightsurv Ltd accepts no responsibility if supplied to any other party than the original client.
2. Certain areas of the site may have been inaccessible due to dense vegetation, vehicles etc on site at the time of survey, therefore not all services may be identified on the survey drawing.
3. Information Shown outside of the site boundary has been taken from Ordnance Survey records and would need verification to be relied upon.
4. The spread of vegetation shown is approximate only. Where canopy spread is critical then this shall be regularly checked. Generally only trees with a spread greater than 2.0m will be shown on the drawing.
5. Where the identity of a service is shown this is based on a visual id only. Where specific identification is required then additional survey work shall be undertaken.
6. Dimensions shown are in millimetres and levels in metres unless indicated.

Levels Levels relate to GPS observations.

LEGEND KEY

AV Air Valve	FL Floor Level	RE Rodding Eye	Building	Tree Canopy
B Bollard	FW Foul Water	RL Ridge Level	Vegetation	Fence
BH Borehole	G Gully	RS Road Sign	Control Station	Boundary
BL Bed Level	OV Gas Valve	RWP Rainwater Pipe	Bush/Shrub	Contours
BS Bus Stop	SL Soffit Level	SI Stump	Tree	OH Telecom
BT BT Cover	IC Inspection Chamber	SV Stop Valve	Tree (Multi-Bolt)	OH Electric
BW Brick Wall	IL Invert Level	SW Soil & Vent Pipe	Bore Hole	Foul Water
CB Close Boarded	IR Iron Railing	SW Surface Water	Gate	Surface Water
CL Chain Link	KO Kerb Outlet	SW Stone Wall		
CL Cover Level	LB Letter Box	THL Threshold Level		
Col. Column	LP Lamp Post	TL Traffic Light		
CRW Concrete Retaining Wall	MH Manhole	TP Telegraph Pole		
CW Concrete Wall	MR Marker Post	U/S Underside		
CPI Catch Pit	NP Name Plate	UTL Unable To Lift		
DPC Damp Proof Course	OH Overhead	VP Vent Pipe		
Dr Drain	P Post	WL Water Level		
EL Eaves Level	PI Pipe	WM Water Meter		
ER Earth Rod	P/R Post & Rail	WO Wash Out		
EP Electricity Pole	P/W Post & Wire	WT Water Tap		
FH Fire Hydrant	PL Parapet Level			

Brightsurv Ltd.

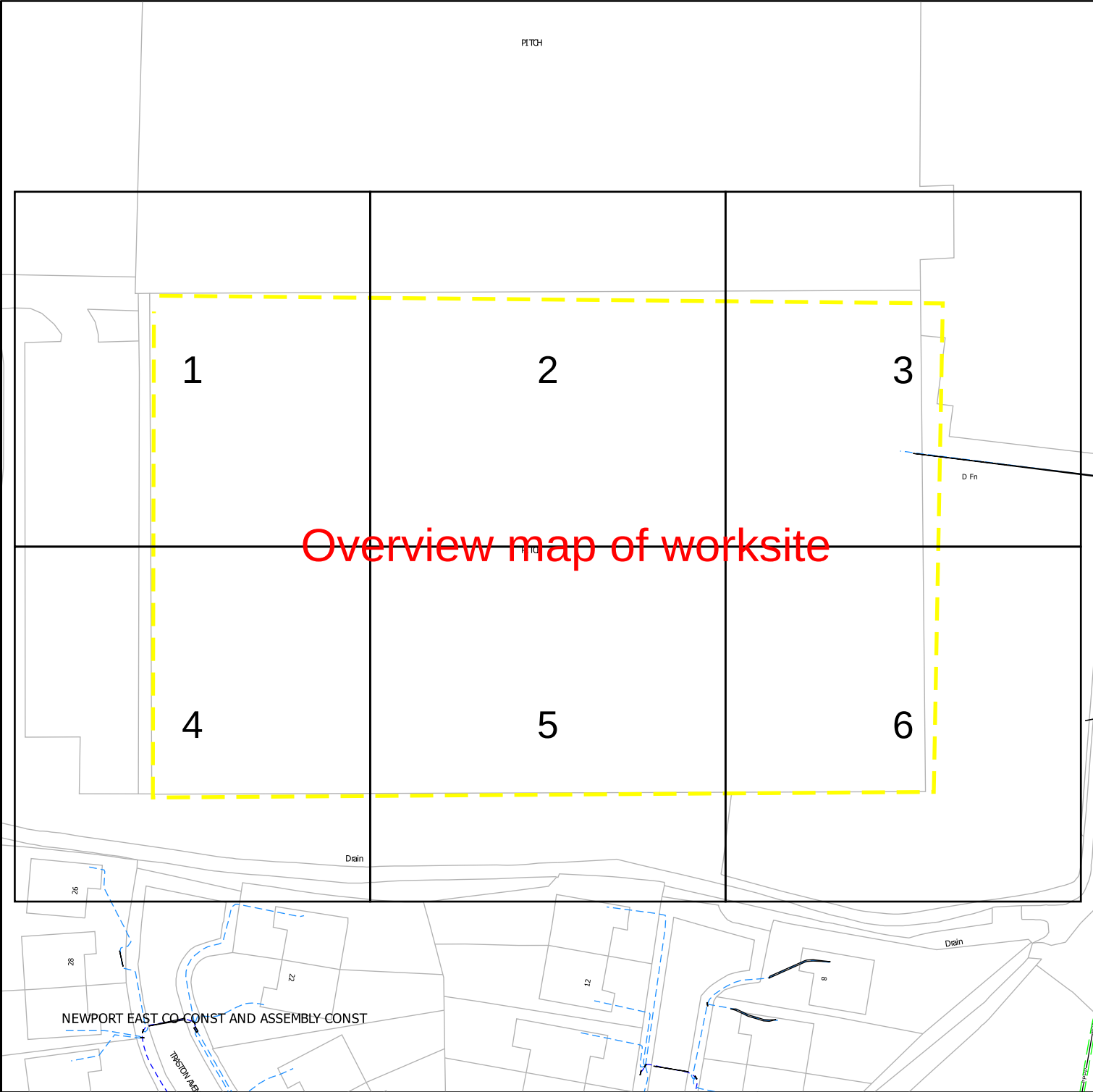
9 Thickwillow
Godmanchester
PE29 2LR

Contact: Richard@brightsurv.co.uk
Tel: 07843 411 341

Scale at A1 1:250	Drawn by RB	Checked by RB	Date Oct 2025
Status For Information	Project ref BRI1244	Drawing no. T01	Revision

Client Sports Labs Ltd	Project Velodrome Way, Newport	Title Topographical Survey
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Appendix I Statutory Undertakers Responses





Contact Us

Mapping Enquiries:
All areas 0121 623 9780

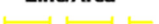
General Enquiries:
All areas 0800 096 3080

Link Box



Site Location

Line/Area



Overhead Line

	PL
	Service
	LV
	HV (11kV)
	HV (33kV)
	HV (66kV)
	HV (132kV)

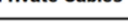
Underground Cable



National Grid Telecoms

 S S

Private Cables



Pilot Cables

 P P

Pole Mounted Transformer



Ground Mounted Transformer



PME Earth



Underground Earth



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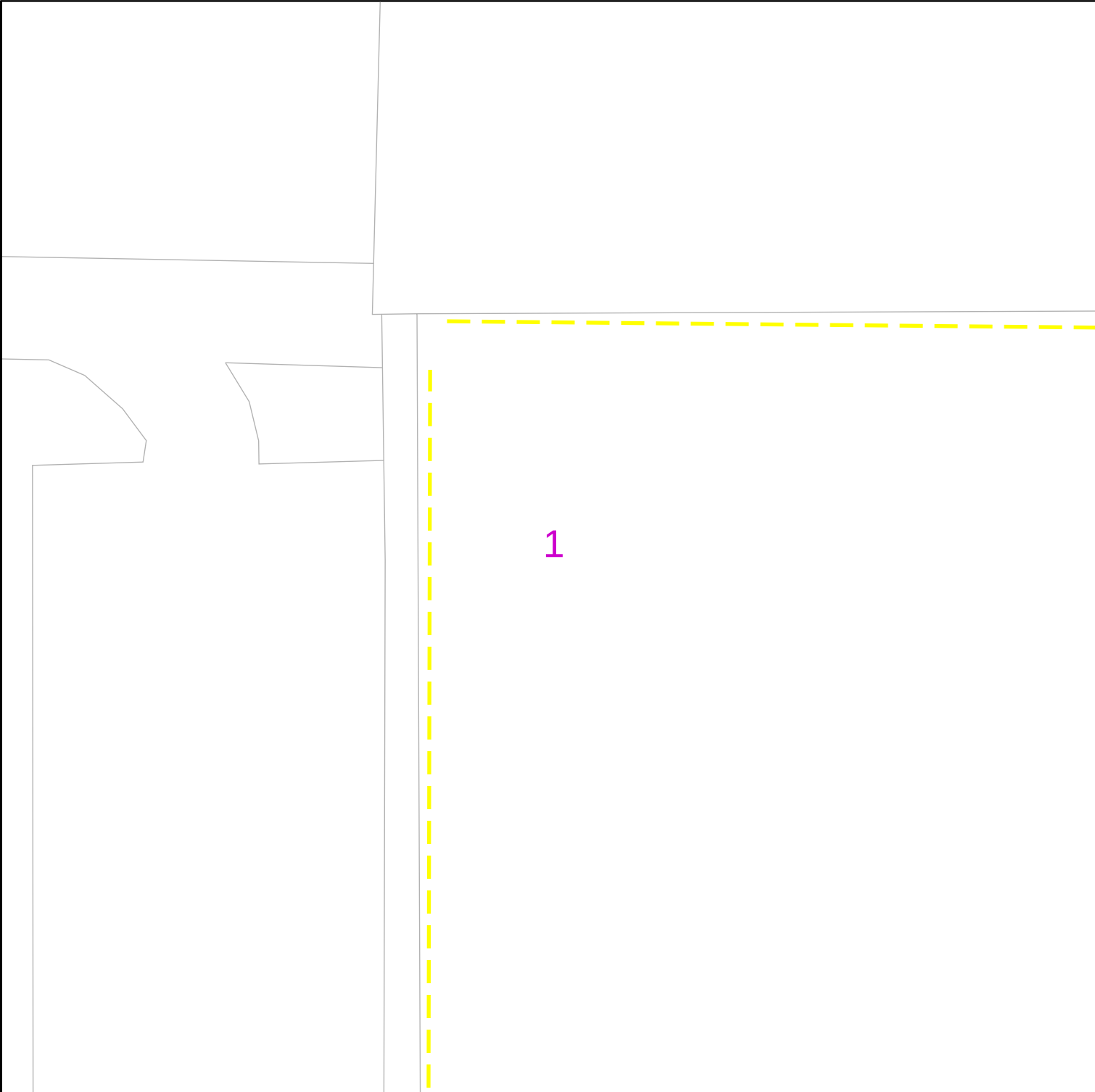
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- You should always verify exact locations of cables using a cable locator and by careful use of hand tools in accordance with HSE guidance note HSG47.
- When working within 10m of any overhead electric line you should follow the requirements of HSE Guidance Note GS6.
- For further advice on working near our electricity cables or lines, call our General Enquiries number.
- Advice should be sought from the National Grid Electricity Distribution General Enquiries team for any work that is to take place in proximity to 132kV underground cables and 132kV overhead lines.

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA: 0800 6783 105

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Contact Us

Mapping Enquiries:
All areas 0121 623 9780

General Enquiries:
All areas 0800 096 3080

Date Requested: 14/10/2025
Job Reference: 39046636
Site Location: 333941 186518
Requested by: Miss Lauren Wenham
Your Scheme/Reference: STX7242

0 2.5 m

Link Box

Site Location Line/Area

Overhead Line

- PL
- Service
- LV
- HV (11kV)
- HV (33kV)
- HV (66kV)
- HV (132kV)

Underground Cable

- PL
- Service
- LV
- HV (11kV)
- HV (33kV)
- HV (66kV)
- HV (132kV)

National Grid Telecoms

Private Cables

PME Earth

Underground Earth

Pilot Cables

Pole Mounted Transformer

Ground Mounted Transformer

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Contact Us**Mapping Enquiries:**

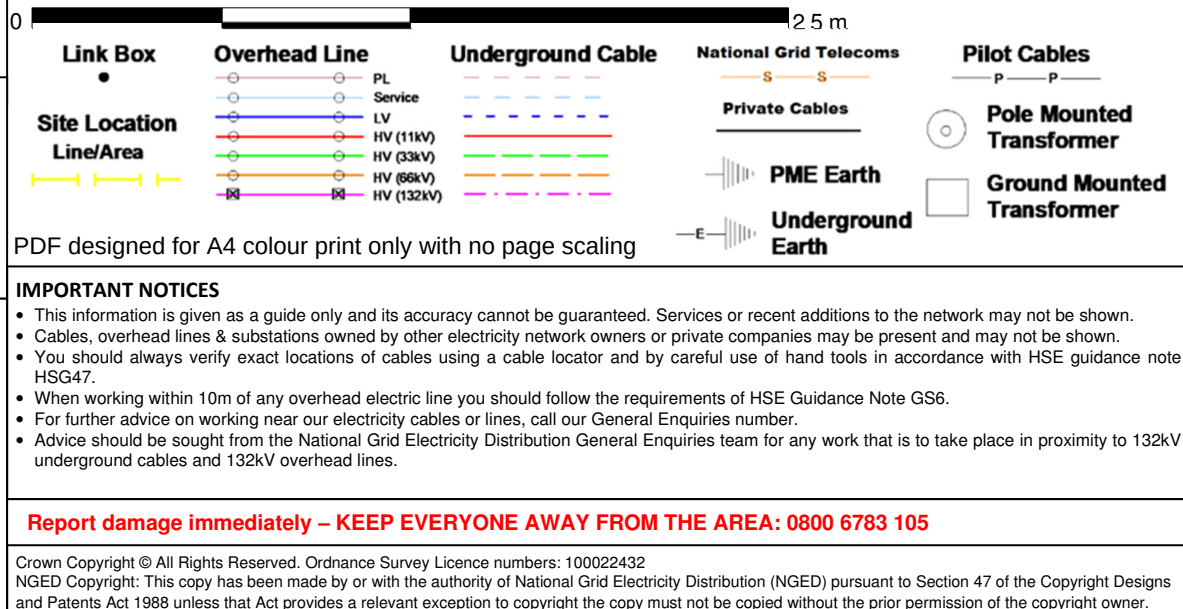
All areas 0121 623 9780

General Enquiries:

All areas 0800 096 3080

Date Requested: 14/10/2025
Job Reference: 39046636
Site Location: 333941 186518
Requested by: Miss Lauren
Wenham
Your Scheme/Reference:
STX7242

Scale: 1:250 (When plotted at A4)



5

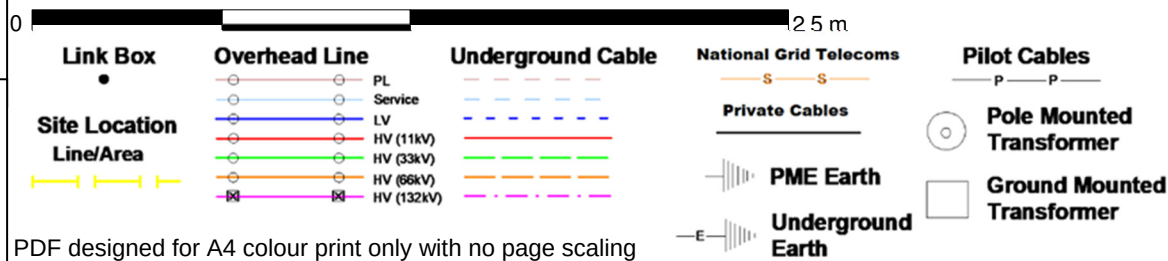
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6

3000 I.A PIPE IN 150 CONCRETE
ON TWO LAYERS OF RUBBER MATS
RESTING DIRECTLY ON TOP
OF 33kV CABLES

nationalgrid Electricity Distribution

Contact Us

Mapping Enquiries:

All areas 0121 623 9780

General Enquiries:

All areas 0800 096 3080

Date Requested: 14/10/2025
Job Reference: 39046636
Site Location: 333941 186518
Requested by: Miss Lauren Wenham
Your Scheme/Reference: STX7242

02.5 m

Link Box
●
Site Location
Line/Area
| | |

Overhead Line
—○—○—
—○—○— Service
—○—○— LV
—○—○— HV (11kV)
—○—○— HV (33kV)
—○—○— HV (66kV)
—○—○— HV (132kV)

Underground Cable
- - - - -
- - - - -
- - - - -
- - - - -
- - - - -

National Grid Telecoms
—S—S—
Private Cables
- - - - -
PME Earth
—E—
Underground Earth

Pilot Cables
—P—P—
Pole Mounted Transformer
Ground Mounted Transformer

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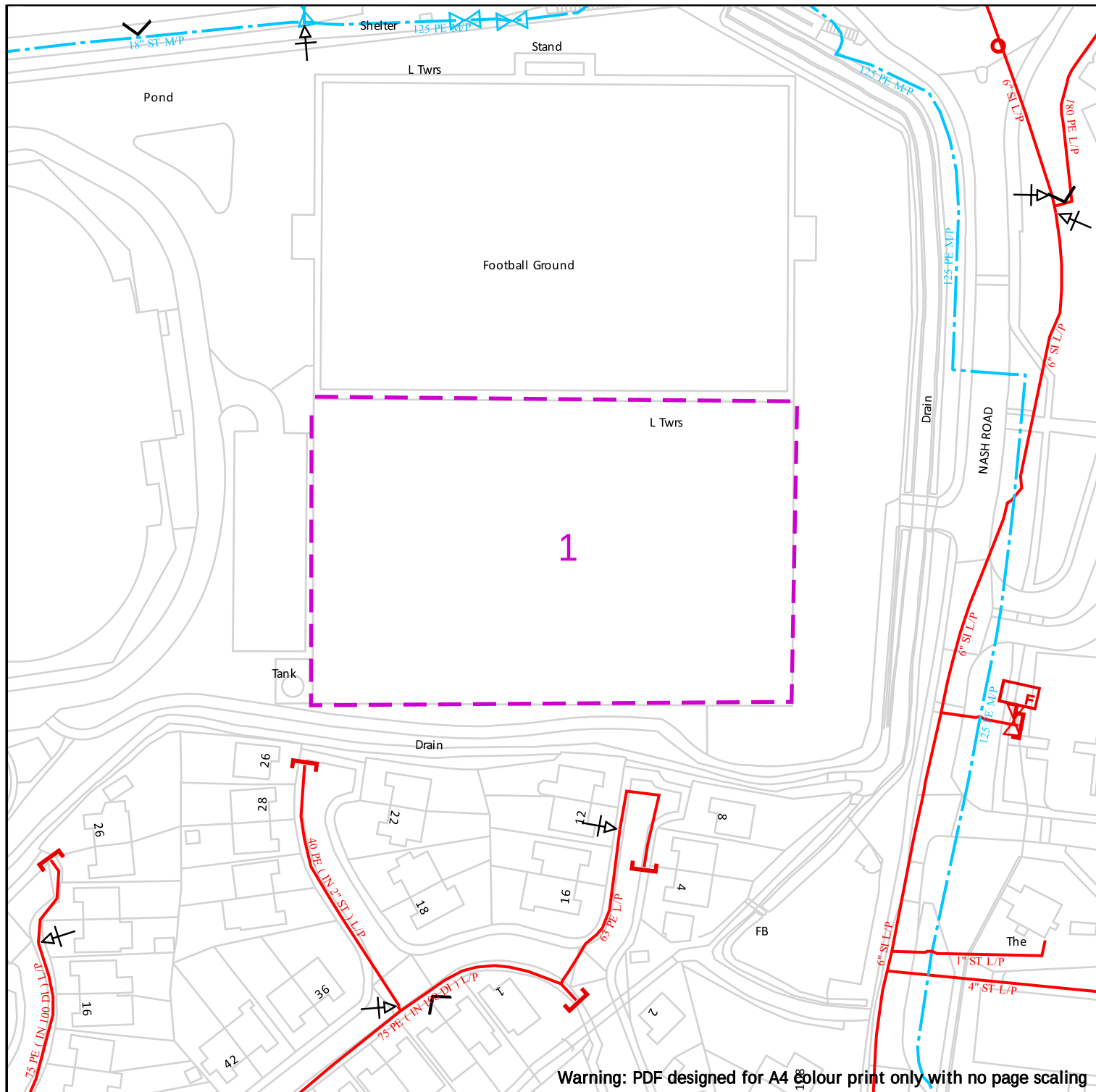
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Contact Us

Mapping Enquiries:

All areas 02920 278 912

General Enquiries:

All areas 0800 912 2999

Dig Sites

Area:

Line:

- Low Pressure (LP) 21mbar – 75mbar
- Medium Pressure (MP) 350mbar – 2bar
- Intermediate Pressure (IP) 2bar – 7bar
- High Pressure (HP) >7bar



Change of Diameter



End Cap



Depth of cover



Line/Fire Valve



Governor Station

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed
- The plan only shows those pipes owned by Wales & West Utilities (WWU) as its role as a licensed Gas Transporter
- Service pipes, valves, syphons, stub connections etc. may not be shown but their presence should be anticipated
- You must use safe digging practices in accordance with H5(G)47 to establish the actual position of mains, services and other apparatus before any mechanical excavation is used
- It is your responsibility to ensure this information is provided to all persons working near our plant
- If in doubt call the WWU dig team on 02920 278912

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 111 999

Date Requested: 14/10/2025
Job Reference: 39046636
Site Location: 333941 186518
Requested by: Miss Lauren Wenham
Your Scheme/Reference: STX7242

Scale: 1:1250 (When plotted at A4)

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Smell gas?
Call the Gas Emergency Service on
0800 111 999.

**Dial
before
you dig**

We need
10 days' notice

Dial
Call 029 2027 8912
before you start work.
Investigate
Before you dig, make sure
you know what's below.
Go ahead
Done your research?
Now you can dig safely.



Dŵr Cymru
Welsh Water

Dragon Park, Newport, NP19 4RA



LEGEND

Clean network:

Sluice valve

Pressure reducing valve

Meter

Bulk meter

Hydrant

Cap end

Air valve

Stop tap

Water Treatment Works

Water Pumping Station

Existing main

Non-operational main

Raw Water

NB: Water main symbol colour indicates the type.

LIGHT BLUE - Trunk

DARK BLUE - Distribution

YELLOW - Raw Water

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation.

Dŵr Cymru Cylinddydd (the Company) gives this information as to the position of its underground apparatus by way of general guidance only and on the understanding that it is based on the best information available and is not warranted as to its correctness in relation to the extent of excavations or other works made in the vicinity of the company's apparatus. The user of this information is advised to carry out any excavations made solely on their own. The information which is supplied by the Company is done so in accordance with statutory requirements of sections 105 and 106 of the Water Industry Act 1989 which in no way opens the liability of the Company for any inaccuracies, but without prejudice to the generality of the foregoing, it should be noted that the records that are available to the Company may not disclose the existence of a water main, service pipe, sewer, lateral drain or other apparatus and any associated apparatus and before September 1989, or if they do, the particular detail of the position underground may not be accurate. It must be understood that the furnishing of this information is solely without prejudice to the provisions of the New Roads and Street Works Act 1991 and the Company's right to be compensated for any damage to its apparatus.

Service pipes are not generally shown but their presence should be anticipated.

**EXACT LOCATIONS OF ALL APPARATUS
TO BE DETERMINED ON SITE.**

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Map Ref: 333882,186563
Map scale: 1:1500
Printed by: Ffion Evans
Printed on: 16 Oct 2025

Enquirer

Name	Miss Lauren Wenham	Phone	01604 781877
Company	Soiltechnics Ltd	Mobile	Not Supplied
Address	Cedar Barn White Lodge Walgrave Northamptonshire NN6 9PY		
Email	admin@soiltechnics.net		

Enquiry Details

Enquiry type	Planned Works
Work category	Development Projects
Work type	Piling
Work type buffer*	150 metres
Start date	15/10/2025
End date	15/10/2025
Scheme/Reference	STX7242
Search location	np194ra
Confirmed location	333941 186518
Site size	0 metres square
Site Contact Name	Admin Soiltechnics
Site Phone No.	01604781877
Description of Works	Boreholes

* The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.

Site Map



Please note that the above map only displays the location of the proposed work site and will not display any of the Members' pipes and cables. It is imperative that this area accurately reflects the proposed work site.

Affected LSBUD members

(LSBUD Members who have assets registered on LSBUD within the vicinity of your search area.)

Do not proceed until all Members listed below have confirmed that your works can continue.

Asset Owner	Phone/Email	Emergency Only	Status
Concept Solutions People Ltd	01934313673	01934313673	Await response
National Grid Electricity Distribution	08000963080	08006783105	Await response
National Grid Electricity Transmission	08000014282	0800404090	Await response
Wales and West Utilities	02920278912	0800111999	Await response

Status explanation

Await Response means that the asset owner will contact you. This is typically by sending the plan response but they may ask for further information before being able to do so, particularly if any payments or authorisations are required.

Email Additional Info means that the asset owner needs further information about your works to assess your enquiry before providing a response. Please provide any details you have available including plans, method statements etc. if available.

Important notices

It is very important that you correctly understand what the service does and the procedures in order for you to work safely. Please refer to the LSBUD Support Page (www.lsbud.co.uk/lineasearchbeforeudig-support) for further guidance.

This information includes how to provide additional information to the LSBUD Members who request it to provide a response to your enquiry.

Validity and search criteria. The results of this enquiry are based on the confirmed information you entered and are valid only as at the date and time of the enquiry. It is your responsibility to ensure that the Enquiry Details are correct, and LineasearchbeforeUdig (LSBUD) accepts no responsibility for any errors or omissions in the Enquiry Details or any consequences thereof. LSBUD Members update their asset information on a regular basis so you are advised to consider this when undertaking any works. It is your responsibility to choose the period of time after which you need to resubmit any enquiry but the maximum time (after which your enquiry will no longer be dealt with by the LSBUD Helpdesk and LSBUD Members) is 28 days. If any details of the enquiry change, particularly including, but not limited to, the location of the work, then a further enquiry must be made.

Terms and Conditions. Please note that this enquiry is subject always to our standard terms and conditions available at www.lsbud.co.uk ("Terms of Use") and the disclaimer at the end of this document. Please note that in the event of any conflict or ambiguity between the terms of this Enquiry Confirmation and the Terms of Use, the Terms of Use shall take precedence.

List of not affected LSBUD members

(LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area.)

Advanced Electricity Networks	Air Products PLC	AllPoints Fibre
Angus Energy	AWE Pipeline	B & D Energy Limited
Bakkafrost Scotland Limited	Balfour Beatty Investments Limited	BOC Limited (A Member of the Linde Group)
Box Broadband	BP Exploration Operating Company Limited	BPA
Burwell 11 Solar Limited	Cadent Gas	Cambridge Water
Cambridgeshire County Council Climate Change and Energy Services	CATS Pipeline c/o Wood Group PSN	Cemex
Centrica Storage Ltd	CNG Services Ltd	ConocoPhillips (UK) Teesside Operator Ltd
D.S.Smith	Diamond Transmission Corporation	DIO (MOD Live Pipelines)
Drax Power Limited	Eden Estuary Energy Limited	EDF Energy Renewables Ltd
EET Fuels	EirGrid	Eleclink Limited
Electricity North West Limited	Energy Assets Networks	ENI & Himor c/o Penspen Ltd
EnQuest Heather Ltd	EP Langage Limited	ESB CCGT Power station (Carrington Gas Pipeline)
ESP Utilities Group	Esso Petroleum Company Limited	euNetworks Fiber UK Ltd
EXA Infrastructure	Exolum Pipeline System	Fulcrum Electricity Assets Limited
Fulcrum Pipelines Limited	G.Network Communication Ltd c/o JSM Group Ltd	Gamma
Gas Networks Ireland (UK)	Gateshead Energy Company	Gigaclear Ltd
Greenlink Interconnector Ltd	Harbour Energy	Heathrow Airport LTD
Humbly Grove Energy	IGas Energy	Impala Terminals Infrastructure Ltd
Indigo Networks	INEOS FPS Pipelines	INEOS Manufacturing (Scotland and TSEP)
INOVYN ChlorVinyls Limited	INOVYN Enterprises Limited	Intergen (Coryton Energy or Spalding Energy)
Kensa Utilities	Last Mile	Liverpool City Region Connect
Mainline Pipelines Limited	Manchester Jetline Limited	Manx Cable Company
Marchwood Power Ltd (Gas Pipeline)	Melbourn Solar Limited	MUA Group Limited
Mutual Energy	National Gas Transmission	National Grid Ventures
Neos Networks	Northern Gas Networks Limited	Northumbrian Water Group
NPower CHP Pipelines	NTT Global Data Centers EMEA UK Ltd	NYnet Ltd
Ogi	Oikos Storage Limited	Ørsted
Palm Paper Ltd	Perenco UK Limited (Purbeck Southampton Pipeline)	Petroineos
Phillips 66	Portsmouth Water	Redundant Pipelines - LPDA
RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station)	RWEnpower (Little Barford and South Haven)	SABIC UK Petrochemicals
SAS Utility Services Ltd	Scottish and Southern Electricity Networks	Scottish Power Generation

Seabank Power Ltd	SES Water	SGN
Shell	Shell NOP	South Staffs Water
SP Energy Networks	Spring Fibre Limited	Squire Energy Networks
SSE Generation Ltd	SSE Private Networks / iDNO	SSE Transmission
Storengy	Sutton Bridge Power Generation	Tata Communications (c/o JSM Construction Ltd)
TfL – London Underground HV Cables (Road & Track Side Cables)	toob Limited	Total (Colnbrook) c/o Penspen
Total Finaline Pipelines	Transmission Capital	Trojan Energy Limited
UK Power Distribution	UK Power Networks	Uniper UK Ltd
University of Cambridge Granta Backbone Network	Vattenfall	Veolia ES SELCHP Limited
Veolia ES Sheffield Ltd	Virgin Media O2	Voneus Limited
VPI Power Limited	Welsh Power	West of Duddon Sands Transmission Ltd
West Sussex OpenNetwork (Cooperative National Infrastructure)	Westminster City Council	Winnington CHP Ltd
Zayo Group UK Ltd c/o JSM Group Ltd		

Non-LSBUD members (Asset owners not registered on LSBUD)

(The following Non-LSBUD Members may have assets in your search area. It is **YOUR RESPONSIBILITY** to contact them before proceeding.)

Please be aware this list is not exhaustive and it is your responsibility to identify and contact all asset owners within your search area.)

Asset Owner	Preferred contact method	Phone	Status
Bring Energy	nrswa@bringenergy.com	0800 130 3600	Not Notified
BT	https://www.swns.bt.com/pls/mbe/welcome.home	08000232023	Not Notified
CityFibre	asset.team@cityfibre.com	033 3150 7282	Not Notified
Colt	plantenquiries@catelecomuk.com	01227768427	Not Notified
Dwr Cymru Welsh Water	https://contact.dwrcymru.com/en	0800 917 2652	Not Notified
GTC	https://pe.gtc-uk.co.uk/PlantEnqMembership	01359240363	Not Notified
Lumen Technologies	plantenquiries@ocugroup.com	02087314613	Not Notified
Mobile Broadband Network Limited	mbnl.plant.enquiries@turntown.com	01212 621 100	Not Notified
Sota	sota.plantenquiries@ocugroup.com		Not Notified
Utility assets Ltd	assetrecords@utilityassets.co.uk		Not Notified
Verizon Business	osp-team@uk.verizonbusiness.com	01293611736	Not Notified
Virgin Media	http://www.digdat.co.uk	08708883116	Not Notified
Vodafone	osm.enquiries@atkinsglobal.com	01454662881	Not Notified

Disclaimer

Please refer to LSBUD's Terms of Use for full terms of use available at www.lsbud.co.uk

The results of this Enquiry are personal to the Enquirer and shall not be shared with or relied upon by any other party. The asset information on which the Enquiry results are based has been provided by LSBUD Members, therefore LSBUD will provide no guarantee that such information is accurate or reliable nor does it monitor such asset information for accuracy and reliability going forward. There may also be asset owners which do not participate in the enquiry service operated by LSBUD, including but not exclusively those set out above. Therefore, LSBUD cannot make any representation or give any guarantee or warranty as to the completeness of the information contained in the enquiry results or accept any responsibility for the accuracy of the mapping images used. LSBUD and its employees, agents and consultants accept no liability (save that nothing in this Enquiry Confirmation excludes or limits our liability for death or personal injury arising from our negligence, or our fraud or fraudulent misrepresentation, or any other liability that cannot be excluded or limited by English law) arising in respect thereof or in any other way for errors or omissions including responsibility to any person by reason of negligence.

Our Ref: 39046636 STX7242

Tuesday, 14 October 2025

Lauren Wenham
Cedar Barn White Lodge

NTH
NN6 9PY

National Grid House
Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

Electricity Emergency Number:
0800 40 40 90*
*Available 24 hours, 7 days/week.
Calls may be recorded and monitored.
www.nationalgrid.com

Asset Protection
National Grid Electricity Transmission
Warwick
Email: assetprotection@nationalgrid.com

National Grid Electricity – No Assets Affected

Dear Sir/ Madam,

An assessment has been carried out with respect to NGET apparatus and the proposed work location. Based on the search area entered in the LSBUD system for assessment the search area has been found to not affect any NGET apparatus.

Please note this response and any attached map(s) are valid for 28 days

Yours sincerely

Asset Protection Team

Your Responsibilities and Obligations

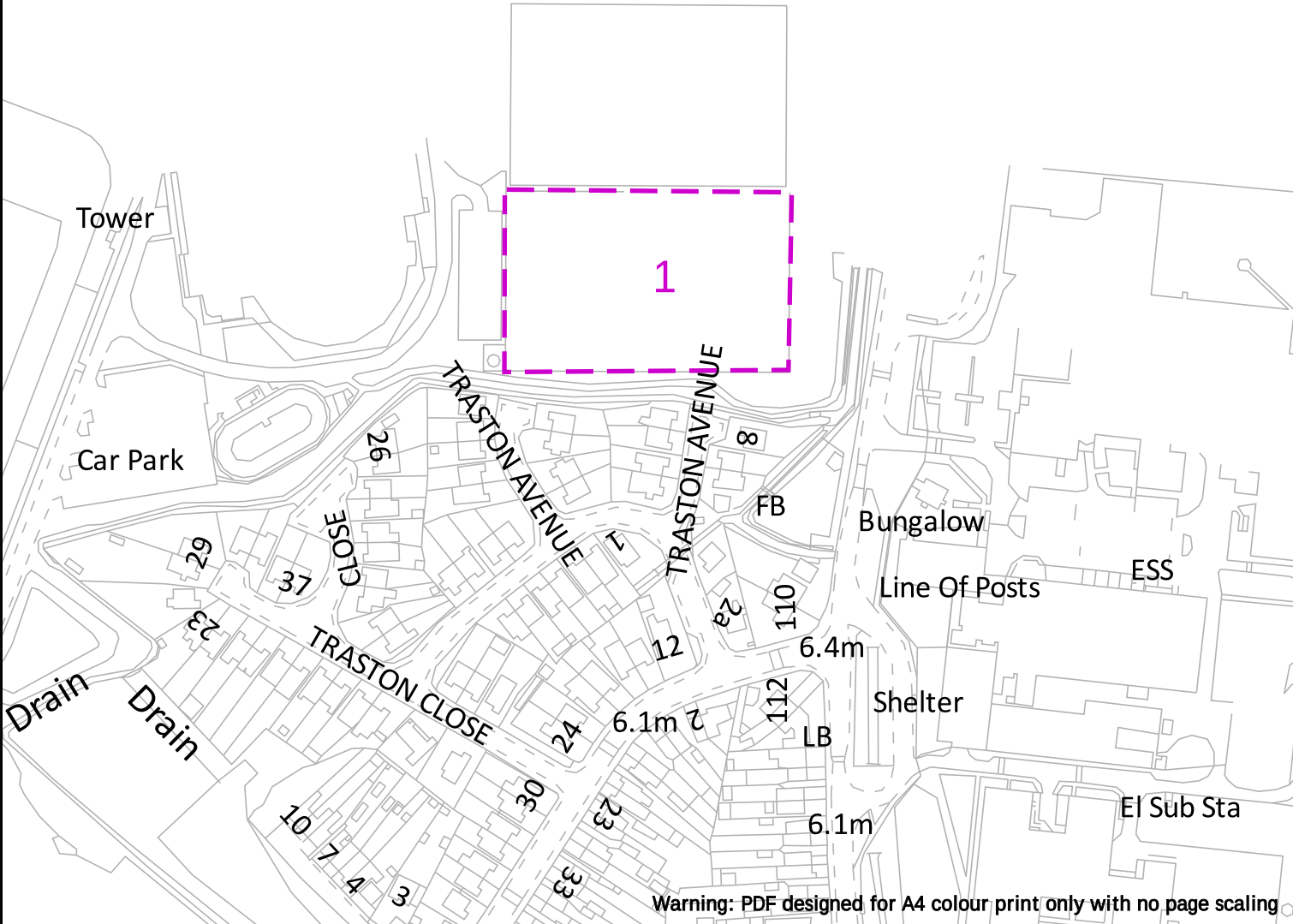
It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near National Grid Electricity Transmission plc's apparatus, as legally required including under the Construction (Design and Management) Regulations 2015.

The assessment solely relates to the physical apparatus of National Grid Electricity Transmission plc (NGET)
It does **NOT** cover:

- Apparatus owned by other people or organisations, e.g., Cadent, other gas distribution operators, local electricity companies, other utilities, landowners etc
- Apparatus owned by National Grid Gas plc.
- NGET's legal rights and interests (such as those contained in easements or wayleaves) in or concerning the land, which restrict activity in proximity to NGET's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and/or from HM Land Registry and/or you should seek legal advice. If in doubt, contact Asset Protection.

It is **YOUR** responsibility to consider whether any of the items or factors listed above may be present or relevant and if they could be affected by your proposed activities.

NGET or its agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability, which is prohibited by law, nor does it supersede the express terms of any related agreements.



nationalgrid



EXTREME CAUTION - HIGH VOLTAGE
****RISK OF DEATH OR SERIOUS INJURY****

Dig Sites	Area:	Line:
	Underground Cables	
	Overhead Lines	
	Fibre Cables	

NationalGrid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

AssetProtection@NationalGrid.com

Date Requested: 14/10/2025
Job Reference: 39046636
Site Location: 333941 186518
Requested by: Miss Lauren Wenham
Your Scheme/Reference: STX7242

IMPORTANT NOTICES

This plan shows those pipes owned by National Grid Electricity Transmission plc in its role as a Licensed Electricity Transporter (ET). Electricity cables owned by other ETs, or otherwise privately owned, may be present in this area. Information with regards to such cables should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Ancillary equipment such as cooling systems and communication cables are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Electricity Transmission plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of cables and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near electricity apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

National Grid Electricity Emergency Number: 0800 40 40 90
Available 24 hours, 7 days/week. Calls may be recorded and monitored

Scale: 1:2500 (When plotted at A4)

ENQUIRY SUMMARY

Received Date

14/10/2025 9:48

Work Start Date

15/10/2025

Your Reference

STX7242

Location

Centre Point: 333941 186518

X Extent:

Y Extent:

Postcode: NP194TE

Map Options

Paper Size: A4

Orientation: PORTRAIT

Scale: 1:2500

Real World Extents: 111m x 70m

Enquirer Details

Organisation Name: Soiltechnics Ltd

Contact Name: Lauren Wenham

Email Address: admin@soiltechnics.net

Telephone: 01604 781877

Address: Cedar Barn White Lodge, , NTH, NN6 9PY

Enquiry Type

Planned Works

Activity Type

Development Projects

Work Types

Piling

Notes/Works Description (if supplied)

Boreholes

Site Contact Name (if supplied)

Admin Soiltechnics

Site Contact Number (if supplied)

01604781877



The information shown on this map is given as a general guide only. The map is issued without obligation or warranty. The accuracy cannot be guaranteed. The exact position of the ducts should be verified prior to mechanical excavation. The Nominal Depth of Duct Cover is:- Carriageway - 600mm / Footway & Verge - 350mm.



St John's House,
54 St John's Square, London
EC1V 4JL
Tel: 08456 805906
www.conceptsolutionspeople.com

Key:

	CSP DUCT
	TC
	CSP TURNING CHAMBER
	CSP CHAMBER FW4
	CSP CHAMBER FW5

Title			
NEWPORT Additional Area No3			
Location :		Newport	SCALE 1:500
Drawing Number:		CEN-CSP-029	OVERVIEW
Designed:		C.Rowbotham	15/07/2015
Drawn:		C.Cockerham	15/07/2015
Approved:		S.Ives	15/07/2015
REV	DATE	DRAWN	APPROVED



OFFICE 3.3, 15, NORMANTON BUSINESS
PARK, 20011 DUNELF, NORMANTON DN41 1DT
01904 227226 info@centara.co.uk

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Rev.
A

The Information shown on this map is given as a general guide only. The map is issued without obligation or warranty. The accuracy cannot be guaranteed. The exact position of the ducts should be verified prior to mechanical excavation. The Nominal Depth of Duct Cover is:- Carriageway - 600mm / Footway & Verge - 350mm.

 St John's House, 54 St John's Square, London EC1V 4JL Tel: 08456 805906 www.conceptSolutionspeople.com	Title NEWPORT Additional Area No3						
	Location :		Newport		SCALE 1:500		
	Drawing Number:		CEN-CSP-029		SHEET 01 OF 10		
	Designed:		C.Rowbotham		15/07/2015		
	Drawn:		C.Cockerham		15/07/2015		
Approved:		S.Ives		15/07/2015			
REV		DATE		DRAWN		APPROVED	

■ CSP DUCT

■ CSP TURNING CHAMBER

■ CSP CHAMBER FW4

■ CSP CHAMBER FW6



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people.

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EC1V 4JL

Tel: 08456 805806
www.conceptsolutionspeople.com

Key:

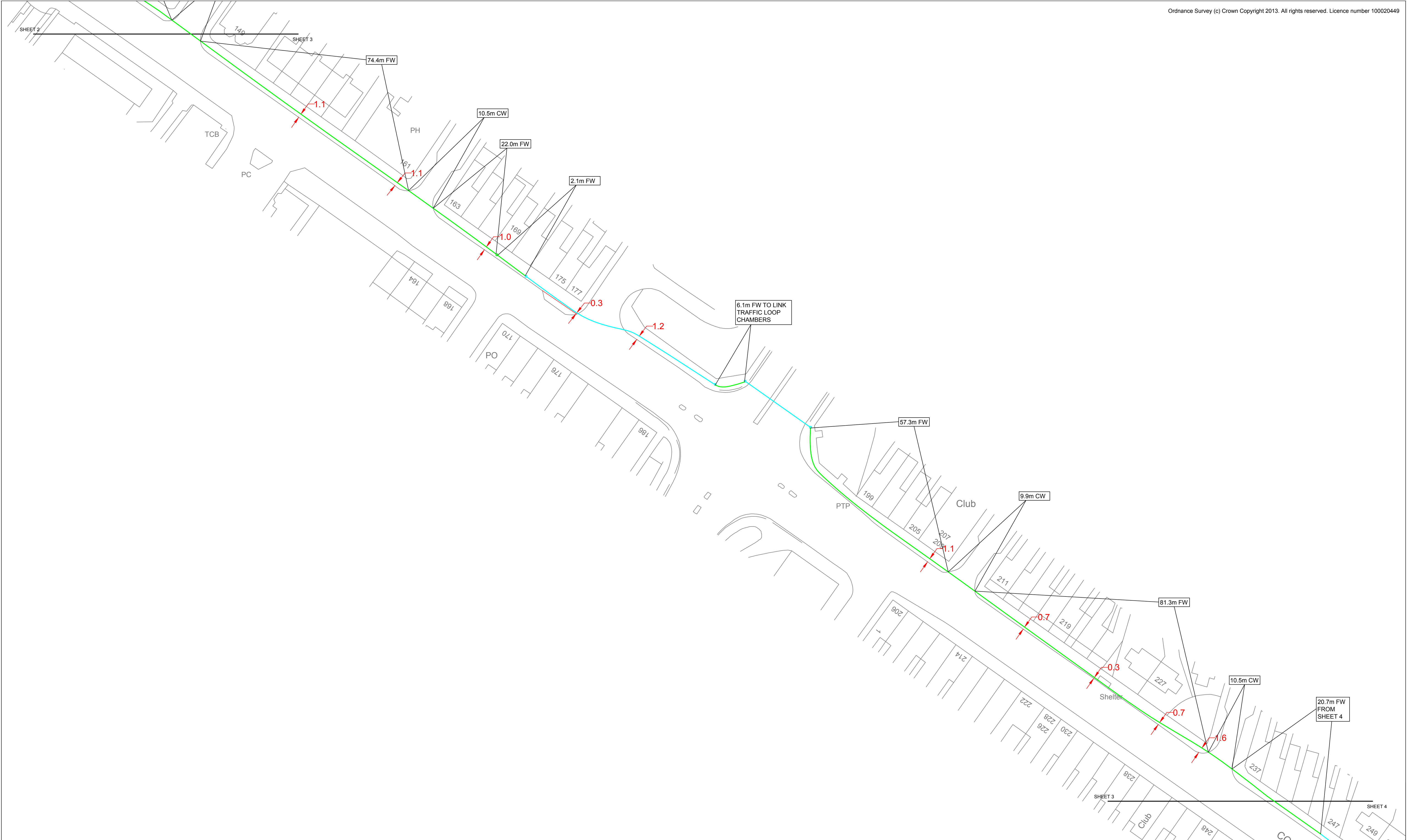
	CSP DUCT
	TC
	CSP TURNING CHAMBER
	CSP CHAMBER FW4
	CSP CHAMBER FW5

Title			
NEWPORT Additional Area No3			
Location :		Newport	SCALE 1:500
Drawing Number:		CEN-CSP-029	SHEET 02 OF 10
Designed:		C.Rowbotham	15/07/2015
Drawn:		C.Cockerham	15/07/2015
Approved:		S.Ives	15/07/2015
REV	DATE	DRAWN	APPROVED



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DESIGN, PRINT, AND DIGITAL

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A



The information shown on this map is given as a general guide only. The map is issued without obligation or warranty. The accuracy cannot be guaranteed. The exact position of the ducts should be verified prior to mechanical excavation. The Nominal Depth of Duct Cover is:- Carriageway - 600mm / Footway - 350mm



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St John's House,
54 St John's Square, London
EC1V 4JL
Tel: 08456 805896
www.conceptsolutionspeople.com

Key:

	CSP DUCT
	TC
	CSP TURNING CHAMBER
	CSP CHAMBER FW4
	CSP CHAMBER FW5

Title

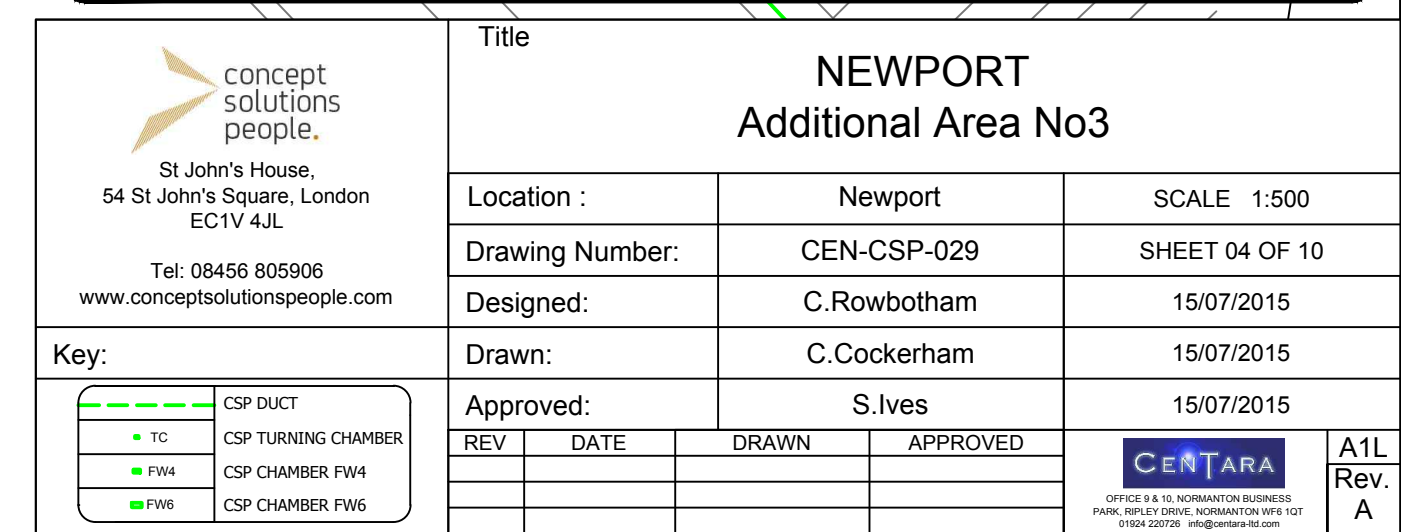
**NEWPORT
Additional Area No3**

Location :	Newport	SCALE 1:500
Drawing Number:	CEN-CSP-029	SHEET 03 OF 10
Designed:	C.Rowbotham	15/07/2015
Drawn:	C.Cockerham	15/07/2015
Approved:	S.Ives	15/07/2015
REV	DATE	DRAWN



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EC1V 4JL
Tel: 08456 805906
www.conceptsolutionspeople.com

Key:	
	CSP DUCT
	CSP TURNING CHAMBER
	CSP CHAMBER FW4
	CSP CHAMBER FW6

Title				NEWPORT Additional Area No3				
Location :		Newport		SCALE		1:500		
Drawing Number:		CEN-CSP-029		SHEET		05 OF 10		
Designed:		C.Rowbotham		15/07/2015				
Drawn:		C.Cockerham		15/07/2015				
Approved:		S.Ives		15/07/2015				
REV	DATE	DRAWN		APPROVED		 OFFICE & 10 INFORMATION BUSINESS PARK, 100 CECIL ROAD, NORTHAMPTON NN4 7JG		A1L Rev. A

The drawing is a plan view of a sewerage network. A main sewer line runs diagonally from the top left to the bottom right, labeled 'CORPORATION ROAD'. Along this line, several manholes are marked with green dots and labeled with distances from the start: 10.1m CW, 89.9m FW, 11.3m CW, 33.4m FW, 11.3m FEED INTO LIBRARY, 5.4m FW, 11.2m CW, 33.5m FW, 10.8m CW, 32.3m FW, 9.0m FW, 46.2m FW, and 50m FW TO SHEET 7. A 450 x 450 Chamber is located near the 11.3m FEED INTO LIBRARY. The drawing also shows a 'Carnegie Free Library' and a 'Shelter'. Red arrows indicate flow directions, with values like 0.9, 1.0, 0.8, 0.3, 0.5, and 1.0. The drawing is divided into sheets: SHEET 5, SHEET 6, and SHEET 7. A title block in the bottom right corner provides project details.

Key:

- TC CSP DUCT
- FW4 CSP TURNING CHAMBER
- FW5 CSP CHAMBER FW4
- FW6 CSP CHAMBER FW5

Title: NEWPORT Additional Area No3

Location : Newport

Drawing Number: CEN-CSP-029

Designed: C.Rowbotham

Drawn: C.Cockerham

Approved: S.Ives

Rev.: A1L

Rev.: A

Scale: 1:500

Date: 15/07/2015

Sheet: SHEET 06 OF 10

Company: concept solutions people.

Address: St John's House, 54 St John's Square, London EC1V 4JL

Tel: 08456 805906

Website: www.conceptsolutionspeople.com

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The drawing is a plan view of a sewerage network. A main sewer line runs diagonally from the top left to the bottom right, labeled 'CORPORATION ROAD'. Along this line, several manholes are marked with green dots and labeled with distances from the start: 10.1m CW, 89.9m FW, 11.3m CW, 33.4m FW, 11.3m FEED INTO LIBRARY, 5.4m FW, 11.2m CW, 33.5m FW, 10.8m CW, 32.3m FW, 9.0m FW, 46.2m FW, and 50m FW TO SHEET 7. A 450 x 450 Chamber is located near the 11.3m FEED INTO LIBRARY. The drawing also shows a 'Carnegie Free Library' and a 'Shelter'. Red arrows indicate flow directions, with values like 0.9, 1.0, 0.8, 0.3, 0.5, and 1.0. The drawing is divided into sheets: SHEET 5, SHEET 6, and SHEET 7.

Key:

- TC CSP DUCT
- FW4 CSP TURNING CHAMBER
- FW5 CSP CHAMBER FW4
- FW6 CSP CHAMBER FW5

Information Box:

The Information shown on this map is given as a general guide only. The map is issued without obligation or warranty. The accuracy cannot be guaranteed. The exact position of the ducts should be verified prior to mechanical excavation. The Nominal Depth of Duct Cover is:- Carriageway - 600mm / Footway & Verge - 350mm.

Company Information:

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Project Information:

Title: NEWPORT Additional Area No3
Location: Newport
Drawing Number: CEN-CSP-029
Designed: C.Rowbotham
Drawn: C.Cockerham
Approved: S.Ives
Date: 15/07/2015
Scale: 1:500
Sheet: SHEET 06 OF 10

Revision Table:

REV	DATE	DRAWN	APPROVED

Logo: Centara

Scale: 1:500

Sheet: SHEET 06 OF 10

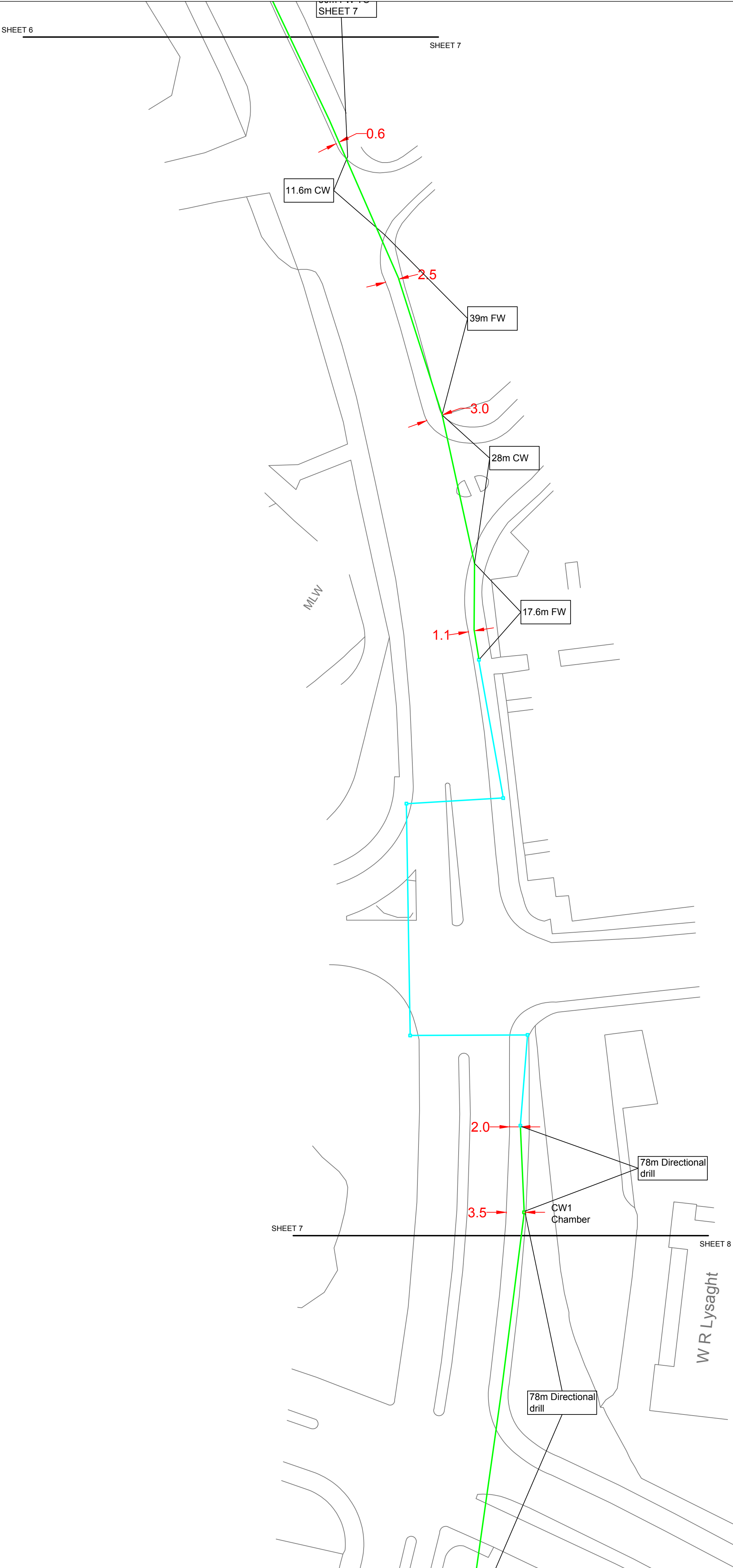
Author: C.Rowbotham

Checker: C.Cockerham

Approver: S.Ives

Date: 15/07/2015

Rev.: A1L



The information shown on this map is given as a general guide only. The map is issued without obligation or warranty. The accuracy cannot be guaranteed. The exact position of the ducts should be verified prior to mechanical excavation. The Nominal Depth of Duct Cover is:- Carriageway - 600mm / Footway & Verge - 350mm.



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Key:

---	CSP DUCT
+	TC
+	CSP TURNING CHAMBER
+	CSP CHAMBER FW4
+	CSP CHAMBER FW5

Title			
NEWPORT Additional Area No3			
Location :		Newport	SCALE 1:500
Drawing Number:		CEN-CSP-029	SHEET 07 OF 10
Designed:		C.Rowbotham	15/07/2015
Drawn:		C.Cockerham	15/07/2015
Approved:		S.Ives	15/07/2015
REV	DATE	DRAWN	APPROVED



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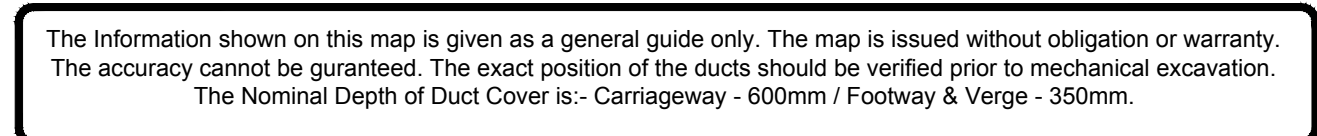
St John's House,
54 St John's Square, London
EC1V 4JL

Tel: 08456 805906
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Key:	
	CSP DUCT
	CSP TURNING CHAMBER
	CSP CHAMBER FW4
	CSP CHAMBER FW6

Title				NEWPORT Additional Area No3			
Location :		Newport		SCALE		1:500	
Drawing Number:		CEN-CSP-029		SHEET		08 OF 10	
Designed:		C. Rowbotham		15/07/2015			
Drawn:		C. Cockerham		15/07/2015			
Approved:		S.Ives		15/07/2015			
REV	DATE	DRAWN	APPROVED	 OFFICE 18, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100		A1L Rev A	

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 concept solutions people. St John's House, 54 St John's Square, London EC1V 4JL Tel: 08456 805906 www.conceptsolutionspeople.com	Title NEWPORT Additional Area No3																																	
Key: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"> CSP DUCT </td> <td style="width: 50%; text-align: center;"> CSP TURNING CHAMBER </td> </tr> <tr> <td style="text-align: center;"> CSP FWA4 </td> <td style="text-align: center;"> CSP CHAMBER FWA4 </td> </tr> <tr> <td style="text-align: center;"> CSP FWA6 </td> <td style="text-align: center;"> CSP CHAMBER FWA6 </td> </tr> </table>	CSP DUCT	CSP TURNING CHAMBER	CSP FWA4	CSP CHAMBER FWA4	CSP FWA6	CSP CHAMBER FWA6	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Location :</td> <td style="width: 33%;">Newport</td> <td style="width: 33%;">SCALE 1:500</td> </tr> <tr> <td>Drawing Number:</td> <td>CEN-CSP-029</td> <td>SHEET 10 OF 10</td> </tr> <tr> <td>Designed:</td> <td>C.Rowbotham</td> <td>15/07/2015</td> </tr> <tr> <td>Drawn:</td> <td>C.Cockerham</td> <td>15/07/2015</td> </tr> <tr> <td>Approved:</td> <td colspan="2" style="text-align: center;">S. Ives</td> </tr> <tr> <td style="text-align: center;">REV</td> <td style="text-align: center;">DATE</td> <td style="text-align: center;">DRAWN</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;">APPROVED</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> </table>	Location :	Newport	SCALE 1:500	Drawing Number:	CEN-CSP-029	SHEET 10 OF 10	Designed:	C.Rowbotham	15/07/2015	Drawn:	C.Cockerham	15/07/2015	Approved:	S. Ives		REV	DATE	DRAWN			APPROVED						
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REV	DATE	DRAWN																																
		APPROVED																																

Dragon Park, Newport, NP19 4RA



LEGEND(Representative of most common features)

- | | | | | | | | |
|------------------------|--------------------|-----------------------|-------------------------|-------------------------|-----------------|---|------------------------|
| Waste networks: | Foul chamber | Surface water chamber | Combined sewer overflow | Special purpose chamber | Treatment works | Pumping station | |
| Outfall | Lamp pole | Storm Overflow | Rising main | Gravity sewer | Private sewer | Private sewer subject to Sect. 104 adoption agreement | Private Sewer Transfer |
| Lateral Drain | Inspection Chamber | | | | | | |

Notes:

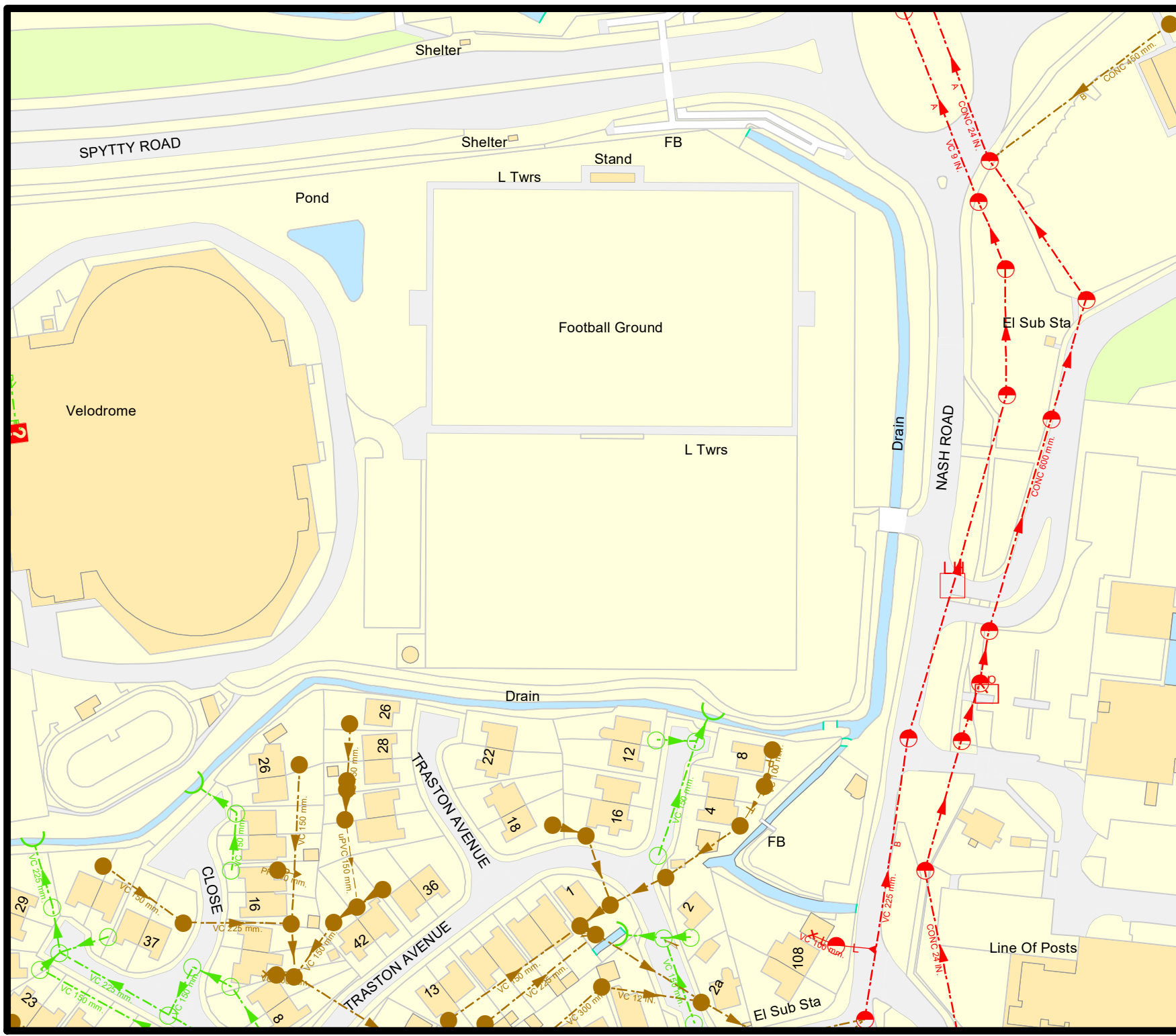
Whilst every reasonable effort has been taken to correctly record the pipe material of DCNW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation.

Dŵr Cymru Cympany (the Company) gives this information as to the position of its underground apparatus by way of general guidance only and on the understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus. The user of this information is advised to carry out any excavations made entirely on their own. The information which is supplied by the Company is done so in accordance with statutory requirements of sections 193 and 199 of the Water Industry Act 1991 which in cases opens the best information available and, in particular, but without prejudice to the generality of the foregoing, it is advised to be noted that the records that are available to the Company may not disclose the existence of a water main, service pipe, sewer, lateral drain or other apparatus and any associated apparatus, but before 1 September 1992, or if they do, the particular detail including the position underground may not be accurate. It must be understood that the furnishing of this information is entirely without prejudice to the provisions of the New Roads and Street Works Act 1991 and the Company's right to be compensated for any damage to its apparatus. Service pipes are not generally shown but their presence should be anticipated.

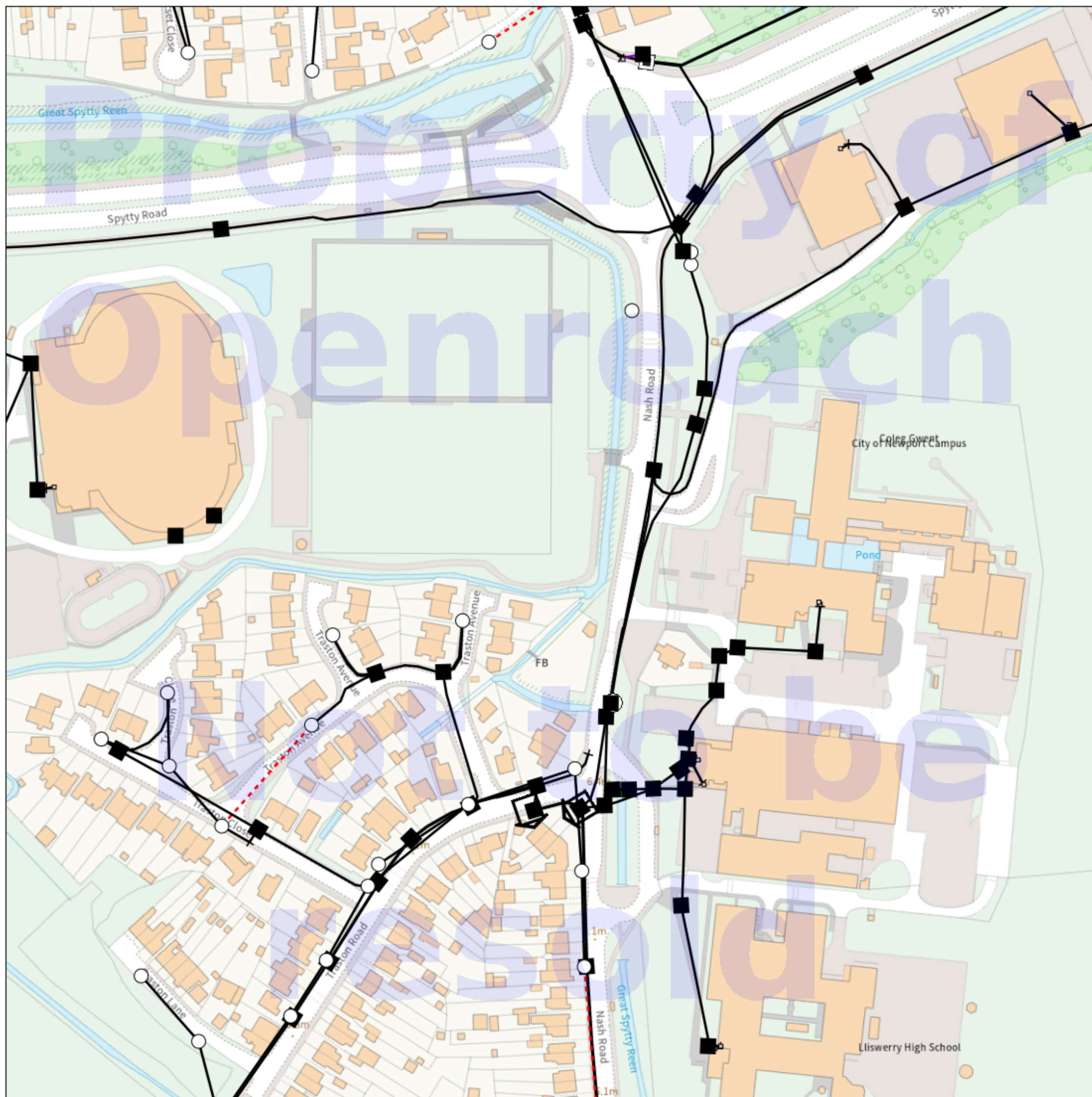
EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

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Map Ref: 333882,186563
Map scale: 1:1500
Printed by: Ffion Evans
Printed on: 16 Oct 2025



Maps on Demand Plant Information Reply



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KEY TO BT SYMBOLS

		Change Of State	+	Hatchings	
	<i>Planned</i>	<i>Live</i>	×	Built	
PCP			Split Coupling	▲	Planned
Pole			Duct Tee	■	Inferred
Box			Building	Ⓚ	Duct
Manhole			Kiosk		
Cabinet			Other proposed plant is shown using dashed lines. BT Symbols not listed above may be disregarded. Existing BT Plant may not be recorded. Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.		
		Pending Add	In Place	Pending Remove	Not In Use
Power Cable					
Power Duct					N/A

BT Ref : UCO151710

Map Reference : (centre) ST3394186518

Easting/Northing : (centre) 333941,186518

Scale : 1:500

Issued : 14/10/2025 15:17:47

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk