Comer Homes Group

North London Business Park

Phase 2 Geo-environmental and Geotechnical Site Investigation

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RSK GENERAL NOTES

Project No.: 1921321-R01

Title: Phase 2 Geo-environmental and Geotechnical Site Investigation: North London Business Park, Oakleigh Road South, Barnet, N11 1NP

Client: Comer Homes Group

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EXECUTIVE SUMMARY

Commissioning and purpose of assessment	RSK Environment Limited (RSK) was commissioned by Comer Homes Group to carry out a Phase 2 Geo-environmental and Geotechnical Site Investigation of the land at North London Business Park, Oakleigh Road South, Barnet, N11 1NP, grid reference 528088, 193479. The overall aim of the project was to assess potential land contamination sources and geotechnical constraints to the proposed development.
DESK-BASED ASSESSMENT	
Site description and proposed development	The site currently comprises an operational business park with an accompanying school, occupying a total area of ~4.50 hectares. The site is being considered for development for residential use in addition to relocation of the existing school.
History of site and surrounding area	Historical information has been reviewed from a previous Preliminary Risk Assessment of the site. The site formerly comprised numerous gravel pits within the northern area of the site, later occupied from 1938 by New Southgate Works across the majority of the site. Minor alterations of the associated warehouse buildings are noted up to between 1990 and 2000. Based upon a previous assessment of the site, the present-day configuration of the site layout was identified from 2007.
Previous assessment (PRA) report	RSK have been provided with a Preliminary Risk Assessment report for the site completed by WSP Environmental Ltd (December 2007). The report details the entire site boundary, including an additional area towards the north and west of site, these additional areas are located within the remit of North London Business Park.
Geology and environment setting	According to published geological data for the surrounding area, the site is underlain by deposits of the London Clay Formation, which is underlain by deposits of the Lambeth Group at depth. Due to historical developments on site, Made Ground is likely to be present. Environmental receptors identified comprise of a central surface water feature located adjacent to the school buildings, identified as an artificial pond.
Site reconnaissance findings	Various areas of soft landscaping bunds are noted across the site, more notably within the northern-most part of site. Within these areas, extensive Made Ground soils are likely to be present. Variations in topography are noted across the site between the south-eastern and northern areas. No potentially contaminative current site activities were noted during the site walkover. No visual signs of contamination were noted at the central pond surface water feature.

Initial conceptual site model (CSM) and preliminary risk assessment (PRA)	Following a review of both the previous WSP Environmental Ltd report and other available information, it is considered that the preliminary Conceptual Site Model produced for the site by WSP Environmental Ltd is appropriate for the site. Hence the main on-site sources of contamination identified are as follows: ○ Potential infilled gravel pits within the north of site; ○ Historical developments on site, including bunds; and ○ Potential for UXO to be present on site. In addition, the following off-site sources of contamination have been identified: ○ Neighbouring sites with commercial/industrial history; and ○ Landfills and waste transfer stations within the vicinity.
INTRUSIVE INVESTIGATION & ASSESSMENT	
SI scope	The intrusive investigation works and subsequent monitoring of the site was completed between August and October 2020 and comprised the following investigation techniques. • 18No mechanically excavated trial pits, completed up to a maximum depth of 3.0m bgl; • 8No boreholes by cable percussive methods, completed up to a maximum depth of 40.0m bgl; • Installation of 8No combined gas and groundwater monitoring wells; and • A total of 3No return gas and groundwater monitoring visits.
SI factual findings	The reported ground conditions comprised a profile of Made Ground or natural Topsoil underlain by bedrock deposits of the London Clay Formation. Deposits considered to represent the Lambeth Group were encountered from between 26.3m and 32.0m below ground level. Groundwater strikes noted as 'seepages' were noted throughout the cable percussive boreholes. Groundwater was not encountered within any of the trial pit locations. Evidence of visual or olfactory evidence of contamination was limited to Made Ground soils, generally comprising asphalt and clinker fragments, with some localised asphalt odours.
Geo-environmental assessment	No site-wide contamination issues have been identified across the site however, some limited contamination issues have been identified within Made Ground and subsoil that potentially pose a risk to human health. Based upon return gas monitoring completed to date, it is considered appropriate to determine the site as Characteristic Situation 2, where gas protection measures will be required. A total of 2No shallow soil samples have been shown to contain hazardous properties with regards to waste disposal. As a result, some waste on site would require disposal at a suitably permitted hazardous waste landfill or treatment facility.

Geotechnical assessment	It is understood that the proposed development will adopt a piled foundation solution within the underlying London Clay Formation and Lambeth Group. No specific information relating to building loads has been provided. A foundation works risk assessment will not be required for the development. An assessment of the potential magnitude of both long-term and short-term heave associated with the formation of basements should be undertaken. The recommended sub-grade soil CBR value for the preliminary road pavement design is 5%. Due to the variability within the subgrade soils, the materials should be regarded as frost suspectable. It is recommended that buried concrete piled foundations are designed in accordance with Design Sulphate Class DS-3 and Aggressive Chemical Environment for Concrete Class AC-3 (ACEC-AC).
Recommendations including issues for further assessment	Some limited contamination issues have been identified which pose potential risks to human health, consequently remediation measures will be required to mitigate and/or accommodate these risks. Should unforeseen contamination be encountered during the development then specialist advice should be sought to determine the appropriate course of action. Imported material (e.g. topsoil, subsoil) should be validated before use on-site to confirm its suitability.
The information given in this summary is necessarily incomplete and is provided for initial briefing purposes only. The summary must not be used as a substitute for the full text of the report.	

1 INTRODUCTION

1.1 Commissioning

RSK Environment Limited (RSK) was commissioned by Comer Homes Group to carry out a Phase 2 Geo-environmental and Geotechnical Site Investigation of the land at North London Business Park, Oakleigh Road South, Barnet, N11 1NP. The project was carried out to an agreed brief as set out in RSK's proposal (Ref. T1921321, dated 16th July 2020).

The Site in question is being considered for development for residential and commercial use. The planned layout of the site is shown in **Appendix B**.

1.2 Objectives

The objective of the work is:

- To identify any land contamination and/or geotechnical constraints to the proposed development and to support discharge of relevant planning conditions and relevant building control requirements; and
- To identify the need for any additional investigation or remediation works to demonstrate that the site is suitable for its proposed use.

1.3 Scope of works

The scope of this assessment has been developed in accordance with relevant British Standards and authoritative technical guidance as referenced through the report. The assessment of the contamination status of the site is in line with the technical approach presented in Land Contamination Risk Management (LCRM) (Environment Agency, 2020) – which supersedes CLR11 Model Procedures for Land Contamination – and in general accordance with BS 10175: 2011 + A2 2017 (BSI, 2017). It is also compliant with relevant planning policy and guidance.

The scope of the intrusive investigation has been designed in line with the recommendations of BS5930:2015+A1:2020 Code of practice for ground investigations (BSI, 2020), which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. It has also been developed in general accordance with BS 10175: 2011 + A2 2017. Ground gas assessment has been undertaken in general accordance with BS8576: 2013 and BS 8485:2015+A1:2019. Note: Remove any references above that are not applicable.

A brief summary of relevant legislation and policy relating to land contamination is given in **Appendix C**.

The scope of works for the assessment, has included the following:

Desk Study:

- A summary of the preceding preliminary risk assessment;

- Assessment of local geology, hydrogeology and hydrology; and
- Completion of a site reconnaissance survey to assess the visual condition of the site.

Intrusive Investigation

- Design and implementation of an intrusive investigation, in situ testing, soil sampling, laboratory geo-environmental and geotechnical testing, groundwater and ground gas monitoring of installed boreholes;
- Interpretation of data to develop a refined conceptual site model (CSM);
- Generic quantitative risk assessment (GQRA) of relevant contaminant linkages;
- Interpretation of ground conditions and geotechnical data to provide preliminary recommendations with respect to foundations and infrastructure design;
- Preliminary assessment of the potential waste classification; and
- Preparation of this factual and/or interpretative report.

It is noted that the number and spread of the exploratory holes advanced on site were dictated by the client.

1.4 Existing reports

The following reports detailing previous works at the site were made available for review:

- Phase 1 Geo-Environmental Assessment, North London Business Park and Land at Oakleigh Road South, New Southgate, WSP Environmental Ltd, December 2007, report ref: 12220279.

Pertinent information from this report has been summarised in Section 3.

1.5 Limitations

This report is subject to the RSK service constraints given in Appendix A and limitations that may be described through this document.

2 SITE DETAILS

2.1 Site location

Site location details are presented below in **Table 1** and a site location plan is provided as **Figure 1**.

Table 1 Site location details

Site name	North London Business Park
Full site address and N11 1NP	Oakleigh Road South, Barnet N11 1NP
National Grid reference (centre of site)	528088, 193479

2.2 Site description

The Site boundary and current site layout are shown on **Figure 2**.

The Site covers an area of c. 4.5 hectares. It is currently occupied by a large commercial building (Comer Business and Innovation Centres) and St Andrew the Apostle Greek Orthodox School, with associated external car parking facilities.

The majority of the site comprises external space occupied by car parking, mounded soft landscaping areas with a large pond located within the eastern part of site. The building units on site are accessible by paved roads throughout the business park.

2.3 Surrounding land uses

The Site is located in Barnet within a predominantly residential setting. Immediate surrounding land uses are described in **Table 2**.

Table 2 Surrounding land uses

North	Residential
East	New Southgate Cemetery and Crematorium Mercedes Care Limited (Vehicle Repair Shop) Residential
South	Residential
West	Commercial buildings of North London Business Park Rail track

2.4 Development plans

The proposed layout of the site, at the time of preparing this report, is included in **Appendix B**.

The proposed development of the site comprises the relocation of the existing school and the development of residential units. The school is proposed to be relocated along the eastern boundary of site along Brunswick Park Road. In addition to the main school building, an additional hall and changing facilities with an accompanying sports field are also proposed along the southern boundary.

A total of 5No residential blocks are proposed along the western boundary of site, ranging between 3- and 8- storey with the inclusion of some basements, providing 360 units.

It is noted as part of the proposed development that the existing pond feature within the central part of site will not be retained.

Information regarding change of site levels has not been provided at the time of writing. From a visual assessment of the site, it is considered likely that some localised reprofiling of the site will be required.

No active planning applications pertaining to the site according to the London Borough of Barnet Council planning portal were identified.

2.5 Site services

Buried utility services and their backfill can provide preferential pathways for gas, vapour or groundwater to migrate along to another part of the site or to a receptor. They can also represent significant constraints to development.

Service plans obtained from utility companies either by RSK or the client are contained in **Appendix E**.

3 SUMMARY OF PREVIOUS REPORT (WSP)

RSK was provided with the following Preliminary Risk Assessment report prior to the intrusive works at the study site:

- Phase 1 Geo-Environmental Assessment, North London Business Park and Land at Oakleigh Road South, New Southgate, WSP Environmental Ltd, December 2007, report ref: 12220279.

A brief overview of the report is provided below, reference should be made to the full report provided in Appendix D for detailed information.

3.1 Introduction

The Preliminary Risk Assessment report was completed in December 2007 and details the entire site boundary, including an additional area towards the north and west of site. It is noted that the additional areas are still located within the remit of the North London Business Park area.

At the time of writing, full details of a proposed development were not identified. However, reference is made to the development of 'residential properties with gardens in the north and east of the site' as a receptor within the initial conceptual site model.

3.2 Site history

The previous Preliminary Risk Assessment included a review of historical Ordnance Survey maps to identify any potentially contaminative former land uses. It should be noted that the review of the historical maps included a larger site area than the site boundary targeted as part of RSK's intrusive works.

The previous historical map review by WSP Environmental Ltd (WSP) noted that, on the earliest available map record (1863), the site comprised land associated with the adjacent cemetery. A ground feature in the form of a cutting is noted towards the west of site from 1879. Gravel pits were noted within the northern part of the larger site boundary between 1879 and 1896.

From 1938 the site was noted to comprise a sports ground, with an accompanying miniature rifle range, pavilion and tank within the northern part of site. At this time, the southern part of site was noted to be occupied by New Southgate Works (Telephones and Cables), with a number of large warehouse style structures across the site. Two pond features separated by a weir were noted within the eastern part of site from 1981. Alternations for the warehouse buildings were noted between 1990 and 2000, with the map dated 2007 noted to show the 'current layout' (2007) of the site.

A review of historic publicly available satellite imagery (Google Earth, 2020) indicates that the commercial buildings, formerly identified by WSP as works up to early 2000s, underwent a phase of construction during late 2003. After this date, the satellite imagery appears to show the site in its present day (2020) configuration.

In addition to the details above, anecdotal information provided by a site representative during the initial assessment included the following:

- "a number of former aid raid shelters were present across the site; two shelters are still present, with access at ground level located in the centre of the site, adjacent to the multi-storey car park";
- "..additional shelters have since been infilled, and as such associated walls and foundations are likely to remain underground."

The following potentially contaminative former land uses within the site vicinity were noted following completion of the WSP historical map review:

- Great Northern Cemetery (adjacent southeast);
- Great Northway railway line (adjacent west);
- East Barnet Sewage Farm, Sewage Disposal Works, Unspecified Works (300m east)
- Photographic Works, Unspecified Works (200m south); and
- Unspecified Works, Depot (100m east).

3.3 Geology, Hydrogeology and Hydrology

Based upon a review of published geological records by the British Geological Survey, the site is detailed to be underlain by bedrock deposits of the London Clay Formation, anticipated up to a depth of around 30m below ground level, underlain by deposits of the Lambeth Group.

In addition, due to the apparent historical phases of development at the site, a profile of made ground is expected. An area of made ground is also noted by the British Geological Survey within the eastern part of site, this feature was noted likely to be associated with the former East Barnet Sewage Works.

As the site is underlain by unproductive strata of the London Clay Formation, it was noted that local groundwater resources are perceived not to be at risk from activities carried out on site. The nearest potable water supply was reported 700m south east of site. The study site is not located within an Environment Agency groundwater Source Protection Zone.

A surface water feature is located within the eastern part of site reported as an 'Un-named lake'. The nearest off-site surface water feature is located 400m towards the east. No surface water abstractions are located within 1km of the site.

3.4 WSP Environmental Conceptual Model

The following Sources, Pathways and sensitive Receptors was identified by WSP following initial review of the available data sources.

<u>Sources (on site)</u>

- Possibility of infilled former gravel pits in the north of site, may give rise to deep areas of Made Ground or ground gas generation;

- The site has had a long history of development, including railway sidings, telephones/cables works, electricity sub-stations and tanks, which could have resulted in contamination across the site;
- A number of bunds are present as a result of previous phases of redevelopment;
- The site is thought to have been bombed during World War II which could have resulted in unexploded ordnance (UXO) being present across the site; and
- Previous phases of redevelopment at the site have results in bunds/infilled air raid shelters which could have results in deep areas of Made Ground.

It is noted from the above that the former gravel pits and tank within the northern part of site are located within the northern part of the larger site boundary. As a result, it is considered that these features are located north of the current site boundary targeted as part of this RSK intrusive investigation.

Sources (off site)

- Neighbouring sites and land have had commercial/industrial history, including the sewage works and photo works; and
- Two landfill sites are located within 250m of the site. Two waste transfer stations are located within 500m of the site.

Pathways

- Direct contact with contaminated soils (ingestion, inhalation and dermal contact); and
- Ground gas migration form historic filing activities on site.

In addition, it was noted that the underlying solid geology is London Clay and is predominately cohesive and is likely to restrict the widespread transport of pollutants.

Receptors (Environmental)

- The un-named lake present within the eastern part of site.

Receptors (Human Health Risks)

- The proposed redevelopment plans include residential properties with gardens in the north and east of the site, there is unlikely to be a barrier between any subsurface contamination and the end users; and
- Third party neighbours are primarily residential in nature and, as such, a barrier between any subsurface contamination is unlikely to be present.

3.5 WSP Conclusions and Recommendations

Based upon the information obtained and reviewed within the previous report, WSP Environmental Ltd consider that the site represents a ‘medium risk’ with respect to environmental receptors.

The following recommendations, noted to be undertaken prior to redevelopment of the site, were provided:

- An intrusive phase II investigation should be undertaken to provide information relating to contamination issues, provide preliminary geotechnical advice and a ground gas assessment; and
- An unexploded ordnance desk study.

Following a review of both the previous WSP report and other available information, it is considered that the preliminary Conceptual Site Model produced for the site by WSP remains appropriate for the site.

4 SITE RECONNAISSANCE FINDINGS

In addition to the review of the previous risk assessment report detailed in Section 3, a site reconnaissance was completed by RSK prior to the intrusive works at the site. The characteristics of the site observed during the walkover are summarised in **Table 3**.

At the time of the survey, only external areas of the site were accessible.

A site plan is provided in **Figure 2** with photographic records included in **Appendix F** detailing the main features identified below.

Whilst the walkover summary includes consideration of current operations and housekeeping on the site as potential sources of contamination, it does not constitute a comprehensive environmental audit of the site, as covered under ISO 14001.

Table 3 Site reconnaissance findings

Feature	Description
Physical characteristics	
Access constraints	At the time of the survey, only external areas of the site were accessible. The external areas of site are readily accessible by foot or vehicle via roadways throughout the business park.
Site topography	There are significant changes in topographical level across the site. The northern part of site, within the vicinity of the commercial office buildings, is at a higher elevation than the south-eastern corner of site. Throughout the site several bunds are present, assumed to be associated with previous phases of redevelopment at the site.
Surface cover	Paved areas on site include roadways providing access throughout the business park and associated car parking facilities. Other paved areas include footpaths and an external playground located between the school building and lake within the central part of site. The remaining site cover comprises soft landscaping. It is noted that many of the soft landscaping areas are bunded with a higher elevation than the adjacent roadways throughout the business park.
Site drainage	Manhole covers and other formal drainage installations are located throughout the business park and within the vicinity of the central school development. No obvious outfalls to the central pond were observed.
Surface water	A large pond is located within the central-eastern part of site, surrounded by the school development to the north, access road to the east and bunded soft landscaping areas towards the south and west. The pond appears in good visual condition with no obvious signs of discolouring or other signs of contamination noted. There are no other surface water features on site or within its immediate vicinity.

Feature	Description
Trees and hedges	Vegetation present on-site comprises numerous species of mature trees with accompanying shrubs spread across the site. Main areas of tree cover are located adjacent to the southern, eastern and north-eastern boundaries of site, within areas of soft landscaping. It is noted some trees are located within bunded areas of soft landscaping, particularly along the southern part of site. No vegetation exhibiting signs of distress or die-back was observed.
Invasive species	Based upon the walkover survey, obvious evidence of Japanese Knotweed or other invasive species has not been identified on-site. However, it should be noted that a detailed survey of the possible presence or absence of invasive species is outside of the scope of investigation and consideration should be given to commissioning a specialist survey, as necessary.
Existing buildings on site	School buildings are present within the south western part of site. The buildings comprise up to 2-storey and include external paved areas and soft landscaping. A smaller outbuilding, utilised as a site security hut, is located along the Oakleigh Road access point within the eastern part of site.
Retaining walls and adjacent buildings on or close to site boundary	The business innovation centre is located directly adjacent to the western boundary of site, comprising up to a total of 3-storey. No retaining walls were observed.
Basements on-site	No evidence of existing or infilled basements was observed from the external observations of the site. Basements may be present beneath the school building or the adjacent business innovation centre adjacent west of site.
Made ground, earthworks and quarrying	Extensive Made Ground soils are expected to be present within the bunded soft landscaping areas, predominantly located within the northern and south-eastern parts of site.
Potentially unstable slopes on or close to site	No obvious signs of unstable slopes observed. The bunded areas noted across the site do not appear to pose a significant instability risk.
Environmental characteristics	
Underground/ above ground storage tanks and pipework	No evidence of underground or above-ground storage tanks were noted from the external observations of the site.
Potentially hazardous materials storage and use	No evidence of potentially hazardous materials storage and use were noted from the external observations of the site. It is considered unlikely for such materials to be present within the school building.
Asbestos-containing materials	No obvious asbestos construction materials were observed but a detailed survey of the buildings would be required to confirm the presence or otherwise of asbestos-containing materials.

Feature	Description
Waste storage	Waste from the school units are stored in wheelie bins within the south western corner of site. The business park area is maintained and cleaned with no obvious signs of fly-tipping observed.
Electricity sub-stations/ transformers	There is an existing sub-station located adjacent to the school building within the southern part of site. No evidence of oil leakage was observed.
Evidence of possible land contamination on-site	There is the potential for extensive Made Ground soils to be present within the bunded areas on site. No other significant sources of contamination were observed on site.
Potential off-site sources of ground contamination	The immediate site vicinity generally comprises a residential setting with the business innovation centre located directly adjacent to the western boundary. Potential sources of contamination noted within the immediate site vicinity include: • Vehicle repair shop located east of Brunswick Park Road from the eastern boundary of site, identified as Mercedes Care Limited; and • New Southgate Cemetery and Crematorium located east of Brunswick Park Road from the eastern boundary of site. As the business innovation centre is understood to comprise office units, it is not considered to pose as a significant source of contamination. It is however noted that contamination within this area may still be present as a result of historical land use as a works.

Potentially significant land contamination or geotechnical issues arising from the site reconnaissance survey are summarised below:

- Various areas of soft landscaping bunds noted across the site, likely to comprise Made Ground; and
- Variation in topography between the south-eastern and northern part of the site.

5 SITE INVESTIGATION STRATEGY & METHODOLOGY

5.1 Introduction

RSK carried out intrusive investigation works and subsequent monitoring of boreholes between August and October 2020.

5.2 Objectives

The specific objectives of the investigation were as follows:

- To establish the ground conditions underlying the site including the extent and thickness of any Made Ground;
- To investigate specific potential sources of contamination identified in initial WSP Environmental Ltd CSM;
- To determine groundwater depth and flow direction;
- To determine the ground gas regime underlying the site; and
- To assess geotechnical properties of soils.

5.3 Selection of investigation methods

The techniques adopted for the investigation were chosen with consideration of the objectives and site constraints, which are described below.

Cable percussion drilling was chosen based on the targeted drilling depth, requirement for in-situ geotechnical data, the opportunity to collect both disturbed and undisturbed samples and install monitoring wells. This was supplemented by mechanically excavated trial pitting to obtain a number of investigation locations and achieve greater visibility of the Made Ground.

Prior to conducting intrusive works, utility service plans were obtained and buried service clearance undertaken in line with RSK's health and safety procedures. Copies of statutory service records obtained by RSK as part of the agreed scope of works are contained in **Appendix E**.

5.4 Investigation strategy

The ground investigation was carried out using intrusive ground investigation techniques in general accordance with the recommendations of BS5930:2015+A1:2020, which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. Whilst every attempt was made to record full details of the strata encountered in the boreholes, techniques of hole formation and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks.

The investigation strategy involved targeted boreholes and trial pits. The investigation comprised an exploratory investigation, focussing on the developmental areas of the site.

Details of the investigation locations, installations and rationale are presented in **Table 4**. A total of 18 No. machine excavated trial pits were dug to a maximum depth of 3.0m bgl before being backfilled with arisings. In addition, 8 No. cable percussive boreholes were drilled to a maximum depth of 40.0m bgl, each installed with a combined gas and groundwater monitoring well.

Table 4 Exploratory hole and monitoring well location rationale

Investigation Type	Number	Designation	Monitoring well installation	Rationale Examples below
Mechanically excavated trial pits	18	TP1 – TP18	N/A	To accurately log the upper strata in targeted and non-targeted locations beneath the site. Collect samples from the shallow Made Ground and natural soils. To allow in-situ geotechnical testing via dynamic cone penetrometer methodologies.
Boreholes by cable percussive methods	8	BH1 – BH8	Gas and groundwater	To prove the geological succession beneath the site and obtain in-situ geotechnical data. To allow the installation of combined gas and groundwater monitoring wells.

5.4.1 Implementation of investigation works

The exploratory holes were logged by an engineer in general accordance with the recommendations of BS5930:2015+A1:2020 (which incorporates the requirements of BS EN ISO 14688-1, 14688-2 and 14689-1).

The monitoring well construction and associated response zones are detailed on the exploratory hole records in **Appendix H**.

The soil sampling and analysis strategy was designed to characterise each encountered soil strata, permit an assessment of the potential contaminant linkages identified and investigate the geotechnical characteristics. In addition, samples were taken to allow for geo-environmental and geotechnical testing to be undertaken.

Soils collected for laboratory analysis were placed in a variety of containers appropriate to the anticipated testing suite required. They were dispatched to the laboratory in cool boxes under chain of custody documentation. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination.

Selected samples were placed in polythene bags for headspace screening with a photo-ionisation detector (PID) fitted with a 10.6 eV bulb. The PID screening results are presented on the exploratory hole records.

5.5 Monitoring programme

5.5.1 Ground gas monitoring

A total of 3 No. monitoring rounds have been undertaken to provide data to investigate the potential risk identified as part of the initial CSM.

The number of monitoring rounds undertaken is in general accordance with the decision matrix presented as Figure 6 of BS8576.

A calibrated infrared gas meter was used to measure gas flow, concentrations of carbon dioxide (CO_2), methane (CH_4) and oxygen (O_2) in percentage by volume, while hydrogen sulphide (H_2S) and carbon monoxide (CO) were recorded in parts per million.

Initial and steady state concentrations were recorded. In addition, during the first monitoring round, all wells were screened with a PID to establish if there are any interferences and cross-sensitivity of other hydrocarbons with the infrared gas meter.

The atmospheric pressure before and during monitoring, together with the weather conditions, were recorded. The monitoring included periods of falling atmospheric pressures and after/during rainfall.

All ground gas monitoring results together with the temporal conditions are contained within Appendix I. Equipment calibration certificates are available on request.

5.5.2 Groundwater monitoring

A total of three rounds of groundwater monitoring were undertaken concurrently with the ground gas monitoring. The monitoring records, including dates, are included in Appendix I.

5.5.3 Surface water sampling

Surface water samples were obtained from the pond located within the central-eastern part of site. A total of 2 No. samples were submitted for chemical analysis.

5.6 Laboratory testing

Laboratory testing was undertaken at a UKAS accredited laboratory with ISO17025 and MCERTS accredited test methods were specified where applicable for contamination testing and as shown in the laboratory test certificates appended.

5.6.1 Chemical analysis of soil samples

The soil sampling strategy was designed to characterise made ground and/or natural strata typically within the upper 1.0m of the ground profile whilst also characterising deeper strata and the potential for contaminant migration from relevant identified sources.

The programme of chemical tests undertaken on soil samples obtained from the intrusive investigation is presented in **Table 5** with the laboratory testing results contained in **Appendix J**.

Table 5 Summary of chemical testing of soil samples

Stratum	Tests undertaken	No. of tests
Made ground	SS2 - Speciated PAH-16MS, TPH CWG, pH, Metals, Total Sulphate, Water Soluble Sulphate, Asbestos Screen and ID	22
	TOC	6
	TPH CWG and VOCs	2
	Waste Acceptance Criteria	4
Topsoil	SS2 - Speciated PAH-16MS, TPH CWG, pH, Metals, Total Sulphate, Water Soluble Sulphate, Asbestos Screen and ID	4
London Clay Formation	SS2 - Speciated PAH-16MS, TPH CWG, pH, Metals, Total Sulphate, Water Soluble Sulphate, Asbestos Screen, and ID	1
	BRE Pyritic Geology (Soil – Greenfield)	24

5.6.2 Geotechnical analysis of soils

Where appropriate disturbed, bulk and undisturbed soil samples were taken for geotechnical classification testing with the depth and nature of samples detailed within the exploratory hole records.

Where appropriate, testing was undertaken in accordance with BS 1377:1990 Method of Tests for Soils for Civil Engineering Purposes or, where superseded, by the relevant part of BS EN ISO 17892:2014 Geotechnical investigation and testing - Laboratory Testing of Soil. Tests carried out in order to classify the concrete class required on-site have been undertaken following the procedures within BRE SD1:2005.

The programme of geotechnical tests undertaken on samples obtained from the intrusive investigation is presented in **Table 6**. The results and UKAS accreditation of tests methods are shown in **Appendix K**.

Table 6 Summary of geotechnical testing undertaken

Strata	Tests undertaken	No. of tests
London Clay Formation	Moisture content %	14
	Liquid/ plastic limits	14
	Qu Single Stage	23
	Consolidation and Measurement of Swelling	4
Lambeth Group	Qu Single Stage	2

5.6.3 Chemical analysis of surface water samples

Groundwater and surface water samples were collected in containers appropriate to the anticipated testing suite required. The containers were filled to capacity and placed in a cool box to minimise volatilisation.

Chemical testing undertaken on water samples obtained presented in **Table 7** with the laboratory testing results contained in **Appendix L**.

Table 7 Summary of chemical testing of water samples

Sample type	Tests undertaken	No. of tests
Surface water (pond)	Metals, Sulphates, Speciated PAHs, TPH CWG, pH	2

6 SITE INVESTIGATION FACTUAL FINDINGS

The results of the intrusive investigation and subsequent geo-environmental and geotechnical laboratory analysis undertaken are detailed below.

6.1 Ground conditions encountered

The descriptions of the strata encountered, notes regarding visual or olfactory evidence of contamination, list of samples taken, field observations of soil and groundwater, in-situ testing and details of monitoring well installations are included on the exploratory hole records presented in **Appendix H**.

The exploratory holes revealed that the site is underlain by a variable thickness of Made Ground or Topsoil over bedrock deposits of the London Clay Formation with strata considered to represent the Lambeth Group encountered at depth. This appears to confirm the anticipated stratigraphical succession detailed within the previous Preliminary Risk Assessment Report detailed in Section 3.0.

For the purposes of discussion, the ground conditions encountered during the fieldworks are summarised in **Table 8** with the strata discussed in subsequent subsections.

Table 8 General succession of strata encountered

Stratum	Exploratory holes encountered	Depth to top of stratum (m bgl)	Proven thickness
Topsoil	TP1, TP2, TP5 – TP7, TP11, TP13, TP14 BH5, BH6	GL	0.15m – 0.40m
Made Ground	TP1 – TP12, TP14 – TP18 BH1 – BH8	GL – 0.40m	0.45m – 2.50m
London Clay Formation	TP1, TP2, TP4 – TP9, TP13, TP14 BH1 – BH8	0.20 – 2.50	<39.24
Lambeth Group	BH1, BH3 – BH6	26.30 – 32.00	<10.86

6.1.1 Topsoil

The Topsoil encountered on site comprised a soft consistency cohesive soil with some flint gravels including roots and rootlets. Generally, Topsoil was encountered in the majority of the exploratory hole locations up to a maximum depth of 0.40m below ground level.

No evidence of anthropogenic materials was reported. However, as Topsoil was underlain by Made Ground soils it is considered that the Topsoil represents imported or potentially recycled site material.

6.1.2 Made ground

The Made Ground soils generally comprised a cohesive soil with a significant proportion of granular matrix of variable thickness, encountered at all of the exploratory holes apart from locations TP13 and BH8.

Locations that reported a profile of Made Ground greater than or equal to 1.50m in thickness are detailed in **Table 9**.

Table 9 Summary of extensive Made Ground soils encountered on site

Exploratory hole	Proven thickness (m)	Composition	Site location
TP5	1.70	Flint, concrete, brick, metal, glass, plastic	Bunded soft landscaping area within southern part of site, adjacent to school out building and central pond feature
TP10	2.00	Flint, concrete, brick, metal, timber, asphalt, clinker	Soft landscaping area adjacent to business centre entrance
TP12	1.50	Flint, concrete, brick, metal, glass, asphalt	
TP16	2.50	Flint, concrete, brick, metal, timber, asphalt, clinker Asphalt odour noted at 1.0m bgl	Large bunded soft landscaping area within the northern part of site
TP17	2.00	Flint, concrete, brick, metal, glass, plastic	
TP18	2.50	Flint, concrete, brick, metal, timber, asphalt, clinker	
BH1	2.50	Flint, concrete and frequent brick	Adjacent to central pond feature
BH4	1.70	Flint, concrete, brick, asphalt, clinker	South-western corner of site within sloped area
BH7	2.30	Flint, concrete and brick	Within car parking adjacent to business centre building

Based upon the summary provided in **Table 9**, it is noted that more extensive Made Ground soils were noted within either bunded soft landscaped areas, adjacent to key on-site and off-site developments or within proximity of the central pond feature.

6.1.3 London Clay Formation

This stratum was encountered at all of the cable percussive borehole locations and at the majority of the mechanically excavated trial pit locations. The London Clay Formation underlying the site comprises brown becoming grey stiff clay.

Some flint gravels were noted within the upper surface of the London Clay Formation, this is considered to represent a weathered surface layer as gravel content was noted to generally decrease with an increase in depth. Bands of claystone were also encountered at depth within this stratum.

Greater thicknesses of the London Clay Formation were encountered within the northern part of site, noted to be situated within an area of greater elevation than the southern part of the site.

A summary of the in-situ and laboratory test results recorded in the stratum are presented in **Table 10**.

Table 10 Summary of in-situ and laboratory test results for London Clay

Soil parameters	Min. Value	Max. Value	Reference
Moisture content (%)	28	36	**Appendix K**
Modified moisture content (%)	29	47	**Appendix K**
Liquid limit (%)	66	79	**Appendix K**
Plasticity limit (%)	22	26	**Appendix K**
Plasticity index (%)	44	55	**Appendix K**
Modified plasticity index (%)	30.8	50.49	**Appendix K**
Plasticity term	High	Very High	**Appendix K**
Volume change potential	Medium	High	**Appendix K**
SPT 'N' values	4	+50	**Appendix H**
SPT 'N_{60}' values	5.2	+50	**Appendix H**
Undrained shear strength inferred from SPT 'N_{60}' values (kN/m^2)*	29	372 (+500)^	**Appendix H**
Undrained shear strength measured by triaxial testing (kN/m^2)	34	511	**Appendix K**
Bulk density (Mg/m^3)	1.76	2.04	**Appendix K**
Consistency term from field description	Firm	Stiff	**Appendix H**
Notes: *derived using a Stroud Factor of 5.5, ^based on extrapolated N and () claystone			

6.1.4 Lambeth Group

This stratum was encountered beneath the London Clay Formation within the cable percussive boreholes from depths of between 26.30m and 30.00m below ground level, reported as stiff sandy clay.

Deposits considered to represent the Lambeth Group were reported at all of the cable percussive borehole locations, with the exception of boreholes BH7 and BH8. This is considered likely due to the higher elevation within the northern part of site where BH7 and BH8 were located.

Bands of siltstone were encountered at depth within the Lambeth Group at borehole locations BH1, BH4, BH5 and BH6 from depths of between 30.70m and 38.10m below ground level.

The Lambeth Group surface elevations are provided below in **Table 11** and reference should be made to the exploratory hole logs provided in **Appendix H** for detailed information.

Table 11 Elevations of Lambeth Group and Siltstone bands

Exploratory Hole	TOC elevation (m AOD)	Depth to Lambeth Group (m AOD - min)	Depth to Siltstone bands (m AOD - min)
BH1	48.83	19.13	12.23
BH3	50.85	18.85	N/A
BH4	52.47	26.17	20.87
BH5	49.91	19.71	11.81
BH6	51.43	21.43	20.73

Based upon the above, the surface of the Lambeth group appears to be discontinuous across the site, reported between elevations of 18.85m and 26.17m AOD. A review of the exploratory hole plan, presented as **Figure 2**, suggests that the presence of siltstone bands is likely to be discontinuous across the site.

A summary of the in-situ and laboratory test results recorded in the Lambeth Group are presented in **Table 12**.

Table 12 Summary of in-situ and laboratory test results for Lambeth Group

Soil parameters	Min. Value	Max. Value	Reference
Moisture content (%)	24	24	Appendix K
SPT 'N' values	38	+50	Appendix H
SPT 'N_{60}' values	49	+50	Appendix H
Undrained shear strength inferred from SPT 'N_{60}' values (kN/m^2)*	247	+500	Appendix H
Undrained shear strength measured by triaxial testing (kN/m^2)	181	448	Appendix K
Bulk density (Mg/m^3)	2.01	2.11	Appendix K
Notes: *derived using a Stroud Factor of 5, ^based on extrapolated N			

6.1.5 Visual/olfactory evidence of soil contamination

As detailed within Section 6.1.2 and Table 9, Made Ground was encountered at all of the exploratory holes apart from locations TP13 and BH8. Made Grounds was generally reported to comprise brick and concrete fragments, with some areas comprising asphalt, clinker and other anthropogenic materials.

6.2 Groundwater and surface water

6.2.1 Groundwater encountered during intrusive works

Groundwater was not encountered within any of the mechanically excavated trial pits during the intrusive works.

Some groundwater was encountered as seepages within the cable percussive boreholes during the intrusive investigation works, as detailed on the logs in **Appendix H**.

6.2.2 Groundwater encountered during monitoring

Rest groundwater levels recorded during the monitoring programme are summarised in **Table 13** based upon the data provided in **Appendix H**. Field data measurements are also shown in **Appendix H**.

Table 13 Summary of groundwater monitoring results

Monitoring well	Response zone stratum	TOC elevation (m AOD)	Depth to water (mb TOC)	Groundwater elevation (m AOD) – min.	Groundwater elevation (m AOD) – max.
BH1	Made Ground London Clay	48.83	Dry – 4.20	44.63	44.63
BH2	London Clay	50.08	4.80 – 4.83	45.28	45.25
BH3	Made Ground London Clay	50.85	0.80 – 3.93	46.92	50.05
BH4		52.47	Dry	N/A	N/A
BH5		49.91	1.81 – 2.80	47.11	48.1
BH6	London Clay	51.43	Dry	N/A	N/A
BH7	Made Ground London Clay	57.43	Dry	N/A	N/A
BH8		60.80	Dry – 3.05	57.75	57.75

Based upon the groundwater monitoring completed to date, it is considered that groundwater reported within the monitoring wells is considered likely to represent surface water ingress through Made Ground soils as opposed to a natural groundwater table.

6.3 Chemical laboratory results

The soil and surface water testing results are presented in **Appendix J** and **Appendix L**, respectively.

A total of 27 No. samples were screened for the presence of asbestos, none of the samples were identified to contain any asbestos fibres or bulk material. However, on a site where Made Ground is present, there remains the possibility of localised asbestos which has not yet been recorded.

6.4 Ground gas monitoring

The results of the ground gas monitoring and testing carried out are given in **Appendix I** and discussed in Section 7.

6.5 Geotechnical laboratory results

The results of the geotechnical testing are discussed in Section 9 and presented in **Appendix K**.

7 GEO-ENVIRONMENTAL ASSESSMENT

7.1 Refinement of initial CSM

The encountered ground conditions are the same as those anticipated within the initial Conceptual Site Model with no significant changes noted. Based upon the factual findings of the intrusive works, no changes are considered necessary to the initial Conceptual Site Model.

7.2 Linkages for assessment

As described in LCRM (Environment Agency, 2020), there are two stages of quantitative risk assessment (QRA), Tier 2 generic (GQRA) and Tier 3 detailed (DQRA). The GQRA comprises the comparison of soil, groundwater, soil gas and ground gas results with generic assessment criteria (GAC) that are appropriate to the linkage being assessed. This comparison can be undertaken directly against the laboratory results or following statistical analysis depending upon the sampling procedure that was adopted.

The potentially complete contaminant linkages that require further assessment and the methodology of assessment are presented in **Table 14**.

Table 14 Linkages for GQRA

Potentially relevant contaminant linkage	Assessment method
Soil data	
1. Oral, dermal and inhalation exposure with impacted soil, soil vapour and dust by future residents	Human health GAC in **Appendix M** for a proposed residential end-use with home-grown produce. As the proposed development layout has not been provided at the time of writing, the GAC for private gardens will provide the most conservative assessment for the site. Consideration given to the applicability of the use of Statistical Assessment. Methodology for statistical assessment.
2. Inhalation exposure of future residents to asbestos fibres	Qualitative assessment based on the asbestos minerals present, their form, concentration, location and the nature of the proposed development.
3. Uptake of contaminants by vegetation potentially impacting plant growth (phytotoxicity)	Comparison of soil data to GAC in **Appendix N** for phytotoxicity.
4. Contaminants permeating potable water supply pipes	Comparison of soil data to GAC in **Appendix O** for plastic water supply pipes using UK WIR (2010) guidance.
5. Leaching of soil contaminants and dissolved phase migration	Comparison of leachate data to the relevant GAC in Table 1 of **Appendix R**.
Water data	

Potentially relevant contaminant linkage	Assessment method
6. Direct assessment of surface water features	Comparison of surface water data to relevant GAC based on freshwater EQS in Table 1 of **Appendix R**.
Ground Gas	
7. Concentrations of methane and carbon dioxide in ground gas entering and accumulating in enclosed spaces or small rooms in new buildings, which could affect future site users. For methane this could create a potentially explosive atmosphere, while death by asphyxiation could result from carbon dioxide.	Borehole hazardous gas flow rates (Qhg) have been calculated using maximum (peak) methane and carbon dioxide concentrations and steady state flow rates in accordance with BS8485. This is subject to interpretation and use of professional judgement to designate the site or zones of the site characteristic situation by comparison to a Gas Screening Value (GSV) as appropriate and in line with the CSM.

7.3 Methodology and assessment of soil results

The analysis of laboratory results relating to soil samples submitted for testing, including leachate analysis, is included in the following sections.

7.3.1 Oral, dermal and inhalation exposure with impacted soil by future occupants/site users

In order to assess the soil results against the appropriate Generic Acceptance Criteria (GAC), the soil results have been split into appropriate data sets relevant to the oral, dermal and inhalation linkage.

The datasets being considered in the assessment are:

- Data set 1 Made Ground
- Data set 2 Natural Soils

As an initial assessment of each dataset, all soil results in each dataset have been directly compared against the GAC for residential with home-grown produce end use, to provide the most conservative assessment.

The ratio of soil contaminant concentrations of genotoxic PAHs (benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(ah)anthracene, indeno(123-cd)pyrene and benzo(ghi)perylene) against benzo(a)pyrene have been compared against lower and upper limits set out in C4SL project methodology (CL:AIRE, 2014). All genotoxic PAH ratios were within the upper and lower bounds of the underlying toxicological study. Therefore, and in accordance with HPA guidance (HPA, 2010), the assessment of genotoxic PAHs has been based on the use of benzo(a)pyrene as a surrogate marker. Therefore, a risk from genotoxic PAHs is only considered likely if the respective benzo(a)pyrene concentrations exceed the relevant GAC.

7.3.1.1 *Data set 1 – Made Ground*

All made ground results have been compared with the GAC for residential with home-grown produce. A soil organic matter (SOM) of 1% has been selected since laboratory results within the made ground range from 0.17% and 1.81%. The soil screening output spreadsheet is presented as Appendix P.

Assessment of the results indicates exceedances of the GAC for the contaminants shown in **Table 15**. These are highlighted in red on the screening output spreadsheet in **Appendix P**.

Table 15 Data summary table – Data set 1

Determinand	No. of samples tested	GAC (mg/kg)	No of exceedances	Maximum concentration (mg/kg)	
				Value	Location / depth (m bgl*)
Copper	21	2500	1	3550	TP4 (0.80m)
Lead	21	200	1	459	
Nickel	21	130	1	142	
Benzo(b)fluoranthene	21	2.6	1	2.65	
Dibenzo(ah)anthracene	21	0.27	1	0.27	

**Below surface level of bunded area within southern part of site*

7.3.1.2 *Data Set 1 Summary*

It is noted from the above assessment that the determinands reported in exceedance of their respective GAC in Table 15 are a single sample, obtained from exploratory hole location TP4 at 0.80m below ground level. At this location, the sample was reported to contain an 'asphalt odour' with a black to dark brown colour. The mechanically excavated trial pit was also terminated at a shallow (1.35m bgl) depth due to the presence of a potential service encountered at the base of the exploratory hole.

It is also noted that this sample was obtained from a bunded area within the southern part of the site, as a result it is considered that the sample was obtained from a level above the road/ground level directly adjacent to the north of the location.

Based upon the above, it is considered that localised remediation of the Made Ground material sampled within the area of TP4 would effectively remove the localised source of contamination noted on site. With regards to the proposed layout of the site, it is noted that the development proposal for this area of site comprises a changing unit for the school building and accompanying sports hall. As a result, this bunded area within the southern area of site will require removal as part of the proposed development, thus removing the source of contamination.

7.3.1.3 *Data set 2 – Natural Soils*

Natural soil results have been compared with the residential with home-grown produce GAC. A soil organic matter (SOM) of 1% has been selected to provide the most

conservative assessment. The soil screening output spreadsheet is presented as **Appendix P**.

Assessment of the results indicates exceedances of the GAC for the contaminants shown in **Table 16**. These are highlighted in red on the screening output spreadsheet in **Appendix P**.

Table 16 Data summary table – Data set 2

Determinand	No. of samples tested	GAC (mg/kg)	No of exceedances	Maximum concentration (mg/kg)	
				Value	Location / depth (m bgl)
Lead	5	200	2	219	TP2 (0.10m)
				563	TP6 (0.10m)

7.3.1.4 Data Set 2 Summary

Exceedances of the GAC for Lead are noted within two shallow (0.10m bgl) samples of topsoil from exploratory hole locations TP2 and TP6, located within the south-eastern and south-western parts of site respectively.

With reference to the exploratory hole logs provided in Appendix H, it is noted that both samples were underlain by similar Made Ground soils containing fragments of metal.

As detailed within the analysis of Data Set 1, no exceedances were reported within samples of Made Ground obtained from TP2 or TP6 at depths of 0.70m and 0.40m respectively.

On this basis, it is considered that the exceedances of Lead reported in the samples of topsoil may be a result of cross-contamination with respect to the interface of the underlying Made Ground, representing a localised hotspot of contamination.

Due to the shallow depth of the reported exceedances, it is considered local remediation in the form of a shallow strip would be appropriate to remove the localised sources of contamination noted within natural soils. It may also be prudent to remove any existing underlying Made Ground soils within these areas.

It is noted that such remediation measures would only be required within proposed areas of soft landscaping. If roads, buildings or hardstanding areas are proposed within the identified hotspot areas, no remediation is considered necessary as a potential contamination pathway would not be present in this post development scenario.

7.3.2 Inhalation exposure of future occupants/site users to asbestos fibres

The visual inspection at the laboratory identified no materials suspected of potentially containing asbestos and the scheduled laboratory screening for asbestos found no detectable asbestos fibres within the samples of Made Ground or natural soils. However, on a site where Made Ground is present, there remains the possibility of localised asbestos which has not yet been recorded.

7.3.3 Uptake of contaminants by vegetation potentially inhibiting plant growth (phytotoxicity)

The results have been compared with the GAC presented in **Appendix N** for this linkage.

The results indicate that a relevant contaminant linkage may exist associated with phytotoxic effects.

7.3.4 Impact of organic contaminants on potable water supply pipes

For initial assessment purposes, the results of the investigation have been compared with the GAC presented in Appendix O for this linkage, which are reproduced from *UK WIR Report 10/WM/03/21. Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites* (UK WIR, 2010).

The results indicate that a relevant linkage may exist associated with organic contaminants and therefore pollutant polyethylene (PE) and/or polyvinyl chloride (PVC) water supply pipes are expected to be unsuitable for use on the development unless remedial measures are implemented that mitigate the risk.

It should be noted that at the time of this investigation the future routes of water supply pipes had not been established, hence the investigation and sampling strategy may not be fully compliant with UK WIR recommendations. Consequently, a targeted investigation and specific sampling/analytical strategy may be required at a later date once the route(s) of the supply pipes are known. In addition, it is recommended that the relevant water supply company be contacted at an early stage to confirm its requirements for assessment, which may not necessarily be the same as those recommended by UK WIR.

7.4 Methodology and assessment of water results

7.4.1 Direct assessment of surface water feature

Due to the presence of a large central pond feature located on site, samples of the surface water have been collected to provide a direct assessment of the water quality, this surface water feature was noted to be present on site from 1981.

The analytical results for surface waters are below the relevant GAC (EQS for freshwater) indicating that a complete pollutant linkage is unlikely to exist.

7.5 Ground gas risk assessment – bulk gases

7.5.1 Appropriate guidance

The risks to development from ground gases have been assessed in accordance with BS8485:2015+A1:2019 (BS8485), which provides guidance on ground gas (methane and carbon dioxide) characterisation and hazard assessment, as well as providing a framework for the prescription of protection measures within new buildings.

The process involves characterising the gas hazard from combining the qualitative assessment of risk (using the CSM) with ground investigation data so that a ‘characteristic

situation' (CS) can be derived for the site or zones within the site. Characteristic situations range from CS1 to CS6, the higher the CS, the higher the hazard potential. Gas protection measures within new buildings can be prescribed using a point scoring system, taking into consideration the CS and the proposed building type.

BS8485 indicates that the gas hazard can be characterised using the following methods:

- An empirical semi-quantitative approach using gas monitoring data to determine the 'characteristic situation' of the site (or zones of the site) and subsequent protective measures (Wilson and Card approach);
- An empirical semi-quantitative approach using TOC data to determine the 'characteristic situation' of the site (or zones of the site) and subsequent protective measures (CL:AIRE RB17 approach); or
- Detailed quantitative assessment methodologies.

For the purpose of this assessment, the empirical semi-quantitative approach above has been used to characterise the gas hazard and provide advice on the protective measures likely to be required within new buildings at the site.

7.5.2 Summary of the refined CSM for ground gas

In the assessment of risks and selection of appropriate mitigation measures, BS8485 highlights the importance of the conceptual model. In summary, potential sources of ground gas within influencing distance of the site identified in Section 3.4 comprise:

- Possibility of infilled former gravel pits in the north of site; and
- Ground gas generation from Made Ground associated with a number of earth bunds present across the site.

This assessment has been undertaken to assess risks to building structures and proposed end-users. The assessment has not taken into consideration the health and safety of construction workers. Risks may still be present to construction workers especially where works include the entry into excavations within the ground. Construction workers should undertake appropriate risk assessments and risks should be managed through health and safety procedures and safe systems of work.

7.5.3 Empirical semi-quantitative approach using borehole monitoring data (Wilson and Card approach, BS8485)

7.5.3.1 Background

The empirical semi-quantitative approach using gas monitoring data requires the designation of a gas screening value (GSV) for the entire site or zones within the site, which informs the hazard potential and associated prescribed ground gas protection measures within new buildings (where necessary). BS8485 defines the GSV as the *'flow rate (l/hr) of a specific hazardous gas* ***representative of a site or zone****, derived from assessment of borehole concentration and flow rate measurements and taking account of all other influencing factors, in accordance with a conceptual site model'.*

BS8485 Section 6.3.1 outlines the process for developing a GSV for the site or a zone as follows:

- Borehole hazardous gas flow rate (Q_{hg}) is calculated for each borehole standpipe for each monitoring event. The borehole hazardous gas flow rate is defined in BS8485 as the '*flow rate of a specific hazardous gas, either methane or carbon dioxide, from a borehole standpipe'*. The Q_{hg} is calculated from individual borehole measurements of total gas flow and the concentration of the specific hazardous gas. BS8485 states in Section 6.3.4 that the **maximum** gas concentration recorded during the monitoring event should be used, together with **steady-state** values of gas flows.
- The reliability of the measured gas flow rates and concentrations are assessed taking into account borehole construction;
- Decisions are made about how to deal with any temporal or spatial shortages in the data; and
- Judgements are made about what GSV to designate for use for design purposes taking all relevant information and the conceptual site model into account.

Once the Q_{hg} has been calculated for methane and carbon dioxide, individual borehole measurements are compared to the thresholds presented in Table 2 of BS8485 which inform the CS that directly relates to each individual measurement. Taking into account the site data (i.e. borehole gas concentration and flow rate to calculate the Q_{hg}) and all other influencing factors in accordance with the CSM, a decision can then be made regarding the GSV that is considered to be representative of the site or a zone within it.

Typical threshold concentrations of methane (1% v/v) and carbon dioxide (5% v/v), and flow rates (>70 l/h), are also considered when designating the GSV for the site or zone, which in turn dictates the hazard potential and CS. It is important to note that the site or zone characteristic GSV and maximum concentration or flow thresholds are guideline values and not absolute. The thresholds may be exceeded in certain circumstances, if the CSM indicates it is safe to do so.

7.5.3.2 Designation of a GSV for the site or zone

The results of the ground gas monitoring and testing undertaken, alongside site conditions at the time of monitoring, are given in **Appendix I**.

A summary of the maximum recorded concentrations per borehole (or minimum for oxygen) is presented in **Table 17** overleaf. This table also presents details of the response zone, maximum recorded initial and steady state flow rates and minimum recorded depth to water across all monitoring rounds.

The range of atmospheric pressure over the 3No monitoring rounds completed was 1008 - 1015 mbar and this was recorded to be falling at the time of one of the monitoring visits.

Table 17 Summary of ground gas monitoring results

Exploratory position ID	Response zone top (mbgl)	Response zone base (mbgl)	Response zone geological unit	No. of monitoring rounds	Peak CH_4 max. (%/vol)	Steady-state CH_4 max. (%/vol)	Peak CO_2 max. (%/vol)	Steady-state CO_2 max. (%/vol)	Oxygen min. (%/vol)	Peak gas flow max. (l/hr)	Steady-state gas flow max. (l/hr)	Depth to water min. (m)	Depth to water max. (m)	Atm. pressure min. (mb)	Atm pressure max. (mb)
BH1	1.00	4.93	London Clay Formation	3	<0.1	<0.1	3.5	3.5	17.1	<0.1	<0.1	Dry	4.20	1008	1015
BH2	1.00	4.98		3	<0.1	<0.1	6.3	6.3	12.6	<0.1	<0.1	4.80	4.83	1008	1015
BH3	1.00	4.93		3	<0.1	<0.1	1.6	1.6	18.2	<0.1	<0.1	0.80	3.93	1008	1015
BH4	1.00	4.83		3	<0.1	<0.1	7.6	7.6	10.1	<0.1	<0.1	Dry	Dry	1008	1015
BH5	1.00	4.95		3	<0.1	<0.1	5.3	5.3	10.5	<0.1	<0.1	1.81	2.80	1008	1015
BH6	1.00	5.00		3	<0.1	<0.1	1.9	1.9	17.0	<0.1	<0.1	Dry	Dry	1008	1015
BH7	1.00	4.97		3	<0.1	<0.1	1.0	1.0	8.4	<0.1	<0.1	Dry	Dry	1008	1015
BH8	1.00	4.91		3	<0.1	<0.1	9.4	9.4	10.0	<0.1	<0.1	Dry	3.05	1008	1015

7.5.3.3 *Designation of site gas screening value (GSV)*

BS8485 suggests that the GSV should be derived by multiplying the worse credible (worst case) recorded flow value in any standpipe in that strata or zone with the maximum gas concentration in any other standpipe in that strata or zone. Further guidance is given in BS8485 Section 6.3.

Considering the assessment of the gas monitoring results the following maximum GSV have been derived for the site.

- Methane GSV (0.0001 l/hr) = methane concentration (0.1% v/v)/100 x flow rate (0.1l/hr)
- Carbon Dioxide GSV (0.0094 l/hr) = carbon dioxide concentration (9.4% v/v)/100 x flow rate (0.1l/hr)

Based upon the GSV derived and the method for determining the CS presented within Table 2 of BS8485, the site can be characterised as CS1. BS8485 states that where elevated concentrations of methane (>1%) and carbon dioxide (>5%) are reported, consideration should be made to increase the Characteristic Situation from CS1 to CS2.

The main sources of ground gas comprise the following:

- Possibility of infilled former gravel pits in the north of site, giving rise to deep areas of Made Ground or ground gas generation; and
- Ground gas generation from Made Ground associated with a number of earth bunds present across the site.

The following exploratory hole locations in **Table 18** details locations with elevated concentrations of carbon dioxide during the programme of return monitoring. It is noted that no elevated concentrations of methane have been reported to date.

Table 18 Summary of elevated carbon dioxide concentrations

Exploratory Hole ID	Location	Peak CO2 Max (%/vol)		
		Monitoring Visit 1	Monitoring Visit 2	Monitoring Visit 3
BH2	South eastern area of site within bunded area, adjacent to pond feature	5.2	4.9	6.3
BH4	South western corner of site adjacent to school buildings	7.6	7.0	5.3
BH5	Central part of site located within playground area adjacent to school building	5.3	5.1	4.9
BH8	Northern part of site located adjacent to bunded area	7.5	9.4	8.7

In addition to the above, it is noted that monitoring location BH7 showed consistent depleted concentrations of oxygen (min: 8.4%), without the corresponding elevated carbon dioxide.

As shown above, consistent elevated concentrations of carbon dioxide were reported at the monitoring locations across the 3 No. return visits. It is noted that with reference to the exploratory hole location plan provided as **Figure 2**, these monitoring locations are spread across the entire site.

It has previously been acknowledged that the presence of the practically impermeable London Clay Formation underlying the entire site will reduce the migration of ground gases at the site. On this basis, it is considered that elevated concentrations of carbon dioxide may be a result of localised areas of Made Ground within the vicinity of the monitoring locations. This was as expected within the vicinity of the bunded soft landscaping areas and historical developments within the northern part of site.

On this basis, it is considered appropriate that the site is characterised as Characteristic Situation 2 (CS2) where basic gas protection measures are required.

7.5.3.4 Data Limitations

It should be noted that there are inherent limitations in ground gas monitoring including spatial adequacy of monitoring locations, changes in groundwater levels, variation in temporal or atmospheric conditions and whether these have been adequately characterised by the scope of monitoring undertaken.

The investigation undertaken to date has incorporated an appropriate number of ground gas monitoring visits, the data is considered reliable, and spatially representative of the site. It is also noted that 2 No. round(s) were completed during low and falling atmospheric pressure (<1000mb) indicating that possible worst-case conditions have been present during monitoring.

7.5.4 BS8485 recommended ground gas protection measures

Case 2: Characteristic Situation 2

Ground gas protective measures within buildings include a combination of:

- structural barriers;
- ventilation systems; and
- gas resistant membranes.

Section 7 of BS8485 provides a point scoring system for ground gas protective measures, whereby different barriers (i.e. structural barriers, ventilation systems, and gas resistant membranes) are assigned different point scores. A combination of protective measures (minimum of 2 types) can be used to achieve a total minimum gas protection point score, the total minimum point score required is determined based on the building type (see Table 3 in BS8485) and the risk classification.

Considering the CS determined for the site (CS2) and the proposed building type (Public building) a minimum point score (see Table 2 in BS8485) of 3 will be required to achieve an adequate level of protection.

As an example, a passive subfloor dispersal layer with a very good performance (score of 2.5) and a proprietary gas resistant membrane (score of 2) would provide a total point score of 4.5, which would be considered adequate for the proposed development.

It should be noted that for membranes to achieve a point score greater than zero they should be:

- Sufficiently impervious to methane and carbon dioxide;
- Capable after installation of providing a complete barrier to the entry of the relevant gas;
- Sufficiently durable to remain serviceable for the anticipated life of the building and duration of gas emissions;
- Sufficiently strong to withstand in service stresses (e.g. due to ground settlement if placed below a floor slab);
- Sufficiently strong to withstand the installation process and following construction activities until covered (e.g. penetration from steel fibres in fibre reinforced concrete, penetration of reinforcement ties, tearing due to working above it, and dropping tools);
- Chemically resistant to degradation by other contaminants that might be present; and
- Verified in accordance with CIRIA C735.

A separate detailed gas protection design report should be prepared for the proposed mitigation measures and should be provided to and agreed with the local authority and relevant warranty providers prior to construction works commencing. The design report should include a combination of the following:

- Gas conceptualisation (severity of gas regime and sensitivity of land use);
- Building and construction related details such as floor slab, wall construction, ground conditions and any complex detailing
- Gas protection design sufficient to mitigate the gas risk and be practically installed given the building and construction related details. Likely to include venting calculations, product specifications, installation methodology and installer qualifications/experience
- Verification plan (prepared in accordance with CIRIA C735) to identify the verification tasks, frequency of such tasks and by whom they should be undertaken, regulatory requirement and contingency plans. The verification measures required will be dependent on a number of factors including the gas regime, the qualifications of the installers, the complexity of the design and the number of plots.

7.5.5 Implications of Foundation Design

As detailed in Section 11, piled foundation types are being considered for the development. Where such works may create preferential pathways for ground gas migration to the surface, this needs to be considered through the design process, such as through a foundation works risk assessment.

Should foundation solutions or building design change within the design process, then this gas risk assessment and mitigation should be reviewed and where applicable updated.

8 PRELIMINARY WASTE ASSESSMENT

In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if reused on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not become waste until the criteria above are met. Further background information is provided in **Appendix G**.

Excavation arisings from the development may therefore be classified as waste if surplus to requirements or unsuitable for reuse. The following assessments assume the material tested is classified subsequently as waste.

8.1 Hazardous waste assessment

Technical Guidance WM3 (EA, 2018) sets out in Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. The preliminary assessment provided below is based only upon the available sample results and may not be sufficient to adequately classify the waste.

8.1.1 Chemical contaminants

Envirolab, an RSK company, has developed a waste soils characterisation assessment tool (HASWASTE), which follows the guidance within Technical Guidance WM3. The analytical results have been assessed using this tool to assess the hazardous properties to support potential off-site disposal of materials in the future. Note that it is ultimately for landfills to confirm what wastes they are able to accept within the constraints of their permit.

The results of samples which identified hazardous properties are summarised in **Table 19** and presented in full in **Appendix R**. The remaining samples did not identify any hazardous properties.

Table 19 Results of waste soils characterisation assessment (HASWASTE)

Sample ref/ depth	Hazardous properties identified
TP4 (0.80m)	Ecotoxic HP14
TP13 (0.40m)	Carcinogenic HP7
	Mutagenic HP11

Samples TP4 (0.80m) and TP13 (0.40m) representing Made Ground and Subsoil respectively are classified as having hazardous properties. This suggests that some of the waste would require disposal at a suitably permitted hazardous waste landfill or treatment facility.

It is noted that sample TP4 (0.80m) was obtained from above ground level within a bunded area of soft landscaping within the southern part of site, identified as a contamination

hotspot. It is considered likely that this will require removal and subsequent disposal following landscaping works in this area.

8.1.2 Asbestos within waste soils

Technical Guidance WM3 requires that within a mixed waste the separately identifiable wastes be assessed separately.

For instance, where waste soil contains identifiable pieces of asbestos (visible to the naked eye) the asbestos should, where feasible, be separated from the soil and classified separately. This should be disposed of within a hazardous, stable non-reactive hazardous waste landfill or a special cell in a non-hazardous waste landfill.

Samples of potential asbestos containing material were collected from site and analysed for the presence of asbestos, the results of which are presented in **Appendix J**. Analysis confirmed that asbestos is not present within any of the samples analysed. Visible asbestos containing material was not identified on-site.

8.2 WAC assessment

The following combined samples detailed in **Table 20** were submitted for waste acceptance criteria (WAC) testing for 'Full 1 Batch Waste Suite', the results of which are presented in **Appendix J**.

Table 20 Combined WAC sample analysis

Sample Reference	Site Location	Sample ID	Sample Depth (m)
Combined Sample 1	Adjacent to southern boundary, within bunded area of soft landscaping.	TP3	0.75
		TP4	0.80
Combined Sample 2	Within soft landscaping area of school grounds, east of the main building.	TP7	0.50
		TP8	0.50
Combined Sample 3	North of the central pond feature.	TP11	0.50
		TP13	0.40
Combined Sample 4	Large bund within the northern part of site.	TP15	0.80
		TP16	0.50

The results of the WAC testing on Combined Sample 1 indicate that the leaching limit values and total content of organic parameters for inert waste have been exceeded and therefore the waste is not suitable for disposal within an inert landfill but should be disposed of at a landfill or treatment facility which is permitted to take non-hazardous waste.

The results of the WAC testing for Combined Samples 2 – 4 indicate that the leaching limit values and total content of organic parameters for inert waste have not been exceeded. Therefore, this waste would be suitable for disposal at an inert landfill or a site that has a valid exemption from the Environmental Permitting (England and Wales) Regulations 2016 (as amended) registered with the EA.

Based on the above, due to the size of the site, varying composition of made ground soils and the requirement for mass landscaping works for the proposed development, further sampling and testing is likely to be required for waste characterisation purposes at the development stage.

RSK recommends that a Sampling Plan be prepared to support any waste classifications and hazardous waste assessments, prior to any material being excavated. Given the level of data obtained, scale of the development and heterogeneity of the site soils, the following assessment should be considered indicative and further assessment should be undertaken following the preparation of a waste sampling plan.

9 GEOTECHNICAL ASSESSMENT

9.1 Proposed development

It is understood that the proposed development is to involve the relocation of the existing school and the development of residential units. A total of 5No residential blocks are proposed along the western boundary of site, ranging between 3No and 8No storeys with the inclusion of some basements.

Information regarding change of site levels has not been provided at the time of writing. It is anticipated that localised reprofiling of the site will be required.

From information provided by the client, it is understood that the proposed development will adopt a piled foundation solution within the underlying London Clay Formation and potentially the Lambeth Group. At this stage no specific information relating to building loads has been provided.

9.2 Key geotechnical hazards / development constraints

The key risks identified from the available ground investigation data are detailed below:

- Variable Made Ground deposits that may be unstable in open excavations and generally unsuitable as founding strata;
- London Clay soils of high-volume change potential and numerous mature trees present in parts of the site leading to a risk of swelling/shrinkage of the clay soils that will have implications for the design of foundations, floor slabs and pavements. In addition, any desiccated site won clay fill would be prone to swelling and cause problems if used below structures or pavements;
- Silt-rich soils susceptible to rapid loss of strength in wet conditions;
- Relatively high perched groundwater levels in the Made Ground and underlying London Clay;
- Adverse ground chemistry due to elevated sulphates in the London Clay;
- Variation in topography across the site; and
- Existing and historical sub-structures associated with current and historical site developments (e.g. tunnels, foundations, basements and adjacent sub-structures).

9.3 Ground model and characteristic values

The preliminary ground model summarised in **Table 21** has been adopted for the purpose of the preliminary foundation design recommendations.

The ground model is based on the representative ground conditions across the site, to provide the most conservative assessment with respect to the distribution of loadings for the new structures. It should be noted that

In summary, the ground model comprises made ground underlain by the London Clay Formation, before encountering a cohesive succession of the Lambeth Group.

Table 21 Ground model derived from ground investigation

Stratum	Depth to top of stratum (m bgl)	Thickness (m)
Made Ground	Ground level	0.2 - 2.5
London Clay Formation	2.5	23.8
Lambeth Group	26.3	Not proven +40.0m bgl

During the intrusive works groundwater strikes were noted as minor seepages. Rest groundwater levels recorded during return monitoring visits ranged from 0.80m to 4.83m bgl and are considered to be representative of perched groundwater bodies within shallow made ground and London Clay Formation deposits.

The geotechnical design parameters presented in **Table 22** are based on the results of the fieldwork, in-situ and laboratory testing, and reflect RSK's understanding of the proposed construction at the time of reporting. The Designer should assess the applicability of the characteristic values provided below for the design situation under consideration and to ensure that it is a cautious estimate of the value affecting the occurrence of the relevant limit state(s).

Table 22 Summary of characteristic geotechnical design parameters

Design parameter	Stratum		
	Made Ground	London Clay Formation	Lambeth Group
Unit weight - $\gamma_{,k}$ (kN/m^3)	18.0[1]	19.0 – 20.0[4]	20.0[4]
Undrained shear strength – $c_{u,}$ (kN/m^2)	-	40 @1mbgl + 9.73 z[4]	280 + 5.19 z[4]
Peak Effective Angle of Friction - $\varphi'_{pk,k}$ (◦)	27[2]	23[2]	23[2]
Critical State Angle of Friction - $\varphi'_{cv,k}$ (◦)	25[2]	21[3]	21[3]
Effective cohesion - $c'_{,k}$ (kN/m^2)	0[2]	2[2]	5[2]

Notes:
[1]Estimated from soil descriptions using Figure 1 & 2 of BS 8002:2015
[2]Assumed empirical values in the absence of testing
[3]Estimated using Table 2 for fine soils and equations 3 & 4 for coarse soils from BS 8002:2015
[4]Based on geotechnical laboratory testing carried out on site derived soil samples

9.4 Foundations

9.4.1 Foundation options

Given the anticipated relatively high column loadings associated with the proposed multi-storey residential blocks and need to mitigate ground movements associated with the extensive areas of basement, piled foundations are recommended to support the new buildings. In additional, restraint piles may be required to resist clay heave on the underside of the basement slab in podium garden or other similar areas where there is no

imposed loads from the superstructure above or potential for desiccated clay soils to remain at formation level.

9.4.2 Piled foundations

Recommendations for the design and construction of pile foundations in relation to the ground conditions are set out in **Table 23**.

Table 23 Design and construction of piled foundations

Design/construction considerations	Design/construction recommendations	
Pile type	The construction of both bored/CFA piles is considered technically feasible at this site.	
Possible constraints on choice of pile type	Driven piles will not be suitable due to ground vibration, noise and heave related issues.	
Temporary casing	Given the presence of groundwater strikes over the full depth of the investigation bored piles will require temporary casing throughout their depth. Alternatively, the use of continuous-flight-auger (CFA) injected bored piles usually overcomes this issue. It is recommended that a specialist piling contractor be consulted with respect to the most suitable piling technique for the prevailing ground and groundwater conditions.	
Made ground / potentially desiccated soils / proposed basements	For the purpose of assessing preliminary pile capacities the top 4m has been presumed not to contribute to the load-carrying capacity for the piles to account for the presence of made ground / potentially desiccated clay soils and proposed basement levels. This will need to be refined during detailed design to take account of variation in ground and basement levels for individual blocks.	
Man-made obstructions	The presence of buried sub-structures or other obstructions within made ground may lead to some difficulty during piling. It is recommended that once the proposed pile layout has been determined, pre-pile probing be carried out at each of the pile positions. Where buried obstructions are encountered, it will be necessary to either relocate the pile(s) or make allowance for removing the obstruction.	
Hard strata	An allowance should be made for chiselling thin 'rock' bands (claystone or siltstone) within the London Clay or underlying Lambeth Group.	
Pile design parameters for London Clay Formation	Pile design parameter	Bored/CFA
	Undrained shear strength c_u (kN/m^2)	Cu = 68 kN/m^2 @4m + 9.41 z kN/m^2 where z = depth into clay
	Adhesion factor α	0.5
	Bearing capacity factor, N_c	9

Design/construction considerations	Design/construction recommendations	
Pile design parameters for Lambeth Group	Undrained shear strength c_u (kN/m^2)	Cu = 280 kN/m^2 + 5.19 z kN/m^2 where z = depth into clay
	Adhesion factor α	0.4
	Bearing capacity factor, N_c	9
SLS Check	Factor of 1.2 on ultimate shaft friction	
Special precautions relating to bored pile shafts and bases	Bored pile concrete should be cast as soon after completion of boring as possible and in any event the same day as boring. Prior to casting the base of the pile bore should be clean, otherwise a reduced safe working load will be required. Similarly, if the pile bore is left open the shaft walls may relax/soften, leading to a reduced safe working load.	

The design resistance has been calculated in accordance with BS EN 1997-1 and the UK National Annex, using partial resistance factors for bored piles, given in **Table 24**.

Table 24 Partial resistance factors (γ_R)

Resistance	Set	
	DA1 C1	DA1 C2
Base - γ_b	1.0	2.0
Shaft (compression) - γ_s	1.0	1.6
Total (compression) - γ_t	1.0	2.0

The design procedure for piles varies considerably, depending on the proposed type of pile. However, for illustrative purposes, **Table 25** gives indicative factored pile resistances in accordance with EC7 for traditional bored/CFA, cast-in-situ concrete piles of various diameters and lengths based upon the characteristic design parameters given in **Tables 22** and **23**.

Table 25 Typical pile design resistances for bored/CFA cast-in-situ piles

Typical Design resistance for DA1 – Combinations C1 & C2 & SLS (kN)									
Pile toe depth	Pile diameter								
m bgl	450 mm			600 mm			750 mm		
	C1	C2	SLS	C1	C2	SLS	C1	C2	SLS
16	943	566	631	1341	796	841	1779	1047	1052
18	1156	697	792	1633	975	1056	2156	1276	1320
20	1388	839	969	1951	1169	1293	2564	1524	1616
22	1630	988	1154	2282	1372	1539	2988	1783	1924

Typical Design resistance for DA1 – Combinations C1 & C2 & SLS (kN)									
Pile toe depth	Pile diameter								
m bgl	450 mm			600 mm			750 mm		
	C1	C2	SLS	C1	C2	SLS	C1	C2	SLS
24	1872	1137	1340	2613	1574	1786	3413	2041	2233
26	2113	1285	1525	2944	1777	2033	3837	2300	2541
28	2371	1442	1710	3303	1994	2280	4307	2581	2850
30	2632	1600	1895	3668	2213	2527	4784	2866	3159

The geotechnical capacity should be taken as the minimum of the DA1-C2 or SLS resistances, which in this instance is the DA1-C2 resistances throughout.

It should be stressed that the above capacities do not take into consideration limiting concrete stress nor pile group effects, the latter of which is more pronounced for a large number of closely spaced piles.

Settlement of new piles designed on the basis of the working loads outlined above would typically be anticipated to be in the range of 0.5% to 1.0% of the pile diameter. It should be noted, however, that this range is for individual piles and could increase significantly if piles are installed in closely spaced groups. As such, it may be necessary to determine the overall settlement of the foundation system once the final pile layout is known.

The piles should be appropriately reinforced to mitigate the risk of heave induced by the proposed basement excavation. Further, for piles located within areas of tree influence, it is recommended that piles are designed to resist uplift forces over the top 4.0m, subject further to design considerations in accordance with NHBC standards or similar (i.e. heave protection to pile caps and ground beams).

Notwithstanding the above, it is recommended that the detailed advice of a specialist-piling contractor be sought as to the most suitable type of pile for the prevailing ground conditions and as to their lengths and diameters to support the required design loads.

9.4.3 Foundation works risk assessment

It is not anticipated that a foundation works risk assessment report will be required for the development because:

- The type of foundation proposed does not have the potential to create preferential pathways for migration of ground gas to surface or groundwater to depth;
- A considerable thickness of cohesive London Clay Formation has been encountered beneath the site is likely to significantly retard migration pathways and the foundations proposed will not affect this; and
- There are no identified ground gas sources present at depth that could be affected by the type of foundation proposed.

9.5 Floor slabs

9.5.1 Ground floor slabs

The site is generally underlain by more than 600mm of existing Made Ground and the underlying London Clay sub-grade soils have a high volume change potential. Therefore, it is recommended that ground floor slabs should be suspended. The NHBC standards should be referenced in respect to the minimum void dimensions required to accommodate potential ground movement beneath ground floor slabs and ground beams.

9.5.2 Basement floor slabs

The formation level of the new basements to Block 1A, Blocks 1C & 1D and Blocks 1E & 1F will lie within the London Clay Formation. Perched groundwater levels have been recorded within the Made Ground and surface of the London Clay at depths ranging between 1.0m to 4.8m bgl, i.e. in some instances above the underside of the proposed basement slab levels.

It is estimated that the excavation of the proposed single and double basement levels to the blocks above will require the removal of some 3.50m up to a maximum of 7.20m of overburden soil. The removal of soil to form the basement excavations will lead to an unloading in the order of 70 to 144 kN/m^2, which will result in short term elastic heave and longer term swelling of the London Clay. These ground movements will be mitigated in part by the loads imposed by the proposed multi-storey buildings, but will likely result in some longer-term heave movement that will affect the ground outside of the immediate construction envelope and could potentially affect adjoining properties and infrastructure.

A preliminary ground movement assessment has been completed to estimate the potential magnitude of short and long term heave associated with the unloading due to excavation of the proposed basement structures. The results of the preliminary analysis for each of the blocks are summarised below and plots are presented in **Appendix S**. These preliminary results are only indicative because no detailed sections where available showing the variation in the relationship between existing ground levels and the proposed basement formation levels. In addition, the analysis doesn't consider the reimposed loads from the proposed development and further detailed analysis will be required once a foundation schemes have been developed.

Block 1A

Estimates of 20mm and 50mm of short and long term heave, respectively, at the centre of the basement excavation. Assuming the majority of the short term heave movement occurs immediately following excavation / prior to the construction of the basement slab, it would leave approximately 25 to 30mm of remaining long term heave.

Blocks 1C & 1D

Estimated short term heave of 20mm at the centre of Block 1C and 40mm at the centre of Block 1D and long term heave of 70 mm and 135 mm, respectively. Based on the assumption above this would leave approximately 50 to 100mm of remaining long term heave beneath Block 1C and 1D, respectively.

Blocks 1E & 1F

Estimated short term heave of 20 to 25mm at the centre of Blocks 1E and 1F, 40 to 45mm at the centre of the overlap of Blocks 1E and 1F and long term heave of 55 to 60mm and 80 to 85mm, respectively. Based on the assumption above this would leave approximately 35 to 40mm of remaining long term heave beneath Block 1C and 1D, respectively.

Consideration will need to be given to designing the basement slab to withstand heave of the underlying clay soils resulting from unloading due to excavation and hydrostatic pressures, which should allow for groundwater levels to rise at some point in the future. The greater of the heave or hydrostatic pressure should be used in design.

The heave pressures exerted by heave of the underlying clay will depend on many issues not least the time delay from excavation to slab construction. For preliminary purposes it may be expected that the heave pressure will be equivalent to approximately 25% of the unloading indicated above. Alternatively, pressures associated with clay heave may be mitigated by suspending the slab with a proprietary void former beneath the slab.

9.6 Roads and hardstanding

In the 1 m to 1.5 m below the proposed finished ground level the exploratory holes have revealed a soil profile comprising variable made ground over firm medium strength high to very high plasticity clays.

In pavement design terms, the groundwater conditions are anticipated to comprise a low water table, i.e. at least 1 m below the pavement formation level.

The estimated minimum, equilibrium soil-suction, California bearing ratio (CBR) value for the soils and groundwater conditions described above under a completed pavement is 2.5 to 3.0%, based upon Table C1 in TRRL (1984) Report LR1132.

The results of in-situ testing dynamic cone penetration (DCP) tests are summarised in **Table 26**.

Table 26 Summary of CBR values derived from in-situ DCP tests

Test location	Minimum CBR value determined at or just below anticipated formation level
TP2	Typically 5% or greater
TP4	Typically 5% or greater
TP5	Typically 5% or greater
TP6	Typically 5% or greater
TP10	Typically 5% or greater
TP13	Typically 5% or greater
BH1	Typically 5% or greater
BH5	Typically 5% or greater

The recommended sub-grade soil CBR value for road pavement design is therefore 2% to 3% %. This value assumes that during construction the formation level will be carefully compacted and any soft spots removed and replaced with well-compacted granular fill.

The sub-grade condition at the time of construction should be confirmed by testing at the final formation level by in situ CBR testing.

Due to the variability observed within the made ground, the sub-grade soils can be regarded as frost-susceptible, based upon the criteria given in Appendix 1 of TRRL (1970) Report Road Note 29. When the sub-grade is frost-susceptible the thickness of sub-base must be sufficient to give a total thickness of non-frost-susceptible pavement construction over the soil of not less than 450 mm.

We note the presence of numerous mature trees in some areas of the site, which if removed will likely lead to some heave of the high volume change potential soils within their zone influence. This heave movement could continue for many years after removal of the tree(s) and the resulting movements could be sufficient to cause damage or result in uneven surfaces to roads/pavements/sports pitches leading to the requirement for some on-going long term maintenance.

Similarly, if desiccated site won clay soils are reused beneath surfaced areas these will be prone to swelling as soil moisture contents return to equilibrium values giving rise to similar issues. It is therefore recommended that all site won clay material excavated within the influence of trees (as defined by the NHBC guidance) should only be reused in non-structural landscaping applications where swelling would not cause any future problems.

9.7 Excavations

Generally, the trial pits remained stable during excavation which indicates that relatively shallow/small excavations should also remain stable in the short term. In the event that excavations are to remain open for longer periods or for larger excavations, consideration should be given to the use of appropriate support systems or battering back excavation sides to a safe slope angle.

The recommended maximum safe slope angles for the strata encountered are provided in **Table 27** and parameters for retaining wall design are presented in the following section.

Table 27 Recommended maximum safe slope angles for temporary excavations

Strata	Temporary (Short Term)
Made ground	1v : 2h - 1v : 1.5h[1]
Kempton Park Gravel	1v : 1h
Note:	[1]Steeper slope angle may be achievable subject to observations on site Safe slope angles above assume relatively 'dry' conditions. Excavations will require support and dewatering where perched groundwater is encountered

Suitably trained and experienced personnel should be present on site during the formation of temporary excavations to confirm suitability of the safe slope angles for the conditions encountered. It should also be noted that the safe slope angles given above do not take

account of any applied loadings at or near the crest of the slope, presence of groundwater or restrictions on lateral movement to protect adjacent utilities or other infrastructure.

A detailed assessment should be undertaken by the temporary works designer for all proposed excavation slopes to account for factors such as any imposed live loadings and protection of nearby assets/infrastructure.

Man entry into any excavations should not be undertaken without provision of suitable shoring and support and dewatering or suitable regrading and battering of side slopes to safe angles. Confined spaces protocols for the Health and Safety of personnel should always be used where man entry into excavations is to be undertaken as low oxygen conditions may be present.

The cohesive nature of the soils encountered suggests that pumping from open sumps should be sufficient to keep the excavations reasonably dry.

Excavation should be possible using conventional site plant. Breakers may be necessary to remove any concrete obstructions within the Made Ground.

9.8 Retaining wall design

The following soil parameters in **Table 28** may be used for retaining wall design purposes.

Table 28 Retaining wall design parameters

Soil type	Unit weight γ_k (kN/m^3)	Short Term Parameters		Long Term Parameters	
		$c_{u,k}$ (kN/m^2)	$\phi'_{cv,k}$ (°)	$c'_{,k}$ (kN/m^2)	$\phi'_{cv,k}$ (°)
Made ground (mixed soils)	18.0	-	27*	0	27*
London Clay	19.0 - 20.0	40 @1mbgl + 9.73 z^4	-	2*	23*
Lambeth Group	20.0	280 + 5.19 z^4	-	2*	23*
Notes: *Assumed from soil descriptions, published literature and/or previous experience					

Perched groundwater levels have been encountered within the Made Ground and London Clay, therefore allowance should be made for hydrostatic pressures acting behind retaining structures. The design groundwater level should take account for a potential future rise in groundwater levels and accidental events, such as a burst water main. Furthermore, the new basement construction must be designed to be fully sealed to prevent any future groundwater ingress.

In order to prevent damage to adjacent structures and road infrastructure, the design of the retaining wall must address the risk of excessive deformation of the wall. Bracing, both in the temporary and permanent condition will therefore be required, to ensure that the horizontal and vertical soil movement remain within acceptable levels.

9.9 Chemical attack on buried concrete

This assessment of the potential for chemical attack on buried concrete at the site is based on BRE Special Digest 1: Concrete in aggressive ground, which represents the most up-to-date guidance on this topic currently available in the UK.

The desk study and site reconnaissance indicate that, for the purposes of assessing the aggressive chemical environment of the site, the site should be considered as comprising natural ground likely to contain pyrite.

Based on testing results, **Table 29** gives the characteristic pH, water-soluble and total sulphate content values for soils from Made Ground and London Clay Formation soils encountered on-site.

Table 29 Characteristic pH, water soluble sulphate and total sulphate values

Stratum	pH	Water Soluble Sulphate (mg/l)	Total Potential Sulphate (%)
Made Ground	10.84 – 6.73	<1 – 450	-
London Clay Formation	7.74 – 8.64	72 – 2370	0.00 – 1.07

Based on the results above and following the steps outlined in the BRE guidance, the Design Sulphate Classes and Aggressive Chemical Environment for Concrete classifications are summarised in **Table 30**, on the basis of water soluble sulphate and total potential sulphate, respectively.

Table 30 Concrete design class

Stratum	Ground water	Water Soluble Sulphate		Total Potential Sulphate	
		DS Class	AC Class	DS Class	AC Class
Made Ground	Mobile	DS-1	AC-1	-	-
London Clay Formation	Static	DS-3	AC-3	DS-3	AC-3

The recommended ACEC Classification is therefore AC-3 with a Design Sulphate Class of DS-3.

However, if the proposals include the reuse of the pyritic London Clay Formation, i.e. cutting and filling, or excavation and backfill, it is recommended ACEC Classification will increase to AC-3 with a Design Sulphate Class of DS-3.

10 CONCLUSIONS

10.1 Ground model

The ground investigation has identified a profile comprising either topsoil and/or Made Ground underlain by natural cohesive deposits of the London Clay Formation. The Lambeth Group was encountered at depth underlying the London Clay Formation comprising a cohesive nature, with some siltstone bands encountered at greater depths.

Groundwater was generally encountered as minor seepages throughout the majority of the boreholes. Resting groundwater reported during return monitoring of shallow monitoring well installations were considered to represent shallow perched groundwater bodies.

Whilst the field observations to the made ground soils reported the presence of some anthropogenic content, there was no significant evidence to suggest any widespread and/or persistent contamination.

10.2 Geo-environmental assessment

Based upon the results of the site investigation and GQRA, no site-wide contamination issues have been identified and the site appears suitable for the residential development subject to the use of remedial measures.

Some limited contamination issues have been identified, particularly within earth bunds within the southern part of site (TP4). The identified contamination currently poses potential risks to human health, consequently remediation measures will be required to mitigate and/or accommodate these risks.

Based on the ground gas monitoring completed to date, it is considered appropriate that the site is characterised as CS2, due to marginally elevated (>5%) ground gas levels of carbon dioxide at a number of locations.

Should unforeseen contamination be encountered during the development then specialist advice should be sought to determine the appropriate course of action. Imported material (e.g. topsoil, subsoil) should be validated before use on-site to confirm its suitability.

10.3 Waste

With respect to waste disposal, samples of made ground and shallow subsoil were found to contain hazardous properties based on the hazardous waste assessment.

No visual asbestos containing material was identified on site. In addition, laboratory analysis confirmed that asbestos is not present within any of the samples analysed. Due to the size of the site and the limited testing undertaken to date, it is not considered appropriate to discount the potential presence of asbestos within the wider site area at this stage.

Waste Acceptance Criteria testing indicates that some waste is not suitable for disposal within an inert landfill but should be disposed of at a landfill or treatment facility which is permitted to take non-hazardous waste.

Due to the size of the site, varying composition of made ground soils and the requirement for mass landscaping works for the proposed development, further sampling and testing is likely to be required for waste characterisation purposes at the development stage. A sampling plan should be prepared to support any waste classifications and hazardous waste assessments, prior to any material being excavated.

10.4 Geotechnical assessment

The key risks identified from the available ground investigation data are discussed below:

- Variable Made Ground deposits that may be unstable in open excavations and generally unsuitable as founding strata;
- London Clay soils of high-volume change potential and numerous mature trees present in parts of the site leading to a risk of swelling/shrinkage of the clay soils that will have implications for the design of foundations, floor slabs and pavements. In addition, any desiccated site won clay fill would be prone to swelling and cause problems if used below structures or pavements;
- Silt-rich soils susceptible to rapid loss of strength in wet conditions
- Adverse ground chemistry due to elevated sulphates in the London Clay;
- Variation in topography across the site; and
- Existing and historical sub-structures associated with current and historical site developments (e.g. tunnels, foundations, basements and adjacent sub-structures).

At the time of writing it is understood that the proposed development comprises the relocation of the existing school and the development of residential units. A total of 5No residential blocks are proposed along the western boundary of site, ranging between 3No and 8No storeys with the inclusion of large 1 to 2 level basements.

In view of the relatively high column loadings anticipated for the proposed multi-storey residential blocks and need to control ground movements associated with the extensive areas of basement, a piled foundation solution is recommended. In additional, restraint piles may be required to resist heave pressures on the underside of the basement slab in podium garden or other similar areas where there is no imposed loads from the superstructure above or where potentially desiccated clay soils remain below the formation level. At this stage no specific information relating to building loads has been provided.

Pile foundations should be appropriately reinforced to mitigate the risk of heave induced by the proposed basement excavation. Further, for piles located within areas of tree influence, it is recommended that piles are designed to resist uplift forces over the top 4.0m, subject further to design considerations in accordance with NHBC standards or similar (i.e. heave protection to pile caps and ground beams).

A foundation works risk assessment will not be required for the development.

It is recommended that ground floor slabs should be suspended due to the presence of Made Ground and London Clay sub-grade soils with a high volume change potential.

Consideration will need to be given to designing the basement slab to withstand heave of the underlying clay soils resulting from unloading due to excavation and hydrostatic pressures, which should allow for groundwater levels to rise at some point in the future. The greater of the heave or hydrostatic pressure should be used in design. Pressures associated with clay heave may be mitigated by suspending the slab with a proprietary void former beneath the slab.

In the view of variable made ground and the silt rich and highly plastic nature of the underlying natural strata, the recommended sub-grade soil CBR value for the preliminary road pavement design is 2.5 to 3.0%. Due to the variability within the Made Ground subgrade soils, the materials should be regarded as frost suspectable. The removal of trees will lead to heave movement that could go on for a number of years and affect roads/pavements/sports pitches leading to the requirement for some on-going maintenance.

It is recommended that buried concrete piled foundations are designed in accordance with Design Sulphate Class DS-3 and Aggressive Chemical Environment for Concrete Class AC-3 (ACEC-AC).

Given the impermeable nature of the soils beneath the site, the ground conditions do not appear suitable for the use of pit soakaways. However, consideration could be given to discharging to existing storm water/foul sewer systems.

11 RECOMMENDATIONS

Following the site assessment, the following recommendations are made in relation to redevelopment of the site for a residential end-use:

- Production of Remedial Strategy to confirm mitigation requirements and provide strategy for dealing with unforeseen ground conditions – this may require updating once the development layout is finalised;
- Additional assessment of the earth bunds to provide more confidence on their contents;
- Japanese Knotweed and Giant Hogweed has not been identified. A re-assessment should be undertaken at the start of the growing season (April);
- Re-use of natural arisings on site will be possible but Made Ground will only be able to be re-used if proven to be chemically suitable for use and there is also geotechnical suitability (if required). Made Ground could be re-used beneath buildings and hardstanding;
- Production of a Materials Management Plan (MMP) if re-use of soils is proposed on site;
- Ground gas design report together with a verification plan (in line with C735) should be prepared for the NHBC and Local Authority approval prior to implementing the mitigation measures;
- Discussion with Local Authority and Environment Agency as needed to confirm the conclusions and recommendations are accepted;
- Verification report following ground remediation and installation of ground gas protection measures;
- It is recommended that the detailed advice of a specialist-piling contractor be sought at the earliest opportunity to determine the most suitable type of pile for the prevailing ground conditions and lengths and diameters required to support the required design loads;
- A detailed ground movement assessment should be undertaken for the development once the proposed loading information and foundation layout is known;
- The sub-grade condition at the time of construction should be confirmed by testing at the final formation level by in situ CBR testing.

REFERENCES

Previous SI reports and other site related information

Phase 1 Geo-Environmental Assessment, North London Business Park and Land at Oakleigh Road South, New Southgate, WSP Environmental Ltd, December 2007, report ref: 12220279

Standards and guidance

AGS Interim Guidance (2013), 'Site investigation and asbestos risk assessment for the protection of site investigation and geotechnical laboratory personnel', February.

Boyle, R. A. and Witherington, P. J. (2007), 'Guidance on Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are Present', National House-Building Council and RSK Group.

British Standards Institution (BSI) (1990), 'BS 1377:1990. Methods of test for soils for civil engineering purposes'.

British Standards Institution (BSI) (2020), 'BS 5930:2015+A1:2020. Code of practice for ground investigations'.

British Standard Institution (BSI) (2019), 'BS 8485:2015+A1:2019. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.

British Standards Institution (BSI) (2011), 'BS 10175:2011 + A2:2017. Investigation of potentially contaminated sites: Code of practice'.

British Standards Institution (BSI) (2013), BS8576:2013. Guidance on investigations for ground gas – permanent gases and volatile organic compounds (VOCs).

Building Research Establishment (2005), BRE Special Digest 1: Concrete in aggressive ground.

Card G, Wilson S, Mortimer S, (2012). A Pragmatic Approach to Ground Gas Risk Assessment. CL:AIRE Research Bulletin RB17. CL:AIRE, London, UK. ISSN 2047- 6450 (Online).

Chartered Institute of Environmental Health (CIEH), (2008), The Local Authority Guide to Ground Gas. Wilson, Card and Haines, September 2008.

CIRIA (2014). Good practice on the testing and verification of protection systems for buildings against hazardous ground gases.

Environment Agency (2018), 'Technical Guidance WM3. Guidance on the classification of and assessment of waste, 1st Edition, v.1.1, May 2018.

Environment Agency (2020), Land contamination risk management, https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm, 8 October 2020

National House Building Council (NHBC) (2016), Technical Extra, April 2016.

Norbury, D. (2010), Soil and Rock Description in Engineering Practice.

Part IIA of the Environmental Protection Act (Contaminated Land Regulations (England)) 2002.

Rudland, D. J., Lancefield, R. M. and Mayell, P. N. (2001), CIRIA C552. Contaminated Land Risk Assessment: A Guide to Good Practice.

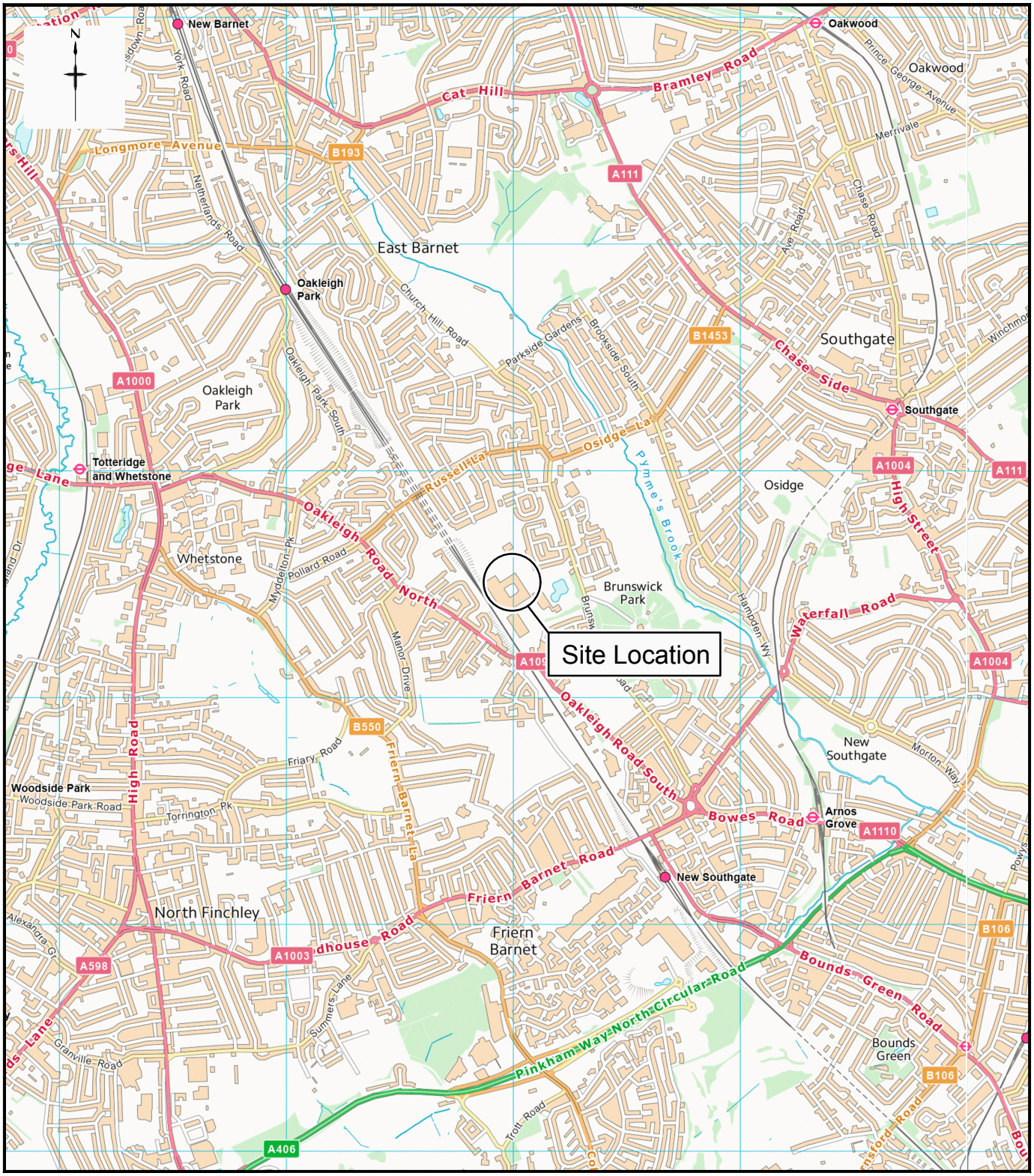
Stone, K., Murray, A., Cooke, S., Foran, J., Gooderham, L., (2009) CIRIA C681, Unexploded Ordnance (UXO). A guide or the construction industry.

Transport and Road Research Laboratory, (1970), 'TRRL Road Note 29 (Appendix 1). Road pavement design'.

Transport and Road Research Laboratory (1984), 'TRRL Report LR1132 (Table C1)'.

UK Water Industry Research, (2010), UKWIR Report 10/WM/03/21. Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites.

FIGURES



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Client: COMER HOMES GROUP

Project Title: NORTH LONDON BUSINESS PARK, BRUNSWICK PARK RD, LONDON, N11 1GN

Drawing Title: SITE LOCATION PLAN

Rev	Drawn	Date	Checked	Date	Approved	Date
01	LN	20.10.20	AM	20.10.20	AM	20.10.20

Dimensions	Scale	Original Size
m	1:25,000	A4

Project Number	Drawing File	Drawing Number
1921321 - R01 (00)	1921321 (R01-00) Figure 1.dwg	FIGURE 1

Key:

- Cable Percussive Borehole
- Mechanically Excavated Trial Pit
- Site Store, Skip and Welfare Point

RSK	**Provisional Exploratory hole location plan rev2**	**Client:**	**Comer Homes Group**	**Figure No:**	**2**
		Site:	**North London Business Park**	**Job No:**	**1921321**
		Scale:	**Not to scale**	**Source:**	**Client**

APPENDIX A
SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Comer Homes Group (the "Client") in accordance with the terms of a contract [RSK Environment Standard Terms and Conditions] between RSK and the Client, dated 16th July 2020. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by an environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.
2. Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**
4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the Client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials, unless specifically identified in the Services.
7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services or accreditation system (such as UKAS ISO 17020:2012 clause 7.1.6):

a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.

b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.

c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the Client and RSK.

8. The intrusive environmental site investigation aspects of the Services are a limited sampling of the site at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope between the client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

10. The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

11. Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works.

12. Unless stated otherwise, only preliminary geotechnical recommendations are presented in this report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed.

APPENDIX B
DEVELOPMENT DRAWINGS

BLOCK 4B
Max. Storey Height: 9
GEA: (Retail) : 503 msq
GEA: (Resi): 15,048
No. Units: 84

BLOCK 4C
Max. Storey Height: 9
GEA: 27,946 sqm
No. Units: 158

BLOCK 5A
Max. Storey Height: 9
GEA (Resi): 32,902
GEA (Office) : 2,354
No. Units: 197

BLOCK 5B
Max. Storey Height: 9
GEA: 10,500 sqm
No. Units: 59

BLOCK 3B
Max. Storey Height: 9
GEA: 20,913 msq
No. Units: 115

BLOCK 2C
Max. Storey Height: 4
GEA: 4,561 sqm
No. Units: 22

BLOCK 2F
Max. Storey Height: 3
GEA: 1,948 sqm
No. Units: 9

BLOCK 4A
Max. Storey Height: 9
GEA: 16, 693 sqm
No. Units: 94

BLOCK 3C
Max. Storey Height: 5
GEA: 5,760 sqm
No. Units: 32

BLOCK 3A
Max. Storey Height: 9
GEA (Resi): 17,724 sqm
GEA (Community) : 510 msq
GEA (Retail) : 650 msq
GEA (Office) : 660 msq
GEA (Childcare): 300msq
No. Units: 115

BLOCK 2E
Max. Storey Height: 3
GEA: 3,528 sqm
No. Units: 16

BLOCK 1B
Max. Storey Height: 3
GIA: 965 sqm
No. Units: 07

BLOCK 1C
Max. Storey Height: 7
GIA: 17,553 sqm
No. Units: 114

BLOCK 1D
Max. Storey Height: 7
GIA: 24,809 sqm
No. Units: 123

BLOCK 1E
Max. Storey Height: 8
GIA: 10,273 sqm
No. Units: 58

BLOCK 1F
Max. Storey Height: 8
GIA: 9,617 sqm
No. Units: 58

BLOCK 2B
Max. Storey Height: 4
GEA: 6,188 sqm
No. Units:28

BLOCK 2A
Max. Storey Height: 5
GEA: 7,624 sqm
No. Units: 42

BLOCK 2D
Max. Storey Height: 3
GEA: 4,680 sqm
No. Units: 22

BLOCK 1A
Max. Storey Height: 3
GIA: 12,428 sqm
Education/Sports:

Phase 1
Phase 2
Phase 3
Phase 4
Phase 5

4A
4B
4C
5A
5B
1A Hall
1A Changing
1A Main School Building
1B
1C
1D
1E
1F
2A
2B
2C
2D
2E
2F
3A
3B
3C
3-Storey

OAKLEIGH ROAD NORTH
HAYNES CLOSE
BRUNSWICK CRESCENT
BRUNSWICK PARK GARDENS
HOWARD CLOSE
PINE ROAD
WEIRDALE AVENUE
New Southgate Cemetery and Crematorium

General Notes

1. Developmentment Zones (within which development can occur) and public open spaces are identified on drawing number 211_WS_02_01
2. Access and circulation routes are identified on Drawing number 211_WS_02_02.
3. Landscape treatments are identified on drawing number 211_WS_02_03
4. Allowable uses at ground floor frontages are identified on Drawing number 211_WS_02_04
4. Allowable uses at ground floor frontages are idnetified on Drawing number 211_WS_02_04
5. Allowable horizontal limits of deviations are identified on Drawing number 211_WS_02_05
6. Proposed site ground levels and allowable vertical deviations are identified on Drawing number 211_WS_02_06
7. Heights and allowable vertical deviations are identified on Drawing number 211_WS_02_07
8. Basement extents and allowable horizontal and vertical deviation are identified on drawing number 211_WS_02_08

Additional Notes

1. Refer to Section 5 of the Design Principles Document for further guidance on the Development Zone.
2. Refer to section 4 of the Design Principles Document for further guidance on the Public Open Space Zones, access routes typologies , and landscaping treatments of streets and spaces.
3. Refer to section 3 of the Design Principles Document for further guidance on the streets and circulation routes.

NOTES:

REV.	DATE:	DETAILS:	INITIALS:
A	27/04/2016	General revision	DT
B	10/03/2017	General revision	SDG

Legend

- Planning Application Boundary
- Public Open Space
- Detailed Application Zone Blocks
- Phase 1 — Detailed Application Zone Reference
- 1A — Detailed Application Zone Block Reference
- + 57.00 — Proposed Site Basement Level_(AOD) Limit of Deviation +/- 2.0m
- Phasing of Outline Component of Application

NORTH POINT:

KEY PLAN:

PLUS ARCHITECTURE
Exchequer Chambers, Exchequer Street, Dublin 2, Ireland.
W: www.plusarchitecture.ie T: 353 (0) 1 521 3378

PROJECT:	North London Business Park	PROJECT: 211	DATE: 10/03/17
CLIENT:	The Corner Group	DRAWING NO.: 211_WS_02_01	REVISION NO.: B
TITLE:	Proposed Development Zone Plan	DRAWN BY.: SDG	SCALE AT A1 .: 1 : 1000
ISSUE TYPE:	Planning	CHECKED BY.: DT	SCALE AT A3 .: 1 : 2000

APPENDIX C
SUMMARY OF LEGISLATION AND POLICY RELATING TO LAND CONTAMINATION

Part IIA of the Environmental Protection Act 1990

Part IIA of the Environmental Protection Act 1990 (Part IIA) and its associated Contaminated Land Regulations 2000 (SI 2000/227), which came into force in England on 1 April 2000, formed the basis for the current regulatory framework and the statutory regime for the identification and remediation of contaminated land. Part IIA of the EPA 1990 defines contaminated land as 'any land which appears to the Local Authority in whose area it is situated to be in such a condition by reason of substances in, on or under the land, that significant harm is being caused, or that there is significant possibility of significant harm being caused, or that pollution of controlled waters is being or is likely to be caused'. Controlled waters are considered to include all groundwater, inland waters and estuaries.

In August 2006, the Contaminated Land (England) Regulations 2006 (SI 2006/1380) were implemented, which extended the statutory regime to include Part IIA of the EPA as originally introduced on 1 April 2000, together with changes intended chiefly to address land that is contaminated by virtue of radioactivity. These have been replaced subsequently by the Contaminated Land (England) (Amendment) Regulations 2012, which now exclude land that is contaminated by virtue of radioactivity.

The intention of Part IIA is to deal with contaminated land issues that are considered to cause significant harm on land that is not undergoing development (see Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, April 2012). This document replaces Annex III of Defra Circular 01/2006, published in September 2006 (the remainder of this document is now obsolete).

Planning Policy

Contaminated land is often dealt with through planning because of land redevelopment. This approach was documented in Planning Policy Statement: Planning and Pollution Control PPS23, which states that it remains the responsibility of the landowner and developer to identify land affected by contamination and carry out sufficient remediation to render the land suitable for use. PPS23 was withdrawn early in 2012 and has been replaced by much reduced guidance within the National Planning Policy Framework (NPPF), reference ISBN: 978-1-5286-1033-9, February 2019.

The new framework has only limited guidance on contaminated land, as follows:

Chapter 11. Making effective use of land

117 Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or 'brownfield' land.

118. Planning policies and decisions should:

c) give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land.

Chapter 15. Conserving and enhancing the natural environment

170. Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Ground conditions and pollution

178. Planning policies and decisions should ensure that:

a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);

b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990; and

c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.

179. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

Water Resources Act (WRA)

The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 updated the Water Resources Act 1991, which introduced the offence of causing or knowingly permitting pollution of controlled waters. The Act provides the Environment Agency with powers to implement remediation necessary to protect controlled waters and recover all reasonable costs of doing so.

Water Framework Directive (WFD)

The Water Framework Directive 2000/60/EC is designed to:

- enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands that depend on the aquatic ecosystems
- promote the sustainable use of water
- reduce pollution of water, especially by ‘priority’ and ‘priority hazardous’ substances
- ensure progressive reduction of groundwater pollution.

The WFD requires a management plan for each river basin be developed every six years.

Groundwater Directive (GWD)

The 1980 Groundwater Directive 80/68/EEC and the 2006 Groundwater Daughter Directive 2006/118/EC of the WFD are the main European legislation in place to protect groundwater. The 1980 Directive is due to be repealed in December 2013. The European legislation has been transposed into national legislation by regulations and directions to the Environment Agency.

Priority Substances Directive (PSD)

The Priority Substances Directive 2008/105/EC is a 'Daughter' Directive of the WFD, which sets out a priority list of substances posing a threat to or via the aquatic environment. The PSD establishes environmental quality standards for priority substances, which have been set at concentrations that are safe for the aquatic environment and for human health. In addition, there is a further aim of reducing (or eliminating) pollution of surface water (rivers, lakes, estuaries and coastal waters) by pollutants on the list. The WFD requires that countries establish a list of dangerous substances that are being discharged and EQS for them. In England and Wales, this list is provided in the River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions 2010. In order to achieve the objectives of the WFD, classification schemes are used to describe where the water environment is of good quality and where it may require improvement.

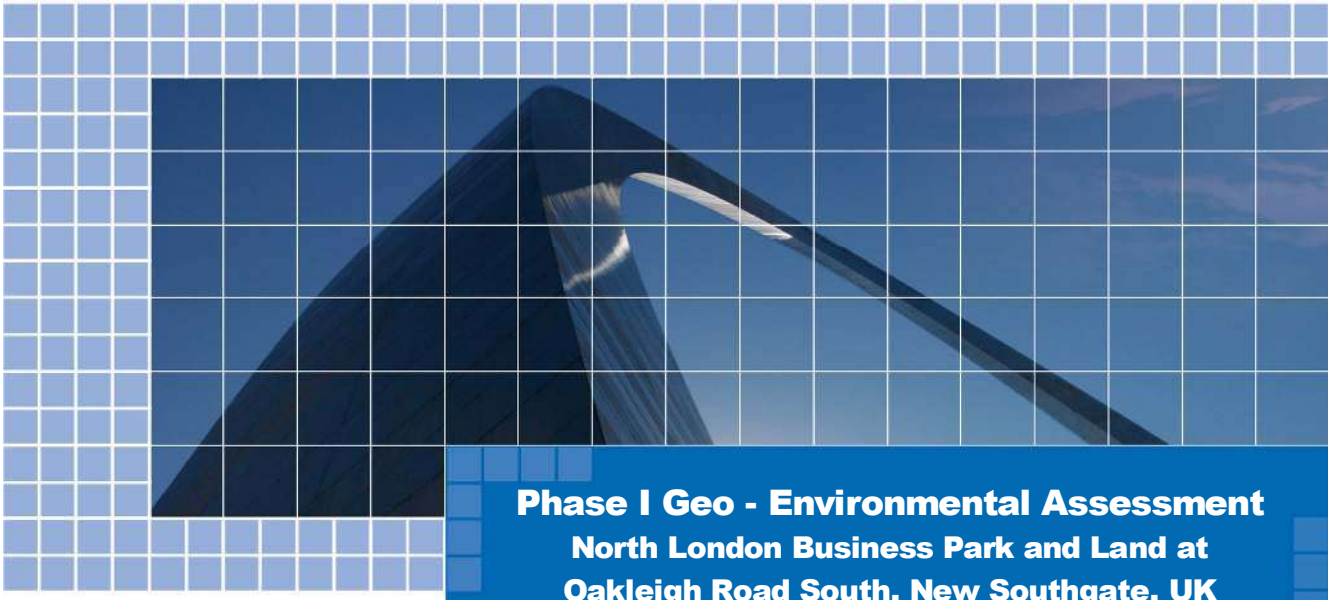
Environmental Permitting Regulations (EPR)

The Environmental Permitting (England and Wales) Regulations 2016 (as amended) provide a single regulatory framework that streamlines and integrates waste management licensing, pollution prevention and control, water discharge consenting, groundwater authorisations, and radioactive substances regulation. Schedule 22, paragraph 6 of EPR 2016 states: 'the regulator must, in exercising its relevant functions, take all necessary measures - (a) to prevent the input of any hazardous substance to groundwater; and (b) to limit the input of non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater.'

Notes:

1. *The above information is provided for background but does not constitute site-specific advice*
2. *The above summary applies to England only. Variations exist within other countries of the United Kingdom*

APPENDIX D
SUPPORTING INFORMATION



Phase I Geo - Environmental Assessment

North London Business Park and Land at Oakleigh Road South, New Southgate, UK

Comer Homes

December 2007

WSP

QM

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks	Draft			
Date	December 2007			
Prepared by	A Reeder			
Signature				
Checked by	M Wheeler			
Signature				
Authorised by	M Wheeler			
Signature				
Project number	12220279			
File reference				

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Contents

Part 1: North London Business Park

Executive Summary

WSP Environmental Ltd (hereafter referred to as WSPE) was instructed by Comer Homes to undertake a Phase I Geo - Environmental Assessment of the land at North London Business Park (referred to by Comer Homes as Brunswick Park). The report highlights environmental considerations, predominantly with respect to ground conditions, and is required as part of the planning application associated with the site. Please refer to Appendix E for WSP's Methodology and Limitations.

Key Findings

The subject site comprises North London Business Park, and includes commercial buildings ranging from single to three storey buildings (ground plus two), surface and multi storey car parking areas, overgrown sports grounds, soft landscaped areas and a lake. There are significant changes in levels across the site, and a number of bunds are present from previous phases of redevelopment.

The site is located in New Southgate, within Barnet, adjacent to the east of the overland train station, in a predominantly residential area with the occasional commercial property.

Historical maps indicate that the site was partially associated with the cemetery in 1863. By 1879 railway sidings and gravel pits were noted on the site. New Southgate Works and a sports ground were present by 1936 and during the 1990s and 2000s building layouts changed. Surrounding land uses include a railway, residential properties, a cemetery, industrial properties and a sewage works.

The Local Authority has provided information relating to nearby historic landfills. In addition it indicated that an intrusive phase II investigation is likely to be required and contamination issues will be dealt with during the planning process associated with redevelopment.

It is understood that the site was subject to bombing in the Second World War, and as such there is a potential for unexploded ordnance to be present on site.

Liability

Based on the information contained within this report and with due regard to redevelopment (including residential with gardens), it is the opinion of WSPE that the site represents a **medium** risk with respect to environmental considerations.

Based on the information contained within this report, it is the opinion of WSPE that the site represents a **medium** risk with respect to geotechnical considerations.

Recommendations

No further work is considered necessary for the ongoing current use of the site. However, the following recommendations should be considered prior to redevelopment:

- An intrusive phase II investigation should be undertaken to provide information relating to contamination issues, provide preliminary geotechnical advice and a ground gas assessment.
- An unexploded ordnance desk study.

1 Site Information

1.1 SITE DETAILS

Site Address	North London Business Park, Brunswick Park Road, Barnet, N11 1HB, UK
National Grid Reference	528050, 193450
Size	Approximately 16 hectares
Site Location	The site is located in New Southgate, within Barnet, adjacent to the east of the overland train station, in a predominantly commercial and residential area. A site location plan is included as Appendix A.
Current Site Use	The subject site is utilised for a mixed development of commercial properties.

1.2 SITE RECONNAISSANCE

A walk over survey of the site was carried out on 28th November 2007, including an inspection of the exterior and interior of the site and buildings.

An annotated site plan, and associated site photographs are presented in Appendix B and C, respectively.

The following key observations were made during the site reconnaissance:

Site Description

The subject site comprises North London Business Park, and includes commercial buildings ranging from single to three storey buildings (ground plus two), surface and multi storey car parking areas, overgrown sports grounds, soft landscaped areas and a lake. There are significant changes in topographical levels across the site, and a number of bunds are present from previous phases of redevelopment.

Specific on-site activities

- The commercial units are generally located in the west of the site and are occupied by London Borough of Barnet (offices and meeting rooms), Barnet College (classrooms and lecture theatres), Middlesex University (offices, classrooms and lecture theatres), philip ADVENT (offices) and a sports and social club. An additional building was being constructed at the time of the walkover, located to the west of the lake. The site representative indicated that this new building would be occupied by Barnet College.
- A number of former air raid shelters are present across the site. The site representative indicated that a number of the air raid shelters have since been infilled with surplus material following previous phases of redevelopment, most noteworthy being the shelters in the north west of the site, to the rear of the commercial buildings. The site representative inferred that the roofs had been removed, but that the floors, walls and foundations were likely to remain. Ground level access to two small air raid shelters, located in the south east of the site, to the north east of the multi storey car park, was noted during the site walkover (see photo C1).

- Three bunds were noted on site, primarily located within the north and centre of the site (see photo C2). The site representative stated that the bunds were constructed during previous phases of redevelopment as surplus material was not permitted to be disposed off site. It is unknown at this stage, exactly what is contained in these stockpiles.

External Areas

- A multi storey car park is present on site, located to the south east of the commercial buildings, with surface car parking noted around the majority of the site. In addition, a stepped surface car park is located to the north west of the commercial buildings; above where the site representative stated the former below ground air raid shelters were located.
- A former sports ground, including a sports pitch, a rifle range and a tennis court were noted in the north of the site, elevated above the commercial development. It was noted that at the time of the walkover the sports ground had not been used in a long time, and had become overgrown (see photo C3). In addition to this, the tennis courts were being utilised as a storage facility for construction materials (see photo C4).
- A lake and associated soft landscaped areas were present in the east of the site (see photo C5).

Bulk Hazardous Materials Storage

- The site representative stated that there are currently no below ground storage tanks and no evidence of such tanks was noted during the site reconnaissance.
- The site representative stated that a former below ground fuel tank was located beneath one of the current commercial buildings, located in the centre of the site. The site representative inferred that the tank had been removed during the redevelopment and construction of the current commercial building.
- An above ground storage tank, fuelling the back up generator was noted adjacent to one of the commercial buildings. The tank was raised above a concrete base. No ground staining was noted in the surrounding area (see photos C6 and C7).

Other Hazardous Materials

- The site representative stated that there are no hazardous materials stored on-site. No such materials were observed on site during the site walkover.

Polychlorinated Biphenyls (PCBs)

- An electricity sub station is located within the site's boundary, in the south of the site, adjacent to the main site entrance. It was not possible to access the compound in which the sub station is located and therefore the condition could not be determined.
- In addition to the main sub station, located at the main site entrance, a number of smaller transformers were noted across the site associated with individual commercial buildings, and a mast and associated transformer was noted adjacent to the former rifle range in the north of the site (see photo C8).

Ozone Depleting Substances (ODS)

- The site representative stated that all air conditioning units had been recently refurbished, and no longer utilise the refrigerant R22, which is an ozone depleting substance.
- Further to this, former units were noted within the immediate external areas to some of the commercial buildings, however the site representative stated that these units were no longer in use.

Wastes Management

-Non Hazardous

- Waste produced on site comprises cardboard, packaging, office waste, catering waste and general wastes, which are compacted before being stored in a number of skips and removed regularly by reportedly licensed waste contractors.

-Hazardous

- The site representative stated that no hazardous waste was generated on site. No such materials were observed on site during the site walkover.

Drainage Issues

-Surface Water

- The site representative stated that all surface water drained into the lake on site.

-Foul Water

- Foul water on site is limited to sewage and domestic waste water. The site representative did not report any issues associated with on site foul water, and no issues were observed during the site walkover.

-Trade Effluent

- No trade effluent discharges were identified during the site visit.

Asbestos Containing Materials (ACMs)

The site representative stated that asbestos containing materials were historically found to be present within one of the buildings on site, the site representative stated that this has since been cleared, and that no asbestos containing materials are currently present on site, however WSPE has not received confirmation of this. It is understood that Asbestos Registers are held for the commercial buildings present on site, however these have not been reviewed by WSPE.

1.3 SURROUNDING LAND USE

The site is located in New Southgate, within Barnet, in a predominantly residential area, with occasional commercial properties, predominantly to the south of the site. Residential properties are located adjacent to the northeast, east and south east of the site, and the overland railway runs adjacent to the western boundary of the site.

2 Historical Land Use

2.1 SITE HISTORY

A study of historical Ordnance Survey maps has been undertaken to identify any potentially contaminative former land uses. Reference to historical maps provides invaluable information regarding the land use history of the site, but historical evidence will be incomplete for the period pre-dating the first edition and between successive maps. A selection of historical map extracts is included as Appendix D.

Historical maps indicate that the site comprised land associated with the adjacent cemetery from the earliest OS map dated 1863. The western boundary is marked by the cutting for the adjacent railway, with associated sidings noted on the 1879 map in the south west of the site. Also in 1879 gravel pits were noted in the north of the site, however were cleared by 1896. The Cemetery Station was noted in the east of the site on the 1866 map associated with the adjacent cemetery; however this was cleared by 1897. By 1936 the north and east of the site are occupied by a sports ground, including tennis courts, a pavilion, a miniature rifle range and a tank, whereas the south of the site is occupied by New Southgate Works (Telephones and Cables), with a number of large warehouse structures across the site. Two pond features were noted in the east of the site in 1981, with a weir separating them. The 1991 map shows the northern sports field to comprise the former pavilion and a new rifle range in the extreme north of the site, all other features have been cleared. Within the 1990s and 2000s the building layout within the works changes, and the map dated 2007 indicates the current layout.

Anecdotal Information

The site representative stated that a number of former air raid shelters were present across the site; two shelters are still present, with access at ground level located in the centre of the site, adjacent to the multi storey car park. Further to this, the site representative stated that additional shelters have since been infilled, and as such associated walls and foundations are likely to remain underground. The historic, infilled air raid shelters were located to the north of the remaining shelters and to the north of the commercial buildings.

2.2 SURROUNDING AREA

A study of historical Ordnance Survey maps has been undertaken to identify any potentially contaminative former land uses. A selection of relevant historical map extracts is included as Appendix D. The following represents a summary of the available map information:

Surrounding Features	Dates	Distance (m)	Direction
Great Northern Cemetry (including Mortuary Chapel) *Then* New Southgate Cemetry and Crematorium	Pre 1881 – pre 1989 . Pre 1989 - present	Adjacent	South east
Railway line – Great Northern (including tunnel to north west)	Pre 1881 – present	Adjacent	West
East Barnet Sewage Farm *Then* Sewage Disposal Works	Pre 1897 – pre 1938 Pre 1938 – pre 1962	300	East

Surrounding Features	Dates	Distance (m)	Direction
Then Works	Pre 1962 – pre 1973		
Then Scrub land	Pre 1973 – pre 1989		
Then Cleared	Pre 1989 – pre 1999		
Then Brunswick Park	Pre 1999 – present		
Photographic Works	Pre 1897 – pre 1962	200	South
Then Works	Pre 1962 – present		
Unnamed building	Pre 1962 – pre 1963	100	East
Then Works (with electricity sub station)	Pre 1963 – pre 1994 .		
Then cleared, with a depot	Pre 1994 – pre 2007		
Then Residential properties	Pre 2007 – present		

3 Regulatory Information & Consultations

3.1 REGULATORY DATABASE

The following environmental data has been obtained from a summary of information databases.

	0-250m	250-500m	Details
Registered landfills	0	0	Not applicable (N/A)
Closed landfill facilities	2	0	Great Northern Cemetery (now New Southgate) was located approximately 100m to the east of the site and held a waste license for a year (1979). In addition to the cemetery, East Barnet Sewage Works, was formerly located approximately 125m to the north east of the site, held a license for fifteen years (1950-1965) including inert, commercial and household waste.
Registered transfer stations/ treatment facilities	1	1	GBN Services Ltd is located approximately 200m to the south east of the site, and accepts inert commercial and household waste. Further to this, a second transfer station (Winters Haulage) is located approximately 380m to the south east of the site, and accepts household, commercial and industrial waste.
Closed transfer stations/ treatment facilities	0	0	N/A
Authorised industrial processes (IPC/IPPC).	1	4	Oakleigh Dry Cleaners are located approximately 120m to the south west of the site. The remaining authorised processes relate to the cemetery, additional dry cleaners and a petrol filling station.
Fuel Stations Entries	1	1	The closest fuel station is approximately 70m to the south of the site and is recorded as obsolete. Further to this, Barnet service station is approximately 300m to the north west of the site and recorded as open.
Licensed radioactive substances	0	0	N/A
Enforcements, prohibitions or prosecutions	0	0	N/A
Discharge Consents	0	0	N/A
Pollution Incidents	0	1	The nearest pollution incident occurred 340m to the southeast of the site. The incident comprised the release of oil to a drainage ditch and was classified as minor. This has not been attributed to the subject site.
Natural Cavities	0	0	N/A
Consents issued under the Planning (Hazardous Substances) Act 1990	0	0	N/A

3.2 CONSULTEES

Local Authority Building Control

The Building Control Officer at London Borough of Barnet was contacted with regard to ground conditions beneath the subject site. A response has not yet been received by WSPE.

Local Authority Contaminated Land Office

The Contaminated Land Officer at London Borough of Barnet was contacted for environmentally pertinent information relating to the site. The Officer confirmed that the site has had numerous potentially contaminative uses, however stated that for continued current use the site was not considered as high priority for classification as contaminated land under Part IIa of the Environmental Protection Act (1990). The Officer indicated that prior to redevelopment of the site, particularly if the proposed redevelopment comprised an end use change, to residential, an intrusive investigation would be required, and that contamination issues would be dealt with through the planning process.

In addition to this the Officer was consulted on the former landfills identified in the surrounding area. The Officer stated that in relation to Great Northern Cemetery, London Borough of Barnet are not aware of any waste that has been deposited there historically. The Officer indicated that the license the cemetery held (1 year, 1979) may relate to the deposition of soil, permitting an additional layer of viable land. The Officer confirmed that this site is not considered to represent a significant risk to the subject site.

The second landfill license was related to East Barnet Sewage Works. The Officer stated that prior to the closure of the works materials may have been used to backfill holes and excavations across the site. Further to this, the Officer stated that a number of reports (including site investigations and gas assessments) are available for the sewage works as a portion of the works has been redeveloped for residential end use. The Officer stated that gas reports have identified low amounts of gas, and that in 1995 the Environment Agency (EA) classified the site as 'green' in relation to ground gas, and that low to no risk is anticipated. The Officer indicated that in addition to the sewage works materials present, there is a potential that household waste may have been deposited briefly at the site.

Petroleum Officer

No issues have been identified which warrant further consultation with the Petroleum Officer.

Environment Agency

The Environment Agency has been contacted in relation to landfills in the surrounding area. A response has not yet been received by WSPE. The Environment Agency confirmed the presence of the two landfills within the vicinity of the site, however have stated that as both sites were closed before the Environment Agency became the regulatory body for waste sites no further information is held.

Environment Agency Flooding Data

The site is not located within an Environment Agency indicative floodplain.

Health Protection Agency

The site is located within an area where no radon protection measures are considered necessary.

British Geological Survey

The site is located within an area where there is low to very low risk of landslip subsidence hazards and moderate risk of swelling clay subsidence hazards.

Coal Authority Report

The site is not located within an area affected by Coal Mining. From the information currently available to the Coal Authority, a mining report is not required for this site.

4 Other Relevant Information

4.1 PLANNING BRIEF

The London Borough of Barnet, Planning Brief for North London Business Park and land adjacent to Coppices Grove has been provided by the client and includes details of the site development. A summary of the relevant information has been provided below.

- The site's history has comprised New Southgate Works (telephone and cable), followed by Northern Telecom (Nortel) occupying part of the site in 1989. An optical centre of excellence was present in 2000 and by 2003 Nortel relocated off site;
- During the Second World War it is reported that the site was bombed, due to its strategic industrial use;
- A number of underground air raid shelters are present across the site;
- An underground public sewer crosses the site; and
- Fly tipping is reported to have occurred in the north of the site within and to the east of the former sports ground.

5 Environmental Setting

5.1 GEOLOGY AND HYDROGEOLOGY

The published 1:50,000 scale geological map of the area (Sheet No 256 "North London") indicates the site to be underlain by London Clay, with a potential for Head Deposits to be present overlying the London Clay.

On the basis of the published geological maps of the full succession of natural strata in the vicinity of the site is likely to comprise:

Conjectural Geological Model

Geological Unit	Description	Anticipated Thickness (m)
Superficial Soils / Drift		
Head deposits	Variable deposit	Anticipated to be of limited thickness
Solid Geology		
London Clay	Clay, silty in part	Anticipated to be in the order of 30m
Lambeth Beds	Mottled clay with sand and pebble beds	Unknown
Thanet Sands	Fine grained sand	Unknown
White Chalk Group	Chalk	Unknown

The Dollis Hill River Terrace Deposits were noted off site to the south west of the site, as a gravel, sandy and clayey in part.

The existing topography and history of development of the site suggests that, in addition to these natural strata, Made Ground is likely to be present on the site. Further to this, there is an area of Made Ground noted on the BGS map, located to the east of the site, anticipated to be associated with the former East Barnet Sewage Works.

The published Environment Agency Groundwater Vulnerability Map of the area (Sheet 39 "West London") indicates the site to be predominantly underlain by a Non Aquifer (London Clay). Therefore, groundwater resources are perceived not to be at risk from activities carried out on site.

The following current licensed groundwater abstractions have been identified within a 1km radius of the site, although the abstraction below is likely to be from the deeper chalk aquifer and therefore protected by a thickness of relatively impermeable London Clay:

Source	Use	Distance (m)	Direction
Groundwater	Potable water supply	700	South east

In terms of aquifer protection, the Environment Agency generally adopt a three-fold classification of Source Protection Zones for public supply abstraction wells

- Zone I - or 'inner source protection' is located immediately adjacent to the groundwater source. It is based on a 50-day travel time and is designed to protect

against the effects of human activity and biological/chemical contaminants that may have an Immediate effect on the source

- Zone II - or 'outer source protection' is larger than Zone I and is defined by a 400-day travel time to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants
- Zone III - or 'source catchment' covers the complete catchment areas of a groundwater resource

Information available on the Environment Agency's web-site indicates that the site does not lie within a Source Protection Zone.

5.2 HYDROLOGY

Surface water features in the vicinity of the subject site are as follows:

Surface Water Feature	Quality*	Distance (m)	Direction
Unnamed lake	-	On site	-
Pymme's Brook	C	400	East

*Chemical water quality as classified under the EA's General Quality Assessment (GQA) Scheme.

No surface water abstractions have been identified within a 1km radius of the subject site.

5.3 5.3 SURROUNDING FEATURES

Sensitive surrounding land uses in the immediate vicinity of the subject site are as follows:

Sensitive Land Use	Approx. Distance	Direction
Residential properties with gardens	Adjacent	North, East, South

5.4 ENVIRONMENTAL SENSITIVITY

Overall, the site setting is considered to be of **low / moderate** sensitivity, due to the following reasons:

- The presence of on-site surface water features (lake in the east of the site);
- The residential land uses within the surrounding area;
- The presence of groundwater abstractions within a 1km radius of the site (potable supply, approximately 700m) – although this is considered to be protected by impermeable London Clay;
- The underlying Non Aquifer; and
- The absence of an unprotected minor aquifer underlying the site.

6 Geotechnical Considerations

6.1 PROPOSED DESIGN

WSPE understands that the site will be redeveloped for a mixed use purposes, including additional commercial buildings in the centre and south of the site and residential properties in the north and east of the site; however planning approval has, as yet, not been received. It is understood that current plans include underground parking across large portions of the site. Based on the desk study information obtained and a walkover survey of the site, several areas of geotechnical risk have been identified as outlined below:

The following ground-related hazards have been identified during the investigation:

Hazard	Justification
Lateral changes in ground conditions	Given the changes in levels across the site, and the possible presence for former air raid shelters, it is considered that the depth to natural ground will vary significantly across the site.
Shrinkable clay soils	London Clay is considered to be a material with a medium to high volume change potential.
Desiccation	Given the shrinkage potential of the London Clay and any existing / proposed trees on site, desiccation should be considered.
Soft clay – low bearing capacity	The Head deposits overlying the London Clay have the potential of being soft.
High groundwater / poor drainage	Unknown at this stage.
Potential for below ground obstructions.(foundations / air raid shelters)	Historic development of the site and former air raid shelters indicate the potential for below ground obstructions.
Made Ground / infilled ponds	The historical gravel pits in the north of the site are likely to have been infilled. In addition to this, significant earthworks have occurred on site, resulting in potentially significant thicknesses of Made Ground across the site.
Adverse ground chemistry (weathering of sulphides to sulphates / acidic pH)	Unknown at this stage.

6.2 FOUNDATIONS

From past experience, the London Clay is likely to have a safe bearing capacity in the region of 125kN/m^2 to 150kN/m^2. This generally proves suitable for pad foundations for structures up to three storeys in height. This solution will be subject to confirmatory tests undertaken during an intrusive site investigation. However, the thickness of Made Ground and the thickness and composition of the Head deposits may also preclude the use of shallow foundations.

Footings should be taken deeper where structures are located within influencing distance of any existing or future trees. In these circumstances reference should be made to NHBC Chapter 4.2.

For four storey structures, foundations could be excessively wide and piled foundations may be a more appropriate solution.

It is considered that suspended floor slabs are likely to be required across the site, based on the potential for a significant thickness of Made Ground being present.

The anticipated sub-grade soil CBR value for road pavement design is 2%.

6.3 OBSTRUCTIONS/RELIC STRUCTURES

There is the possibility of relict substructures, possibly including areas of underground air raid shelters and former foundations, being present on the site. In addition to any effect on foundation construction, such features may lead to increased costs for the groundworks operations and delays in programming.

It is recorded within the planning brief that the site was bombed during World War II. It is therefore possible that unexploded ordnance be present across the site.

7 Risk Assessment

7.1 OUTLINE ENVIRONMENTAL CONCEPTUAL MODEL

The methods used within this risk assessment follow a risk-based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-target pollutant linkage' concept introduced in the Environmental Protection Act 1990. For a site to be designated as Contaminated Land a plausible linkage between the identified Sources, Pathways and Targets must be demonstrated, this is further discussed within Appendix E.

Potential Contaminant Sources

On-Site Contaminant Sources	■ Possibility of infilled former gravel pits in the north of the site, may give rise to deep areas of Made Ground or ground gas generation. ■ The site has had a long history of development, including railway sidings, the telephones / cables works, electricity sub stations and tanks, which could have resulted in contamination across the site. ■ A number of bunds are present as a result of previous phases of redevelopment. ■ The site is thought to have been bombed during World War II which could have resulted in unexploded ordnance being present across the site. ■ Previous phases of redevelopment at the site have resulted in bunds / infilled air raid shelters which could have resulted in deep areas of Made Ground.
Off-Site Contaminant Sources	■ Neighbouring sites and land have had a commercial/industrial history, including the sewage works and photo works. ■ Two landfill sites are located within 250m of the site. Two waste transfer stations are located within 500m of the site.

Potential Contaminant Pathways

■ Potentially granular soils in the underlying superficial geology (Head Deposits) have the potential to permit the transport of pollutants. However the underlying solid geology is London Clay and is predominantly cohesive and is likely to restrict the widespread transport of pollutants.

Potential Receptors

Controlled Waters	■ The lake on site.
Human Health Risks	■ The proposed redevelopment plans include residential properties with gardens in the north and east of the site, there is unlikely to be a barrier between any subsurface contamination and the end users. ■ Third Party neighbours are primarily residential in nature and as such a barrier between any subsurface contamination is unlikely to be present.

Pollutant Linkages

■ Migration of contamination through potentially granular soils within the Head deposits

migrating towards surface water receptors.

- Direct contact with contaminated soils (ingestion, inhalation and dermal contact).
- Ground gas migration from historic filling activities on site.

7.2 ENVIRONMENTAL RISK ASSESSMENT MATRIX

Having evaluated the information gathered during this study and described in the previous sections, WSP Environmental Ltd has produced the following assessment of risk primarily focused on contaminated land issues:

	ISSUE	RISK CATEGORY	REASON
Contamination Potential:	Potential for significant on-site contamination	Medium	Potential sources of contamination have been identified across the site, including Made Ground, unexploded ordnance, and the sites predominantly industrial development history.
	Potential for contaminants migrating off the site	Low/Medium	The migration of any potential contaminants present is likely to be restricted due to the nature of the underlying geology. This is dependent on the thickness and composition of the Head deposits on site.
	Potential for contaminants migrating onto the site	Low/Medium	The migration of any potential contaminants present is likely to be restricted due to the nature of the underlying geology. This is dependent on the thickness and composition of the Head deposits on site.
Other Liability Issues:	Potential for 'other' environmental issues to give rise to liabilities	Medium	There is a potential for unexploded ordnance to be present on site, as a result of World War II bombing.
Environmental Consequences	Risk of Pollution of Controlled Waters	Low/Medium	It is considered that in light of the underlying cohesive geology, controlled waters are not considered a significant risk at the site. However there is a lake on site that may have been directly impacted.
	Risk of Damage to Property	Low	No significant issues identified.
	Risk of Harm to Human Health	Medium	The residential redevelopment in the north and east of the site present the highest risk of harm to human health, and certified clean topsoil will need to be imported for the garden areas if materials on site are not suitable.
Business Consequences:	Likelihood of designation as Contaminated Land under EPA 1990	Low/Medium	Consultations with the relevant Contaminated Land Officer have identified that the site is not considered a priority for further investigation under the Contaminated Land Regime for continued use, however prior to redevelopment (including residential end use) issues relating to contaminated land will be dealt with through the planning process.
	Risk of Site Value and/or Saleability being affected.	Medium	Source – pathway – receptor linkages have been identified on site, and as such it is recommended that an intrusive phase II investigation is undertaken.
	Likelihood of a Future Purchaser requesting further investigations.	Low/Medium	No further contamination assessment works are considered necessary for a continued use. However, in the event of redevelopment further works will be required as part of the planning process.
	Risk of Liability for Owner	Medium	Source – pathway – receptors have been identified on site, and as such it is recommended that an intrusive phase II investigation is undertaken. It should be noted that the Waste Licence may be required if the removal of the stockpiles is required.
	OVERALL RISK FOR REDEVELOPMENT		**MEDIUM**

7.3 GEOTECHNICAL RISK ASSESSMENT MATRIX

Based on anticipated ground conditions, potential geotechnical risks that may influence current or future land use are summarised below:

	ISSUE	RISK CATEGORY	REASON
Geotechnical Issue:	Potential for variable depth of Made Ground.	Medium/High	There is potential for infilled former gravel pits in the north of the site, and earthworks from previous phases of redevelopment is anticipated to have generated a significant thickness of Made Ground across the site.
	Potential for below ground obstructions.	Medium/High	Former air raid shelters and former foundations are anticipated to be present across the site.
	Potential for shallow mine workings and coal shafts and adits.	Low	The site is not in an area affected by coal mining.
	Potential for 'other' issues to give rise to liabilities.	Medium	There is a potential for unexploded ordnance to be present on site, as a result of World War II bombing.
Construction Consequences	Risk of Damage to Property	Low/Medium	Identified hazards include high shrinkage potential clay, desiccation and filled areas. The risk rating assumes appropriate investigation and remedial action / foundation solutions have been adopted during the development
	Risk of Harm to Human Health	Low	Structural damage is likely to be detected prior to damage to health.
	Implications for redevelopment	Medium	Above issues are likely to require consideration should the site be redeveloped.
Business Consequences:	Risk of Site Value and/or Saleability being affected.	Low/Medium	The above will require consideration and are likely to result in additional insurance / maintenance costs.
	Risk of Liability for Owner	Low	There is unlikely to be a liability risk to the owner assuming appropriate remedial actions / foundation solutions have been adopted during development.
	OVERALL RISK		**MEDIUM**

8 Summary, Conclusions & Recommendations

Site Address	North London Business Park, Oakleigh Road South, Barnet, N11 1HB, UK
Current Land Use	The subject site comprises North London Business Park, and includes commercial buildings ranging from single to three storey buildings (ground plus two), surface and multi storey car parking areas, overgrown sports grounds, soft landscaped areas and a lake. There are significant changes in levels across the site, and a number of bunds are present from previous phases of redevelopment. The site is located in New Southgate, within Barnet, adjacent to the east of the overland train station, in a predominantly residential area with the occasional commercial property.
Historical Land Use	Historical maps indicate that the site was partially associated with the cemetery in 1863. By 1879 railway sidings and gravel pits were noted on the site. New Southgate Works and a sports ground were present by 1936 and during the 1990s and 2000s building layouts changed. Surrounding land uses include a railway, residential properties, a cemetery, industrial properties and a sewage works.
Regulatory Enquiries	The Local Authority has provided information relating to nearby historic landfills. In addition it indicated that an intrusive phase II investigation is likely to be required and contamination issues will be dealt with during the planning process associated with redevelopment.
Other Information	It is understood that the site was subject to bombing in the Second World War, and as such there is a potential for unexploded ordnance to be present on site.
Environmental Setting	The site setting is considered to be of low / moderate sensitivity, due to the residential properties in the area, and the on site surface water feature.
Geotechnical Hazards	The primary geotechnical hazards are considered to be lateral changes in ground conditions, shrinkable clay soils, soft clay soils, desiccation, potential for below ground obstructions and Made Ground.
Conclusions	Based on the information contained within this report and with due regard to redevelopment (including residential with gardens), it is the opinion of WSPE that the site represents a **medium** risk with respect to environmental considerations. Based on the information contained within this report, it is the opinion of WSPE that the site represents a **medium** risk with respect to geotechnical considerations.
Recommendations	No further work is considered necessary for the ongoing current use of the site. However, the following recommendations should be considered prior to redevelopment: ■ An intrusive phase II investigation should be undertaken to provide information relating to contamination issues, provide preliminary geotechnical advice and a ground gas assessment. ■ An unexploded ordnance desk study.

Please Note: This summary forms part of WSP Environmental Ltd Phase I Environmental Assessment (ref.: 12220279) and as such this should be read in conjunction with the full report.

Appendix A Site Location Plan

Appendix B Annotated Site Plan

Appendix C Photographic Record

PLATE C1:

PLATE C2:

PLATE C3:

PLATE C4:

PLATE C5:

PLATE C6:

PLATE C7:

PLATE C8:

Appendix D Selection of Historical Map Extracts

Appendix E Methodology & Limitations

Methodology

This Environmental Assessment has been designed to provide information relating to:

- the current and former land uses on and surrounding the site;
- the environmental sensitivity of the site location as determined by factors including geology, hydrogeology, surface watercourses and neighbouring land uses; and,
- relevant records held by the environmental regulators.

Any relevant information provided by the client has been reviewed, with appropriate action taken to ensure this information is taken into account and/or verified where necessary. All information is then assessed to define the potential for the site to give rise to environmental liabilities for the freehold/leasehold owner (as appropriate). Recommendations are made for additional work where this is necessary to fully define the site's environmental liabilities, and cost estimates of the financial implications of the findings can be provided under separate cover, where appropriate.

Risk Classification

This assessment has been undertaken with due regard to Contaminated Land Guidance documents issued by the Department for Environment, Food and Rural Affairs (and its Predecessors), the British Standards Institute (the BSi), the Royal Institution of Chartered Surveyors (RICS) and the American Society for Testing and Materials (ASTM) Standard E 1527-00. The methods used follow a risk-based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-target pollutant linkage' concept introduced in the Environmental Protection Act 1990.

Specific comment is made regarding the site's status under the Contaminated Land Regime implemented on the 1st April 2000 as Part IIA of the Environmental Protection Act 1990, and the actual or potential designation of the site as 'Contaminated Land' as defined in Section 78A(2). Unless specifically stated as relating to this definition, references to 'contamination' and 'contaminants' relate in general terms to the Presence of potentially hazardous substances in, on or under the site.

In addition, consideration has been given to a wide range of related topics including (where appropriate): environmental processes; current and foreseeable environmental legislation; the practices and duties of environmental regulators; the health and safety of occupiers and neighbours as affected by contamination; effects on the structure of buildings; and financial implications. References to risk classifications are made according to the following definitions:

Low Risk

It is unlikely that the issue will arise as a liability/cost for the freehold/leasehold owner (as appropriate) of the site.

Medium Risk

It is possible that the issue could arise as a liability/cost for the freehold/leasehold owner (as appropriate) of the site. Further work is usually required to clarify the risk.

High Risk

It is likely that the issue will arise as a liability/cost for the site freehold/leasehold (as appropriate) owner of the site.

Environmental Risk Assessment

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk exists. Within the context of current UK Legislation (i.e. Section 57 of the Environment Act 1995), the interpretation of a "significant risk" is termed to be one where:

- Significant harm is being caused or there is a significant possibility of such harm being caused, (where harm is defined as harm to health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property); and / or, pollution of Controlled Waters is being caused.

The potential for harm to occur requires three conditions to be satisfied:

- Presence of substances (potential contaminants/pollutants) that may cause harm (Source of Pollution).
- The presence of a receptor which may be harmed, e.g. the water environment or humans, buildings, fauna and flora (The Receptor).
- The existence of a linkage between the source and the receptor (The Migration Pathway).

Therefore, the presence of measurable concentrations of contaminants within the ground and subsurface environment does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm.

The nature and importance of both pathways and receptors, which are relevant to a particular site, will vary according to the intended use of the site, its characteristics and its surroundings.

In order to assess the contamination risk at the subject site the above rational has been applied and is discussed within section 6 in the context of Contamination Sources and Potential Pollutant Linkages.

Limitations

WSP Environmental Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from WSP Environmental Limited; a charge may be levied against such approval.

WSP Environmental Limited accepts no responsibility or liability for:

a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and

b) this document to any third party with whom an agreement has not been executed.

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client) and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP Environmental Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.

Where no site inspection is undertaken (for example a Desk Study Assessment or due to restricted site access), WSPE cannot comment on the potential for environmental concerns associated with the current use or structure including the Presence of asbestos.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Appendix F Report References

Environment Agency Aquifer Classifications

The Environment Agency (EA) Groundwater Vulnerability Map and Regional Appendices, which make up part of the published Policy and Practice for the Protection of Groundwater, divide the underlying strata in England and Wales into major, minor and non aquifers dependent upon their potential for potable water supply. The following table is derived from the main policy document. The division of the rock formations into major, minor and non aquifer reflects the Regional importance and vulnerability of the formation.

Major Aquifer

Highly permeable formations usually with the known or probable Presence of significant fracturing. Highly productive strata of Regional importance. Often used for large potable abstractions. E.g. Upper Chalk, Permo-Triassic Sandstones

Minor Aquifer

Fractured or potentially fractured but without high intergranular permeability. Generally only support locally important abstractions E.g. Coal Measures

Variable porosity and permeability but without significant fracturing. Generally only support locally important abstractions. E.g. River Terrace Gravels

Non Aquifer

Formations with negligible permeability. Only support very minor abstractions if any. E.g. Mercia Mudstones, igneous rocks

Regulatory Information Sources

Reference has been made to the Landmark Information Group data provision service. This includes information and data collated from several organisations, including the Environment Agency (EA), Department for Environment, Food & Rural Affairs (DEFRA), Health & Safety Executive (HSE), the Health Protection Agency (HPA), and the Coal Authority

Part 2: Land at Oakleigh Road South

Executive Summary

WSPE was instructed by Comer Homes to undertake a Phase I Geotechnical and Environmental Assessment of the portion of land at Oakleigh Road South. The report highlights environmental considerations, predominantly with respect to ground conditions, and is required as part of the planning application associated with the site. Please refer to Appendix K for WSPE's Methodology and Limitations.

Key Findings

The subject site comprises a warehouse and a two storey office building. To the rear of the warehouse (south) an above ground fuel tank, with associated filling point was noted, and a large above ground water tank. The land in the extreme south of the site was overgrown with vegetation; in addition the land in the east of the site was also overgrown and sloping steeply down to the road.

The site is located in New Southgate, within Barnet, adjacent to the north east of the overland train station, in a predominantly residential area, with the occasional commercial / industrial property.

Historical maps indicate that the site was vacant until 1881, railway sidings were present by 1897, and the current warehouse layout was present by 1966. Surrounding historical land uses include a railway, residential properties, a cemetery, and industrial properties.

No significant issues have been identified for continued use, however an intrusive phase II investigation is likely to be required and contamination issues will be dealt with during the planning process associated with redevelopment.

Unexploded ordnance may be present on site as a result of World War II bombing in the surrounding area.

Liability

Based on the information contained within this report and with due regard to redevelopment to residential with gardens, it is the opinion of WSPE that the site represents a **medium** risk with respect to environmental considerations.

Based on the information contained within this report, it is the opinion of WSPE that the site represents a **low / medium** risk with respect to geotechnical considerations.

Recommendations

No further work is considered necessary for the current ongoing use of the site. However, the following recommendations should be considered prior to redevelopment:

- An intrusive phase II investigation should be undertaken to provide information relating to contamination issues, provide preliminary geotechnical advice and a ground gas assessment.
- An unexploded ordnance desk study.

9 Site Information

9.1 SITE DETAILS

Site Address	Land at Oakleigh Road South
National Grid Reference	528430, 192720
Size	Approximately 2 hectares
Site Location	The site is located in New Southgate, within Barnet, adjacent to the north east of the overland railway line, in a predominantly commercial and residential area. A site location plan is included as Appendix G.
Current Site Use	The subject site is currently vacant, occupied by a derelict building formerly used as a packaging factory.

9.2 SITE RECONNAISSANCE

A walk over survey of the site was carried out on 28th November 2007, including an inspection of the exterior of the site. An annotated site plan and associated site photographs have been presented in Appendix H and I respectively.

The following key observations were made during the site reconnaissance:

Site Description

The subject site comprises a warehouse and a two storey office building. To the rear of the warehouse (south) an above ground fuel tank, with associated filling point was noted, and a large above ground water tank. The land in the extreme south of the site was overgrown with vegetation; in addition the land in the east of the site was also overgrown and sloping steeply down to the road.

Specific on-site activities

- The northern most building comprised two storeys of office space.
- The main building in the centre of the site was a single storey warehouse.
- A large above ground water tank was noted to the south west of the main warehouse building (see photo I1).
- An above ground fuel tank, and associated pipework was enclosed within a brick bund to the south of the main warehouse building (see photo I2 and I3).
- Temporary containers were noted across the site, utilised by contractors associated with London Borough of Barnet.

External Areas

- The land immediately to the west of the entrance to the site was being used by Winters (adjacent property) for vehicle / skip storage.
- The land in the east of the site was overgrown. This portion of the site was sloping significantly downwards to the road.

- The land in the extreme south of the site was also overgrown and at a higher elevation than the rest of the site.

Bulk Hazardous Materials Storage

- The site representative indicated that there are no below ground storage tanks and no evidence of such tanks was noted during the site reconnaissance.
- An above ground fuel oil storage tank was observed to the south of the main warehouse building (see photos I2 and I3). The tank was noted to be placed within a brick bund. Due to overgrown vegetation, full inspection of the bund was not achieved, however no significant ground staining was noted within or surrounding the bund. It was not possible to determine if the tank contained fuel at the time of the walkover.

Other Hazardous Materials

- The site was vacant at the time of the walkover. No such materials were observed on site.

Polychlorinated Biphenyls (PCBs)

- There was no evidence observed at the time of the walkover that would indicate that PCBs are likely to be present on site.
- PCBs are generally associated with electricity sub stations and transformers.

Ozone Depleting Substances (ODS)

- ODSs are generally associated with air conditioning units (refrigerant R22).
- The buildings on site were in a partial state of disrepair, it is considered that prior to redevelopment the current structures will be demolished and should any old air conditioning units be present it is likely that they will be disposed of in an appropriate manner.

Wastes Management

-Non Hazardous

- As the site is vacant no wastes are currently being produced.

-Hazardous

- Five plastic containers were noted in the south of the site, not located in any form of secondary containment (see photo I4). The former contents of the containers are unknown.

Drainage Issues

-Surface Water

- The site representative stated that surface water was formerly directed to the off site pumping station, located to the east of the site.

- The site representative stated that there had been issues in the past relating to a blockage associated with the drainage underneath the railway. The representative stated that this has since been resolved.

-Foul Water

- Foul water on site is limited to sewage and domestic waste water. The site representative did not report any issues associated with on site foul water, and no issues were observed during the site walkover.

-Trade Effluent

- No trade effluent discharges were identified during the site visit.

Asbestos Containing Materials (ACMs)

- Given the age of the property on-site (1966) the presence of asbestos containing materials can not be discounted.

9.3 SURROUNDING LAND USE

The site is located in New Southgate, within Barnet, in a predominantly residential area, with the occasional commercial / industrial building, primarily to the north of the site. Residential properties are located adjacent to the northeast, east and south east of the site, and the overland railway runs adjacent to the west of the site.

10 Historical Land Use

10.1 SITE HISTORY

A study of historical Ordnance Survey maps has been undertaken to identify any potentially contaminative former land uses. Reference to historical maps provides invaluable information regarding the land use history of the site, but historical evidence will be incomplete for the period pre-dating the first edition and between successive maps. A selection of historical map extracts is included as Appendix J.

Historical maps indicate that the site comprised open land on the earliest OS map dated 1881. A slight depression was noted in the south of the site, and a well was noted in the east. By 1897 the site levels had changed and a significant slope was noted along the eastern boundary, sloping down to the site boundary, and railway sidings were present in the western part of the site. The next significant change was noted on the 1966 map, in the form of a warehouse present in the central part of the site. Two small buildings were noted to the north and south of the site, with the northern building being called Gordon House by 1985. An additional slope, to the south of the warehouse was noted, sloping down to the south of the site.

Anecdotal information

The site representative indicated that the warehouse has been vacant for at least five years.

Further to this it is understood that the site is elevated compared to Oakleigh Road South as a result of fill from the adjacent railway cutting being placed and compacted on site.

10.2 SURROUNDING AREA

A study of historical Ordnance Survey maps has been undertaken to identify any potentially contaminative former land uses. A selection of relevant historical map extracts is included as Appendix J. The following represents a summary of the available map information:

Surrounding Features	Dates	Distance (m)	Direction
Great Northern Railway	Pre 1881 – present	15	West
Residential properties *Then* extending south *Then* redeveloped	Pre 1881 Pre 1897 Pre 1966 – present	Adjacent	East
Great Northern Cemetery *Then* New Southgate Cemetery and Crematorium	Pre 1881 – pre 1999 Pre 1999 – present	300	North east
Cemetery Monumental Works *Then* lodge	Pre 1881 – pre 1897 Pre 1897 – present	180	East
Photographic works *Then* Works	Pre 1897 – pre 1938 Pre 1938 – present	350	North
Tank (associated with railway)	Pre 1914 – pre 1936	60	North

Surrounding Features	Dates	Distance (m)	Direction
Then railway sidings *Then* builders yard	Pre 1936 – pre 1985 Pre 1985 – present		
Pumping station *Then* factory	Pre 1916 – pre 1962 Pre 1962 – present	300	East
Boot polish factory *Then* factory	Pre 1916 – pre 1962 Pre 1962 – present	300	East
Works *Then* depot	Pre 1950 – pre 1981 Pre 1981 – present	200	south

11 Regulatory Information & Consultations

11.1 REGULATORY DATABASE

The following environmental data has been obtained from a summary of information databases.

	0-250m	250-500m	Details
Registered landfills	0	0	Not applicable (N/A)
Registered transfer stations/ treatment facilities	1	1	Winters Haulage Ltd is a transfer station located approximately 50m to the north west of the site and is licensed to accept household, commercial and industrial waste. A second transfer station is located 275m to the north of the site, operated by GBN Services Ltd.
Authorised industrial processes (IPC/IPPC).	0	2	These both relate to authorisations associated with petrol filling stations. Both are located to the south east of the site, however one has since been revoked. The current operational station is approximately 260m from the site boundary.
Fuel Stations Entries	1	0	There is one petrol filling station located approximately 175m to the south east of the site.
Licensed radioactive substances	0	0	N/A
Enforcements, prohibitions or prosecutions	0	0	N/A
Discharge Consents	1	0	A temporary license was issued in November 1989 for a Thames Water Utilities pumping station located approximately 10m to the east of the site.
Pollution Incidents	1	0	The nearest pollution incident occurred approximately 170m to the north west of the site. The incident comprised the release of oil in April 1996 and was classified as minor.
Natural Cavities	0	0	N/A
Consents issued under the Planning (Hazardous Substances) Act 1990	0	0	N/A

11.2 CONSULTEES

Local Authority Building Control

The Building Control Officer at London Borough of Barnet was contacted with regard to ground conditions beneath the subject site. A response has not yet been received by WSP E

Local Authority Contaminated Land Office

The Contaminated Land Officer at London Borough of Barnet was contacted for environmentally pertinent information relating to the site. The Officer confirmed that the

site has had a potentially contaminative use, however stated that for continued current use the site was not considered as high priority for classification as contaminated land under Part IIa of the Environmental Protection Act (1990). The Officer indicated that prior to redevelopment of the site, particularly if the proposed redevelopment comprised an end use change, to residential, an intrusive investigation would be required, and that contamination issues would be dealt with through the planning process.

Petroleum Officer

No issues have been identified which warrant further consultation with the Petroleum Officer.

Environment Agency

The Environment Agency has been contacted in relation to landfills in the surrounding area (more than 500m away). A response has not yet been received by WSP E.

Environment Agency Flooding Data

The site is not located within an Environment Agency indicative floodplain.

Health Protection Agency

The site is located within an area where no radon protection measures are considered necessary.

British Geological Survey

The site is located within an area where there is a low to very low risk of landslip subsidence hazards; and a moderate risk of swelling clay subsidence hazards.

Coal Authority Report

The site is not located within an area affected by Coal Mining. From the information currently available to the Coal Authority, a mining report is not required for this site.

12 Other Relevant Information

12.1 PLANNING BRIEF

The London Borough of Barnet, Planning Brief for North London Business Park and land adjacent to Coppices Grove has been provided by the client and includes details of the site development. A summary of the relevant information has been provided below.

- The site was subject to a landslip on part of the vegetated bank in the 1960s. The problem was reportedly overcome by sheet steel piling and limited bank re-grading.

13 Environmental Setting

13.1 GEOLOGY AND HYDROGEOLOGY

The published 1:50,000 scale geological map of the area (Sheet No 256 “North London”) indicates the site to be underlain by London Clay, with a potential for Head Deposits to be present overlying the London Clay.

On the basis of the published geological maps of the the full succession of natural strata in the vicinity of the site is likely to comprise:

Conjectural Geological Model

Geological Unit	Description	Anticipated Thickness (m)
Superficial Soils / Drift		
Head deposits	Variable deposit	Anticipated to be limited in thickness
Solid Geology		
London Clay	Clay, silty in part	Anticipated to be in the order of 30m
Lambeth Beds	Mottled clay with sand and pebble beds	Unknown
Thanet Sands	Fine grained sand	Unknown
White Chalk Group	Chalk	Unknown

The Dollis Hill River Terrace Deposits were noted off site to the south of the site, as a gravel, sandy and clayey in part.

The existing topography and history of development of the site suggests that, in addition to these natural strata, Made Ground is likely to be present on the site.

The published Environment Agency Groundwater Vulnerability Map of the area (Sheet 39 “West London”) indicates the site to be predominantly underlain by a Non Aquifer (London Clay). The Dollis Hill, River Terrace Deposits are classified as a Minor Aquifer, however are likely to be limited in nature. Therefore, groundwater resources are perceived not to be at risk from activities carried out on site.

The following current licensed groundwater abstraction has been identified within a 1km radius of the site, although the abstraction below is likely to be from the deeper chalk aquifer and therefore protected by a thickness of relatively impermeable London Clay:

Source	Use	Distance (m)	Direction
Groundwater	Potable water supply	200	East

In terms of aquifer protection, the Environment Agency generally adopt a three-fold classification of Source Protection Zones for public supply abstraction wells

- Zone I - or ‘inner source protection’ is located immediately adjacent to the groundwater source. It is based on a 50-day travel time and is designed to protect against the effects of human activity and biological/chemical contaminants that may have an Immediate effect on the source

- Zone II - or 'outer source protection' is larger than Zone I and is defined by a 400-day travel time to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants
- Zone III - or 'source catchment' covers the complete catchment areas of a groundwater resource

Information available on the Environment Agency's web-site indicates that the site does not lie within a Source Protection Zone.

13.2 HYDROLOGY

Surface water features in the vicinity of the subject site are as follows:

Surface Water Feature	Quality*	Distance (m)	Direction
Unnamed lake	-	600	north
Pymmes Brook	C	670	east

*Chemical water quality as classified under the EA's General Quality Assessment (GQA) Scheme.

No surface water abstractions have been identified within a 1km radius of the subject site.

13.3 13.3 SURROUNDING FEATURES

Sensitive surrounding land uses in the immediate vicinity of the subject site are as follows:

Sensitive Land Use	Approx. Distance	Direction
Residential properties with gardens	Adjacent	South and east

13.4 ENVIRONMENTAL SENSITIVITY

Overall, the site setting is considered to be of **low to moderate** sensitivity, due to the following reasons:

- The presence of groundwater abstractions (potable supply, approximately 200m) within a 1km radius of the site – although this is considered to be protected by impermeable London Clay;
- The residential land uses within the surrounding area;
- The underlying Non Aquifer;
- The absence of an unprotected aquifer underlying the site.
- The absence of on-site surface water features; and
- The absence of nearby surface water features (nearest surface water feature, approximately 600m).

14 Geotechnical Considerations

14.1 PROPOSED DESIGN

WSP Environmental Limited understands that sites will be redeveloped to a residential end use, however planning approval has as yet not be received. It is understood that current plans include underground parking across large portions of the site. Based on the desk study information obtained and a walkover survey of the site, several areas of geotechnical risk have been identified as outlined below:

The following ground-related hazards have been identified during the investigation:

Hazard	Justification
Lateral changes in ground conditions	Given the historic earthworks that have occurred on site there is likely to be variable thicknesses of Made Ground across the site.
Shrinkable clay soils	London Clay is considered to be a material with a medium to high volume change potential.
Desiccation	Given the shrinkage potential of the London Clay and any existing / proposed trees on site, desiccation should be considered.
Soft clay – low bearing capacity	The Head deposits overlying the London Clay have the potential of being soft.
High groundwater	Unknown at this stage.
Potential for below ground obstructions.(foundations)	Historic development of the site indicate the potential for below ground obstructions.
Made Ground / infilled ponds	Given the historic earthworks that have occurred on site there is likely to be variable thicknesses of Made Ground across the site.
Adverse ground chemistry (weathering of sulphides to sulphates / acidic pH)	Unknown at this stage.
Slope stabilisation	A steep slope, with history of landslips is present in the east of the site.

14.2 FOUNDATIONS

From past experience, the London Clay is likely to have a safe bearing capacity in the region of 125kN/m2 to 150kN/m2. This generally proves suitable for pad foundations for structures up to three storeys in height. This solution will be subject to confirmatory tests undertaken during an intrusive site investigation. However, the thickness of Made Ground and the thickness and composition of the Head deposits may also preclude the use of shallow foundations.

Footings should be taken deeper where structures are located within influencing distance of any existing or future trees. In these circumstances reference should be made to NHBC Chapter 4.2.

For four storey structures, foundations could be excessively wide and piled foundations may be a more appropriate solution.

It is considered that suspended floor slabs are likely to be required across the site, based on the potential for a significant thickness of Made Ground being present.

The anticipated sub-grade soil CBR value for road pavement design is 2%.

14.3 OBSTRUCTIONS/RELIC STRUCTURES

There is the possibility of relict substructures, including former foundations, being present on the site. In addition to any effect on foundation construction, such features may lead to increased costs for the groundworks operations and delays in programming.

A site located within 500m of the subject site is known to have experienced bombing during the Second World War. It is therefore possible that unexploded ordnance may be present across the site.

15 Risk Assessment

15.1 OUTLINE ENVIRONMENTAL CONCEPTUAL MODEL

The methods used within this risk assessment follow a risk-based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-target pollutant linkage' concept introduced in the Environmental Protection Act 1990. For a site to be designated as Contaminated Land a plausible linkage between the identified Sources, Pathways and Targets must be demonstrated, this is further discussed within Appendix K.

Potential Contaminant Sources

On-Site Contaminant Sources	■ The site has had a history of development, including railway sidings, which could have resulted in contamination across the site. ■ Previous phases of redevelopment at the site could have resulted in deep areas of Made Ground. ■ An above ground fuel tank with associated pipework and filling point was located in the south of the site. This could have resulted in localised hydrocarbon spills. ■ The surrounding area is thought to have been bombed during World War II which could have resulted in unexploded ordnance being present across the site.
Off-Site Contaminant Sources	■ Neighbouring sites and land have had a commercial/industrial history, including a haulage company. ■ Two waste transfer stations are located within 500m of the site, one is the adjacent property to the north west.

Potential Contaminant Pathways

■ Potentially granular soils in the underlying superficial geology (Head Deposits) have the potential to permit the transport of pollutants. However the underlying solid geology is London Clay and is predominantly cohesive and is likely to restrict the widespread transport of pollutants.

Potential Receptors

Controlled Waters	■ Potable water supply well (approximately 200m east), although this is considered to be protected by the London Clay. ■ Unnamed lake (approximately 600m, north).
Human Health Risks	■ The proposed redevelopment plans include residential properties with gardens, there is unlikely to be a barrier between any subsurface contamination and the end users. ■ Third Party neighbours are residential in nature and as such a barrier between any subsurface contamination is unlikely to be present.

Pollutant Linkages

■ Migration of contamination through potentially granular soils within the Head deposits migrating towards surface water receptors. ■ Direct contact with contaminated soils (ingestion, inhalation and dermal contact).

15.2 ENVIRONMENTAL RISK ASSESSMENT MATRIX

Having evaluated the information gathered during this study and described in the previous sections, WSP Environmental Ltd has produced the following assessment of risk primarily focused on contaminated land issues:

	ISSUE	RISK CATEGORY	REASON
Contamination Potential:	Potential for significant on-site contamination	Medium	Potential sources of contamination have been identified, including Made Ground, an AST and the sites predominantly industrial development history.
	Potential for contaminants migrating off the site	Low/Medium	The migration of any potential contaminants present is likely to be restricted due to the nature of the underlying geology. This is dependent on the thickness and composition of the Head deposits on site.
	Potential for contaminants migrating onto the site	Low/Medium	The migration of any potential contaminants present is likely to be restricted due to the nature of the underlying geology. This is dependent on the thickness and composition of the Head deposits on site.
Other Liability Issues:	Potential for 'other' environmental issues to give rise to liabilities	Low/Medium	There is a potential for unexploded ordnance to be present on site, as a result of World War II bombing.
Environmental Consequences	Risk of Pollution of Controlled Waters	Low	It is considered that in light of the underlying cohesive geology, controlled waters are not considered a significant risk at the site.
	Risk of Damage to Property	Low	No significant issues identified.
	Risk of Harm to Human Health	Medium	The residential redevelopment in the north and east of the site present the highest risk of harm to human health, and certified clean topsoil will need to be imported for the garden areas if materials on site are not suitable.
Business Consequences:	Likelihood of designation as Contaminated Land under EPA 1990	Low/Medium	Consultations with the relevant Contaminated Land Officer have identified that the site is not considered a priority for further investigation under the Contaminated Land Regime for continued use, however prior to redevelopment (residential end use) issues relating to contaminated land will be dealt with through the planning process.
	Risk of Site Value and/or Saleability being affected.	Medium	Source – pathway – receptor linkages have been identified on site, and as such it is recommended that an intrusive phase II investigation is undertaken.
	Likelihood of a Future Purchaser requesting further investigations.	Low/Medium	No further contamination assessment works are considered necessary for a continued use. However, in the event of redevelopment further works will be required as part of the planning process.
	Risk of Liability for Owner	Medium	Source – pathway – receptor linkages have been identified on site, and as such it is recommended that an intrusive phase II investigation is undertaken.
	OVERALL RISK FOR REDEVELOPMENT		**MEDIUM**

15.3 GEOTECHNICAL RISK ASSESSMENT MATRIX

Based on anticipated ground conditions, potential geotechnical risks that may influence current or future land use are summarised below:

	ISSUE	RISK CATEGORY	REASON
Geotechnical Issue:	Potential for variable depth of Made Ground.	Medium	There is potential for significant thicknesses of Made Ground across the site, as a result of the earthworks that have occurred associated with the arisings from the railway cutting.
	Potential for below ground obstructions.	Low/Medium	Former foundations are anticipated to be present across the site.
	Potential for shallow mine workings and coal shafts and adits.	Low	The site is not in an area affected by coal mining.
	Properties for 'other' issues to give rise to liabilities.	Low/Medium	There is a potential for unexploded ordnance to be present on site, as a result of World War II bombing.
Construction Consequences	Risk of Damage to Property	Low/Medium	Identified hazards include high shrinkage potential clay, desiccation, slope instability and filled areas. The risk rating assumes appropriate investigation and remedial action / foundation solutions have been adopted during the development
	Risk of Harm to Human Health	Low	Structural damage is likely to be detected prior to damage to health.
	Implications for redevelopment	Medium	Above issues are likely to require consideration should the site be redeveloped.
Business Consequences:	Risk of Site Value and/or Saleability being affected.	Low/Medium	The above will require consideration and are likely to result in additional insurance / maintenance costs.
	Risk of Liability for Owner	Low	There is unlikely to be a liability risk to the owner assuming appropriate remedial actions / foundation solutions have been adopted during development.
	OVERALL RISK		**LOW / MEDIUM**

16 Summary, Conclusions & Recommendations

Site Address	Land at Oakleigh Road South, Barnet
Current Land Use	The subject site comprises a warehouse and a two storey office building. To the rear of the warehouse (south) an above ground fuel tank, with associated filling point was noted, and a large above ground water tank. The land in the extreme south of the site was overgrown with vegetation; in addition the land in the east of the site was also overgrown and sloping steeply down to the road. The site is located in New Southgate, within Barnet, adjacent to the north east of the overland train station, in a predominantly residential area, with the occasional commercial / industrial property.
Historical Land Use	Historical maps indicate that the site was vacant until 1881, railway sidings were present by 1897, and the current warehouse layout was present by 1966. Surrounding historical land uses include a railway, residential properties, a cemetery, and industrial properties.
Regulatory Enquiries	No significant issues have been identified for continued use, however an intrusive phase II investigation is likely to be required and contamination issues will be dealt with during the planning process associated with redevelopment.
Other Information	Unexploded ordnance may be present on site as a result of World War II bombing in the surrounding area.
Environmental Setting	The site setting is considered to be of low to moderate sensitivity, due to the residential properties in the area and the presence of a potable water supply borehole approximately 200m from the site.
Geotechnical Hazards	The primary geotechnical hazards are considered to be lateral changes in ground conditions, shrinkable clay soils, soft clay soils, desiccation, potential for below ground obstructions and Made Ground.
Conclusions	Based on the information contained within this report and with due regard to redevelopment to residential with gardens, it is the opinion of WSPE that the site represents a **medium** risk with respect to environmental considerations. Based on the information contained within this report, it is the opinion of WSPE that the site represents a **low / medium** risk with respect to geotechnical considerations.
Recommendations	No further work is considered necessary for the ongoing current use of the site. However, the following recommendations should be considered prior to redevelopment: ■ An intrusive phase II investigation should be undertaken to provide information relating to contamination issues, provide preliminary geotechnical advice and a ground gas assessment. ■ An unexploded ordnance desk study.

Please Note: This summary forms part of WSP Environmental Ltd Phase I Environmental Assessment (ref.: 12220279) and as such this should be read in conjunction with the full report.

Appendix G Site Location Plan

Appendix H Annotated Site Plan

Appendix I Photographic Record

PLATE I1:

PLATE I2:

PLATE I3:

PLATE I4:

Appendix J Selection of Historical Map Extracts

Appendix K Methodology & Limitations

Methodology

This Environmental Assessment has been designed to provide information relating to:

- the current and former land uses on and surrounding the site;
- the environmental sensitivity of the site location as determined by factors including geology, hydrogeology, surface watercourses and neighbouring land uses; and,
- relevant records held by the environmental regulators.

Any relevant information provided by the client has been reviewed, with appropriate action taken to ensure this information is taken into account and/or verified where necessary. All information is then assessed to define the potential for the site to give rise to environmental liabilities for the freehold/leasehold owner (as appropriate). Recommendations are made for additional work where this is necessary to fully define the site's environmental liabilities, and cost estimates of the financial implications of the findings can be provided under separate cover, where appropriate.

Risk Classification

This assessment has been undertaken with due regard to Contaminated Land Guidance documents issued by the Department for Environment, Food and Rural Affairs (and its Predecessors), the British Standards Institute (the BSi), the Royal Institution of Chartered Surveyors (RICS) and the American Society for Testing and Materials (ASTM) Standard E 1527-00. The methods used follow a risk-based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-target pollutant linkage' concept introduced in the Environmental Protection Act 1990.

Specific comment is made regarding the site's status under the Contaminated Land Regime implemented on the 1st April 2000 as Part IIA of the Environmental Protection Act 1990, and the actual or potential designation of the site as 'Contaminated Land' as defined in Section 78A(2). Unless specifically stated as relating to this definition, references to 'contamination' and 'contaminants' relate in general terms to the Presence of potentially hazardous substances in, on or under the site.

In addition, consideration has been given to a wide range of related topics including (where appropriate): environmental processes; current and foreseeable environmental legislation; the practices and duties of environmental regulators; the health and safety of occupiers and neighbours as affected by contamination; effects on the structure of buildings; and financial implications. References to risk classifications are made according to the following definitions:

Low Risk

It is unlikely that the issue will arise as a liability/cost for the freehold/leasehold owner (as appropriate) of the site.

Medium Risk

It is possible that the issue could arise as a liability/cost for the freehold/leasehold owner (as appropriate) of the site. Further work is usually required to clarify the risk.

High Risk

It is likely that the issue will arise as a liability/cost for the site freehold/leasehold (as appropriate) owner of the site.

Environmental Risk Assessment

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk exists. Within the context of current UK Legislation (i.e. Section 57 of the Environment Act 1995), the interpretation of a "significant risk" is termed to be one where:

- Significant harm is being caused or there is a significant possibility of such harm being caused, (where harm is defined as harm to health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property); and / or, pollution of Controlled Waters is being caused.

The potential for harm to occur requires three conditions to be satisfied:

- Presence of substances (potential contaminants/pollutants) that may cause harm (Source of Pollution).
- The presence of a receptor which may be harmed, e.g. the water environment or humans, buildings, fauna and flora (The Receptor).
- The existence of a linkage between the source and the receptor (The Migration Pathway).

Therefore, the presence of measurable concentrations of contaminants within the ground and subsurface environment does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm.

The nature and importance of both pathways and receptors, which are relevant to a particular site, will vary according to the intended use of the site, its characteristics and its surroundings.

In order to assess the contamination risk at the subject site the above rational has been applied and is discussed within section 6 in the context of Contamination Sources and Potential Pollutant Linkages.

Limitations

WSP Environmental Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from WSP Environmental Limited; a charge may be levied against such approval.

WSP Environmental Limited accepts no responsibility or liability for:

a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and

b) this document to any third party with whom an agreement has not been executed.

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client) and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP Environmental Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.

Where no site inspection is undertaken (for example a Desk Study Assessment or due to restricted site access), WSPE cannot comment on the potential for environmental concerns associated with the current use or structure including the Presence of asbestos.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Appendix L Report References

Environment Agency Aquifer Classifications

The Environment Agency (EA) Groundwater Vulnerability Map and Regional Appendices, which make up part of the published Policy and Practice for the Protection of Groundwater, divide the underlying strata in England and Wales into major, minor and non aquifers dependent upon their potential for potable water supply. The following table is derived from the main policy document. The division of the rock formations into major, minor and non aquifer reflects the Regional importance and vulnerability of the formation.

Major Aquifer

Highly permeable formations usually with the known or probable Presence of significant fracturing. Highly productive strata of Regional importance. Often used for large potable abstractions. E.g. Upper Chalk, Permo-Triassic Sandstones

Minor Aquifer

Fractured or potentially fractured but without high intergranular permeability. Generally only support locally important abstractions E.g. Coal Measures

Variable porosity and permeability but without significant fracturing. Generally only support locally important abstractions. E.g. River Terrace Gravels

Non Aquifer

Formations with negligible permeability. Only support very minor abstractions if any. E.g. Mercia Mudstones, igneous rocks

Regulatory Information Sources

Reference has been made to the Landmark Information Group data provision service. This includes information and data collated from several organisations, including the Environment Agency (EA), Department for Environment, Food & Rural Affairs (DEFRA), Health & Safety Executive (HSE), the Health Protection Agency (HPA), and the Coal Authority

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Version 2.0.6

BGS ID: 593939 : BGS Reference: TQ29SE121
British National Grid (27700) : 528810,192920
Report an issue with this borehole

TQ 29 /18
TQ 29 SE 121
2881 9292

EAST BARNET 1425 465 ./W.

2. East Barnet Pumping Station of the Barnet District Water Co. 1899.
From the Local Government Board and from F. J. BANCROFT, Engineer to the Co.

131 ft. above Ordnance Datum.

Shaft. Cast iron cylinders of 14 ft. diameter, 25½ ft.; of 13 ft. diameter, 58¾ ft., of 12 ft. diameter, 50 ft., unlined, of 11½ ft. diameter.

Headings, at the depth of 215 ft. (extended) 2,926½ ft. long; at the depth of 280 ft., 95 ft. long; total 3,021½ ft.

Average daily supply 791,000 gallons.

		Thickness. Ft.	Depth. Ft.
Soil	...	1	1
? Wash	Ballast [gravel]	½	
	Clay	1¼	
	Ballast [gravel]	½	3¼
London Clay, 60¾ ft.	Mixed clay	13¼	
	Dark clay and sand	24	
	Blue clay and sand, most sand	5	
	Blue clay and sand	16	
	Blue clay	2	64
Reading Beds, 64 ft. & T.S.	Mottled clay	2	
	Blue clay	½	
	Mottled clay	8½	
	Rock	1	
	Rock and clay	2	
	Mottled sandy clay	22	
	Black pebbles	1	
	Clay sand and black pebbles	26½	
	Flints	¼	128
[Upper] Chalk	...	172	300

J. M. WOOD states that the pumping at this well affects to a considerable extent the water-level in the bore-hole of the Betstile Well of the Metropolitan Water Board, about a quarter of a mile to the south, in Middlesex.

Water-levels: see chart with 256/8

Present yield .80,000 gallons per day — letter from J.F. Haseldine 24/10/40. (9509/30), see 256/8.

Yield 230,000 g.p.d., pumping 8 hrs. / day.
R.W.L. 188' down.
Pump is 219' from bottom with diesel engine & then use steam pump if necessary.
Sited ☐ on ~~[illegible]~~ Herts 46 SW/W.
Visited 15/4/47.
inf. re ... by post.

APPENDIX E
UTILITY SERVICE PLANS

Network Records NetMAP Symbols Booklet - East of England

This symbol booklet is intended as a general guide only - some local variations of these symbols may be found.

Version 1.2

Released October 2010

Always check with your local Network Records office or the UK Power Networks server to ensure that you are using the most up to date copy of this booklet - Tel: 08000 565866.

Index:-

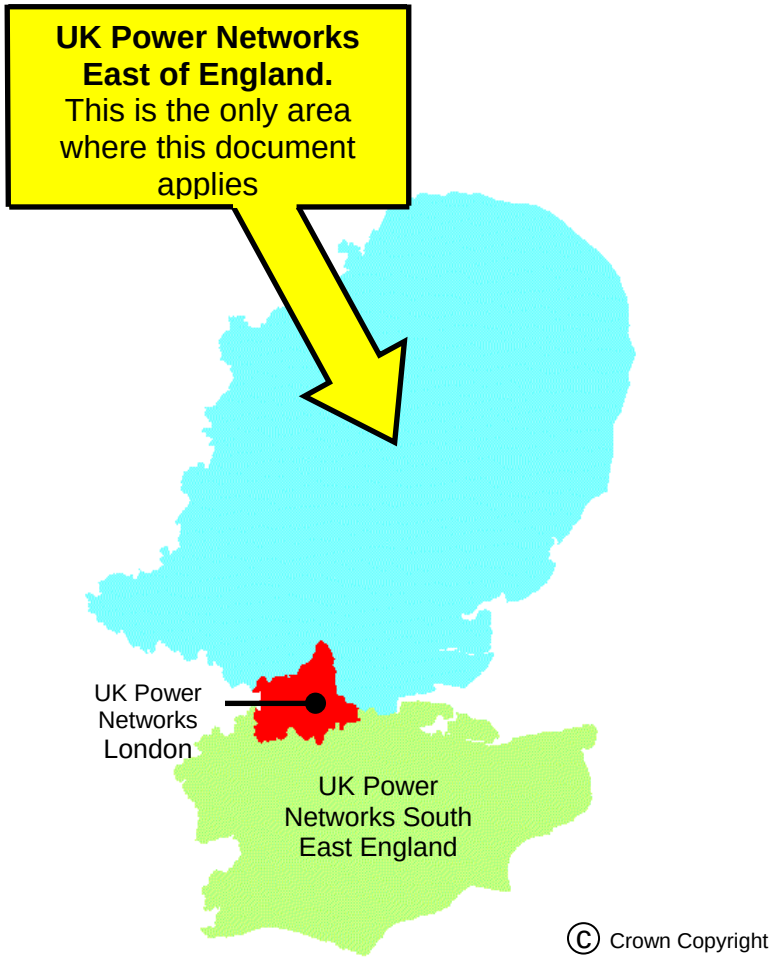
Guidance notes.

Important notice:
If you do not understand the NetMAP record that you are using, please contact the UK Power Networks Network Records team for guidance
Tel: 08000 565866.

- The position of apparatus shown on NetMAP is believed to be correct, but the original landmarks may have altered since the apparatus was installed.
- It must be assumed that there is at least one service to each property, lamp column, street sign etc.
- All cables must be treated as live, unless proven otherwise by an authorised UK Power Networks representative.
- Third party cables are not usually shown. In cases of doubt, please telephone 08000 565866.
- When two or more maps are supplied for the same area, the maps must be read in conjunction with each other and with this symbol document.
- All LV cables are assumed to be 4 core, and all HV cables assumed to be 3 core unless otherwise stated.

Plan Provision Team
Fore Hamlet
Ipswich
Suffolk IP3 8AA
Tel: 08000 565866

The area covered by this guide:



1:500 view - underground network

Scenery

NetMAP system	Scanned image	Description
		100 metre Ordnance Survey grid line (on O/S based maps only.)
		Property fence line
		Building line
		Kerb line
		Electrical Boundary

Scenery - for UK Power Networks use only - boxed in red

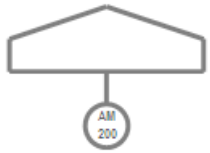
NetMAP system	Scanned image	Description
 Inset Network – Contact xxxx IDNO for further information	Not applicable	Area of inset network - not the asset of UK Power Networks (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Proposed Cross Rail route (only visible to UK Power Networks and their immediate contractors)
	Not applicable	High pressure pipelines in the general vicinity (only visible to UK Power Networks and their immediate contractors)

Note: Pipelines are only viewable on NetMAP by UK Power Networks staff and their immediate contractors. Do not carry out any excavation without consent from the relevant agency - legally protected high pressure petroleum products pipeline route in the general vicinity - consult www.linewatch.co.uk for contacts and guidance. Pipeline contact numbers can also be found on the intranet – out of hours, contact our Control Centre.

	Not applicable	Water - surface water (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Water - Source Protection Zone 1 (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Water - Source Protection Zone 2 (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Water - Source Protection Zone 3 (only visible to UK Power Networks and their immediate contractors)

section continued on next page

Scenery for UK Power Networks use only - boxed in red

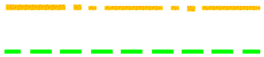
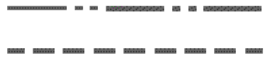
NetMAP system	Scanned image	Description
	Not applicable	Historical - Scheduled Monuments (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Historical - Parks and Gardens (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Historical - Areas of Archaeological Potential (AAP) (only visible to E UK Power Networks and their Immediate contractors)
	Not applicable	Nature - Ramsar Wetlands of International Importance (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - Special Area of Conservation (SAC) (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - Special Protected Area (SPA) (only visible to UK Power Networks and their immediate contractors)
		Nature - Site of Special and Scientific Interest (SSSI) (only visible to UK Power Networks and their immediate contractors)

section continued on next page

Scenery for UK Power Networks use only - boxed in red

NetMAP system	Scanned image	Description
	Not applicable	Nature - Local Nature Reserve (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - National Nature Reserve (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - Area of Outstanding Natural Beauty (AONB) (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - National Park (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Fluid filled cables - very high sensitivity (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Fluid filled cables - high sensitivity (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Fluid filled cables - medium sensitivity (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Fluid filled cables - low sensitivity (only visible to UK Power Networks and their immediate contractors)

Primary distribution cables (1:500 view)

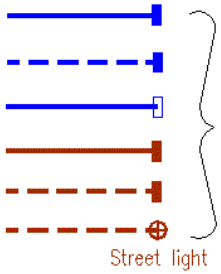
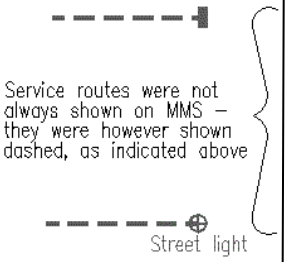
NetMAP system	Scanned image	Description
		Over 33kV and up to 132kV Over 11kV and up to 33kV

Secondary distribution cables (1:500 view)

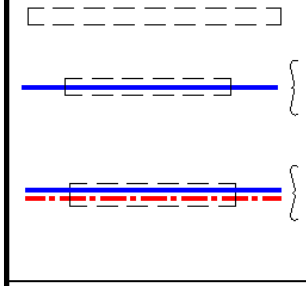
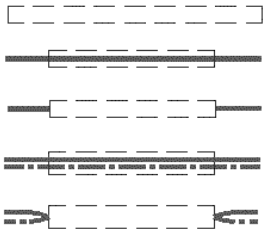
NetMAP system	Scanned image	Description
		Over 230/400V and up to 11kV (HV) cable route
		230/400V (LV) cable route
	 (Only shown this way if independent from HV cable route)	Pilot cable route

Abandoned cables are shown and labelled as such when applicable

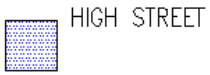
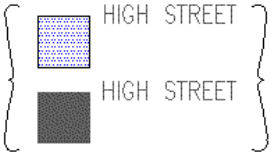
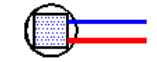
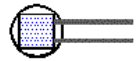
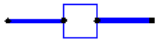
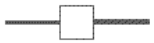
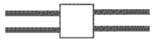
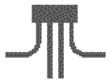
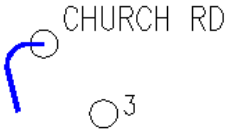
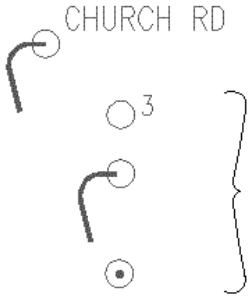
Service cables and terminations (1:500 view)

NetMAP system	Scanned image	Description
		3 phase service with termination 3 phase service with termination (unknown route) 3 phase service with multi-head termination Single phase service with termination Single phase service with termination (route unknown) Street lighting cable and termination

Cable ducts (1:500 view)

NetMAP system	Scanned image	Description
		Empty duct Cable(s) in duct(s) Cable(s) in duct(s) (on some raster maps) Multiple cables in ducts Multiple cables in ducts (on some raster maps)

EHV, HV and LV sites (1:500 view)

NetMAP system	Scanned image	Description
		Primary substation
		Secondary substation
		Pad mounted substation
		Link box – 2 way
		Link box – 4 way (6 way etc shown similarly)
		Feeder pillar – 4 way (6 way etc shown similarly)
		Pole transformer Poles on underground records
		H pole, any voltage
		Service turret (solid type)

section continued on next page

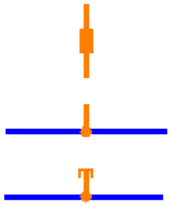
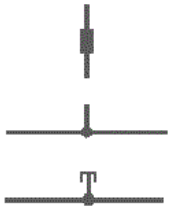
EHV, HV and LV sites continued (1:500 view)

NetMAP system	Scanned image	Description
No NetMAP equivalent  CAUTION Missing Information	 No equivalent	Service turret (with link facility on LV main) Missing data in or near this location
	Not applicable	Contaminated land reference

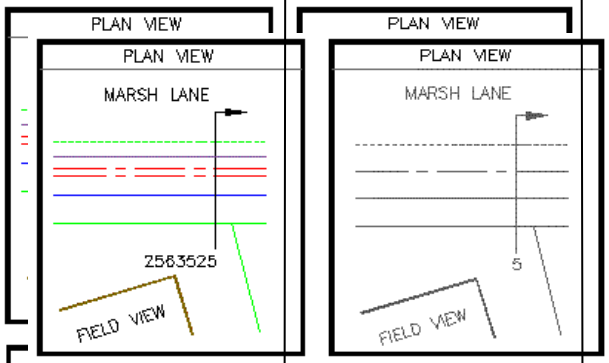
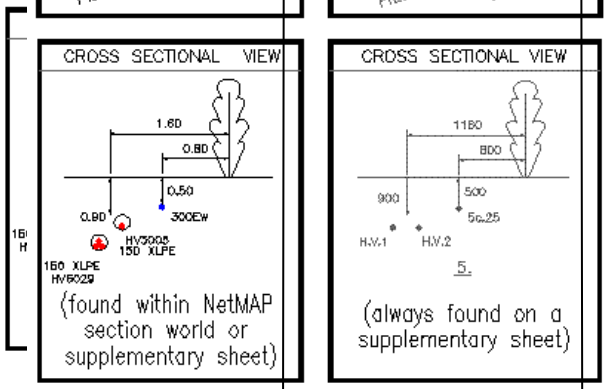
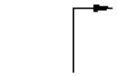
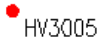
Mains joints (1:500 view)

NetMAP system	Scanned image	Description
(voltage indicated by colour/line-style)		
		Straight joint
		Crutch joint
		Straight crutch joint
		Pot end
		Pot end – on one of several cables – single line representation
		Branch joint/pot end – (humpty back joint, back to back joint, bull nose joint or stub joint
		Sleeve repair or repair joint
		Cut end
		Capped end
		Tee joint
	NetMAP/vector only	Sicame joint box

Service joints (1:500 view)

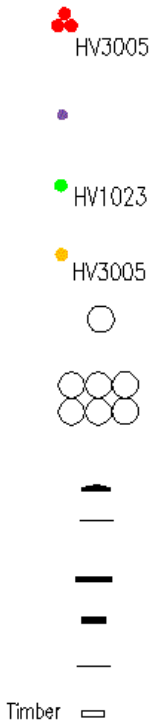
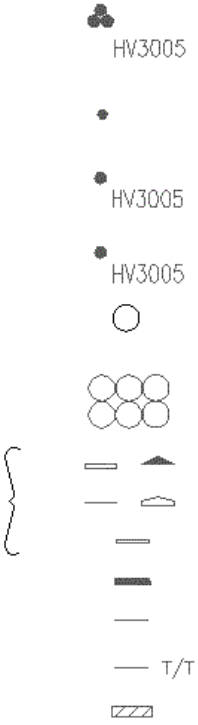
NetMAP system	Scanned image	Description
Please note that 3 phase services are shown blue, and single phase services are shown brown		
		Straight joint
		Service joint to main
		Pot end

Cross sections (1:500 view)

NetMAP system	Scanned image	Description
		Single line representational plan view with NetMAP equivalent (please note the use of seperate line for each voltage on the raster/MMS data)
		Cross sectional view of above
		Section arrow with old/new numbering system – points in direction section is viewed
		LV/3 phase service cable
		Single phase service cable with size annotation
		HV cable – 3 core with route number annotation

section continued on next page

Cross sections continued (1:500 view)

NetMAP system	Scanned image	Description
		HV cable – modern EPR, Plam and Triplex with route number annotation Pilot cable 33kV cable 132kV cable Single duct 6 way duct formation – irrespective of duct type and material, all are displayed similarly Protective slab Tiles Concrete slabs 33kV fibre warning board Steel plate Plastic tile tape Timber

Common abbreviations and terminology (all views)

Abbrev.	Description
1c	Single core
1ph	Single phase
2c	Two core
3c	Three core
3ph	Three phase
ABC	Aerial bunched (bundled) conductor (modern LV overhead line)
ABI	Air break isolator (no fuses)
ABSD	Air break switch disconnector
ACCS	Aluminium concentric copper sheathed
Al	Aluminium
AR	Auto recloser
ASL	Automatic sectionalising links
ax	Triplex (aluminium)
	2 x 22mm AL PVC (example) Duplex
	3 x 22mm AL PVC (example) Triplex
CB	Circuit breaker
c/c	Concentric cores
ccc	Compact covered conductor
CCT	Circuit
CNE	Combined neutral and earth
Cross phased	The core colour may be different to originating transformer phasing
CS	Consac
CSE	Cable sheath earth
Cu	Copper

Abbrev.	Description
Cut out or C/O	Meter/main fuse position
cx	Triplex (copper)
DE	Direct earth
DSTA	Double steel tape armoured
Ea	Alpex cable
EFI	Earth fault passage indicator
EHV	Extra high voltage (11,001 Volts and over)
ELCB	Earth leakage circuit breaker
ELT	Earth leakage trip
EPR	Ethylene propylene rubber
Ew	Waveform cable
E/W	Earthenware duct or earth wire
Fdr or Feeder	LV or HV cable fed by or feeding a substation
F/G	Fuse gear
F/P	Feeder pillar
GRP	Fibreglass substation
GVR	Gas vacuum recloser or pole mounted circuit breaker
HV	High voltage (1,001–11,000 Volts incl)
HYBRID	Modern plastic cable with mixed conductor material (Al/Cu)
Insulation	Electrically protective material surrounding a conductor
Insulator	Porcelain or glass over–head line support (on poles)
ITC	Instrument traced cable or ITC - cable traced electronically using Cable Avoidance Tool (CAT) or similar

section continued on next page

Common abbreviations and terminology continued (all views)

Abbrev.	Description
Jumper	Connecting lead between open points, section points and overhead plant
kV	Kilovolt (or 1,000 Volts) – unit of electrical pressure
kW	Kilowatt (1,000 Watts) – unit of electrical power
kVA	Kilovolt Amps or power
Link box or LB	Means of connecting LV feeders together using links or fuses
LSF	Low smoke & fume
LV	Low voltage (up to 1,000 Volts incl)
LV Pillar	Low voltage fuse distribution board
Neutral	Return path of live cable
O/H or OHL	Overhead line
OYS	Oil filled pole mounted sectionaliser
OYT	Oil filled pole mounted recloser
PC400	Pole mounted LV fuse unit
PE	Pot end or potential end – joint on cable end
Phase	Usually the core colour of a cable (caution – may be cross phased) – Red, Yellow, Blue on old cables, or L1, L2, L3 on new cables, for example

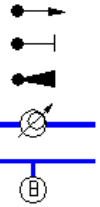
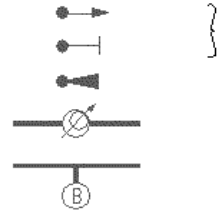
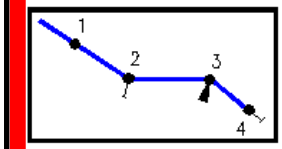
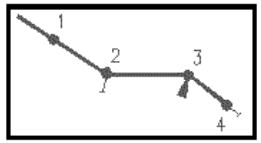
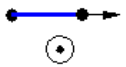
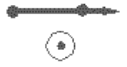
Abbrev.	Description
PICAS	Paper insulated corrugated aluminium sheath armoured
PILC	Paper insulated lead covered
PILSTA	Paper insulated lead covered steel tape armoured cable
PL	Plain lead or public lighting
PME	Protected multiple earth or CNE
PMT	Pole mounted transformer
PMR	Pole mounted recloser (generic term for OYT/GVR)
PT	Pole transformer
PVC	Polyvinyl chloride
RMU	Ring main unit
RN	Reduced neutral
s/c	Split concentric or single core
S/L	Street light
S/S	Substation
STA	Steel tape armoured
SWA	Steel wire armoured
T1 or T2 etc	Substation TX setup where more than one TX exists
T/F or TX	Transformer
Volts	Unit of electrical pressure
Watts	Unit of electrical power
XLPE	Cross linked polyethylene

1:2500 & 1:10000 view - overhead networks - for UK Power Networks use only - boxed in red

General

NetMAP system	Scanned image	Description
		H pole Pole

1:2500 scale LV network

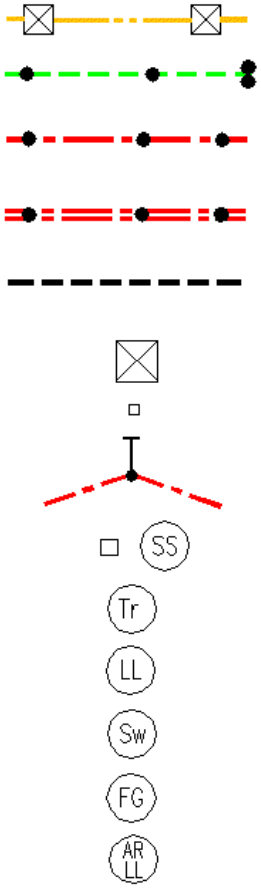
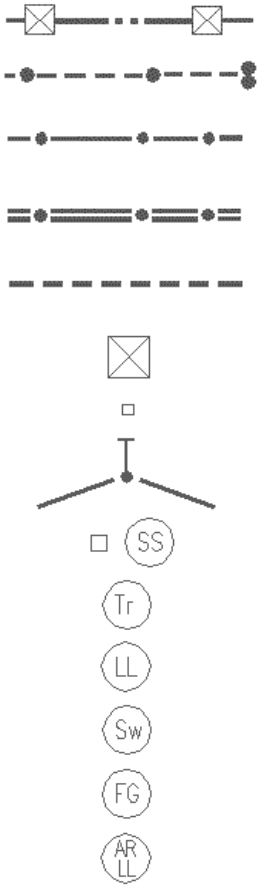
NetMAP system	Scanned image	Description
No NetMAP equivalent		132kV cable route
No NetMAP equivalent		33/22kV cable route
No NetMAP equivalent		11kV underground cable
		132kV overhead line
		33kV overhead line dots mark pole position
		11kV overhead line – dots mark pole position
		Dual construction – dots mark pole position
		LV overhead line – dots mark pole position
No NetMAP equivalent		LV underground cable
		Pole and stay Pole and strut Voltage regulator Static balancer
		Example of struts and stays
		Flying stay
		Earthed pole in PME system
261	261	Pole number
□	□	Ground type substation
S.P.	S.P.	Section pole
S.L.	S.L.	Street light

section continued on next page

1:2500 scale LV network continued

NetMAP system	Scanned image	Description
O.R. Stay Ext. Brkt P. Box N.E. O.R. Brkt	O.R. Stay Ext. Brkt P. Box N.E. O.R. Brkt	Outrigger stay Extension bracket Pole box Neutral and earth Outrigger bracket

1:10000 scale HV network

NetMAP system	Scanned image	Description
		132kV overhead line 33kV overhead line dots mark pole position 11kV overhead line – dots mark pole position 11kV overhead line – dual circuit – dots mark pole position 11kV underground cable and EHV Pylon HV or EHV Grid line tower Stay Ground type substation Pole type transformer Live line taps Switchgear – all types Fuse gear Auto recloser – live line connected

The above circular substation/switchgear symbols may be found that contain different combinations of apparatus (see last example)

LV network diagram view-for UK Power Networks use only-boxed in red

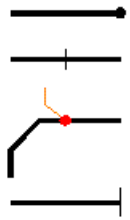
Overhead lines

NetMAP system	Description
	Unknown
	Al
	Cu
	ABC
	Pole link

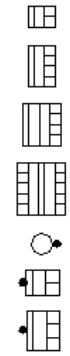
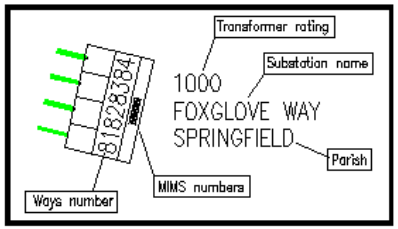
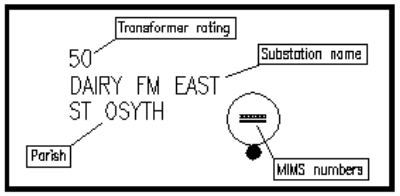
Underground cables (LV network diagram view)

NetMAP system	Description
	Unknown
	Al
	Cu
	CC
	TCC
	Ea
	Ec
	Ecx
	Ew
	LSF
	Other

Joints (LV network diagram view)

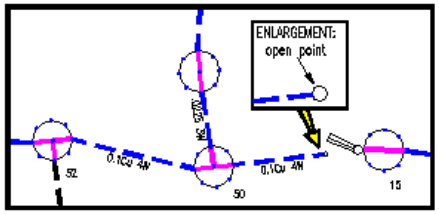
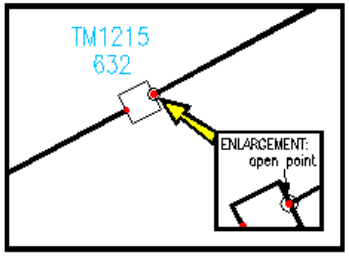
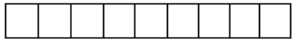
NetMAP system	Description
	Pot end or Sicame Box Straight joint Crutch joint 3 phase termination

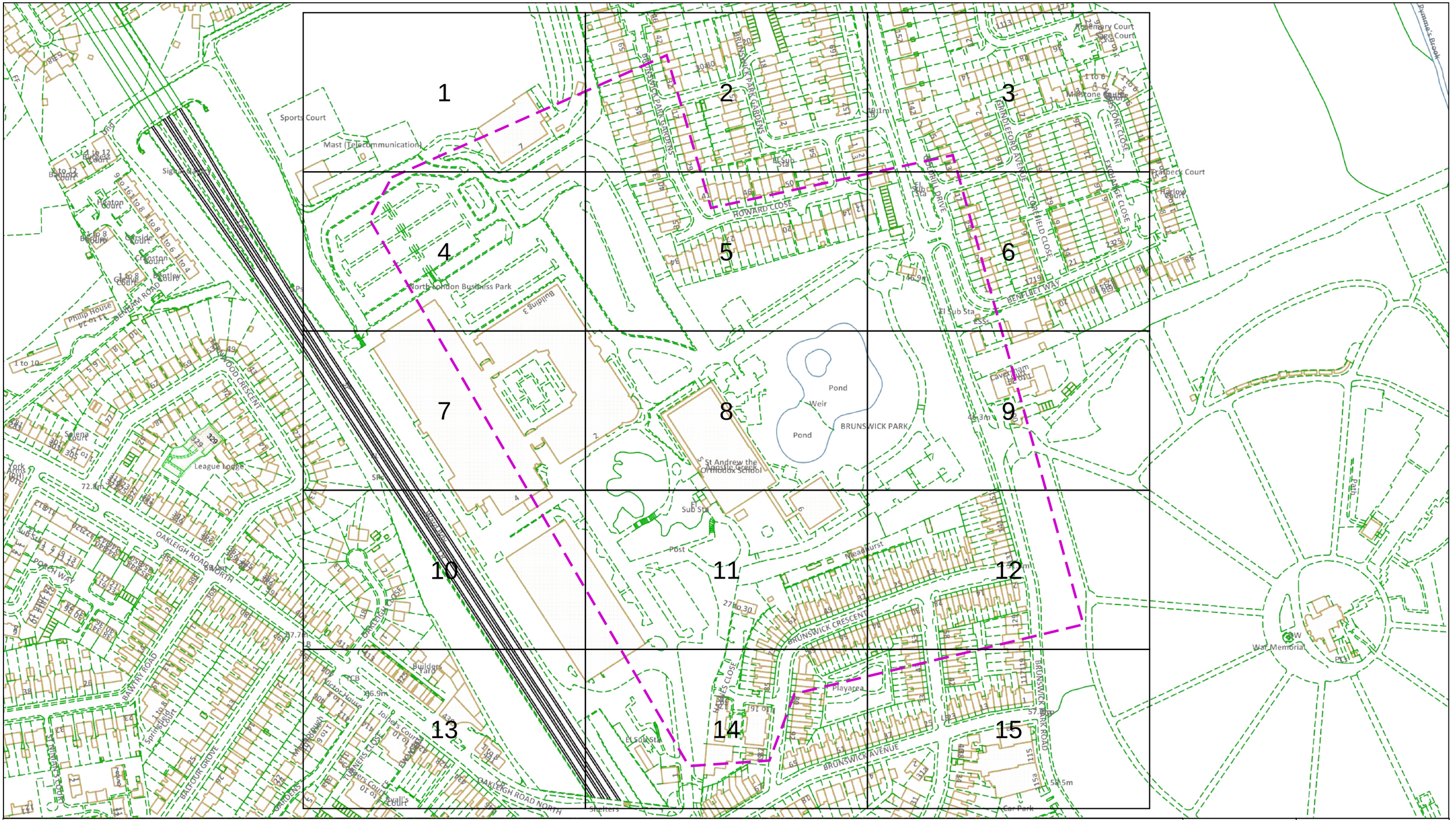
Substations/pole transformers (LV network diagram view)

NetMAP system	Description
There are many substation combinations – these are merely a sample of configurations that can be found.	
	2 way substation 4 way substation 4 way twin busbar substation 10 way back to back substation Pole transformer (normal) Pole transformer 2 way Pole transformer 3 way
	Substation with rating, name, Parish and MIMS identifying number
	Pole transformer with rating, name, Parish and MIMS identifying number
	Intermediate pole Section pole Overhead fuse

section continued on next page

Substations/pole transformers cont'd (LV network diagram view)

NetMAP system	Description
	Overview – the purple lines through the section poles are pole links – these indicate how the network is linked together
	2 way link box
	3 way link box
	4 way link box
	4 way double busbar link box
	4 way BICC link box
	5 way link box
	6 way link box
	6 way double busbar link box
	A two way link box with identification number, connected to a cable with an open point
	Feeder pillars – these range from 2 ways through to 9 ways – a 9 way and a 2 way are shown as examples
	



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Requested by:
Miss Monique Elsom
Your Scheme/Reference: 2190242

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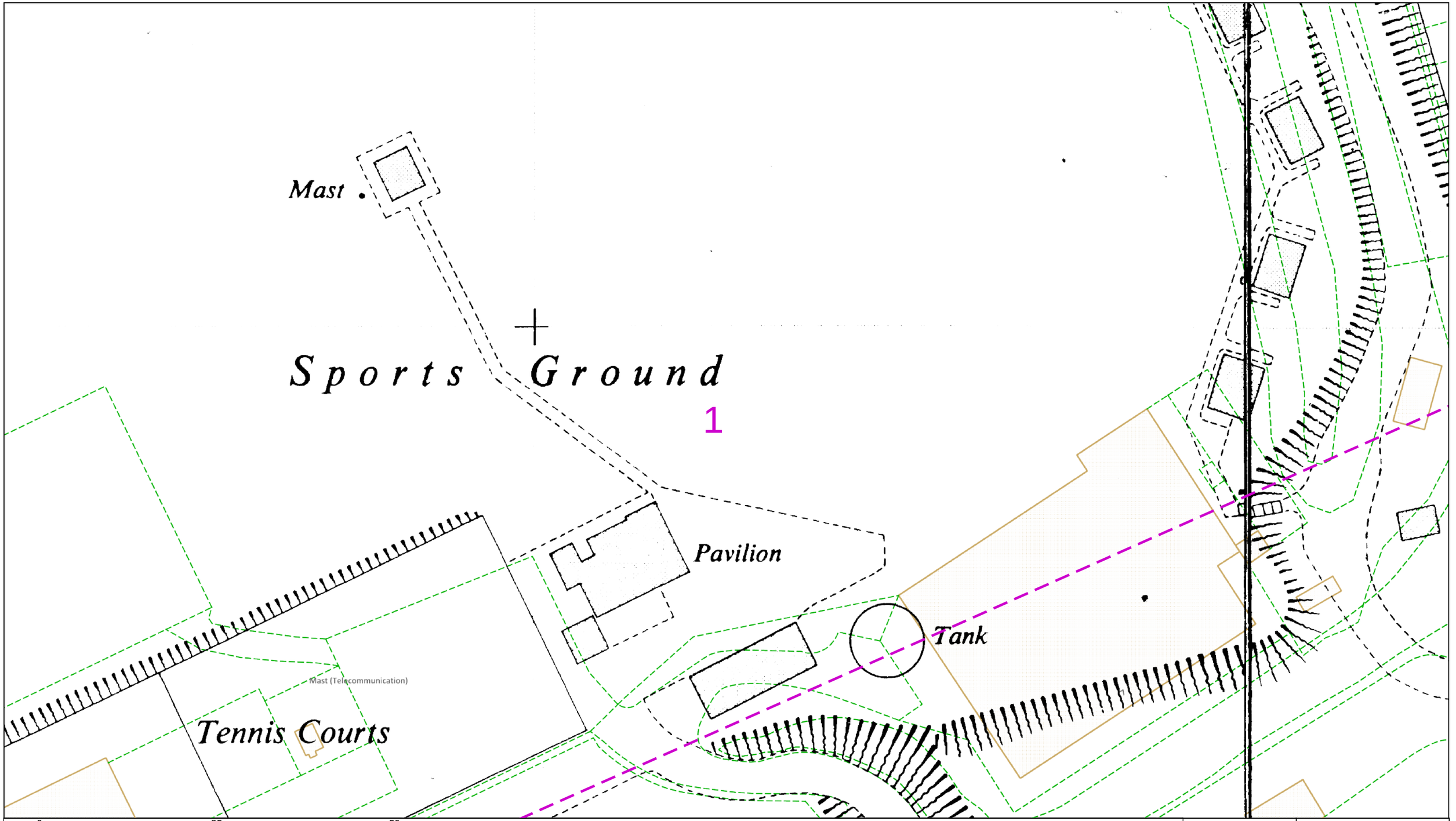

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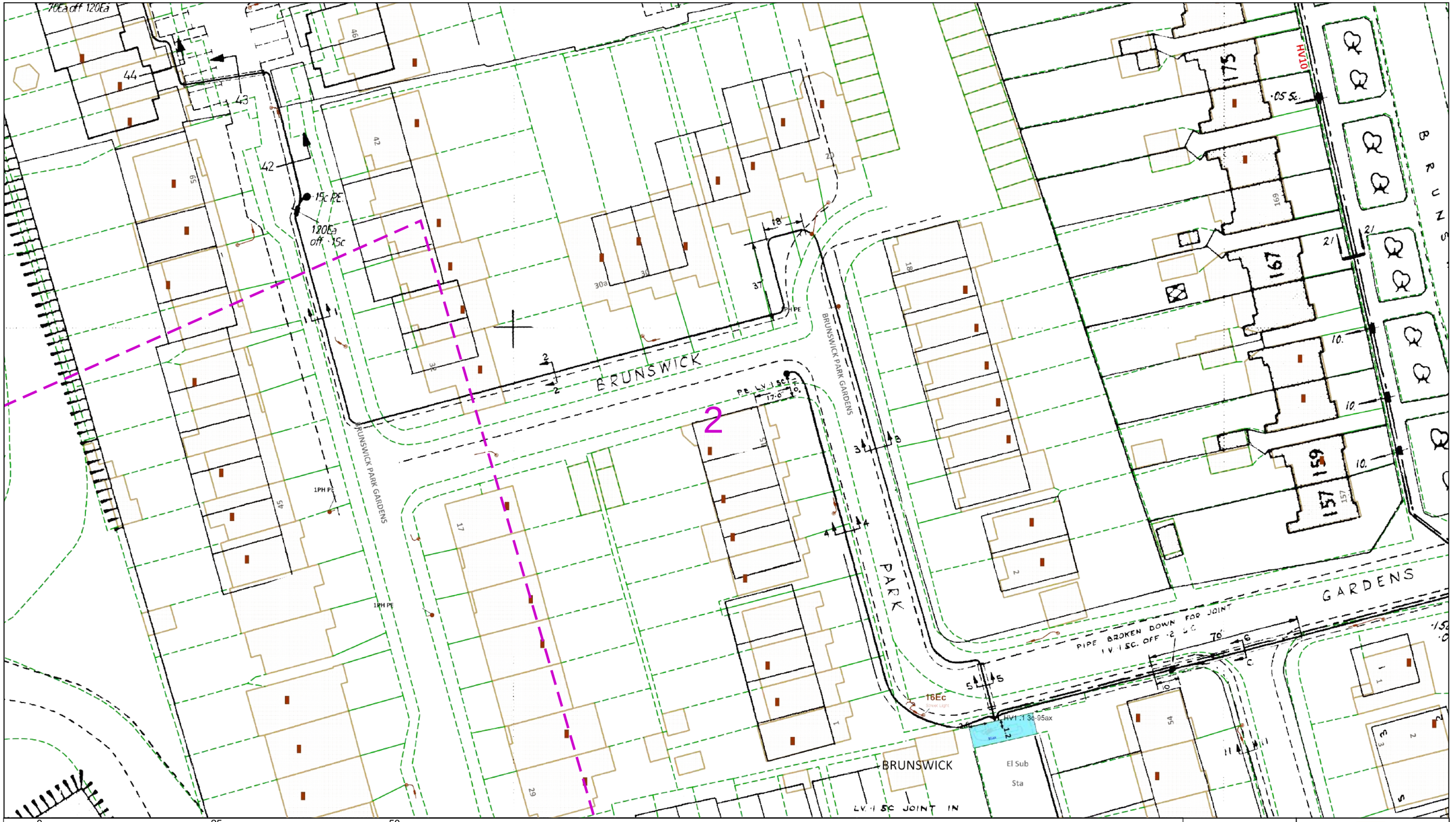

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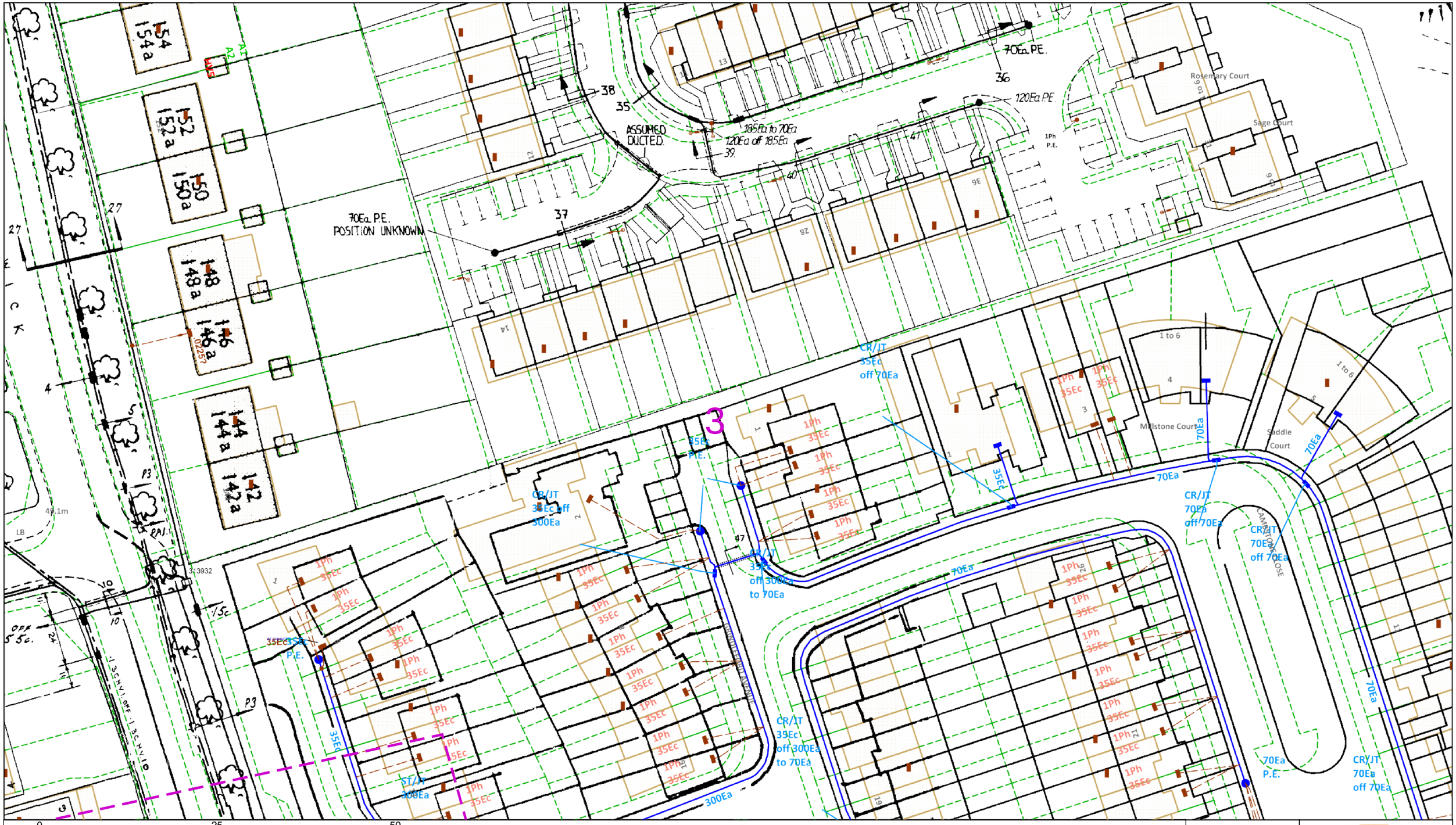

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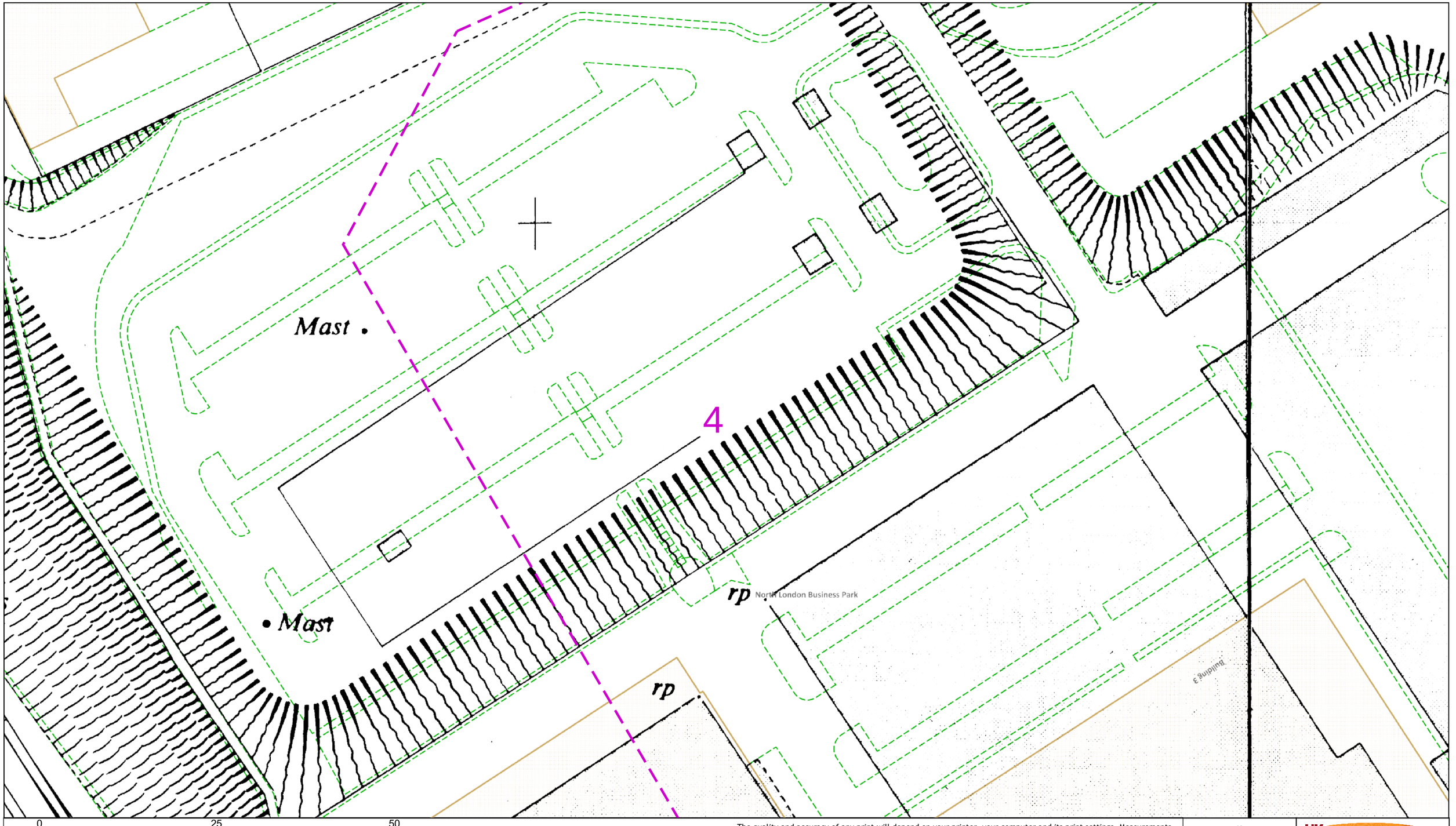

0 25 50
metres

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N W E S

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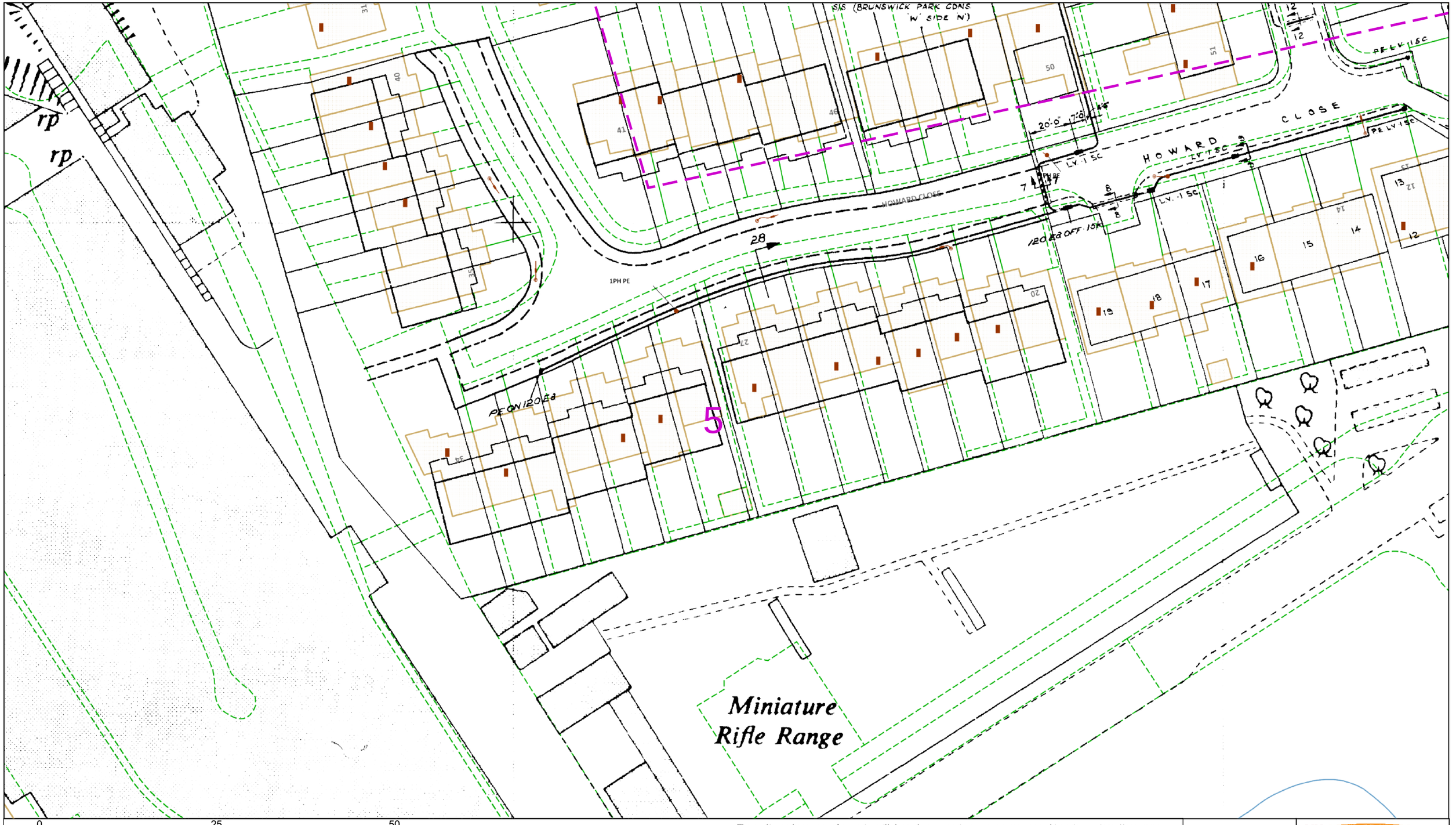

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Date Requested: 05/08/2020
Job Reference: 19594059
Site Location: 527622 193078
Requested by:
Miss Monique Elsom
Your Scheme/Reference: 2190242

Scale: 1:500 (When plotted at A3)

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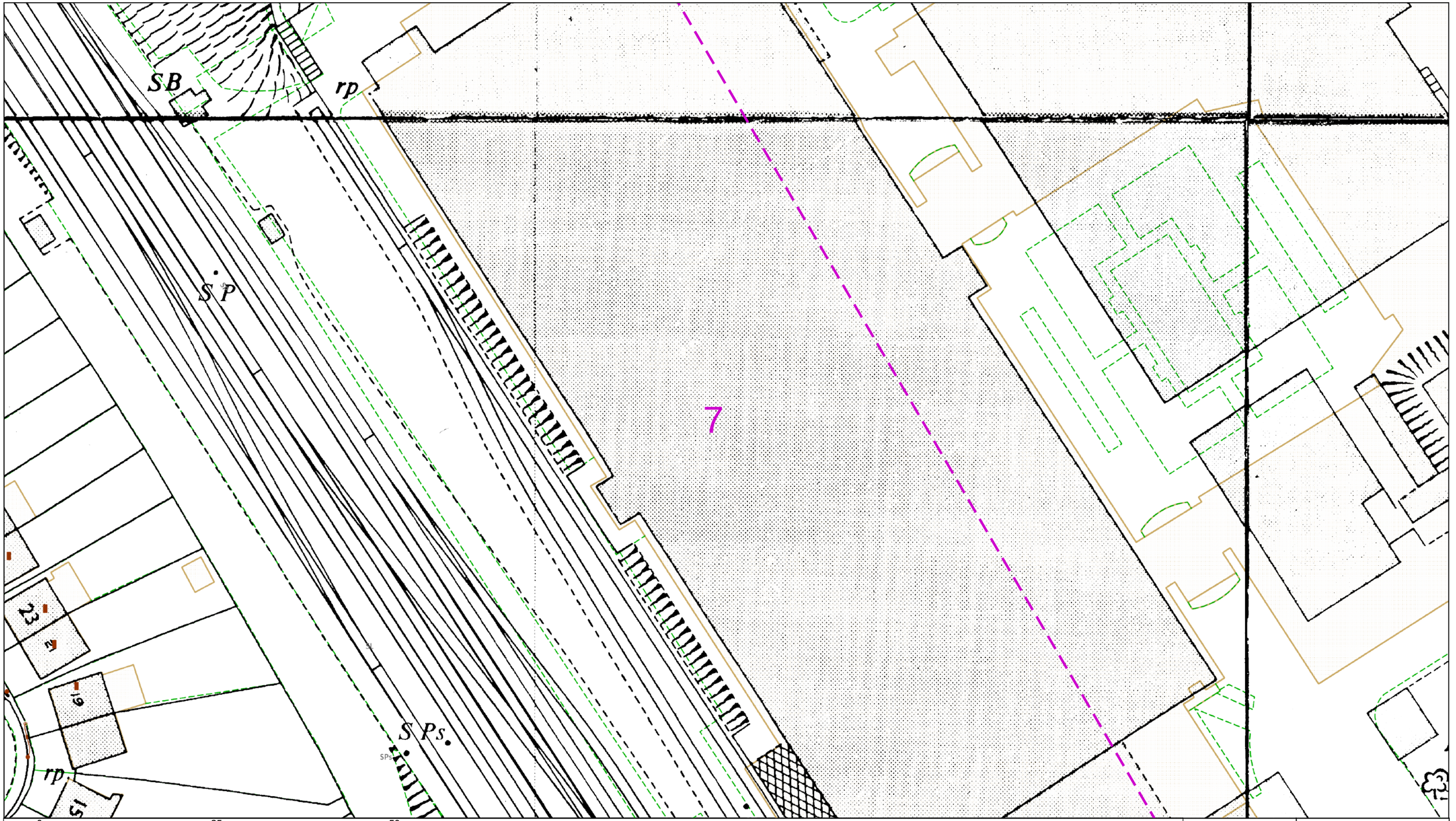

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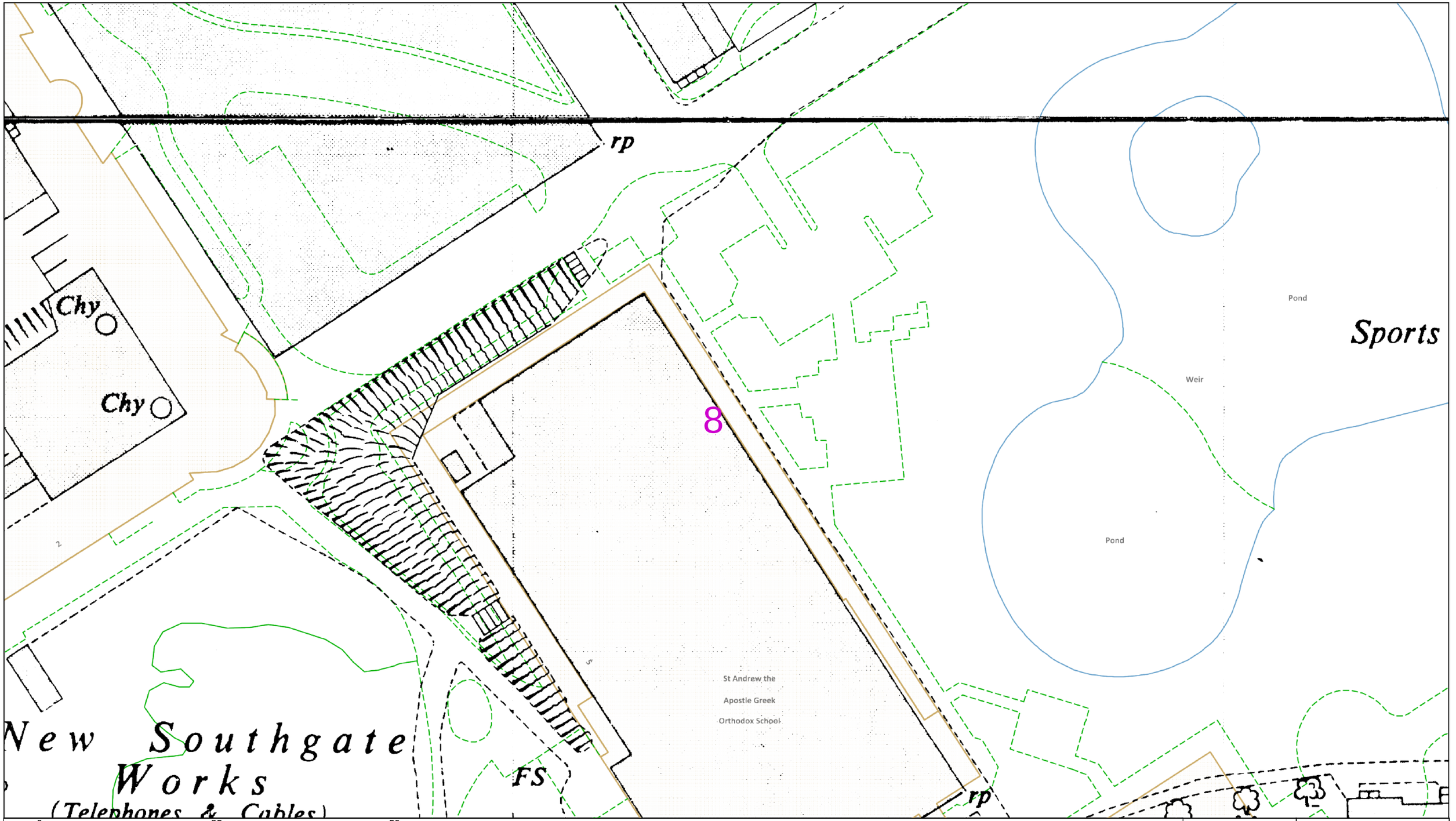

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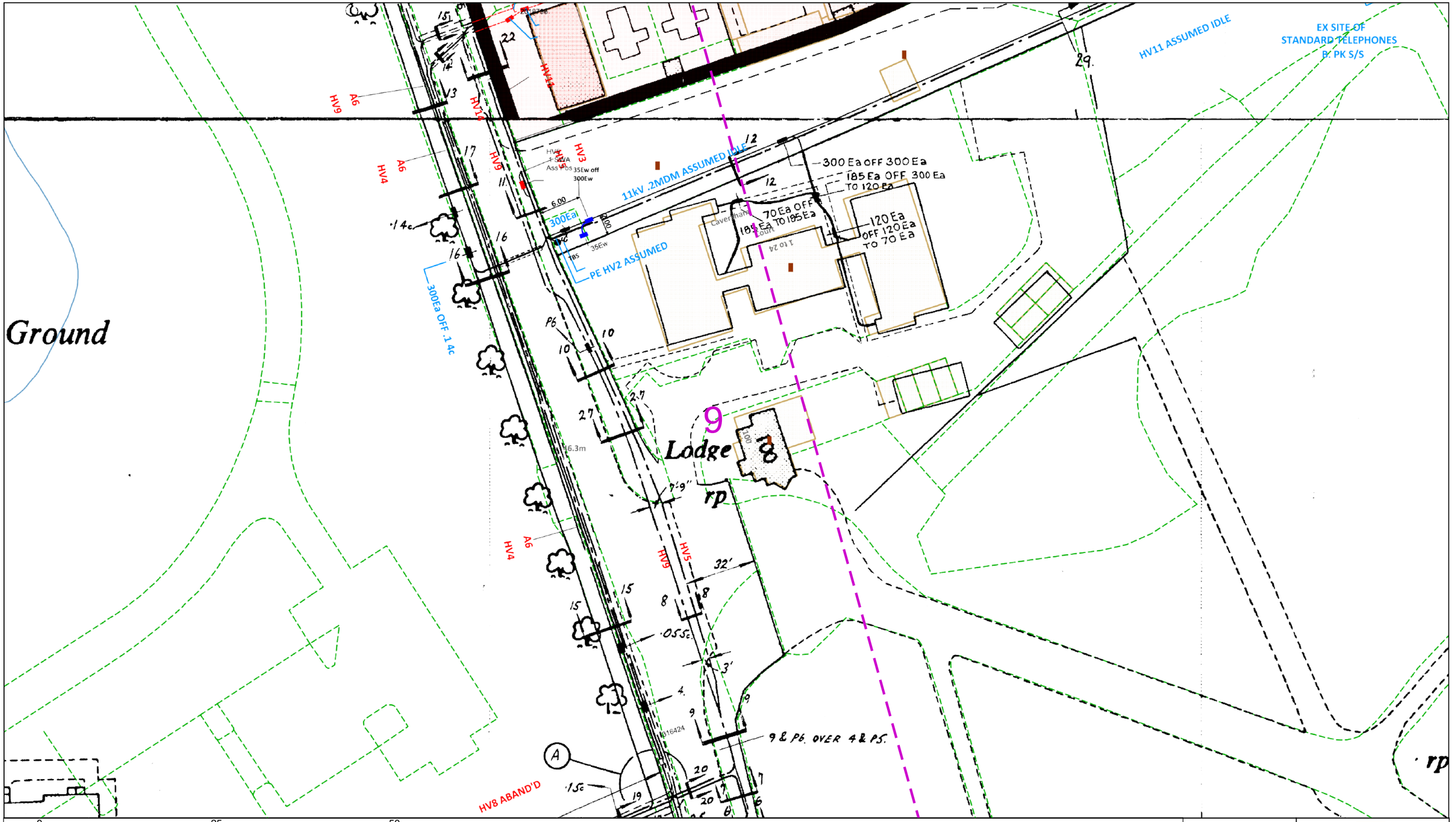

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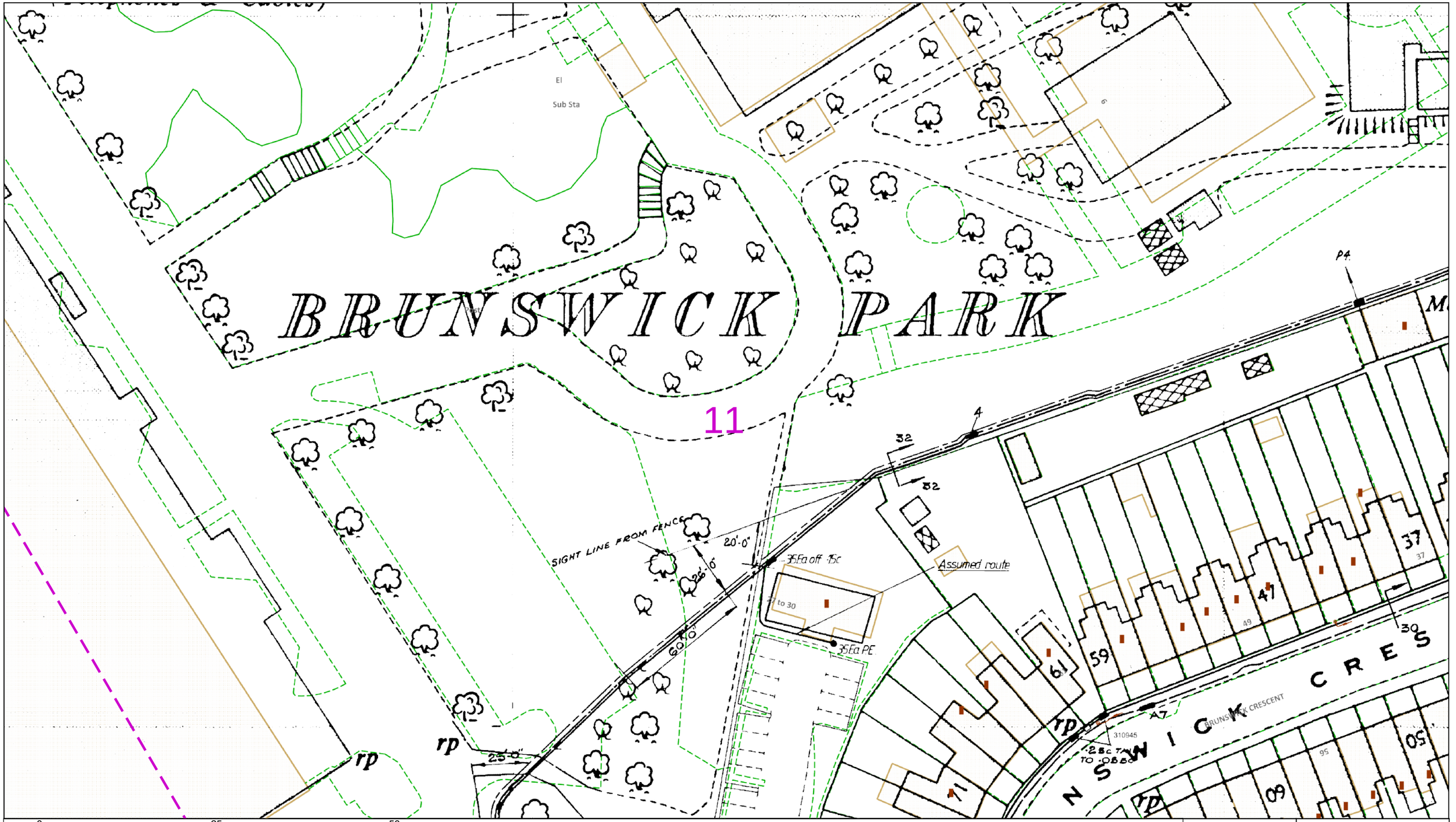

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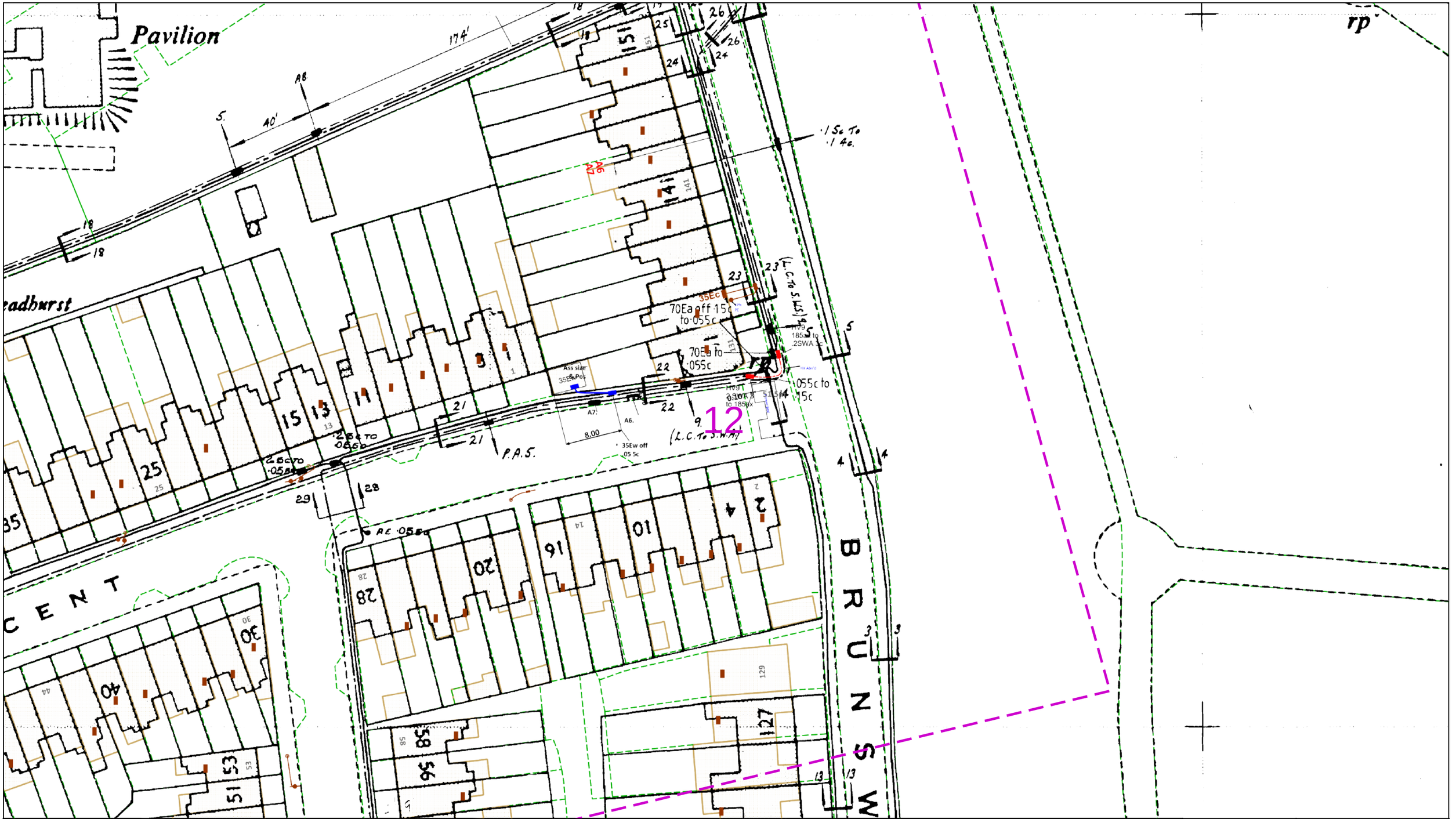

0 25 50

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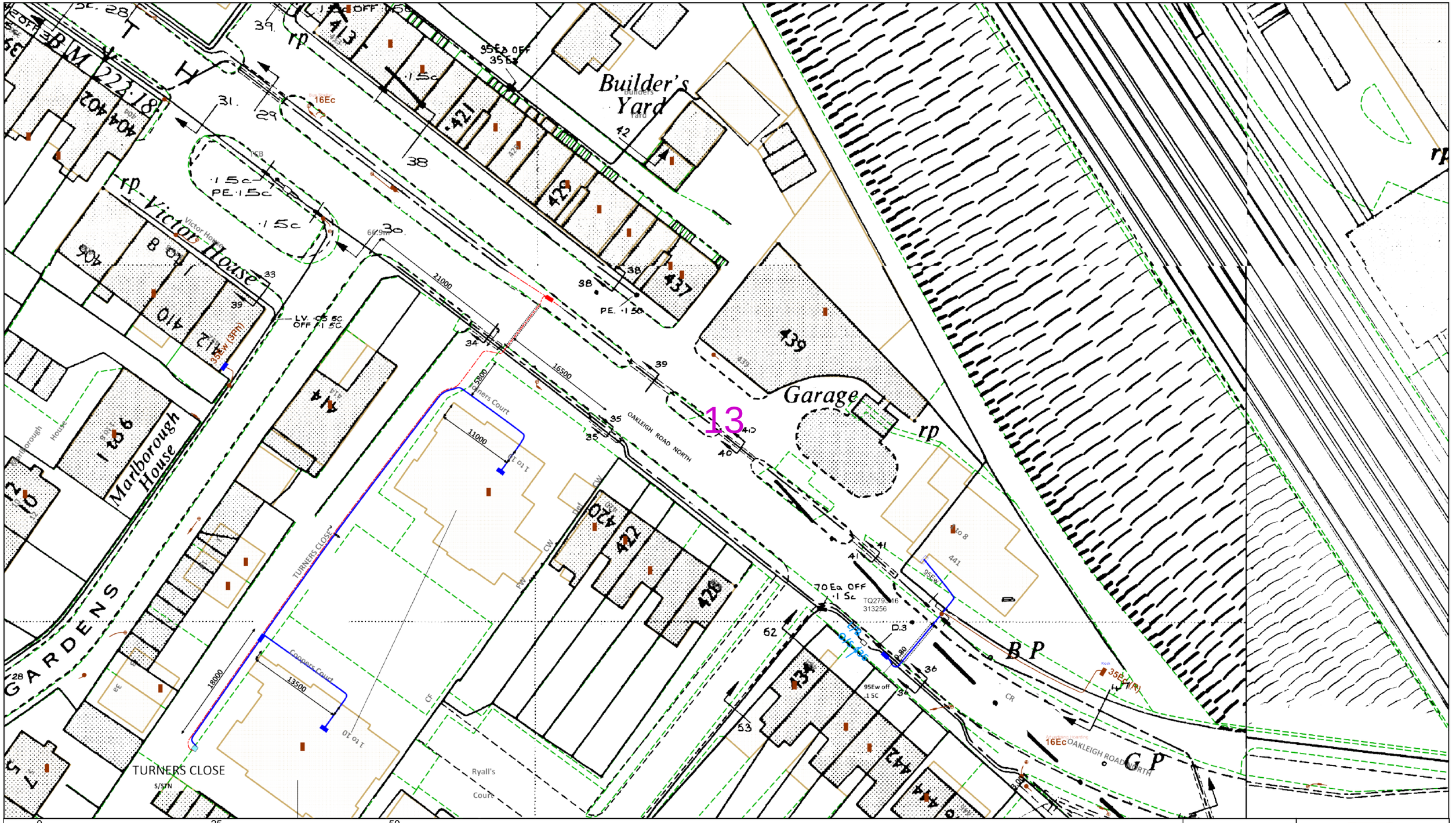

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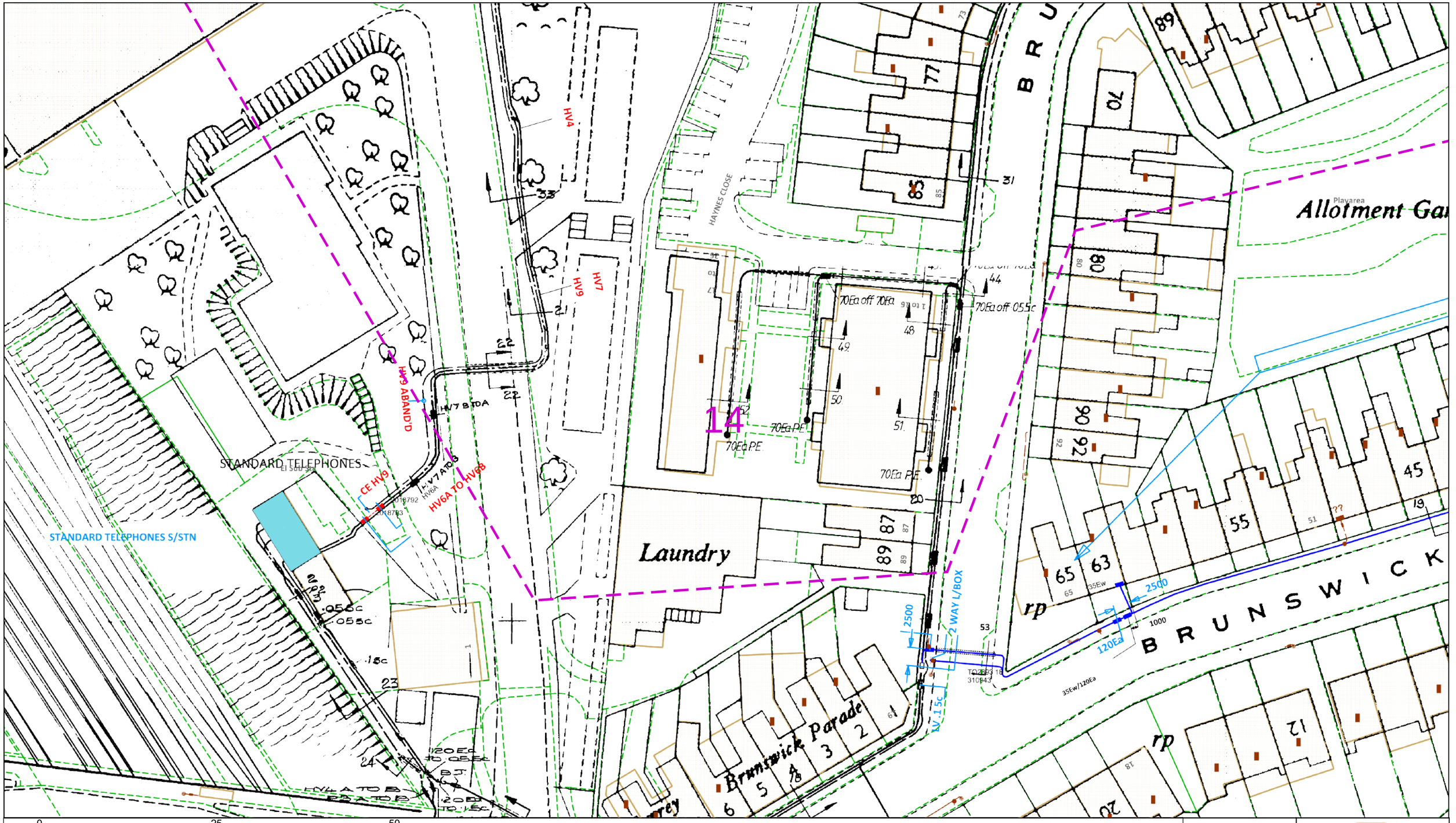

0 25 50
metres

Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

This plan must be used with the attached 'Symbols' document.

Date Requested: 05/08/2020
Job Reference: 19594059
Site Location: 527622 193078
Requested by:
Miss Monique Elsom
Your Scheme/Reference: 2190242

Scale: 1:500 (When plotted at A3)

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N W E S

UK Power Networks

IF IN DOUBT - ASK!
PHONE 0800 056 5866
EMERGENCY - If you damage a cable or line Phone 0800 783 8838 (24hrs) URGENTLY

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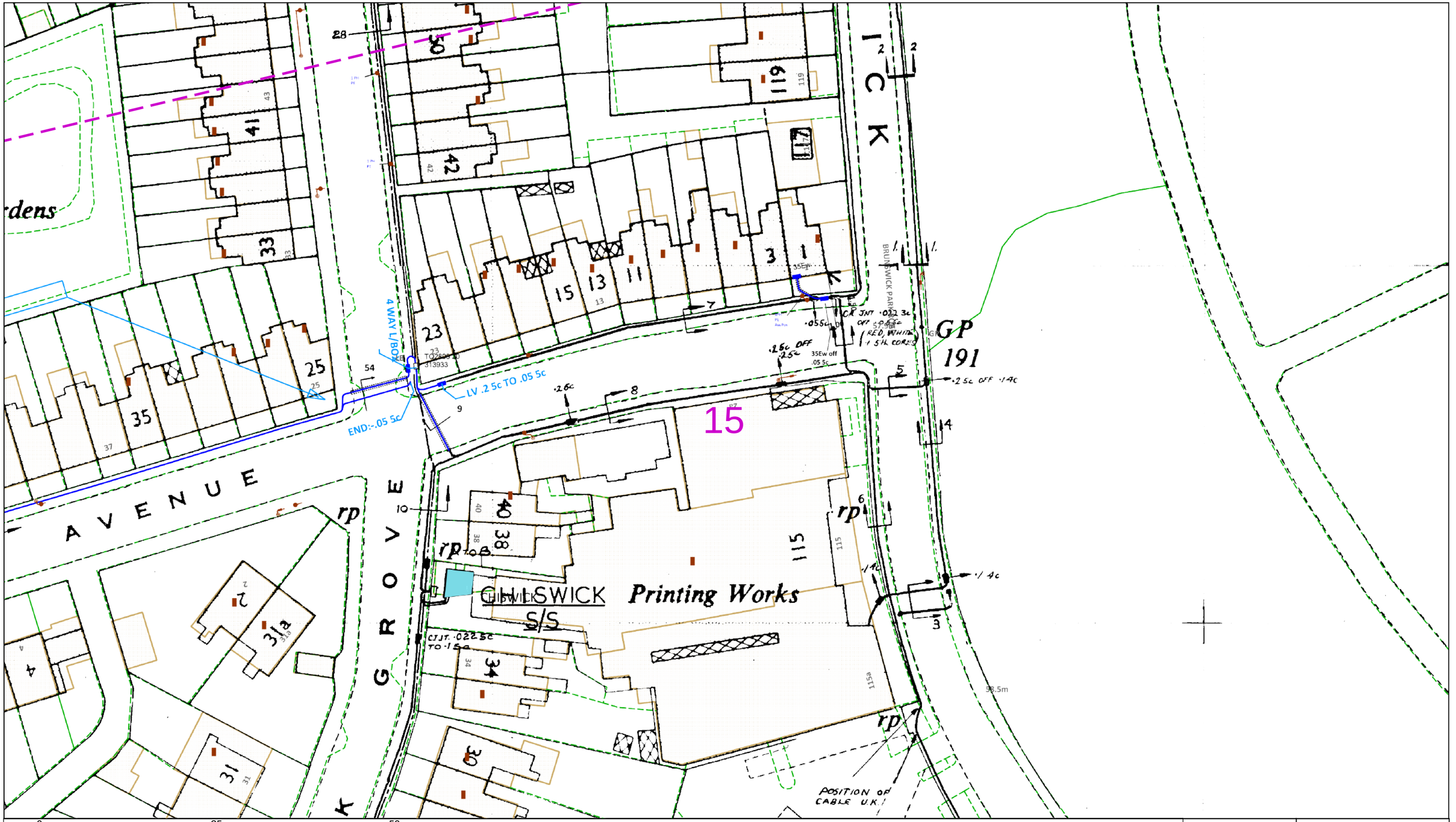

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metres

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Cross Section : 47

See Supplemental Diagram
TQ2893NWB
for Cross-Section 47 details

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Cross Section : 26

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Cross Section : 46

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Cross Section : 17

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Cross Section : 23

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Cross Section : 54

See Supplemental Diagram
TQ2893SWB
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Cross Section : 53

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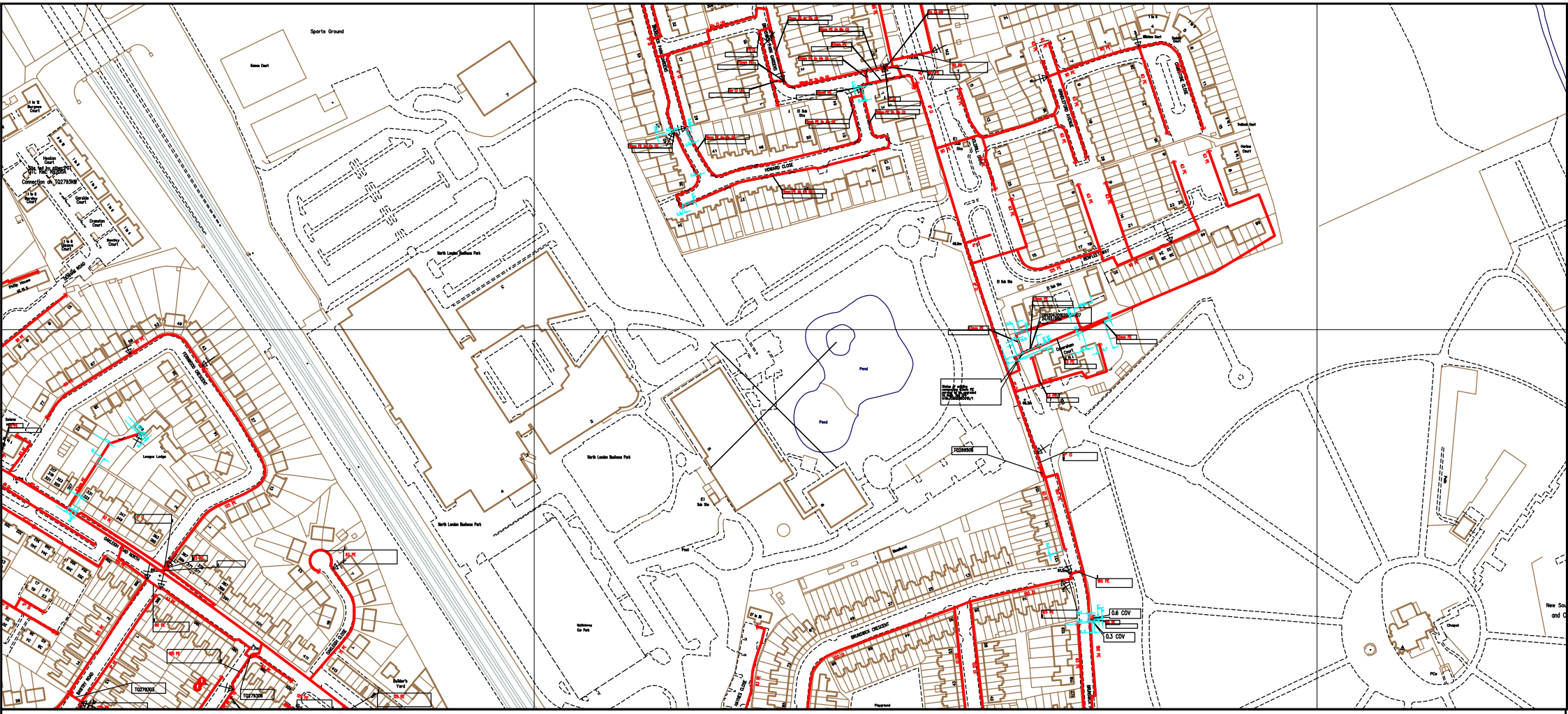


SCALE: Not to scale	LP MAINS
USER ID: MElsom	MP MAINS
DATE: 12/08/2020	IP MAINS
EXTRACT DATE: 10/06/2020	LHP MAINS
MAP REF: TQ2893	
CENTRE: 528160, 193483	

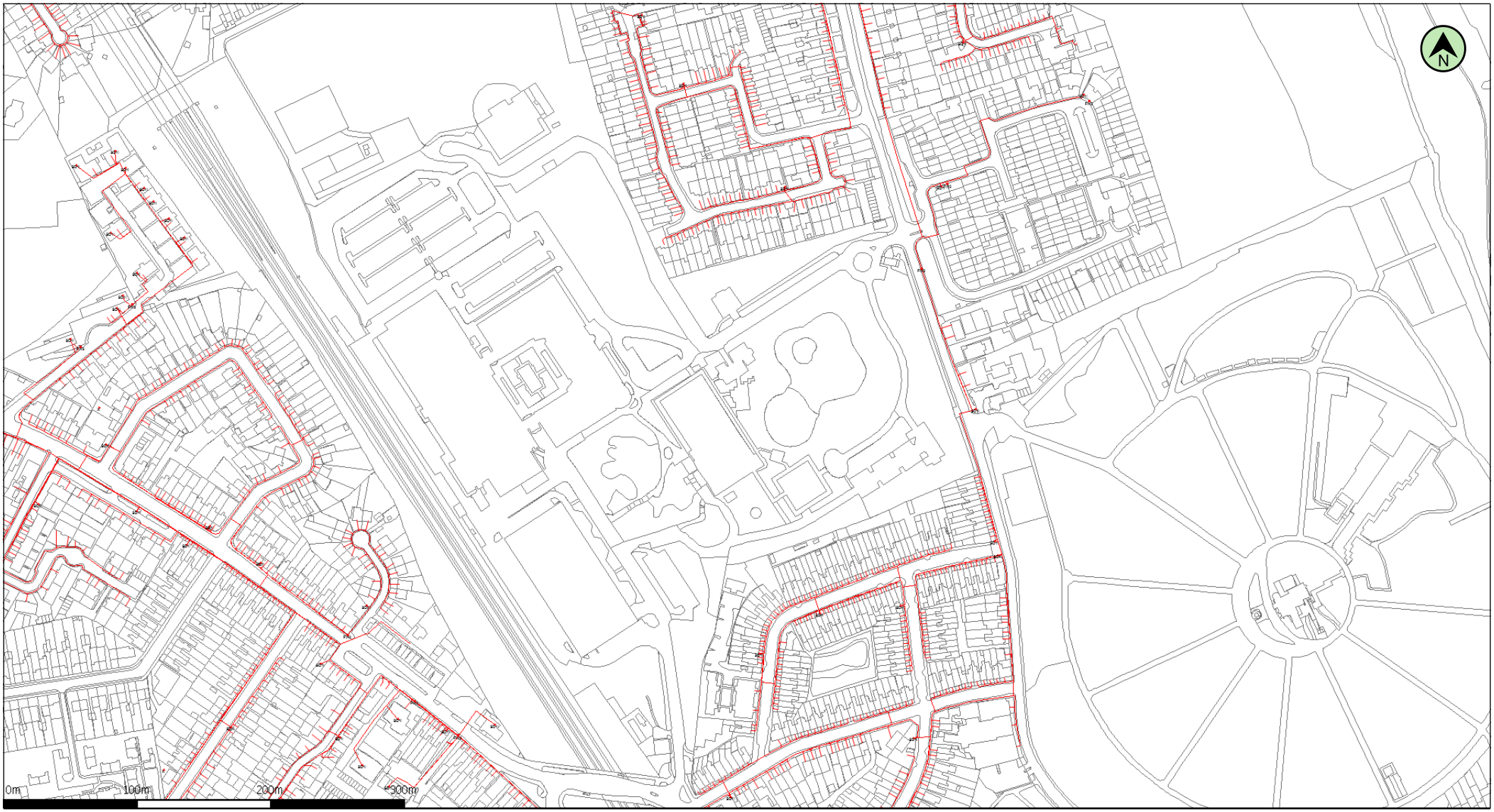
Some examples of Plant Items:

Valve | Depth of Cover | Syphon | Diameter Change | Material Change | Out of Standard Service

This plan shows those pipes owned by Cadent Gas Ltd in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Ltd 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 mains, pipes, services 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 gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue. Further information on all DR4s can be determined by calling the DR4 hotline on 01455 892426 (9am-5pm) A DR4 is where a potential error has been identified within the asset record and a process is currently underway to investigate and resolve the error as appropriate.

MAPS Viewer Version 5.8.0.1

Local Machine



 Date: 06/08/20 Scale: 1:4021 Map Centre: 528153,193452 Data updated: 01/06/20 Telecoms Plan A4

Important Information - please read The purpose of this plan is to identify Virgin Media apparatus. We have tried to make it as accurate as possible but we cannot warrant its accuracy. In addition, we caution that within Virgin Media apparatus there may be instances where mains voltage power cables have been placed inside green, rather than black ducting. Further details can be found using the "Affected Postcodes.pdf", which can be downloaded from this website. Therefore, you must not rely solely on this plan if you are carrying out any excavation or other works in the vicinity of Virgin Media apparatus. The actual position of any underground service must be verified by cable detection equipment, etc. and established on site before any mechanical plant is used. Accordingly, unless it is due to the negligence of Virgin Media, its employees or agents, Virgin Media will not have any liability for any omissions or inaccuracies in the plan or for any loss or damage caused or arising from the use of and/or any reliance on this plan. This plan is produced by Virgin Media Limited (c) Crown copyright and database rights 2020 Ordnance Survey 100019209.

Duct, Trench

Chamber

Cabinet

bharath.gowda@virginmedia.co.uk

VM.1168978

Legend

- Access Chamber.Location Active Footway Chamber
- Underground Route.Route Act. - Owned

vodafone

Vodafone Limited (No01471587) registered office is at Vodafone House, The Connection, Newbury, Berkshire, RG142FN

Plot Date : 06/08/2020	Scale : 1:1250

This plan shows apparatus owned by members of the Vodafone Group of companies (including legacy telecommunication companies currently within the group)

Information with regard to such apparatus should always be obtained from Vodafone or its appointed agents.

Asset location search

Property Searches

RSK Environment Limited
18Frogmore Road Frogmore Road In
HEMEL HEMPSTEAD
HP3 9RT

Search address supplied

Building 1
Oakleigh Road South
North London Business Park
London
N11 1GN

Your reference 2190242

Our reference ALS/ALS Standard/2020_4228048

Search date 5 August 2020

Knowledge of features below the surface is essential for every development

The benefits of this knowledge not only include ensuring due diligence and avoiding risk, but also being able to ascertain the feasibility of any development.

Did you know that Thames Water Property Searches can also provide a variety of utility searches including a more comprehensive view of utility providers' assets (across up to 35-45 different providers), as well as more focused searches relating to specific major utility companies such as National Grid (gas and electric).

Contact us to find out more.

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

Asset location search

Property Searches

Search address supplied: Building 1, Oakleigh Road South, North London Business Park, London, N11 1GN

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This searchprovides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0845 070 9148, or use the address below:

Thames Water Utilities Ltd
Property Searches
PO Box 3189
Slough
SL1 4WW

Email: searches@thameswater.co.uk
Web: www.thameswater-propertysearches.co.uk

Waste Water Services

Please provide a copy extract from the public sewer map.

The following quartiles have been printed as they fall within Thames' sewerage area:

TQ2893SW
TQ2893NW
TQ2793SE
TQ2793NE

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an ‘as constructed’ record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

Following examination of our statutory maps, Thames Water has been unable to find

any plans of water mains within this area. If you require a connection to the public water supply system, please write to:

New Connections / Diversions
Thames Water
Network Services Business Centre
Brentford
Middlesex
TW8 0EE

Tel: 0845 850 2777
Fax: 0207 713 3858
Email: developer.services@thameswater.co.uk

The following quartiles have not been printed as they are out of Thames' water catchment area. For details of the assets requested please contact the water company indicated below:

TQ2893SW	Affinity Water
TQ2893NW	Affinity Water
TQ2793SE	Affinity Water
TQ2793NE	Affinity Water

Affinity Water Ltd
Tamblin Way
Hatfield
AL10 9EZ

Tel: 0345 3572401

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

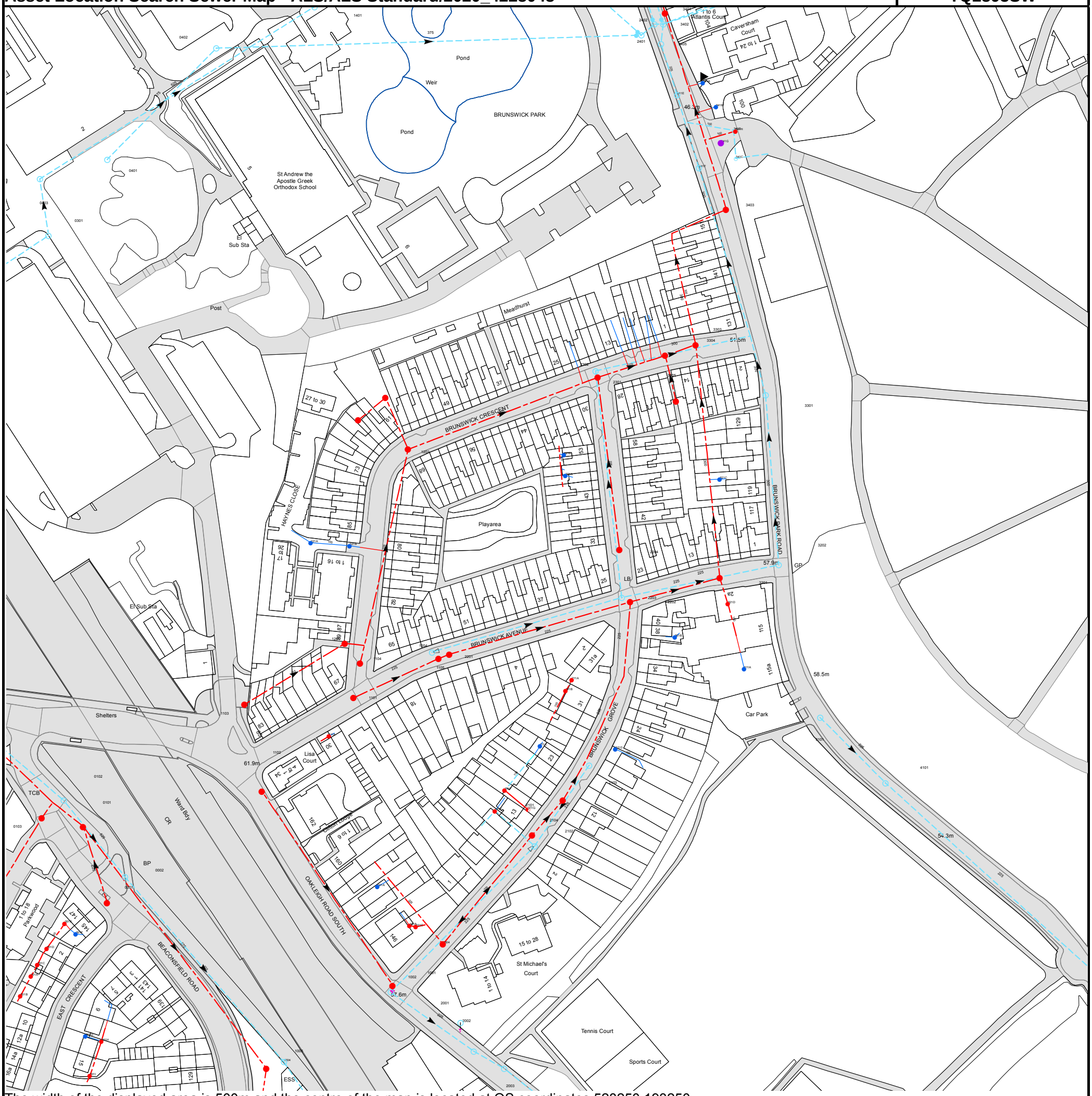
Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2020_4228048

TQ2893SW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 528250,193250

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

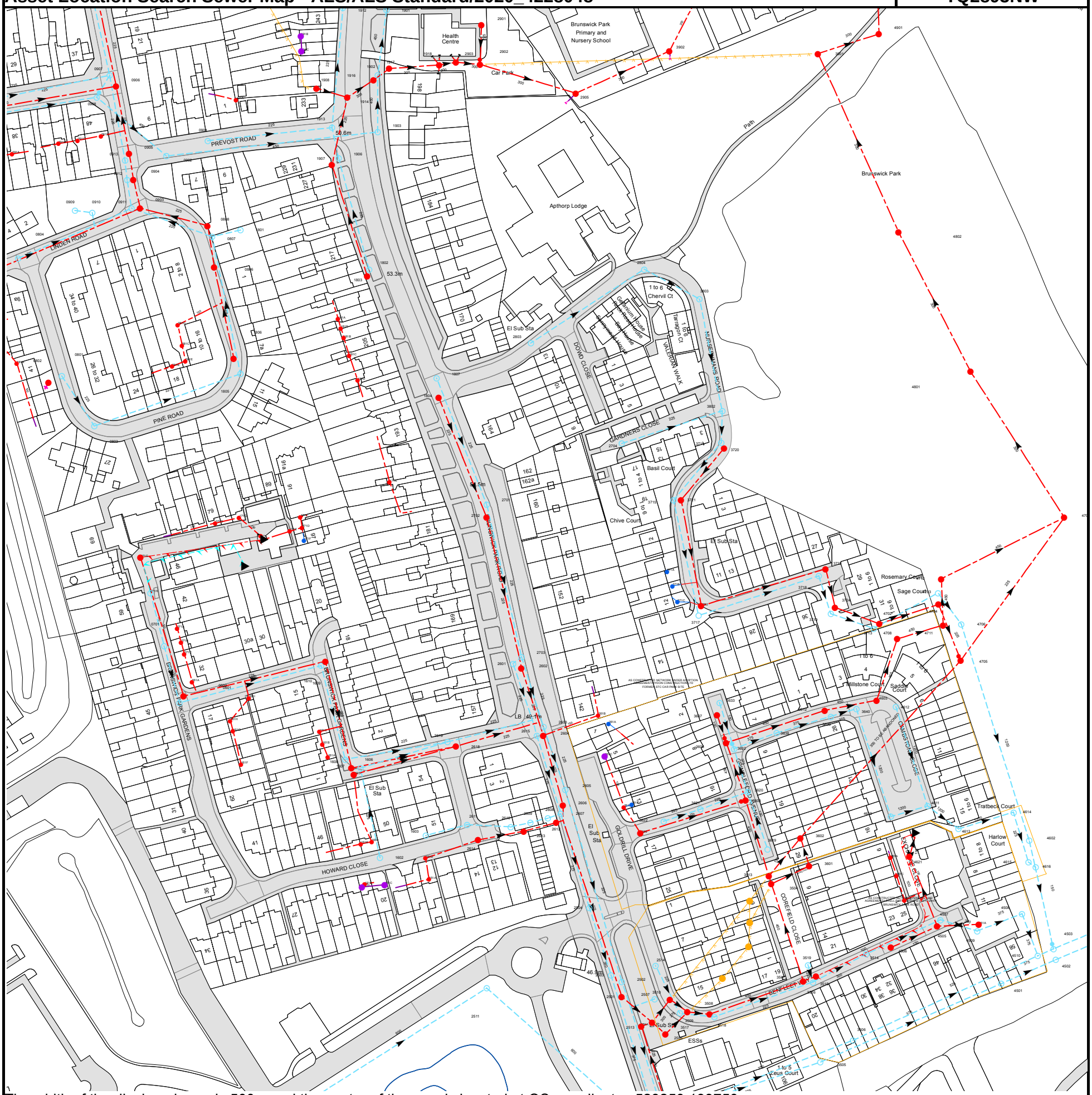
Manhole Reference	Manhole Cover Level	Manhole Invert Level
1401	50.63	47.33
2401	49.38	41.38
2402	45.92	41.04
3405	45.98	44.57
3402	45.99	40.98
3401	45.99	45.08
221B	n/a	n/a
1202	57.7	55.03
3305	54.22	51.9
1301	n/a	n/a
3301	53.24	52.04
2301	55.02	52.99
2302	54.63	53.1
3304	53.15	50.45
3303	52.4	49.68
3403	47.75	46.1
341F	n/a	n/a
341C	n/a	n/a
341G	n/a	n/a
341H	n/a	n/a
341D	n/a	n/a
341B	n/a	n/a
341E	n/a	n/a
341A	n/a	n/a
211A	n/a	n/a
311A	n/a	n/a
1104	.01	n/a
1105	61.05	58.6
2201	60.94	n/a
1204	.01	n/a
321B	n/a	n/a
321D	n/a	n/a
2202	59.91	54.67
2203	59.86	n/a
3201	58.88	54.08
3202	58.01	56.76
2204	59	n/a
321C	n/a	n/a
221A	n/a	n/a
2002	55.66	54.31
001H	n/a	n/a
001G	n/a	n/a
2001	.01	n/a
1002	57.63	n/a
1001	.01	n/a
2004	58.16	56.18
001F	n/a	n/a
101C	n/a	n/a
101B	n/a	n/a
001E	n/a	n/a
0001	.01	n/a
101A	n/a	n/a
0002	61.18	59.43
2102	59.07	57.86
2101	59.26	55.9
0101	61.88	57.31
211E	n/a	n/a
211G	n/a	n/a
2104	59.59	55.86
1102	61.37	n/a
211F	n/a	n/a
2103	.01	n/a
211C	n/a	n/a
1103	.01	n/a
1101	61.29	59.05
211B	n/a	n/a
001I	n/a	n/a
2003	54.88	54.11
1005	.01	n/a
1004	.01	n/a
4101	55.94	54.16
211D	n/a	n/a
3101	57.56	55.88
121A	n/a	n/a
1201	61	59.71
121B	n/a	n/a
1302	n/a	n/a
001B	n/a	n/a
001A	n/a	n/a
001C	n/a	n/a
0103	62.56	58.07
001D	n/a	n/a
0102	62.34	61.07
111A	n/a	n/a
0402	.01	n/a
0301	57.72	51.12
0403	57.44	51.02
0401	.01	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Asset Location Search Sewer Map - ALS/ALS Standard/2020_4228048

TQ2893NW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 528250,193750

The width of the displayed area is 500m and the centre of the map is located at OS coordinates 528250,193750

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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

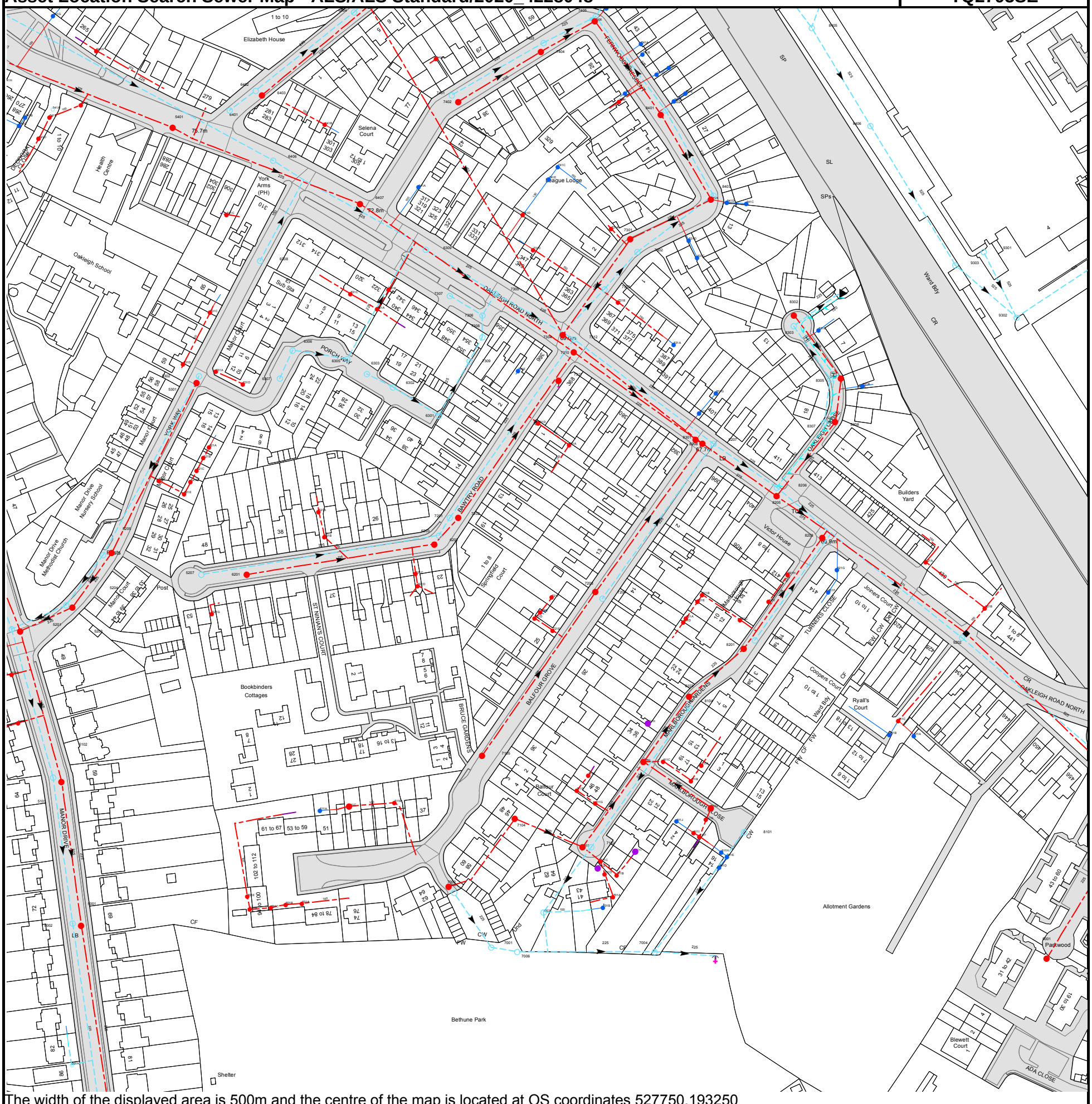
Manhole Reference	Manhole Cover Level	Manhole Invert Level
4801	.01	n/a
4802	.01	n/a
3901	.01	n/a
4901	.01	n/a
1805	59.66	57.74
1806	59.34	n/a
181C	n/a	n/a
2803	n/a	n/a
181B	n/a	n/a
181E	n/a	n/a
181A	n/a	n/a
3803	n/a	n/a
1803	53.53	53.22
1802	53.4	52.11
2804	n/a	n/a
1801	56.57	n/a
1907	52.62	n/a
1906	51.53	n/a
1903	51.2	48.04
1913	50.83	n/a
191A	n/a	n/a
1914	50.2	47.42
2905	48.53	45.56
1908	n/a	n/a
1916	49.85	47.4
1902	49.8	47.05
1917	50	47.39
1918	49.67	46.98
2902	49.75	46.84
2903	49.8	47
191C	n/a	n/a
161G	n/a	n/a
161F	n/a	n/a
161I	n/a	n/a
171C	n/a	n/a
171D	n/a	n/a
171F	n/a	n/a
161C	n/a	n/a
1609	54.33	53.5
161B	n/a	n/a
1610	54.28	53.18
161A	n/a	n/a
1608	53.56	52.64
1607	53.43	52.14
1605	52.89	49.52
181D	n/a	n/a
1606	53.39	50.49
171A	n/a	n/a
1807	52.48	50.74
1804	52.35	50.04
2619	50.9	49.49
2618	48.85	47.11
2702	51.3	n/a
2701	51.29	n/a
2601	49.53	47.45
2602	49.49	46.91
2703	49.55	47.32
2615	48.85	47.11
2603	48.79	46.98
2604	48.8	46.6
2605	48.47	n/a
261B	n/a	n/a
261C	n/a	n/a
261A	n/a	n/a
2704	48.79	47.94
371A	n/a	n/a
371B	n/a	n/a
3715	n/a	n/a
371C	n/a	n/a
3721	n/a	n/a
3717	n/a	n/a
3722	n/a	n/a
3607	n/a	n/a
3633	n/a	n/a
3714	n/a	n/a
3802	47.99	46.4
3720	n/a	n/a
3606	n/a	n/a
3632	n/a	n/a
3638	n/a	n/a
3718	n/a	n/a
3612	n/a	n/a
4706	46.14	43.29
4509	41.3	39.55
451A	n/a	n/a
4501	.01	n/a
4614	n/a	n/a
4508	40.95	39.32
4615	n/a	n/a
4602	45.26	43.07

Manhole Reference	Manhole Cover Level	Manhole Invert Level
4616	n/a	n/a
4510	42.89	38.9
4503	42.76	38.51
4502	.01	n/a
4701	43.1	41.5
3723	n/a	n/a
3639	n/a	n/a
3719	n/a	n/a
3724	n/a	n/a
3506	.01	n/a
3640	n/a	n/a
3514	44.75	43
3713	n/a	n/a
4603	n/a	n/a
4702	n/a	n/a
461A	n/a	n/a
4610	n/a	n/a
4506	44.37	42.42
4612	n/a	n/a
451C	n/a	n/a
4708	n/a	n/a
451B	n/a	n/a
4621	43.94	41.39
4611	n/a	n/a
4505	43.57	41.62
4703	n/a	n/a
4704	46.04	43.69
4507	43.72	41.97
4712	n/a	n/a
4711	n/a	n/a
4613	n/a	n/a
4705	45.97	42.12
161E	n/a	n/a
151D	n/a	n/a
151B	n/a	n/a
1604	52.66	50.37
1602	52.04	51.03
151C	n/a	n/a
161D	n/a	n/a
1603	51.04	49.47
151A	n/a	n/a
2611	50.18	49.16
2614	50.3	48.37
2511	.01	n/a
2610	49.56	48.3
2613	49.55	48.21
2609	49.55	48.1
2608	49.23	47.7
2612	49.26	47.98
2607	48.43	46.6
2606	48.44	46.27
2504	47.75	45.63
2503	46.63	43.88
2502	46.6	n/a
2501	46.58	45.28
261D	n/a	n/a
261E	n/a	n/a
2620	n/a	n/a
251A	n/a	n/a
2513	46.17	44.87
2507	46.27	45.47
2514	46.96	45.2
3622	n/a	n/a
2505	46.74	44.22
3510	46.76	44.83
3517	46.6	44.84
3509	46.54	44.06
3621	n/a	n/a
3508	46.39	44
3518	46.37	44.6
3603	n/a	n/a
3620	n/a	n/a
3619	n/a	n/a
3513	46.32	43.23
3504	45.6	43.03
3602	45.54	43.09
3507	45.66	43.68
3519	45.58	43.95
3601	44.79	43.09
3516	45.59	43.73
3515	45.66	43.73
3505	.01	n/a
161H	n/a	n/a
0601	59.59	57.76
0602	59.58	58.06
061A	n/a	n/a
071C	n/a	n/a
0701	59.6	n/a
071B	n/a	n/a
071A	n/a	n/a
071H	n/a	n/a
071G	n/a	n/a
171E	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
071D	n/a	n/a
171G	n/a	n/a
0803	62.32	60.23
081B	n/a	n/a
081E	n/a	n/a
081C	n/a	n/a
081D	n/a	n/a
0806	57.86	56.05
0807	57.51	n/a
0808	57.45	n/a
0910	57.9	56.28
0903	55.78	n/a
0911	56.9	53.89
0904	55.51	n/a
0912	55.51	53.62
0913	55.09	53.47
0902	54.67	51.32
0905	55.05	n/a
0901	53.69	51.26
091D	n/a	n/a
0908	55.12	52.88
0906	54.46	52.89
0907	54.49	53.24
0802	62.47	n/a
081A	n/a	n/a
0804	59.59	n/a
0909	57.94	56.84
091A	n/a	n/a
091B	n/a	n/a
091C	n/a	n/a
0801	63.16	n/a
3902	46.87	44.48
191B	n/a	n/a
2901	49.06	48.24
1901	48.44	45.49
1912	48.84	46.98

Asset Location Search Sewer Map - ALS/ALS Standard/2020_4228048

TQ2793SE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 527750,193250

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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
531D	n/a	n/a
521E	n/a	n/a
521D	n/a	n/a
521C	n/a	n/a
5301	.01	n/a
5302	.01	n/a
521B	n/a	n/a
521A	n/a	n/a
531C	n/a	n/a
531A	n/a	n/a
631D	n/a	n/a
6307	.01	n/a
6306	75.41	73.96
6305	74.97	73.14
6303	.01	n/a
631A	n/a	n/a
6302	.01	n/a
6301	73.65	72.18
7309	.01	n/a
7306	70.57	69.41
7308	.01	n/a
731E	n/a	n/a
731D	n/a	n/a
7311	.01	n/a
7304	69.08	60.88
721A	n/a	n/a
7310	88.93	n/a
7312	68.93	n/a
821D	n/a	n/a
821A	n/a	n/a
8301	67.66	64.92
821E	n/a	n/a
831F	n/a	n/a
821B	n/a	n/a
8208	67.63	60.12
8207	67.52	66.35
831G	n/a	n/a
821C	n/a	n/a
8201	.01	n/a
8202	68.27	66.75
8206	67.18	65.93
8205	66.72	n/a
8203	66.93	59.75
8307	.01	n/a
821F	n/a	n/a
8308	64.32	60.16
821G	n/a	n/a
831B	n/a	n/a
921A	n/a	n/a
9202	65.8	64.27
921B	n/a	n/a
511A	n/a	n/a
511B	n/a	n/a
511C	n/a	n/a
5202	76.31	73.98
5201	76.36	74.68
5204	.01	n/a
5203	.01	n/a
621D	n/a	n/a
5207	75.41	73.96
6201	.01	n/a
621C	n/a	n/a
5205	.01	n/a
5206	.01	n/a
621B	n/a	n/a
621A	n/a	n/a
7006	.01	n/a
7001	.01	n/a
7003	.01	n/a
701B	n/a	n/a
701A	n/a	n/a
7002	.01	n/a
701D	n/a	n/a
711B	n/a	n/a
711D	n/a	n/a
711A	n/a	n/a
711C	n/a	n/a
7103	64.28	62.36
7102	68.35	66.78
7104	.01	n/a
711G	n/a	n/a
711F	n/a	n/a
711E	n/a	n/a
7105	.01	n/a
721E	n/a	n/a
721D	n/a	n/a
721C	n/a	n/a
7204	70.93	68.01
721F	n/a	n/a
7203	.01	n/a

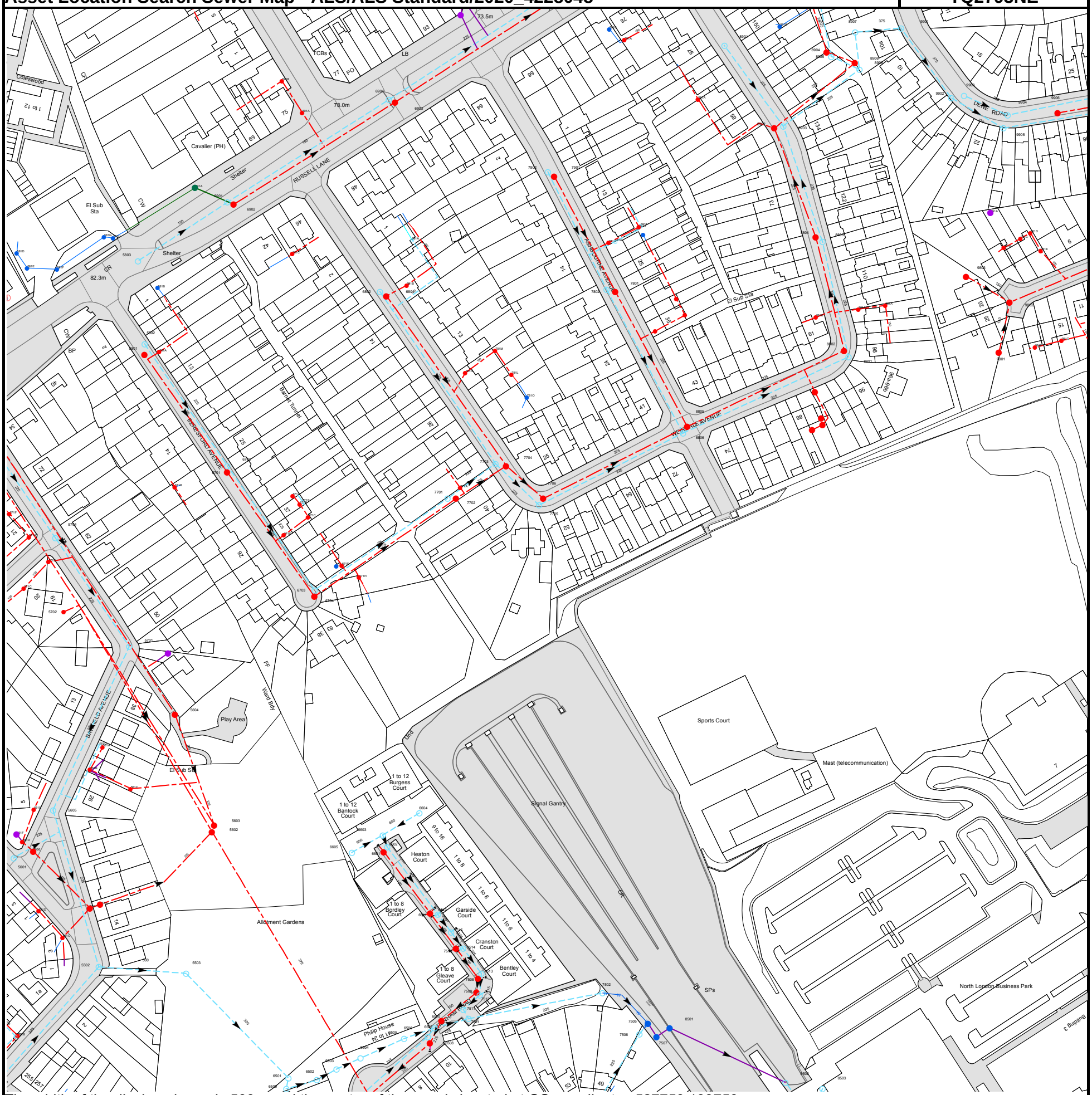
Manhole Reference	Manhole Cover Level	Manhole Invert Level
6202	73.11	70.82
6203	72.84	71.12
7201	72.84	70.91
7202	.01	n/a
711I	n/a	n/a
7101	65.91	61.93
711H	n/a	n/a
7004	.01	n/a
811C	n/a	n/a
811J	n/a	n/a
8104	.01	n/a
8103	.01	n/a
811B	n/a	n/a
811I	n/a	n/a
811F	n/a	n/a
811A	n/a	n/a
811G	n/a	n/a
8102	.01	n/a
811D	n/a	n/a
811H	n/a	n/a
811E	n/a	n/a
8101	64.74	63.58
911B	n/a	n/a
911C	n/a	n/a
911A	n/a	n/a
9001	.01	-1.49
5101	.01	n/a
5102	.01	n/a
501A	n/a	n/a
5001	.01	n/a
5002	.01	n/a
601E	n/a	n/a
601D	n/a	n/a
601C	n/a	n/a
601B	n/a	n/a
601A	n/a	n/a
611A	n/a	n/a
741A	n/a	n/a
741B	n/a	n/a
8405	57.31	53.5
8305	62.89	61.66
8306	.01	n/a
831A	n/a	n/a
831E	n/a	n/a
8303	62.57	61.27
9302	57.3	51.67
8302	62.41	60.49
9303	56.94	51.99
831C	n/a	n/a
9301	57.61	52.03
7302	.01	n/a
831D	n/a	n/a
7301	.01	n/a
841C	n/a	n/a
841D	n/a	n/a
8404	62.58	61.39
8403	.01	n/a
8406	57.03	52.93
8401	.01	n/a
8402	.01	n/a
841F	n/a	n/a
841E	n/a	n/a
741G	n/a	n/a
841G	n/a	n/a
7307	.01	n/a
7401	.01	n/a
7402	.01	n/a
7305	70.22	n/a
741D	n/a	n/a
731C	n/a	n/a
7404	.01	n/a
7403	.01	n/a
741E	n/a	n/a
741C	n/a	n/a
7406	.01	n/a
7405	63.59	60.85
7303	.01	n/a
741H	n/a	n/a
731A	n/a	n/a
731B	n/a	n/a
741F	n/a	n/a
5401	.01	n/a
641C	n/a	n/a
6401	75.37	73.84
6402	74.02	72.37
6308	75.77	74.8
6403	.01	n/a
6406	75.18	73.02
641B	n/a	n/a
631C	n/a	n/a
6404	68.48	66.91
6407	.01	n/a
6405	68.19	61.24

Manhole Reference	Manhole Cover Level	Manhole Invert Level
631B	n/a	n/a
641A	n/a	n/a
6309	.01	n/a
641D	n/a	n/a
541F	n/a	n/a
541H	n/a	n/a
541G	n/a	n/a
521F	n/a	n/a
541D	n/a	n/a
541C	n/a	n/a
541B	n/a	n/a
541A	n/a	n/a
521G	n/a	n/a
821I	n/a	n/a
821H	n/a	n/a
611C	n/a	n/a
611B	n/a	n/a
541E	n/a	n/a
741I	n/a	n/a

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Asset Location Search Sewer Map - ALS/ALS Standard/2020_4228048

TQ2793NE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 527750,193750

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
9801	.01	n/a
981F	n/a	n/a
981G	n/a	n/a
881A	n/a	n/a
981A	n/a	n/a
9802	62.64	61.17
9803	.01	n/a
981E	n/a	n/a
981B	n/a	n/a
981C	n/a	n/a
981D	n/a	n/a
991A	n/a	n/a
9905	59.5	57.12
9904	59.36	58.21
9906	58.91	57.42
9902	60.51	58.28
9903	60.26	58.48
8908	64.86	63.91
9901	61.81	59.64
7506	.01	n/a
7505	n/a	n/a
7507	n/a	n/a
8501	n/a	n/a
8806	72.66	n/a
8805	72.58	69.68
8502	n/a	n/a
8807	n/a	n/a
8809	n/a	n/a
8810	n/a	n/a
8503	57.72	53.87
8808	n/a	n/a
8801	68.04	66.11
8802	68	65.75
7804	n/a	n/a
881B	n/a	n/a
8811	n/a	n/a
8812	n/a	n/a
8803	66.32	64.45
8804	66.26	n/a
7803	n/a	n/a
781J	n/a	n/a
781K	n/a	n/a
8902	66.34	63.96
8903	66.31	64.18
891A	n/a	n/a
8906	64.9	63.71
8905	65.13	63.82
8904	65.15	63.63
8901	68.09	66.8
8907	.01	n/a
891B	n/a	n/a
7515	66.2	64.432
7510	66.267	64.72
7514	65.82	64.22
7511	65.5	62.6
7501	65.8	62.22
7509	65.7	64.33
7508	65.82	64.38
7512	65.55	63.623
7513	65.648	63.87
7502	n/a	n/a
6704	76.33	74.83
6703	76.32	74.85
671H	n/a	n/a
671G	n/a	n/a
671F	n/a	n/a
671C	n/a	n/a
7705	75.17	72.93
671B	n/a	n/a
671E	n/a	n/a
7702	76.46	n/a
7701	76.44	n/a
7706	75.12	72.59
771A	n/a	n/a
7704	75.65	n/a
7703	75.67	n/a
781O	n/a	n/a
781L	n/a	n/a
781N	n/a	n/a
781M	n/a	n/a
6801	77.5	75.63
7801	72.38	n/a
6802	77.56	75.97
7802	72.36	n/a
681B	n/a	n/a
781H	n/a	n/a
781A	n/a	n/a
681A	n/a	n/a
5503	.01	n/a
6509	.01	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
6501	69.93	68.9
6502	67.94	67.04
6503	.01	n/a
6504	.01	n/a
6505	65.9	63.73
6506	65.71	64.11
6508	65.84	63.85
6507	65.43	n/a
6510	65.28	64
5702	.01	n/a
571C	n/a	n/a
571D	n/a	n/a
5704	81.76	n/a
571A	n/a	n/a
671D	n/a	n/a
671A	n/a	n/a
571B	n/a	n/a
6701	79.84	77.86
6702	79.89	78.2
5801	81.78	79.91
581A	n/a	n/a
5802	81.81	80.31
5804	n/a	n/a
581B	n/a	n/a
581F	n/a	n/a
581E	n/a	n/a
5803	81.87	80.72
681C	n/a	n/a
581D	n/a	n/a
581H	n/a	n/a
581G	n/a	n/a
591A	n/a	n/a
6512	66.634	64.685
6511	66.756	65.34
551D	n/a	n/a
5501	76.19	73.49
551E	n/a	n/a
5601	78.18	76.33
6605	n/a	65.34
6601	67.58	66.25
5606	77.63	75.45
6602	67.675	65.187
561D	n/a	n/a
6603	n/a	65.3
561F	n/a	n/a
5602	72.66	62.8
5603	72.83	n/a
6604	n/a	65.348
5605	77.22	75.85
561E	n/a	n/a
561C	n/a	n/a
561B	n/a	n/a
561A	n/a	n/a
5604	76.72	n/a
571E	n/a	n/a
5701	78.82	n/a
551A	n/a	n/a
551B	n/a	n/a
5502	76.28	74.53
551C	n/a	n/a
571F	n/a	n/a
561G	n/a	n/a
6902	80.43	n/a
7901	72.89	n/a
7902	77.84	n/a
691A	n/a	n/a
6903	76.6	n/a
6904	76.51	n/a
691B	n/a	n/a
791A	n/a	n/a
791B	n/a	n/a
7904	n/a	n/a
7903	n/a	n/a
6901	80.48	n/a

ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

Trunk Surface Water

Trunk Foul

Storm Relief

Trunk Combined

Vent Pipe

Bio-solids (Sludge)

Proposed Thames Surface Water Sewer

Proposed Thames Water Foul Sewer

Gallery

Foul Rising Main

Surface Water Rising Main

Combined Rising Main

Sludge Rising Main

Proposed Thames Water Rising Main

Vacuum

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

Air Valve

Dam Chase

Fitting

Meter

Vent Column

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

Control Valve

Drop Pipe

Ancillary

Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol, Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

Outfall

Undefined End

Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories

Public/Private Pumping Station

Change of characteristic indicator (C.O.C.I.)

Invert Level

Summit

Areas

Lines denoting areas of underground surveys, etc.

Agreement

Operational Site

Chamber

Tunnel

Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

Foul Sewer

Surface Water Sewer

Combined Sewer

Gulley

Culverted Watercourse

Proposed

Abandoned Sewer

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.

2) All measurements on the plans are metric.

3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.

4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

5) 'na' or '0' on a manhole level indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in milimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Insight on 0845 070 9148.

Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment 14 days from due date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service, or will be held to be invalid.
4. Thames Water does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL`s terms and conditions shall apply.
6. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 316 9800

If you are unhappy with our service you can speak to your original goods or customer service provider. If you are not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0121 345 1000 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	**BACS Payment**	**Telephone Banking**	**Cheque**
Call **0845 070 9148** quoting your invoice number starting CBA or ADS / OSS	Account number **90478703** Sort code **60-00-01** A remittance advice must be sent to: **Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW.** or email **ps.billing@thameswater.co.uk**	By calling your bank and quoting: Account number **90478703** Sort code **60-00-01** and your invoice number	Made payable to '**Thames Water Utilities Ltd**' Write your Thames Water account number on the back. Send to: **Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW** or by DX to **151280 Slough 13**

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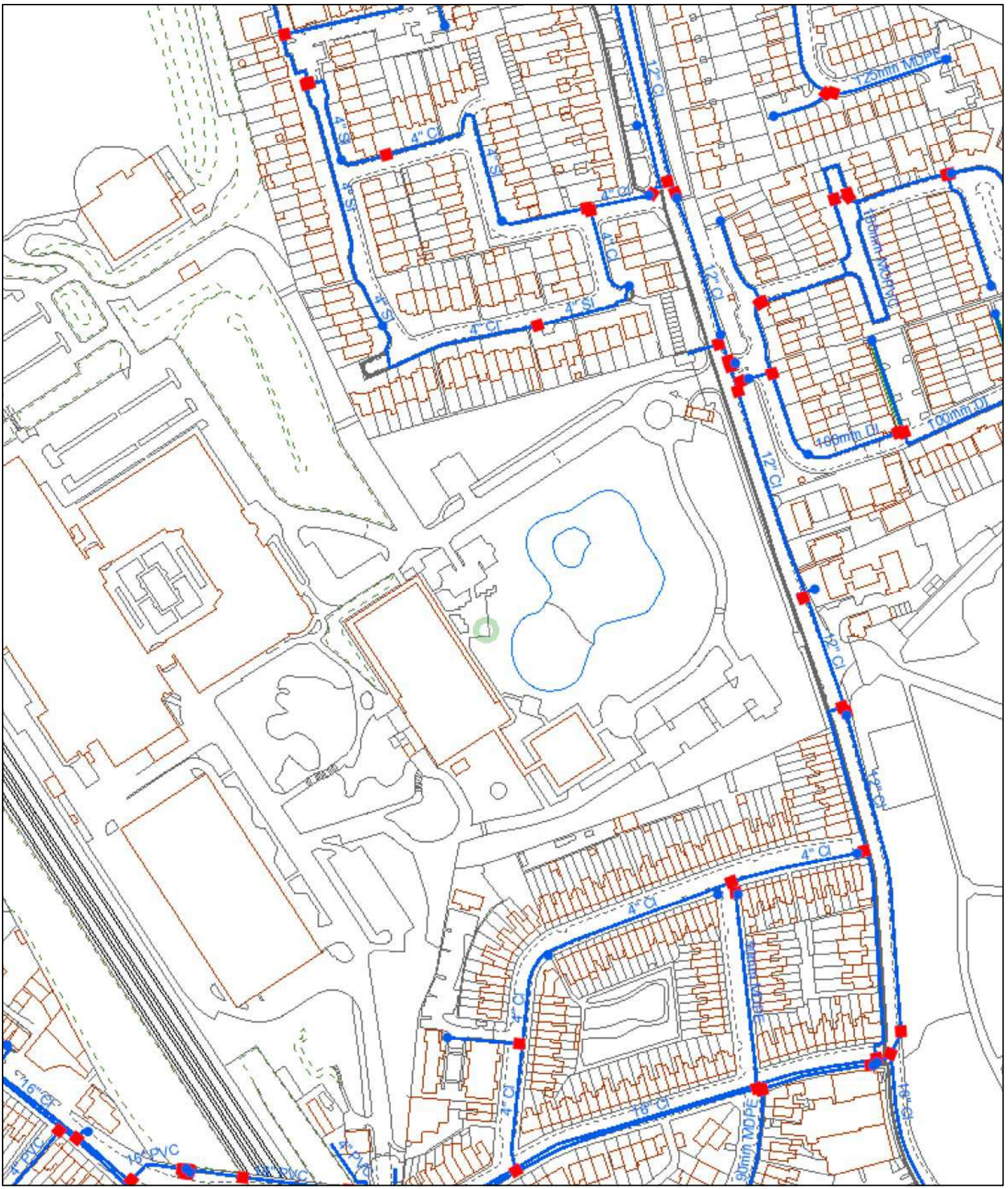
Title

Created on - 05/08/2020



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1:2,500

- Distribution Main
- Asbestos Distribution Main
- Abandoned Main
- Asbestos Abandoned Main
- Adit / Tunnel
- Cable
- Searched Location
- Hydrant
- Fitting
- Easement
- Company Boundary

APPENDIX F
SITE RECONNAISSANCE PHOTOGRAPHS

PHOTOGRAPHIC LOG

Photo no.	**Date:**
1	May 2019

Description:

Site access point located off-site towards the south west along Oakleigh Road South.

Image taken viewing north east.

Image Source: Google Street View (2020)

Photo No.	**Date:**
2	May 2019

Description:

Eastern site access point located along Brunswick Park Road.

Imagen taken viewing north west.

Image Source: Google Street View (2020)

Photo No.	Date:	
3	May 2019	
Description: Eastern corner of site adjacent to Brunswick Park Road access point. Image taken viewing south west. Image Source: Google Street View (2020)		

Photo No.	Date:	
4	May 2019	
Description: Bunded areas of soft landscaping located adjacent to paved roadway in the eastern part of site. Image taken viewing south. Image Source: Google Street View (2020)		

Photo No.	Date:	
5	May 2019	
Description: Bunded soft landscaping located along the southern boundary of site. Image taken viewing south west within the south eastern corner of site. Image Source: Google Street View (2020)		

Photo No.	Date:	
6	May 2019	
Description: Bunded soft landscaping along the southern boundary of site. Image taken viewing east within south western corner of site. Image Source: Google Street View (2020)		

Photo No.	Date:	
7	May 2019	
Description: Central pond feature and adjacent soft landscaping. Image taken viewing south east within northern part of site. Image Source: Google Street View (2020)		

Photo No.	Date:	
8	May 2019	
Description: Main commercial buildings of business park and increase of elevation towards the west. Image taken viewing west. Image Source: Google Street View (2020)		

Photo No.	Date:	
9	May 2019	
Description: St Andrew the Apostle Greek Orthodox School located within the central park of site. Image taken viewing south west. Image Source: Google Street View (2020)		

Photo No.	Date:	
10	May 2019	
Description: Northern part of site with large bunded area of soft landscaping. Image taken viewing north west. Image Source: Google Street View (2020)		

Photo No.	Date:	
11	May 2019	
Description: Northern boundary of site, image taken viewing school building towards the south. Image Source: Google Street View (2020)		

Photo No.	Date:	
12	May 2019	
Description: Western boundary of site, image taken viewing north. Business centre positioned left with large bunded soft landscaping towards the right. Image Source: Google Street View (2020)		

Photo No.	Date:	
13	May 2019	
Description: Comer Business & Innovation Centre located along the western boundary of site. Image taken viewing west. Image Source: Google Street View (2020)		

Photo No.	Date:	
14	May 2019	
Description: External car parking area located off-site towards the north west. Image taken viewing north west. Image Source: Google Street View (2020)		

APPENDIX G
TECHNICAL BACKGROUND

H1 Desk Study

Aquifer designation and Source protection zones

Note the following text relates to sites in England and Wales only.

Principal aquifer: layers of rock or drift deposit that have high intergranular and/or fracture permeability (usually providing a high level of water storage). They may support water supply and/or river base flow on a strategic scale.

Secondary A aquifer: permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Secondary B aquifer: predominantly lower permeability layers that may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

Secondary undifferentiated aquifer: it has not been possible to attribute either a category A or B to a rock type. In most cases this means that it was previously designated as both a minor and non-aquifer in different locations owing to the variable characteristics.

Unproductive' strata: low permeability with negligible significance for water supply or river base flow.

The EA generally adopts a three-fold classification of source protection zones (SPZ) surround abstractions for public water supply. The Site is situated in an area defined as follows:

- Zone 1 or the 'inner protection zone' is located immediately adjacent to the groundwater source and is based on a 50-day travel time from any point below the water table to the source. It is designed to protect against the effects of human activity and biological/chemical contaminants that may have an immediate effect on the source
- Zone 2 or the 'outer protection zone' is defined by a 400-day travel time from a point below the water table to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants
- Zone 3 or the 'total catchment' is the area around the source within which all groundwater recharge is presumed to be discharged at the source.

Preliminary risk assessment methodology

LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. An outline conceptual model should be formed at the preliminary risk assessment stage that collates all the existing information pertaining to a site in text, tabular or diagrammatic form. The outline conceptual model identifies potentially complete (termed possible) contaminant linkages (contaminant–pathway–receptor) and is used as the basis for the design of the site investigation. The outline conceptual model is updated as further information becomes available, for example as a result of the site investigation.

Production of a conceptual model requires an assessment of risk to be made. Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk. RSK has adopted guidance provided in CIRIA C552 for use in the production of conceptual models.

The likelihood of an event can be classified on a four-point system using the following terms and definitions based on CIRIA C552:

- highly likely: the event appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution
- likely: it is probable that an event will occur or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term
- low likelihood: circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term
- unlikely: circumstances are such that it is improbable the event would occur even in the long term.

The severity can be classified using a similar system also based on CIRIA C552. The terms and definitions relating to severity are:

- severe: short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short-term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000)
- medium: chronic damage to human health ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem
- mild: pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures or the environment
- minor: harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

Once the probability of an event occurring and its consequences have been classified, a risk category can be assigned according to the table below.

		Consequences			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**Highly likely**	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low

Definitions of these risk categories are as follows together with an assessment of the further work that may be required:

- very high: there is a high probability that severe harm could occur or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability; urgent investigation and remediation are likely to be required
- high: harm is likely to occur. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required. Remedial works may be necessary in the short term and are likely over the long term
- moderate: it is possible that harm could arise, but it is unlikely that the harm would be severe and it is more likely that the harm would be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term
- low: it is possible that harm could occur, but it is likely that if realised this harm would at worst normally be mild
- very low: there is a low possibility that harm could occur and if realised the harm is unlikely to be severe.

H2 Site Investigation Methodology

Ground gas monitoring

An infrared gas meter was used to measure gas flow, concentrations of carbon dioxide (CO_2), methane (CH_4) and oxygen (O_2) in percentage by volume, while hydrogen sulphide (H_2S) and carbon monoxide (CO) were recorded in parts per million. Initial and steady state concentrations were recorded. In addition, during the first monitoring round, all wells were screened with a PID to establish if there are any interferences and cross-sensitivity of other hydrocarbons with the infrared gas meter.

Low flow groundwater sampling

Groundwater samples were retrieved using a United States Environment Protection Agency (USEPA) approved low-flow purging and sampling methodology.

The low-flow method relies on moving groundwater through the well screen at approximately the same rate as it flows through the geological formation. This results in a significant reduction in the volume of water extracted before sampling and significantly reduces the amount of disturbance of the water in the monitoring well during purging and sampling. Drawdown levels in the monitoring well and water quality indicator parameters (pH, temperature, electrical conductivity, redox potential and dissolved oxygen) are monitored during low-flow purging and sampling, with stabilisation indicating that purging is complete and sampling can begin. As the flow rate used for purging, in most cases, is the same or only slightly higher than the flow rate used for sampling, and because purging and sampling are conducted as one continuous operation in the field, the process is referred to as low-flow purging and sampling.

H3 Site Investigation Assessment Methodology

Statistical assessment

Statistical analysis of the results has been conducted in accordance with *Guidance on Comparing Soil Contamination Data with a Critical Concentration* (CIEH and CL:AIRE, 2008) as detailed in Appendix D.

Statistical analysis is utilised to establish whether the land is suitable for the proposed use under the land use planning system by attempting to answer a key question. For a site being developed the key question is: '*can we confidently say that the level of contamination on this land is low relative to some appropriate measure of risk?*' More specifically, this is expressed as '*Is there sufficient evidence that the true mean concentration of the contaminant (μ) is less than the critical concentration (C_c)?*', where the critical concentration could be the GAC or a site-specific assessment criterion (SSAC). The true mean (μ) is unknown and therefore a conservative estimate, termed the upper confidence limit (UCL), of this value is derived from the data. The UCL is then compared against the GAC.

In statistical terms the question above is handled through the use of a formal hypothesis – the null hypothesis and the alternate hypothesis. The statistical tests are structured to show (with a defined level of confidence, in this case 95%) which of the two hypotheses is most likely to be true, by determining whether the null hypothesis can be rejected.

For consideration under the planning regime, the null (H_0) and alternative (H_1) hypotheses are presented below.

Null and alternative hypotheses

Hypothesis	Equation	Description
Null (H_0)	$\mu \geq C_c$	The true mean concentration is equal to, or greater than, the critical concentration
Alternative (H_1)	$\mu < C_c$	The true mean concentration is less than the critical concentration

Therefore, if the null hypothesis is accepted for a certain contaminant it can be concluded that its concentration is high relative to the critical concentration, which in the case of this assessment is taken to be the GAC/SSAC and as such the whole site may be classed as being contaminated by a particular substance.

In addition, the statistical guidance provides an outlier test (Grubbs' test) that has been used within this assessment for the identification of 'outliers' or 'hotspots'. The 'outlier' test is conducted before undertaking statistical analysis (and 'outliers' may be removed from the dataset) but **only** where the conceptual model supports this.

The statistical tests applied to the dataset are selected based on whether the data is normally or non-normally distributed. The distribution of the dataset has been assessed using the Shapiro-Wilks normality test. Where the dataset has been found to be normally distributed the one sample t-test is undertaken. Where data has been found to be non-normally distributed Chebyshev's theorem is utilised.

Reuse of suitable materials

Note the following text relates to sites in England and Wales only.

The Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011) (CoP) was developed in cons**u**ltation with the Environment Agency and development industry to enable the re-use of materials under certain scenarios and subject to demonstrating that specific criteria are met. The current reuse scenarios covered by the CoP comprise

- reuse on the site of origin (with or without treatment)
- direct transfer of clean and natural soils between sites
- use in the development of land other than the site of origin following treatment at an authorised Hub site (including a fixed soil treatment facility).

The importation of made ground soils (irrespective of contamination status) or crushed demolition materials is not permitted currently under the CoP and requires either a standard rules environmental permit or a U1 waste exemption (see below).

In the context of excavated materials used on-sites undergoing development, four factors are considered to be of particular relevance in determining if the material is a waste or when it ceases to be waste:

- the aim of the Waste Framework Directive is not undermined, i.e. if the use of the material will create an unacceptable risk of pollution of the environment or harm to human health it is likely to be waste
- the material is certain to be used
- the material is suitable for use both chemically and geotechnically
- only the required quantity of material will be used.

The CoP requires the preparation of a materials management plan (MMP) that confirms the above factors will be met. This plan needs to be reviewed by a 'Qualified Person' (QP) who will then issue a declaration form to the EA. As the project progresses, data must be collated and on completion a verification report produced that shows the MMP was followed and describes any changes.

The MMP establishes whether specific materials are classified as waste and how excavated materials will be treated and/or reused in line with the CoP. The MMP is likely to form part of the site waste management plan.

APPENDIX H
EXPLORATORY HOLE RECORDS

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH1**

Contract Ref:	Start: **19.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **21.08.20**	**48.83**	**E:528231.8 N:193528.1**	**1** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.40	1	B				MADE GROUND: Brown slightly sandy gravelly firm consistency CLAY containing occasional roots and rootlets. Sand is fine to coarse. Gravel consists of subangular fine to coarse flint and occasional brick and concrete.	(1.20)	
0.40-0.80	2	B						
0.50	1	ES						
0.80-1.20	3	B						
1.00	2	ES					1.20	
1.20-1.65	1	SPT(c)	N=10			MADE GROUND: Brown and red very sandy slightly gravelly soft consistency CLAY. Sand is fine to coarse. Gravel consists of subangular fine to coarse flint and very occasional brick.	(1.30)	
1.50-2.00	4	D						
1.75	3	ES						
2.00-2.45	2	SPT(c)	N=9				2.50	
2.50-3.00	5	B				Brown slightly sandy slightly gravelly firm becoming stiff consistency CLAY. Sand is fine to medium. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION)	(9.20)	
3.00-3.45	3	SPT	N=11					
3.00-3.45	6	D						
3.50-4.00	7	D						
4.00-4.45	8	U	27 blows 100% recovery					
4.50-5.00	9	D						
5.00-5.45	4	SPT	N=13					
5.00-5.45	10	D						
6.00-6.50	11	D						
6.50-6.95	12	U	41 blows 100% recovery					
7.50-8.00	13	D						
8.00-8.45	5	SPT	N=19					
8.00-8.45	14	D						

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
19/08/20		7.40	3.15		7.40
20/08/20		29.70	3.15		29.69

Chiselling / Slow Progress

From	To	Duration (hh:mm)
14.10	14.30	00:33
31.20	31.50	01:20
36.30	36.80	02:00

General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. 50mm diameter standpipe installed to 5.00m depth on completion. Response zone 1.00m to 5.00m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH1**

Contract Ref:	Start: **19.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **21.08.20**	**48.83**	**E:528231.8 N:193528.1**	**2** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
9.00-9.50	15	D				Brown slightly sandy slightly gravelly firm becoming stiff consistency CLAY. Sand is fine to medium. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION) *(stratum copied from 2.50m from previous sheet)*		
9.50-9.95	16	U	50 blows 100% recovery					
10.50-11.00	17	D						
11.00-11.45	6	SPT	N=21					
11.00-11.45	18	D						
							11.70	
11.70-12.50	19	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION)		
12.50-12.95	20	U	63 blows 100% recovery				(2.40)	
13.50-14.00	21	D						
							14.10	
14.00-14.44	7	SPT	4,5/29,21 for 60mm			Grey CLAYSTONE. (LONDON CLAY FORMATION)	14.30	
14.00-14.45	22	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION)		
15.00-15.50	23	D						
15.50-15.95	24	U	71 blows 100% recovery					
16.50-17.00	25	D						
17.00-17.45	8	SPT	N=32					
17.00-17.45	26	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

4. On completion, borehole backfilled with bentonite seal to 1.00m, gravel filter to 5.00m and arisings to 36.85m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH1**

Contract Ref:	Start: **19.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **21.08.20**	**48.83**	**E:528231.8 N:193528.1**	**3** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
18.00-18.50	27	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 14.30m from previous sheet)*	(11.00)	
18.50-18.95	28	U	77 blows 100% recovery					
19.50-20.00	29	D						
20.00-20.45	9	SPT	N=32					
20.00-20.45	30	D						
21.00-21.50	31	D						
21.50-21.95	32	U	54 blows 100% recovery					
22.50-23.00	33	D						
23.00-23.45	10	SPT	N=33					
23.00-23.45	34	D						
24.00-24.50	35	D						
24.50-24.95	36	U	72 blows 100% recovery					
							25.30	
25.50-26.00	37	D				Grey and green sandy firm consistency CLAY. Sand is fine to coarse. (LONDON CLAY FORMATION)		
26.00-26.45	11	SPT	N=34					
26.00-26.45	38	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH1**

Contract Ref:	Start: **19.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **21.08.20**	**48.83**	**E:528231.8 N:193528.1**	**4** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
27.00-27.50	39	D				Grey and green sandy firm consistency CLAY. Sand is fine to coarse. (LONDON CLAY FORMATION) *(stratum copied from 25.30m from previous sheet)*	(4.40)	
27.50-27.95	40	U	93 blows 80% recovery					
28.50-29.00	41	D						
29.00-29.45	12	SPT	N=44					
29.00-29.45	42	D						
							29.70	
30.00-30.50	43	B				Blue and red mottled orange stiff consistency CLAY. (LAMBETH GROUP)		
30.50-30.95	44	U	99 blows 100% recovery					
31.50-32.00	45	U						
32.00-32.39	13	SPT	8,13/19,23,8 for 15mm					
32.00-32.45	46	D						
33.00-33.50	47	B					(6.90)	
33.50-33.95	48	U	105 blows 100% recovery					
34.50-35.00	49	D						
35.00-35.45	14	SPT	N=50					
35.00-35.45	50	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH1**

Contract Ref:	Start: **19.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **21.08.20**	**48.83**	**E:528231.8 N:193528.1**	**5** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
36.00-36.50	51	D				Blue and red mottled orange stiff consistency CLAY. (LAMBETH GROUP) *(stratum copied from 29.70m from previous sheet)*	36.60	
36.00-36.50	53	D						
36.20-36.50	52	U	150 blows 40% recovery					
36.70-36.76	15	SPT(c)	25/50 for 35mm			Recovered as white and grey weathered SILTSTONE. (LAMBETH GROUP)	36.85	
36.80-36.83	16	SPT(c)	25/50 for 15mm			Cable percussion borehole terminated at 36.85m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH2**

Contract Ref:	Start: **17.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **18.08.20**	**50.08**	**E:528254.7 N:193470.6**	**1** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.25	1	ES				MADE GROUND: Brown slightly sandy gravelly firm consistency CLAY containing occasional roots and rootlets. Sand is fine to coarse. Gravel consists of subangular fine to coarse flint and occasional brick and concrete.	(1.00)	
0.50-1.20	1	B						
0.75	2	ES				. . . From 0.80m becoming stiff consistency.	1.00	
1.20-1.65	1	SPT	N=6			Brown slightly sandy slightly gravelly firm to stiff consistency CLAY. Sand is fine to medium. Gravel consists of subangular fine to coarse flint. (LONDON CLAY FORMATION)	(1.00)	
1.20-1.65	2	D						
1.20	3	ES						
1.50-2.00	3	D					2.00	
2.00-2.45	2	SPT	N=5			Brown slightly gravelly stiff consistency CLAY. Gravel consists of very occasional angular to subangular flint. (LONDON CLAY FORMATION)		
2.00-2.45	4	D						
2.30-3.00	5	B						
3.00-3.45	6	U	10 blows 100% recovery					
3.50-4.00	7	D						
4.00-4.45	3	SPT	N=5				(4.00)	
4.00-4.45	8	D						
4.50-5.00	9	D						
5.00-5.45	10	U	52 blows 0% recovery					
5.10-5.90	11	B						
5.45-5.90	4	SPT(c)	N=17				6.00	
6.00-7.00	12	B				Brown occasionally blue stiff consistency CLAY. (LONDON CLAY FORMATION)		
7.00-7.45	13	U	30 blows 100% recovery					
8.00-8.50	14	D						
8.50-8.95	5	SPT	N=19					
8.50-8.95	15	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
17/08/20		5.20	3.12		4.94

Chiselling / Slow Progress		
From	To	Duration (hh:mm)
34.80	35.10	01:20
38.70	39.00	01:15

General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. 50mm diameter standpipe installed to 5.00m depth on completion. Response zone 1.00m to 5.00m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH2**

Contract Ref:	Start: **17.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **18.08.20**	**50.08**	**E:528254.7 N:193470.6**	**2** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
						Brown occasionally blue stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 6.00m from previous sheet)*	(6.20)	
9.50-10.00	16	D						
10.00-10.45	17	U	51 blows 100% recovery					
11.00-11.50	18	D						
11.50-11.95	6	SPT	N=32					
11.50-11.95	19	D					12.20	
12.20-13.00	20	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION)		
13.00-13.45	21	U	60 blows 100% recovery					
14.00-14.50	22	D						
14.50-14.95	7	SPT	N=21					
14.50-14.95	23	D						
15.50-16.00	24	D						
16.00-16.45	25	U	62 blows 100% recovery					
17.00-17.50	26	D						
17.50-17.95	8	SPT	N=23					
17.50-17.95	27	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

4. On completion, borehole backfilled with bentonite seal to 1.00m, gravel filter to 5.00m and arisings to 36.85m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	AGS

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH2**

Contract Ref:	Start: **17.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **18.08.20**	**50.08**	**E:528254.7 N:193470.6**	**3** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
						Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 12.20m from previous sheet)*		
18.50-19.00	28	D						
19.00-19.45	29	U	60 blows 100% recovery					
20.00-20.50	30	D						
20.50-20.95	9	SPT	N=22					
20.50-20.95	31	D					(17.30)	
21.50-22.00	32	D						
22.00-22.45	33	U	68 blows 100% recovery					
23.00-23.50	34	D						
23.50-23.95	10	SPT	N=22					
23.50-23.95	35	D						
24.50-25.00	36	D						
25.00-25.45	37	U	73 blows 100% recovery					
26.00-26.50	38	D						
26.50-26.95	11	SPT	N=34					
26.50-26.95	39	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH2**

Contract Ref:	Start: **17.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **18.08.20**	**50.08**	**E:528254.7 N:193470.6**	**4** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
						Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 12.20m from previous sheet)*		
27.50-28.00	40	D						
28.00-28.45	41	U	85 blows 90% recovery					
29.00-29.50	42	D						
							29.50	
29.50-29.85	12	SPT	6,6/7,18,21 for 50mm			Green and grey sandy stiff consistency CLAY. Sand is fine to medium. (LAMBETH GROUP)		
29.50-29.95	43	D						
30.50-31.00	44	D					(2.50)	
31.00-31.45	45	U	122 blows 30% recovery					
31.45-31.90	46	D						
							32.00	
32.10-33.00	47	B				Blue and red and orange stiff consistency CLAY. . . . Occasional siltstone bands.		
33.00-33.45	48	U	116 blows 85% recovery					
34.00-34.50	49	D						
34.50-34.95	13	SPT	N=38					
34.50-34.95	50	D						
35.50-36.00	51	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH2**

Contract Ref:	Start: **17.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **18.08.20**	**50.08**	**E:528254.7 N:193470.6**	**5** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
36.00-36.45	52	U	138 blows 80% recovery			Blue and red and orange stiff consistency CLAY. *(stratum copied from 32.00m from previous sheet)*	(8.36)	
37.00-37.50	53	D						
37.50-37.95	14	SPT	N=51					
37.50-37.95	54	D						
38.50-39.00	55	B						
39.00-39.45	15	SPT	N=51					
39.00-39.45	56	D						
39.50-40.00	57	D						
40.00-40.36	16	SPT	8,12/19,15,16 for 60mm					
40.00-40.36	58	D					40.36	
						Cable percussion borehole terminated at 40.36m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH3**

Contract Ref:	Start: **13.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **14.08.20**	**50.85**	**E:528260.0 N:193425.2**	**1** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				MADE GROUND: Brown sandy gravelly CLAY. Sand is fine to coarse. Gravel consists of subangular fine to coarse flint and occasional brick and concrete fragments. Contains occasional roots and frequent rootlets.	(0.60)	
0.40	2	ES					0.60	
0.60-1.00	1	B				(TOPSOIL)		
0.75	3	ES				MADE GROUND: Grey and brown SAND and GRAVEL. Sand is fine to coarse. Gravel consists of subangular fine to coarse concrete rubble.	1.00	
1.15	4	ES				. . . At 0.60m concrete obstruction.	1.30	
1.20-1.65	1	SPT	N=5			MADE GROUND: Brown sandy slightly gravelly soft to firm consistency CLAY. Sand is fine to medium. Gravel consists of occasional conrete fragments.		
1.20-1.65	2	D						
1.50-2.00	3	B						
2.00-2.45	4	U	33 blows 100% recovery			Brown silty firm consistency CLAY. (LONDON CLAY FORMATION)		
2.70-3.00	5	D						
3.00-3.45	2	SPT	N=4					
3.00-3.45	6	D						
3.50-4.00	7	D						
4.00-4.45	8	U	17 blows 100% recovery					
4.50-5.00	9	D						
5.00-5.45	3	SPT	N=18					
5.00-5.45	10	D						
6.00-6.50	11	D				. . . Between 6.00m and 8.00m becoming slightly sandy.		
6.50-6.95	12	U	42 blows 100% recovery				(10.50)	
7.50-8.00	13	D						
8.00-8.45	4	SPT	N=20					
8.00-8.45	14	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)
12.20	12.40	00:33
20.20	20.40	00:33

General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. 50mm diameter standpipe installed to 5.00m depth on completion. Response zone 1.00m to 5.00m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH3**

Contract Ref:	Start: **13.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **14.08.20**	**50.85**	**E:528260.0 N:193425.2**	**2** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
9.00-9.50	15	D				Brown silty firm consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 1.30m from previous sheet)*		
9.50-9.95	16	U	38 blows 100% recovery					
10.50-11.00	17	D						
11.00-11.45	5	SPT	N=22					
11.00-11.45	18	D						
							11.80	
12.00-12.50	19	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION)		
12.50-12.95	20	U	53 blows 100% recovery					
13.50-14.00	21	D						
14.00-14.45	6	SPT	N=26					
14.00-14.45	22	D						
15.00-15.50	23	D						
15.50-15.95	24	U	55 blows 100% recovery					
16.50-17.00	25	D						
17.00-17.45	7	SPT	N=32					
17.00-17.45	26	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

4. On completion, borehole backfilled with bentonite seal to 1.00m, gravel filter to 5.00m and arisings to 40.00m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	AGS

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH3**

Contract Ref:	Start: **13.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **14.08.20**	**50.85**	**E:528260.0 N:193425.2**	**3** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
18.00-18.50	27	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 11.80m from previous sheet)*		
18.50-18.95	28	U	70 blows 100% recovery					
19.50-20.00	29	D						
20.00-20.30	8	SPT	5,7/22,28 for 70mm					
20.00-20.45	30	D						
21.00-21.50	31	D						
21.50-21.95	32	U	74 blows 100% recovery				(20.20)	
22.50-23.00	33	D						
23.00-23.45	9	SPT	N=34					
23.00-23.45	34	D						
24.00-24.50	35	D						
24.50-24.95	36	U	77 blows 100% recovery					
25.50-26.00	37	D						
26.00-26.45	10	SPT	N=37					
26.00-26.45	38	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH3**

Contract Ref:	Start: **13.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **14.08.20**	**50.85**	**E:528260.0 N:193425.2**	**4** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
27.00-27.50	39	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 11.80m from previous sheet)*		
27.50-27.95	40	U	81 blows 100% recovery					
28.50-29.00	41	D						
29.00-29.45	11	SPT	N=47					
29.00-29.45	42	D						
30.10-30.40	43	D						
30.50-30.95	44	U	91 blows 75% recovery					
31.50-32.00	45	D					32.00	
32.00-32.45	12	SPT	N=49			Occasionally blue grey and red silty slightly sandy very stiff consistency CLAY. Sand is fine to medium. (LAMBETH GROUP)		
32.00-32.45	46	D						
32.60-33.50	47	B						
33.50-33.95	48	U	108 blows 90% recovery					
34.50-35.00	49	D						
35.00-35.44	13	SPT	7,7/9,12,15,14 for 65mm					
35.00-35.45	50	D					(8.00)	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH3**

Contract Ref:	Start: **13.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **14.08.20**	**50.85**	**E:528260.0 N:193425.2**	**5** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
36.00-36.50	51	D				Occasionally blue grey and red silty slightly sandy very stiff consistency CLAY. Sand is fine to medium. (LAMBETH GROUP) *(stratum copied from 32.00m from previous sheet)*		
36.50-36.95	52	U	136 blows 85% recovery					
37.50-38.00	53	D						
38.00-38.34	14	SPT	14,11/16,18,16 for 60mm					
38.00-38.45	54	D						
39.00-40.00	55	B					40.00	
40.00-40.31	15	SPT	16,9/18,18,14 for 50mm			Cable percussion borehole terminated at 40.00m depth.		
40.00-40.32	56	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH4**

Contract Ref:	Start: **02.09.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **04.09.20**	**52.47**	**E:528151.6 N:193362.3**	**1** of **4**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.50	1	B				MADE GROUND: Brown sandy gravelly soft consistency CLAY containing roots and rootlets. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint and subangular fine to coarse brick. conrete, asphalt and occasional clinker.	(0.60)	
0.25	1	ES					0.60	
0.60-1.20	2	B				MADE GROUND: Brown sandy gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint and subangular fine to coarse brick and concrete.	(1.10)	
0.75	2	ES					1.70	
1.20-1.65	1	SPT	N=4			Brown slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION - WEATHERED) . . . Gravel content decreasing with depth.		
1.20-1.60	3	B						
1.50	3	ES						
1.60-2.00	4	B						
2.00-2.45	2	SPT	N=8					
2.00-2.45	5	D						
2.50-3.00	6	B						
3.00-3.45	3	SPT	N=11					
3.00-3.45	7	D						
3.50-4.00	8	B						
4.00-4.45	4	SPT	N=18				(4.80)	
4.00-4.45	9	D						
4.50-5.00	10	B						
5.00-5.45	5	SPT	N=20					
5.00-5.45	11	D						
6.00-6.50	12	B						
							6.50	
6.50-6.60	13	U	120% recovery			Brown and grey stiff consistency CLAY. (LONDON CLAY FORMATION)		
6.50-7.00	14	B					(1.50)	
7.50-8.00	15	B						
							8.00	
8.00-8.45	16	U	100% recovery			Grey stiff consistency CLAY. (LONDON CLAY FORMATION) . . . Containing occasional claystone bands.		
8.45-8.60	17	D						

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress

From	To	Duration (hh:mm)
6.50	6.60	00:50
32.10	32.10	02:00

General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. 50mm diameter standpipe installed to 5.00m depth on completion. Response zone 1.00m to

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH4**

Contract Ref:	Start: **02.09.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **04.09.20**	**52.47**	**E:528151.6 N:193362.3**	**2** of **4**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
9.00-9.50	18	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 8.00m from previous sheet)*		
9.50-9.95	6	SPT	N=25					
9.50-9.95	19	D						
10.50-11.00	20	B						
11.00-11.45	21	U	100% recovery					
11.45-11.60	22	D						
12.00-12.50	23	B						
12.50-12.95	7	SPT	N=27					
12.50-12.95	24	D						
13.50-14.00	25	B						
14.00-14.45	26	U	100% recovery					
14.45-14.60	27	D						
15.00-15.50	28	B						
15.50-15.95	8	SPT	N=42					
15.50-15.95	29	D						
16.50-17.00	30	B						
17.00-17.45	31	U	100% recovery				(18.30)	
17.45-17.60	32	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

5.00m depth.
5. On completion, borehole backfilled with bentonite seal to 1.00m, gravel filter to 5.00m and arisings to 32.10m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH4**

Contract Ref:	Start: **02.09.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **04.09.20**	**52.47**	**E:528151.6 N:193362.3**	**3** of **4**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
18.00-18.50	33	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 8.00m from previous sheet)*		
18.50-18.95	9	SPT	N=35					
19.50-20.00	34	B						
20.00-20.45	35	U	100% recovery					
20.45-20.60	36	D						
21.00-21.50	37	B						
21.50-21.95	10	SPT	N=50					
21.50-21.95	38	D						
22.50-23.00	39	B						
23.00-23.45	40	U	100% recovery					
23.45-23.60	41	D						
24.00-24.45	42	B						
24.50-24.94	11	SPT	5,10/12,12,14,12 for 65mm					
24.50-24.95	43	D						
25.50-26.00	44	B						
26.00-26.45	45	U	100% recovery				26.30	
26.45-26.60	46	D				Grey clayey fine to coarse SAND. (LAMBETH GROUP)		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	Opecprime Development Limited	BH4

Contract Ref:	Start: 02.09.20	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: 04.09.20	52.47	E:528151.6 N:193362.3	4 of 4

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
27.00-27.50	47	B				Grey clayey fine to coarse SAND. (LAMBETH GROUP) *(stratum copied from 26.30m from previous sheet)*		
27.50-27.95	12	SPT	N=54					
27.50-27.95	48	D						
28.50-29.00	49	B						
29.00-29.45	50	U	100% recovery				(5.30)	
29.45-29.60	51	D						
30.00-30.50	52	B						
30.50-30.93	13	SPT	8,11/12,14,14,10 for 55mm					
30.50-30.95	53	D						
31.50-32.00	54	B					31.60	
						Grey and green slightly gravelly clayey SAND. Sand is fine to coarse. Gravel consists of fine to coarse subrounded flint and chalk. (LAMBETH GROUP)	(0.50)	
32.10	55	C					32.10	
						Cable percussion borehole terminated at 32.10m depth due to refusal on SILTSTONE band.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: 1:50

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	Dando 2000	Andy Norris	AMarcelo	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH5**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **27.08.20**	**49.91**	**E:528158.0 N:193467.0**	**1** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.40	1	B				Brown sandy gravelly soft consistency CLAY / TOPSOIL containing frequent roots and rootlets. Sand is fine to medium. Gravel consists of subangular to subrounded flint and occasional subangular to angular brick. (TOPSOIL)	0.40	
0.20	1	ES						
0.40-0.80	2	B					0.80	
0.60	2	ES						
0.80-1.20	1	B				MADE GROUND: Brown clayey SAND and GRAVEL. Sand is fine to coarse. Gravel consists of subangular fine to coarse flint and frequent angular to subangular fine to coarse brick and concrete.		
0.80-1.20	3	B						
1.20-1.65	1	SPT(c)	N=6			Brown slightly sandy slightly gravelly firm consistency CLAY. Sand is fine to medium. Gravel consists of fine to coarse subangular flint. (LONDON CLAY FORMATION - WEATHERED)	(2.00)	
1.50-2.00	4	D						
2.00-2.45	2	SPT(c)	N=4					
2.20-2.80	5	B					2.80	
2.80-3.00	6	D				Brown occasionally blue slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION) . . . Gravel content decreasing with depth.		
3.00-3.45	3	SPT	N=14					
3.00-3.45	7	D						
3.50-4.00	8	D						
4.00-4.45	9	U	24 blows 100% recovery					
4.50-5.00	10	D						
5.00-5.45	4	SPT	N=16					
5.00-5.45	11	D						
6.00-6.50	12	D						
6.50-6.95	13	U	41 blows 100% recovery				(8.50)	
7.50-8.00	14	D						
8.00-8.45	5	SPT	N=19					
8.00-8.45	15	D						
8.50-9.00	16	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
26/08/20		30.50	3.15		30.48

Chiselling / Slow Progress		
From	To	Duration (hh:mm)
38.10	38.40	02:00

General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. 50mm diameter standpipe installed to 5.00m depth on completion. Response zone 1.00m to 5.00m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH5**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **27.08.20**	**49.91**	**E:528158.0 N:193467.0**	**2** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
9.00-9.45	17	U	51 blows 100% recovery			Brown occasionally blue slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION) *(stratum copied from 2.80m from previous sheet)*		
10.50-11.00	18	D						
11.00-11.45	6	SPT	N=25					
11.00-11.45	19	D					11.30	
11.50-12.50	20	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) . . . Containing occasional claystone bands.		
12.50-12.95	21	U	61 blows 100% recovery					
13.50-14.00	22	D						
14.00-14.45	7	SPT	N=28					
14.00-14.45	23	D						
15.00-15.50	24	D						
15.50-15.95	25	U	69 blows 100% recovery					
16.50-17.00	26	D						
17.00-17.45	8	SPT	N=32					
17.00-17.45	27	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

4. On completion, borehole backfilled with bentonite seal to 1.00m, gravel filter to 5.00m and arisings to 38.40m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH5**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **27.08.20**	**49.91**	**E:528158.0 N:193467.0**	**3** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
18.00-18.50	28	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 11.30m from previous sheet)*		
18.50-18.95	29	U	87 blows 100% recovery					
19.50-20.00	30	D						
20.00-20.45	9	SPT	N=28					
20.00-20.45	31	D					(18.90)	
21.00-21.50	32	D						
21.50-21.95	33	U	78 blows 100% recovery					
22.50-23.00	34	D						
23.00-23.45	10	SPT	N=40					
23.00-23.45	35	D						
24.00-24.50	36	D						
24.50-24.95	37	U	86 blows 100% recovery					
25.50-26.00	38	D						
26.00-26.45	11	SPT	N=41					
26.00-26.45	39	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH5**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **27.08.20**	**49.91**	**E:528158.0 N:193467.0**	**4** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
27.00-27.50	40	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 11.30m from previous sheet)*		
27.50-27.95	41	U	105 blows 100% recovery					
28.50-29.00	42	D						
29.00-29.45	12	SPT	N=43					
29.00-29.45	43	D						
							30.20	
30.20-30.50	44	B				Grey to green sandy stiff consistency CLAY. Sand is fine to coarse. (LAMBETH GROUP)		
30.50-30.95	45	U	94 blows 100% recovery					
31.00-32.00	46	B						
32.00-32.45	13	SPT	N=50					
32.00-32.45	47	D						
32.50-33.00	48	D						
33.00-33.40	49	U	140 blows 90% recovery					
34.00-34.50	50	D					(7.90)	
34.50-34.95	14	SPT	N=50					
34.50-34.95	51	D						
35.50-36.00	52	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH5**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **27.08.20**	**49.91**	**E:528158.0 N:193467.0**	**5** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
36.00-36.45	15	SPT	N=50			Grey to green sandy stiff consistency CLAY. Sand is fine to coarse. (LAMBETH GROUP) *(stratum copied from 30.20m from previous sheet)*		
36.00-36.45	53	D						
37.00-37.50	54	D						
37.50-37.79	16	SPT	14,11/21,24,5 for 10mm					
37.50-37.95	55	D						
38.00-38.40	56	D					38.10	
						Recovered as white and grey weathered SILTSTONE. (LAMBETH GROUP)	38.40	
38.40-38.47	17	SPT(c)	25/100 for 20mm			Cable percussion borehole terminated at 38.40m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH6**

Contract Ref:	Start: **21.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **25.08.20**	**51.43**	**E:528131.0 N:193518.8**	**1** of **4**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.40	1	B				Brown TOPSOIL.	0.20	
0.10	1	ES				MADE GROUND: Brown sandy gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of subangular fine to coarse flint and occasional brick.	(0.80)	
0.40-0.80	2	B						
0.50	2	ES						
0.80-1.20	3	B					1.00	
1.20-1.65	1	SPT(c)	N=13			Brown slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION)		
1.50-2.00	4	D				. . . Gravel content decreasing with depth.		
2.00-2.45	2	SPT	N=15					
2.00-2.45	5	D						
2.50-3.00	6	D						
3.00-3.45	7	U	67 blows 100% recovery					
3.50-4.00	8	D						
4.00-4.45	3	SPT	N=35					
4.00-4.45	9	D						
4.50-5.00	10	D						
5.00-5.45	11	U	55 blows 100% recovery				(9.20)	
6.00-6.50	12	D						
6.50-6.95	4	SPT	N=31					
6.50-6.95	13	D						
7.50-8.00	14	D						
8.00-8.45	15	U	71 blows 100% recovery					
8.50-9.00	16	D						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)
30.80	31.10	01:50
31.20	31.20	01:00

General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. 50mm diameter standpipe installed to 5.00m depth on completion. Response zone 1.00m to

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH6**

Contract Ref:	Start: **21.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **25.08.20**	**51.43**	**E:528131.0 N:193518.8**	**2** of **4**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
9.00-9.45	17	D				Brown slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION) *(stratum copied from 1.00m from previous sheet)*		
9.50-9.95	5	SPT	N=30					
							10.20	
10.20-11.00	18	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION)		
11.00-11.45	19	U	65 blows 100% recovery					
12.00-12.50	20	D						
12.50-12.95	6	SPT	N=18					
12.50-12.95	21	D						
13.50-14.00	22	D						
14.00-14.45	23	U	72 blows 100% recovery					
15.00-15.50	24	D						
15.50-15.95	7	SPT	N=24					
15.50-15.95	25	D						
16.50-17.00	26	D						
17.00-17.45	27	U	89 blows 100% recovery					

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

5.00m depth.
5. On completion, borehole backfilled with bentonite seal to 1.00m, gravel filter to 5.00m and arisings to 31.24m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH6**

Contract Ref:	Start: **21.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **25.08.20**	**51.43**	**E:528131.0 N:193518.8**	**3** of **4**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
18.00-18.50	28	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 10.20m from previous sheet)*		
18.50-18.95	8	SPT	N=26					
18.50-18.95	29	D						
19.50-20.00	30	D						
20.00-20.45	31	U	90 blows 100% recovery				(19.80)	
21.00-21.50	32	D						
21.50-21.95	9	SPT	N=32					
21.50-21.95	33	D						
22.50-23.00	34	D						
23.00-23.45	35	U	80 blows 100% recovery					
24.00-24.50	36	D						
24.50-24.95	10	SPT	N=33					
24.50-24.95	39	D						
25.50-26.00	40	D						
26.00-26.45	41	U	74 blows 100% recovery					

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH6**

Contract Ref:	Start: **21.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **25.08.20**	**51.43**	**E:528131.0 N:193518.8**	**4** of **4**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
27.00-27.50	42	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 10.20m from previous sheet)*		
27.50-27.95	11	SPT	N=37					
27.50-27.95	43	D						
28.50-29.00	44	D						
29.00-29.45	45	U	89 blows					
							30.00	
30.00-30.50	46	B	100% recovery			Grey and green sandy stiff consistency CLAY. Sand is fine to coarse. (LAMBETH GROUP)	(0.70)	
30.50-30.89	12	SPT	6,8/8,19,16,7 for 10mm				30.70	
30.50-30.88	47	D				Recovered as white and grey weathered SILTSTONE. (LAMBETH GROUP)	(0.54)	
30.80-31.10	48	B						
31.10-31.15	13	SPT	25/50 for 20mm				31.24	
31.10-31.14	49	D				Cable percussion borehole terminated at 31.24m depth.		
31.20-31.24	14	SPT(c)	25/100 for 20mm					

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH7**

Contract Ref:	Start: **02.09.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **04.09.20**	**57.43**	**E:528024.6 N:193533.4**	**1** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: ASPHALT.	0.10	
						MADE GROUND: CONCRETE.	0.30	
0.30-1.20	1	B				MADE GROUND - FILL: Grey sandy GRAVEL. Sand is fine to coarse. Gravel consists of subangular fine to coarse concrete and brick.	(1.00)	
1.20-1.65	1	SPT(c)	N=11				1.30	
1.30-2.00	2	B				MADE GROUND: Brown and grey very sandy very gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of subangular fine to coarse brick and concrete with occasional subrounded fine to coarse flint.	(1.00)	
1.50	1	ES						
2.00-2.45	2	SPT(c)	N=7				2.30	
2.00	2	ES						
2.40-3.00	3	B				Brown slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION) . . . Gravel content decreasing with depth.		
3.00-3.45	4	U	31 blows 100% recovery					
3.50-4.00	5	D						
4.00-4.45	3	SPT	N=22					
4.00-4.45	6	D						
4.50-5.00	7	D						
5.00-5.45	8	U	52 blows 100% recovery					
6.00-6.50	9	D						
6.50-6.95	4	SPT	N=25					
6.50-6.95	10	D						
7.50-8.00	11	D					(10.90)	
8.00-8.45	12	U	49 blows 100% recovery					

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
23/09/20		24.60	3.15		

Chiselling / Slow Progress

From	To	Duration (hh:mm)
23.90	24.30	01:20
27.80	28.10	01:10

General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. 50mm diameter standpipe installed to 5.00m depth on completion. Response zone 1.00m to

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH7**

Contract Ref:	Start: **02.09.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **04.09.20**	**57.43**	**E:528024.6 N:193533.4**	**2** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
9.00-9.50	13	D				Brown slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION) *(stratum copied from 2.30m from previous sheet)*		
9.50-9.95	5	SPT	N=22					
9.50-9.95	14	D						
10.50-11.00	15	D						
11.00-11.45	16	U	69 blows 100% recovery					
12.00-12.50	17	D						
12.50-12.95	6	SPT	N=27					
12.50-12.95	18	D					13.20	
13.20-14.00	19	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) . . . Containing occasional claystone bands.		
14.00-14.45	20	U	78 blows 100% recovery					
15.00-15.50	21	D						
15.50-15.95	7	SPT	N=29					
15.50-15.95	22	D						
16.50-17.00	23	D						
17.00-17.45	24	U	80 blows 100% recovery					

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

5.00m depth.
5. On completion, borehole backfilled with bentonite seal to 1.00m, gravel filter to 5.00m and arisings to 40.40m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH7**

Contract Ref:	Start: **02.09.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **04.09.20**	**57.43**	**E:528024.6 N:193533.4**	**3** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
18.00-18.50	25	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 13.20m from previous sheet)*		
18.50-18.95	8	SPT	N=31					
18.50-18.95	26	D						
19.50-20.00	27	D						
20.00-20.45	28	U	83 blows 100% recovery					
21.00-21.50	29	D						
21.50-21.95	9	SPT	N=38					
21.50-21.95	30	D						
22.50-23.00	31	D						
23.00-23.45	32	U	88 blows 100% recovery					
24.00-24.50	33	D						
24.50-24.95	10	SPT	N=40					
24.50-24.95	34	D						
25.50-26.00	35	D						
26.00-26.45	36	U	88 blows 100% recovery				(27.20)	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH7**

Contract Ref:	Start: **02.09.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **04.09.20**	**57.43**	**E:528024.6 N:193533.4**	**4** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
27.00-27.50	37	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 13.20m from previous sheet)*		
27.50-27.72	11	SPT	18,7/29,21 for 50mm					
27.50-27.95	38	D						
28.50-29.00	39	D						
29.00-29.45	40	U	100 blows 90% recovery					
30.00-30.50	41	D						
30.50-30.95	12	SPT	N=42					
30.50-30.95	42	D						
31.50-32.00	43	D						
32.00-32.45	44	U	96 blows 100% recovery					
33.00-33.50	45	D						
33.50-33.95	13	SPT	N=46					
33.50-33.95	46	D						
34.50-35.00	47	D						
35.00-35.45	48	U	123 blows 90% recovery					

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH7**

Contract Ref:	Start: **02.09.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **04.09.20**	**57.43**	**E:528024.6 N:193533.4**	**5** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
36.00-36.50	49	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 13.20m from previous sheet)*		
36.50-36.93	14	SPT	5,8/12,14,15,9 for 55mm					
36.50-36.95	50	D						
37.50-38.00	51	D						
38.00-38.45	52	U	141 blows 90% recovery					
39.50-40.00	53	D						
40.00-40.40	15	SPT	6,10/14,15,15,6 for 20mm					
40.00-40.40	54	D					40.40	
						Cable percussion borehole terminated at 40.40m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH8**

Contract Ref:	Start: **27.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **01.09.20**	**60.80**	**E:528047.6 N:193625.2**	**1** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: ASPHALT.	0.07	
0.25	1	ES				MADE GROUND - SUB BASE: Grey to brown SAND and GRAVEL. Sand is fine to coarse. Gravel consists of subangular fine to coarse conrete and brick and occasional asphalt fragments.	0.40	
0.30-0.90	1	B					(0.50)	
0.65	2	ES				MADE GROUND - BRICK RUBBLE: Brown to red SAND and GRAVEL. Sand is fine to coarse. Gravel consists of frequent subangular fine to cobble brick and subangular fine to coarse concrete.	0.90	
0.90-1.20	2	D					1.20	
1.10	3	ES				MADE GROUND: Brown sandy gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of subangular fine to coarse flint and occasional brick fragments.		
1.20-1.65	1	SPT(c)	N=23					
1.70-2.00	3	D				Brown slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of fine to coarse subrounded filnt. (LONDON CLAY FORMATION)		
2.00-2.45	2	SPT(c)	N=24			. . . Gravel content decreasing with depth.		
2.00-2.45	4	D						
2.00-3.00	5	B						
3.00-3.45	6	U	32 blows 100% recovery					
3.50-4.00	7	D						
4.00-4.45	3	SPT	N=21					
4.00-4.45	8	D						
4.50-5.00	9	D						
5.00-5.45	10	U	42 blows 100% recovery					
6.00-6.50	11	D						
6.50-6.95	4	SPT	N=24				(11.00)	
6.50-6.95	12	D						
7.50-8.00	13	D						
8.00-8.45	14	U	63 blows 100% recovery					

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)
13.60	13.80	00:50
16.20	16.50	01:10
16.70	17.00	01:15
24.80	25.00	00:50

General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. 50mm diameter standpipe installed to 5.00m depth on completion. Response zone 1.00m to

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH8**

Contract Ref:	Start: **27.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **01.09.20**	**60.80**	**E:528047.6 N:193625.2**	**2** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
9.00-9.50	15	D				Brown slightly gravelly firm becoming stiff consistency CLAY. Gravel consists of fine to coarse subrounded filnt. (LONDON CLAY FORMATION) *(stratum copied from 1.20m from previous sheet)*		
9.50-9.95	5	SPT	N=24					
9.50-9.95	16	D						
10.50-11.00	17	D						
11.00-11.45	18	U	85 blows 100% recovery					
							12.20	
12.20-12.50	19	B				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) . . . Contains occasional claystone bands.		
12.50-12.95	6	SPT	N=17					
12.50-12.95	20	D						
13.50-14.00	21	D						
14.00-14.45	22	U	72 blows 100% recovery					
15.00-15.50	23	D						
15.50-15.95	7	SPT	N=22					
15.50-15.95	24	D						
16.50-17.00	25	D						
17.10-17.55	26	U	106 blows 100% recovery					

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

5.00m depth.
5. On completion, borehole backfilled with bentonite seal to 1.00m, gravel filter to 5.00m and arisings to 40.44m.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH8**

Contract Ref:	Start: **27.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **01.09.20**	**60.80**	**E:528047.6 N:193625.2**	**3** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
18.00-18.50	27	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 12.20m from previous sheet)*		
18.50-18.95	8	SPT	N=32					
18.50-18.95	28	D						
19.50-20.00	29	D						
20.00-20.45	30	U	90 blows 100% recovery					
21.00-21.50	31	D						
21.50-21.95	9	SPT	N=33					
21.50-21.95	32	D						
22.50-23.00	33	D						
23.00-23.45	34	U	75 blows 100% recovery					
24.00-24.50	35	D						
24.50-24.95	10	SPT	5,7/17,14,10,9 for 70mm					
24.50-24.95	36	D						
25.50-26.00	37	D						
26.00-26.45	38	U	86 blows 100% recovery				(28.24)	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH8**

Contract Ref:	Start: **27.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **01.09.20**	**60.80**	**E:528047.6 N:193625.2**	**4** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
27.00-27.50	39	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 12.20m from previous sheet)*		
27.50-27.95	11	SPT	N=38					
27.50-27.95	40	D						
28.50-29.00	41	D						
29.00-29.45	42	U	107 blows 100% recovery					
30.00-30.50	43	D						
30.50-30.95	12	SPT	N=42					
30.50-30.95	44	D						
31.50-32.00	45	D						
32.00-32.45	46	U	111 blows 100% recovery					
33.00-33.50	47	D						
33.50-33.95	13	SPT	N=44					
33.50-33.95	48	D						
34.50-35.00	49	D						
35.00-35.45	50	U	98 blows 100% recovery					

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

BOREHOLE LOG

Contract:	Client:	Borehole:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**BH8**

Contract Ref:	Start: **27.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **01.09.20**	**60.80**	**E:528047.6 N:193625.2**	**5** of **5**

Samples and In-situ Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
36.00-36.50	51	D				Grey stiff consistency CLAY. (LONDON CLAY FORMATION) *(stratum copied from 12.20m from previous sheet)*		
36.50-36.95	14	SPT	N=47					
36.50-36.95	52	D						
37.50-38.00	53	D						
38.00-38.45	54	U	104 blows 100% recovery					
39.00-40.00	55	B						
40.00-40.45	15	SPT	8,8/10,11,14,15 for 70mm					
40.00-40.44	56	D					40.44	
						Cable percussion borehole terminated at 40.44m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable percussion	**Dando 2000**	**Andy Norris**	**AMarcelo**	

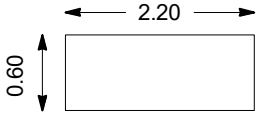
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP1**

Contract Ref:	Start: **24.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **24.08.20**	**49.50**	**E:528264.6 N:193526.6**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Brown soft gravelly sandy soft consistency CLAY containing roots and rootlets. Sand is fine to medium. Gravel consists of subangular fine to coarse flint. (TOPSOIL)	0.25	
0.50	2	ES				MADE GROUND: Brown sandy slightly gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of fine to coarse subrounded brick, flint, concrete and glass.	(0.45) 0.70	
1.00	1	B				Brown slightly sandy slightly gravelly stiff consistency CLAY. Sand is fine to medium. Gravel consists of fine to coarse rounded flint. (LONDON CLAY FORMATION)		
1.75	3	ES				. . . Between 1.50m and 2.50m high organic matter content noted. . . . Between 1.50m and 2.50m organic odour noted.	(2.30)	
2.20	2	B					3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

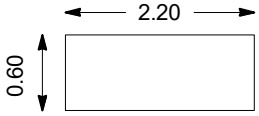
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP2**

Contract Ref:	Start: **24.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **24.08.20**	**49.40**	**E:528278.5 N:193459.3**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Brown soft gravelly sandy soft consistency CLAY containing roots and rootlets. Sand is fine to medium. Gravel consists of subangular fine to coarse flint. (TOPSOIL)	0.25	
0.70	2	ES				MADE GROUND: Brown sandy gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of fine to coarse subangular flint, brick and concrete. Contains occasional roots and rootlets. Clinker and metal.	(0.85)	
							1.10	
2.00	1	B				Brown slightly gravelly stiff consistency CLAY. Gravel consists of occasional fine to coarse rounded flint. (LONDON CLAY FORMATION)	(1.90)	
							3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
3. No groundwater encountered.
5. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

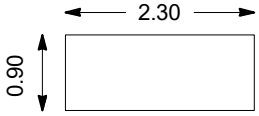
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP3**

Contract Ref:	Start: **24.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **24.08.20**	**50.09**	**E:528282.7 N:193405.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY containing frequent roots and rootlets. Sand is fine to coarse. Gravel consists of fine to coarse subangular to subrounded flint with occasional brick and concrete. (TOPSOIL)	0.25	
0.50	2	ES				MADE GROUND: Brown sandy very gravelly firm consistency CLAY. Sand is fine to medium. Gravel consists of subangular to subrounded flint and frequent brick and concrete fragments, occasional clinker and metal.	(0.80)	
0.75	3	ES					1.05	
						Trial pit terminated at 1.05m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

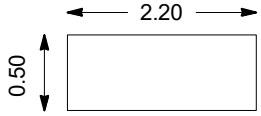
Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
North London Busiess Park - Phase 1		**Opecprime Development Limited**		**TP4**
Contract Ref:	Start: **24.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **24.08.20**	**52.62**	**E:528259.9 N:193386.9**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Brown sandy gravelly soft consistency CLAY containing frequent roots and rootlets. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint. (TOPSOIL)	0.20	
0.35	2	ES				MADE GROUND: Brown gravelly firm consistency CLAY. Gravel consists of fine to coarse subrounded flint, brick and concrete.	(0.35) 0.55	
0.80	3	ES				MADE GROUND: Black to dark brown slightly sandy gravelly firm consistency CLAY. Sand is fine to medium. Gravel consists of fine to coarse brick and occaisonal asphalt fragments. . . . At 0.80m asphalt odour noted.	(0.65) 1.20	
						Brown firm consistency CLAY. (LONDON CLAY FORMATION)	1.35	
						Trial pit terminated at 1.35m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
3. No groundwater encountered.
5. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

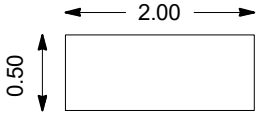
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP5**

Contract Ref:	Start: **24.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **24.08.20**	**50.23**	**E:528212.2 N:193425.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.15	1	ES				Brown soft gravelly sandy soft consistency CLAY containing roots and rootlets. Sand is fine to medium. Gravel consists of subangular fine to coarse flint. (TOPSOIL)	(0.30) 0.30	
0.60	2	ES				MADE GROUND: Brown sandy gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of fine to coarse subangular flint and frequent brick, conrete, metal, glass and occasional plastic.	(1.20) 1.50	
1.75	3	ES				MADE GROUND: Brown sandy gravelly stiff consistency CLAY. Sand is fine to medium. Gravel consists of fine to coarse subangular brick.	(0.50) 2.00	
2.50	1	B				Brown and grey sandy stiff consistency CLAY. Sand is fine to medium. Slightly gravelly fine to coarse rounded flint. (LONDON CLAY FORMATION)	(1.00) 3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

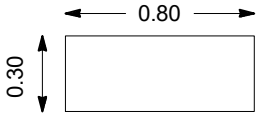
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP6**

Contract Ref:	Start: **26.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **26.08.20**	**52.52**	**E:528167.3 N:193364.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Brown soft gravelly sandy soft consistency CLAY containing roots and rootlets. Sand is fine to medium. Gravel consists of subangular fine to coarse flint. (TOPSOIL)	0.15	
0.40	2	ES				MADE GROUND: Brown sandy gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of subangular to subrounded fine to coarse flint, and frequent fine to cobble subangular brick and concrete. Contains old wire and metals. Occasional roots and rootlets.	(0.45) 0.60	
1.00	1	B				Brown very sandy slightly gravelly firm becoming stiff consistency CLAY. Sand is fine to coarse. Gravel consists of occasional subrounded fine to coarse flint.	(0.90) 1.50	
						Trial pit terminated at 1.50m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**Mini tracked excavator**	**AMarcelo**	

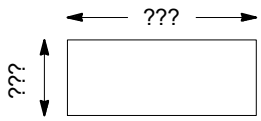
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP7**

Contract Ref:	Start: **26.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **26.08.20**	**50.02**	**E:528159.6 N:193429.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY containing frequent roots and rootlets. Sand is fine to coarse. Gravel consists of subangular to angular brick and concrete. (TOPSOIL)	0.20	
0.50	2	ES				MADE GROUND: Brown slightly clayey SAND and GRAVEL. Sand is fine to coarse. Gravel consists of frequent subangular fine to coarse brick and concrete with occasional asphalt.	(0.50) 0.70	
1.00	1	B				Brown sandy slightly gravelly firm becoming stiff consistency CLAY. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint. (LONDON CLAY FORMATION)	(0.70) 1.40	
						Trial pit terminated at 1.40m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**Mini tracked excavator**	**AMarcelo**	

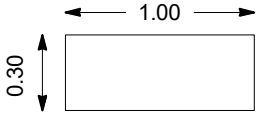
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP8**

Contract Ref:	Start: **26.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **26.08.20**	**49.91**	**E:528159.3 N:193452.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.15	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY. Sand is fine to coarse. Gravel consists of subrounded to rounded fine to coarse flint and occasional subangular fine to coarse brick. (TOPSOIL)	0.25	
0.50	2	ES				MADE GROUND: Brown and grey clayey SAND and GRAVEL. Sand is fine to coarse. Gravel consists of frequent subangular to angular fine to coarse brick and concrete with occasional asphalt.	(0.45)	
							0.70	
1.00	1	B				Brown slightly sandy frm becoming stiff consistency CLAY. Sand is fine to medium. (LONDON CLAY FORMATION)	(0.80)	
							1.50	
						Trial pit terminated at 1.50m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**Mini tracked excavator**	**AMarcelo**	

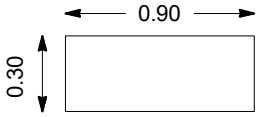
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP9**

Contract Ref:	Start: **26.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **26.08.20**	**53.29**	**E:528080.0 N:193442.7**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY containing frequent roots and rootlets. Sand is fine to coarse. Gravek consists of subangular to subrounded flint and occasional angular brick fragments. (TOPSOIL)	0.20	
0.30	2	ES				MADE GROUND - SUBSOIL: Brown sandy gravelly soft to firm consistency CLAY. Sand is fine to coarse. Gravel consists of subrounded to subangular fine to coarse flint and frequent angular to subangular brick and concrete and occasional asphalt.	0.45	
1.00	1	B				Brown occasional mottled orange sandy firm to stiff consistency CLAY containing occasional roots and rootlets. Sand is fine to coarse. Gravel consists of very occasional subrounded flint. (LONDON CLAY FORMATION)	(0.85)	
						Trial pit terminated at 1.30m depth.	1.30	

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**Mini tracked excavator**	**AMarcelo**	

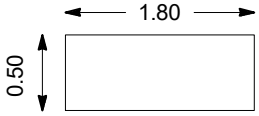
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	**25.08.20** End: **25.08.20**	**54.22**	**E:528073.9 N:193496.3**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY / TOPSOIL containin frequent roots and rootlets. Sand is fine to coarse. Gravel consists of subrounded to subangular fine to coarse flint, and subangular fine to coarse brick and concrete. (TOPSOIL)	0.20	
0.75	2	ES				MADE GROUND: Brown sandy very gravelly firm becoming stiff consistency CLAY. Sand is fine to coarse. Gravel consists of subrounded to subangulaar flint and fine to cobble frequent brick and concrete, and metal, timber, asphalt and clinker. . . . Gravel content decreasing with depth.	(1.80)	
1.50	3	ES				. . . Between 1.00m and 2.00m black particles noted.	2.00	
						Trial pit terminated at 2.00m depth due to concrete obstruction.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

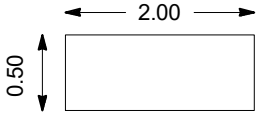
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	Opecprime Development Limited	TP11

Contract Ref:	Start: 24.08.20	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: 24.08.20	49.62	E:528185.9 N:193521.8	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.15	1	ES				Brown soft gravelly sandy soft consistency CLAY containing roots and rootlets. Sand is fine to medium. Gravel consists of subangular fine to coarse flint. (TOPSOIL)	0.25	
0.50	2	ES				MADE GROUND: Brown sandy gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of subangular to subrounded fine to coarse flint, brick, concrete, metal, plastic. . . . Plastic pipe trending N - S exposed on northen face at 0.50m. . . . Brick uncovered with 'DANGER ELECTRIC' engraving. . . . CAT scab showing electrical interfearence at base of pit. . . . Pit terminated due to CAT interfearence and proximity to pipe / BT service.	(0.65)	
						Trial pit terminated at 0.90m depth due to potential service, and subsequent CAT interfearence.	0.90	

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	JCB-3CX	AMarcelo	

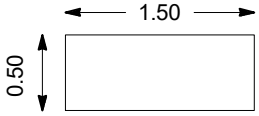
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP12**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **25.08.20**	**54.36**	**E:528082.0 N:193513.2**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY / TOPSOIL. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint and subangular fine to coarse brick and occasional concrete fragments. Contains frequent roots and rootlets. (TOPSOIL)	0.15	
0.50	2	ES				MADE GROUND: Brown sandy very gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint and subangular fine to coblle brick and conrete. Contains metal, clinker, glass and occasional asphalt fragments.	(1.35)	
1.00	3	ES					1.50	
						Trial pit terminated at 1.50m depth due to steel obstruction (potential drains service).		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

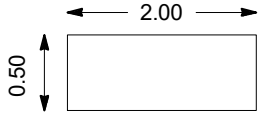
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP13**

Contract Ref:	Start: **24.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **24.08.20**	**50.56**	**E:528177.9 N:193556.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Brown soft gravelly sandy soft consistency CLAY containing roots and rootlets. Sand is fine to medium. Gravel consists of subangular fine to coarse flint. (TOPSOIL)	0.20	
0.40	2	ES				Brown slightly gravelly firm to stiff consistency CLAY containing roots and rootlets. Gravel consists of subrounded flint. (LONDON CLAY FORMATION)	(0.45)	
0.50	1	B					0.65	
1.00	2	B				Brown stiff consistency CLAY. (LONDON CLAY FORMATION)	(1.85)	
2.00	3	B				. . . From 2.00m becoming brown and grey.	2.50	
						Trial pit terminated at 2.50m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

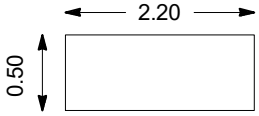
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	Opecprime Development Limited	TP14

Contract Ref:	Start: 24.08.20	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: 24.08.20	54.17	E:528107.3 N:193544.7	1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Brown soft gravelly sandy soft consistency CLAY containing roots and rootlets. Sand is fine to medium. Gravel consists of subangular fine to coarse flint. (TOPSOIL)	0.20	
0.50	2	ES				MADE GROUND: Brown slightly sandy gravely firm consistency CLAY. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint and subangular fine to coarse brick and concrete, clinker. Contains roots and rootles.	(0.70)	
							0.90	
1.50	1	B				Brown stiff consistency CLAY. (LONDON CLAY FORMATION) . . . Contains occasional pockets of orange fine to medium sand.	(2.10)	
2.50	2	B						
							3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: 1:25

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	JCB-3CX	AMarcelo	

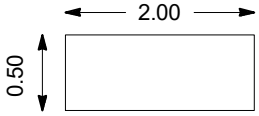
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP15**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **25.08.20**	**59.23**	**E:528042.5 N:193544.4**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.15	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY containing frequent rootlets. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint and subangular fine to coarse brick and occasional concrete. (TOPSOIL)	0.25	
0.80	2	ES				MADE GROUND: Brown slightly sandy gravelly firm becoming stiff consistency CLAY. Sand is fine to coarse. Gravel consists of subrounded fine to coarse flint and frequent fine to cobble brick and concrete, and occasional metal, asphalt and glass fragments. . . . Gravel content decreasing with depth.	(1.75)	
						Trial pit terminated at 2.00m depth due to level concrete obstruction.	2.00	

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

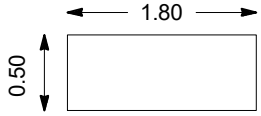
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP16**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **25.08.20**	**59.19**	**E:528064.8 N:193548.2**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY. Sand is fine to coarse. Gravel consists of subangular fine to coarse brick and subrounded fine to coarse flint. Contains frequent roots and rootlets. (TOPSOIL)	0.25	
0.50	2	ES				Brown sandy very gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of subangular fine to coarse brick, concrete and subrounded flint. Contains timber, metal and clinker and asphalt. . . . Gravel content decreasing with depth.	(2.25)	
1.00	3	ES				. . . At 1.00m asphalt odour noted.		
2.00	4	ES						
						Trial pit terminated at 2.50m depth due to machine constraints on steep surface.	2.50	

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

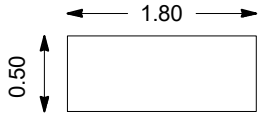
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP17**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	**25.08.20**	**59.60**	**E:528024.1 N:193574.2**	**1** of **1**
	End: **25.08.20**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY / TOPSOIL containing frequent roots and rootlets. Sand is fine to coarse. Gravel consists of subrounded to subangular flint and subangular occasional brick and concrete fragments. (TOPSOIL)	0.20	
0.50	2	ES				MADE GROUND: Brown very sandy very gravelly firm to stiff consistency CLAY. Sand is fine to coarse. Gravel consists of subangular to subrounded fine to coarse flint and fine to cobble subangular frequent brick and concrete. Contains metal, glass, plastic.	(1.80)	
1.50	3	ES					2.00	
						Trial pit terminated at 2.00m depth due to concrete obstruction.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No visual or olfactory evidence of contamination noted.
3. No groundwater encountered.
4. On completion, borehole backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

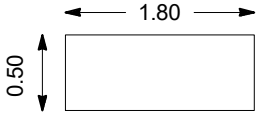
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
North London Busiess Park - Phase 1	**Opecprime Development Limited**	**TP18**

Contract Ref:	Start: **25.08.20**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
1921321	End: **25.08.20**	**60.63**	**E:528056.0 N:193581.6**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				MADE GROUND: Brown sandy gravelly soft consistency CLAY. Sand is fine to coarse. Gravel consists of fine to coarse subrounded flint and subangular fine to coarse brick and occasional concrete fragments. (TOPSOIL)	0.25	
0.75	2	ES				MADE GROUND: Brown sandy very gravelly firm consistency CLAY. Sand is fine to coarse. Gravel consists of fine to coarse subrounded flint and subangular fine to cobble brick metal fragments, timber, asphalt and clinker. . . . Gravel content increasing with depth.	(2.25)	
1.50	3	ES						
2.00	4	ES						
						Trial pit terminated at 2.50m depth.	2.50	

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating radar, CAT and Genny prior to excavation.
2. No groundwater encountered.
3. On completion, borehole backfilled with arisings.

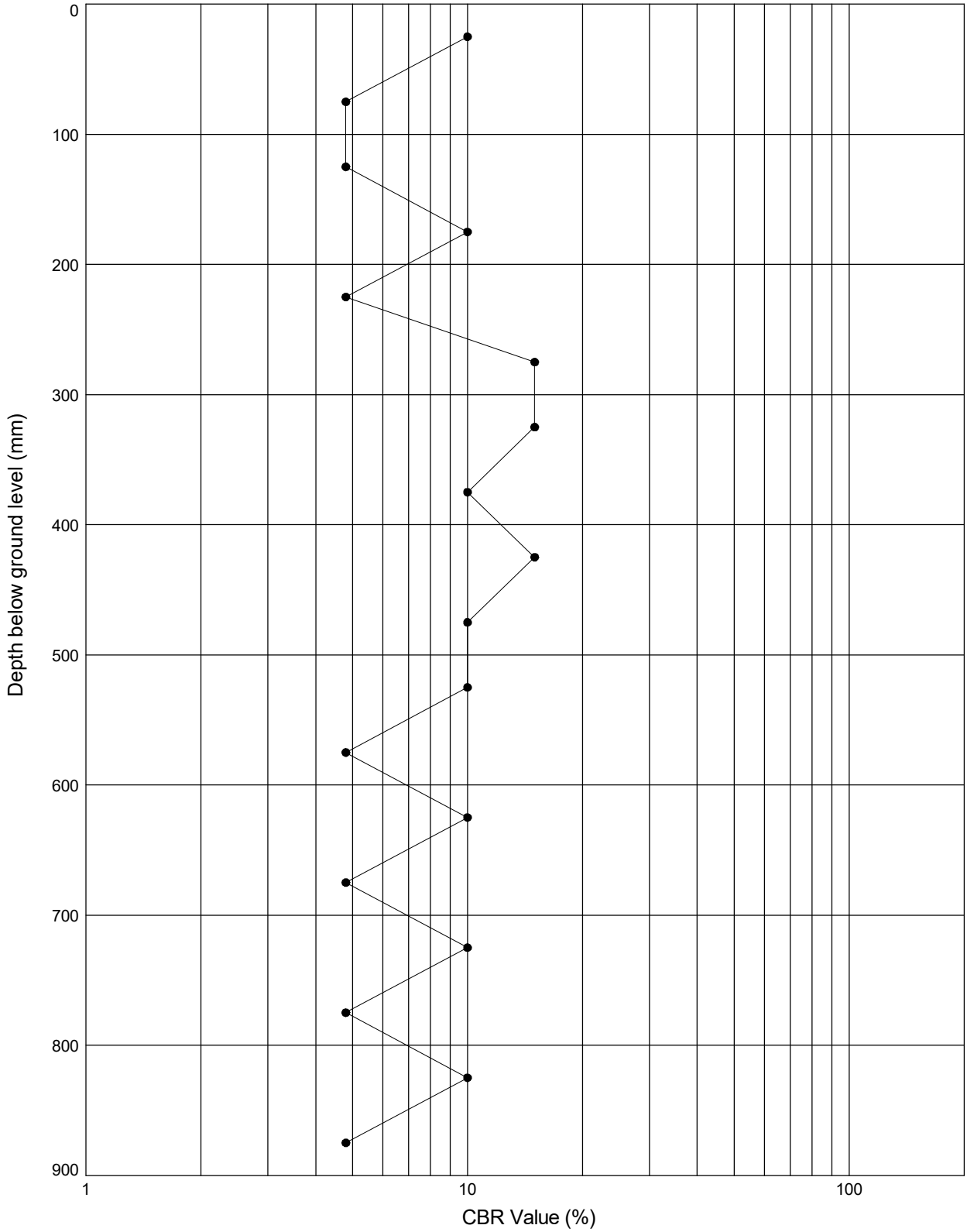
All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Machine dug	**JCB-3CX**	**AMarcelo**	

DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **BH1** Test Date : **09.10.20** Test Number : **1**

Ground Level (m AOD): **48.83** National Grid Co-ordinates: **E:528231.8 N:193528.1**



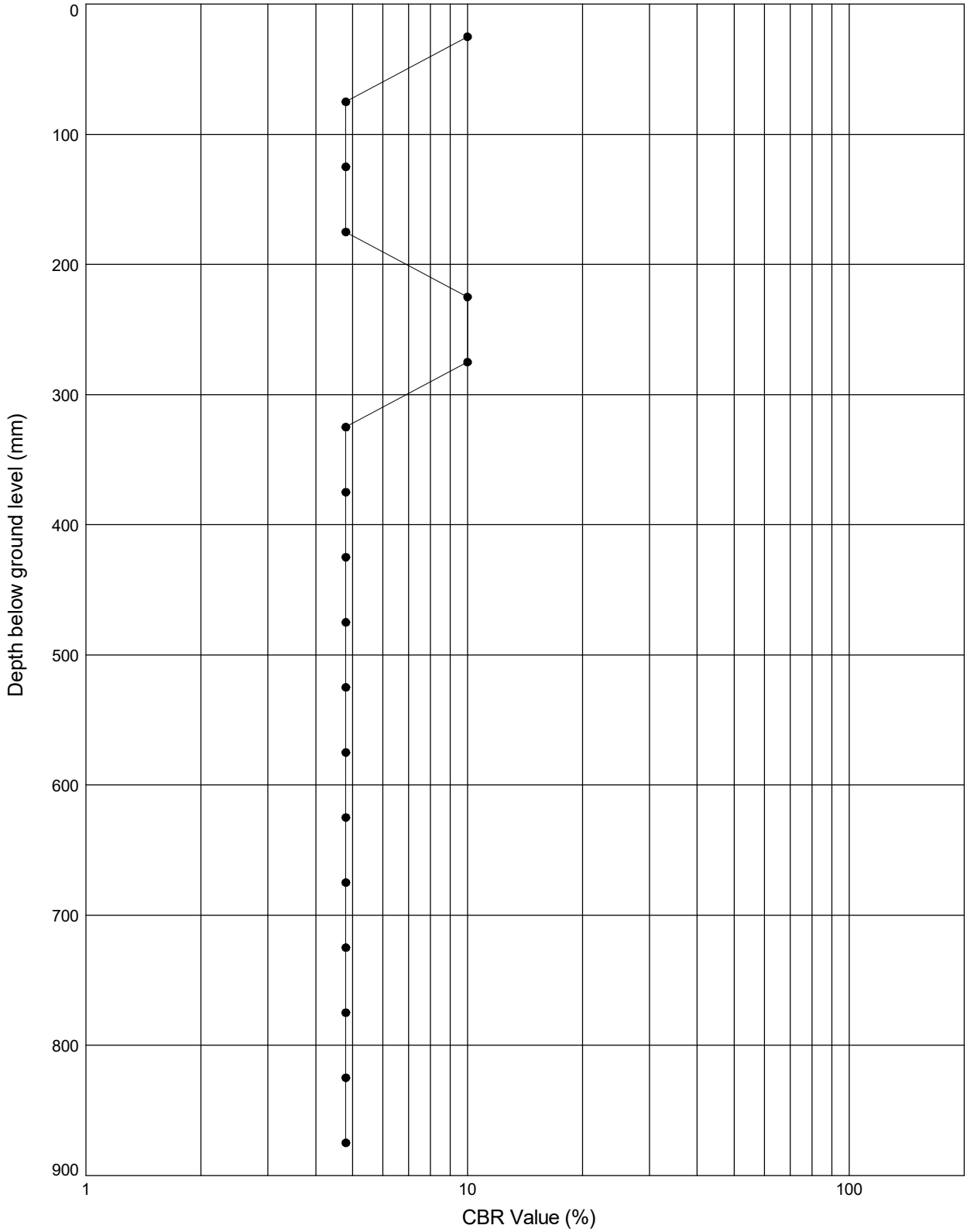
Notes: **CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.**

	Compiled By	Date	Checked By	Date
RSK Environment Ltd 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT		**08/01/21**		
	Contract **North London Busiess Park - Phase 1**		Contract Ref: **1921321**	

DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **BH5** Test Date : **09.10.20** Test Number : **1**

Ground Level (m AOD): **49.91** National Grid Co-ordinates: **E:528158.0 N:193467.0**



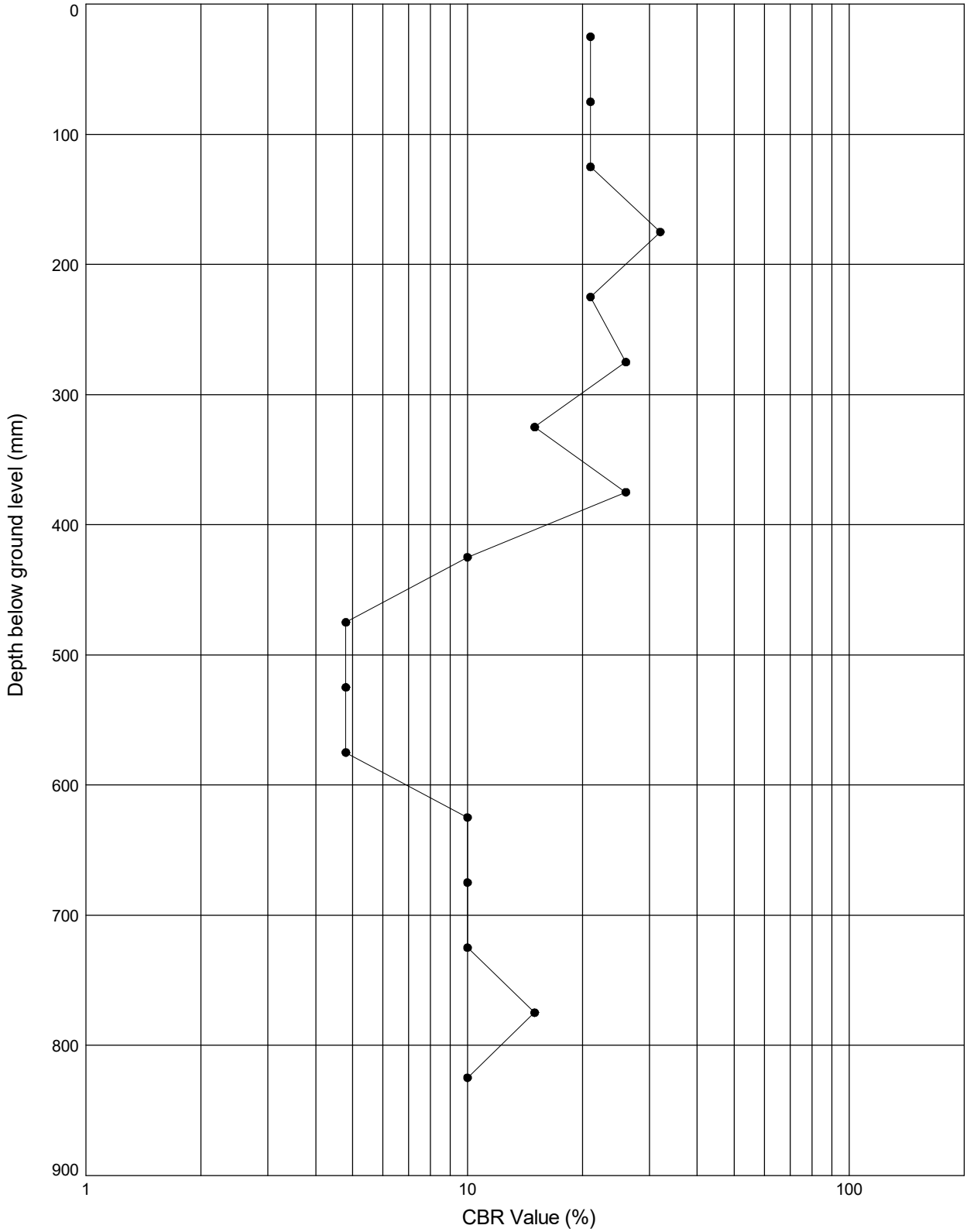
Notes: **CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.**

	Compiled By	Date	Checked By	Date
RSK Environment Ltd 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT		**08/01/21**		
	Contract **North London Busiess Park - Phase 1**		Contract Ref: **1921321**	

DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TP2** Test Date : **09.10.20** Test Number : **1**

Ground Level (m AOD): **49.40** National Grid Co-ordinates: **E:528278.5 N:193459.3**



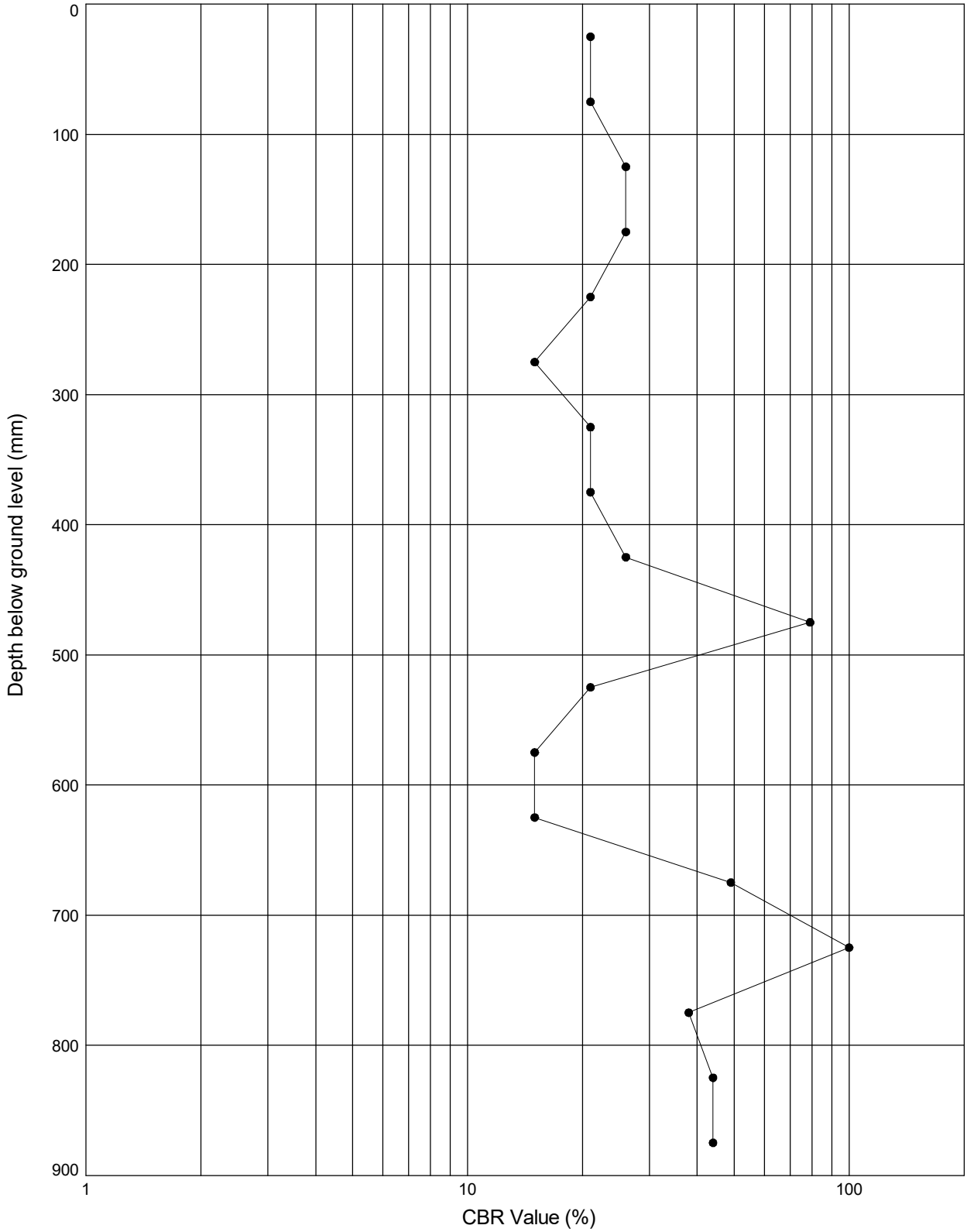
Notes: **CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.**

	Compiled By	Date	Checked By	Date
RSK Environment Ltd 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT		**08/01/21**		
	Contract **North London Busiess Park - Phase 1**		Contract Ref: **1921321**	

DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TP4** Test Date : **09.10.20** Test Number : **1**

Ground Level (m AOD): **52.62** National Grid Co-ordinates: **E:528259.9 N:193386.9**



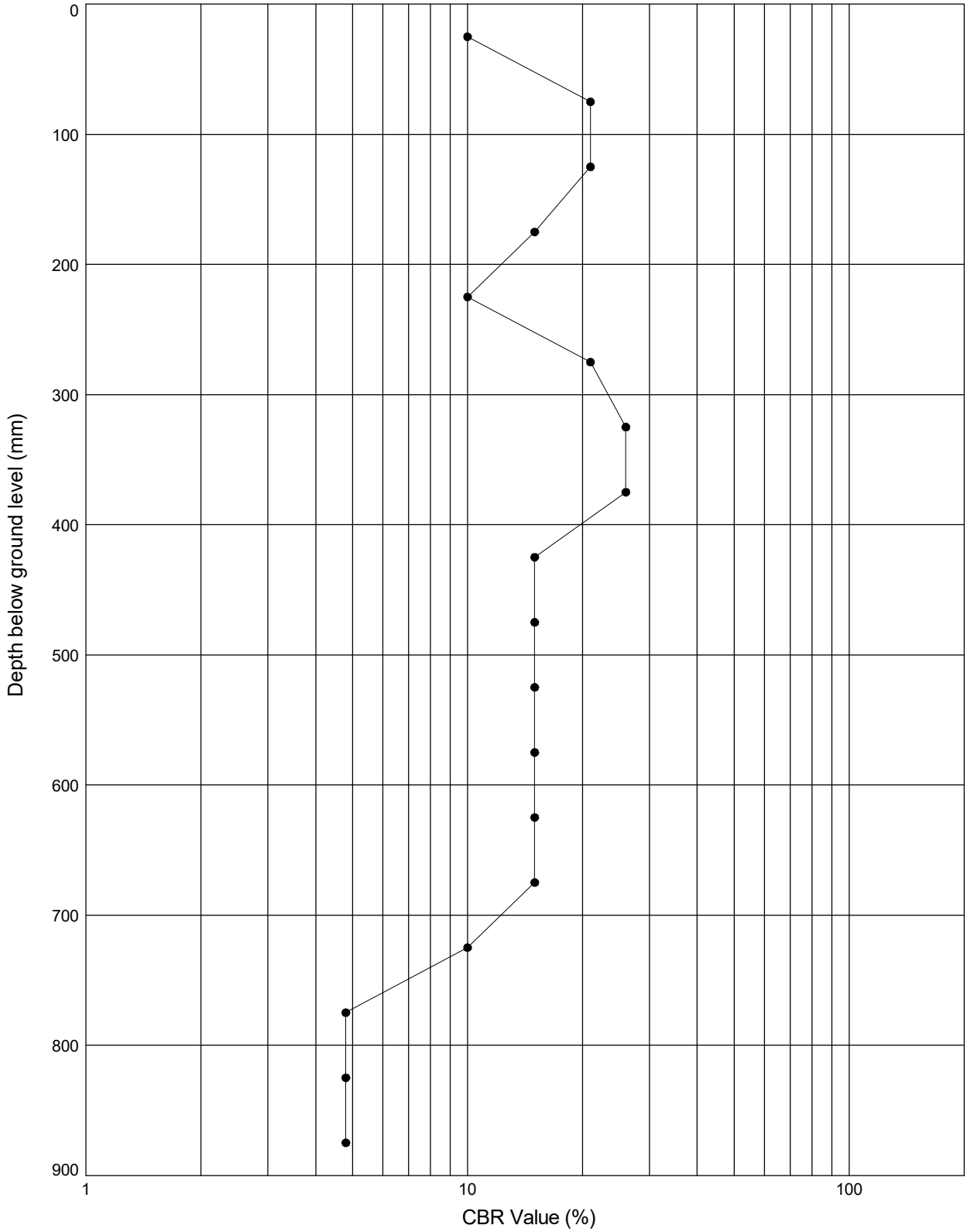
Notes: **CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.**

	Compiled By	Date	Checked By	Date
RSK Environment Ltd 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT		**08/01/21**		
	Contract **North London Busiess Park - Phase 1**		Contract Ref: **1921321**	

DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TP5** Test Date : **09.10.20** Test Number : **1**

Ground Level (m AOD): **50.23** National Grid Co-ordinates: **E:528212.2 N:193425.0**



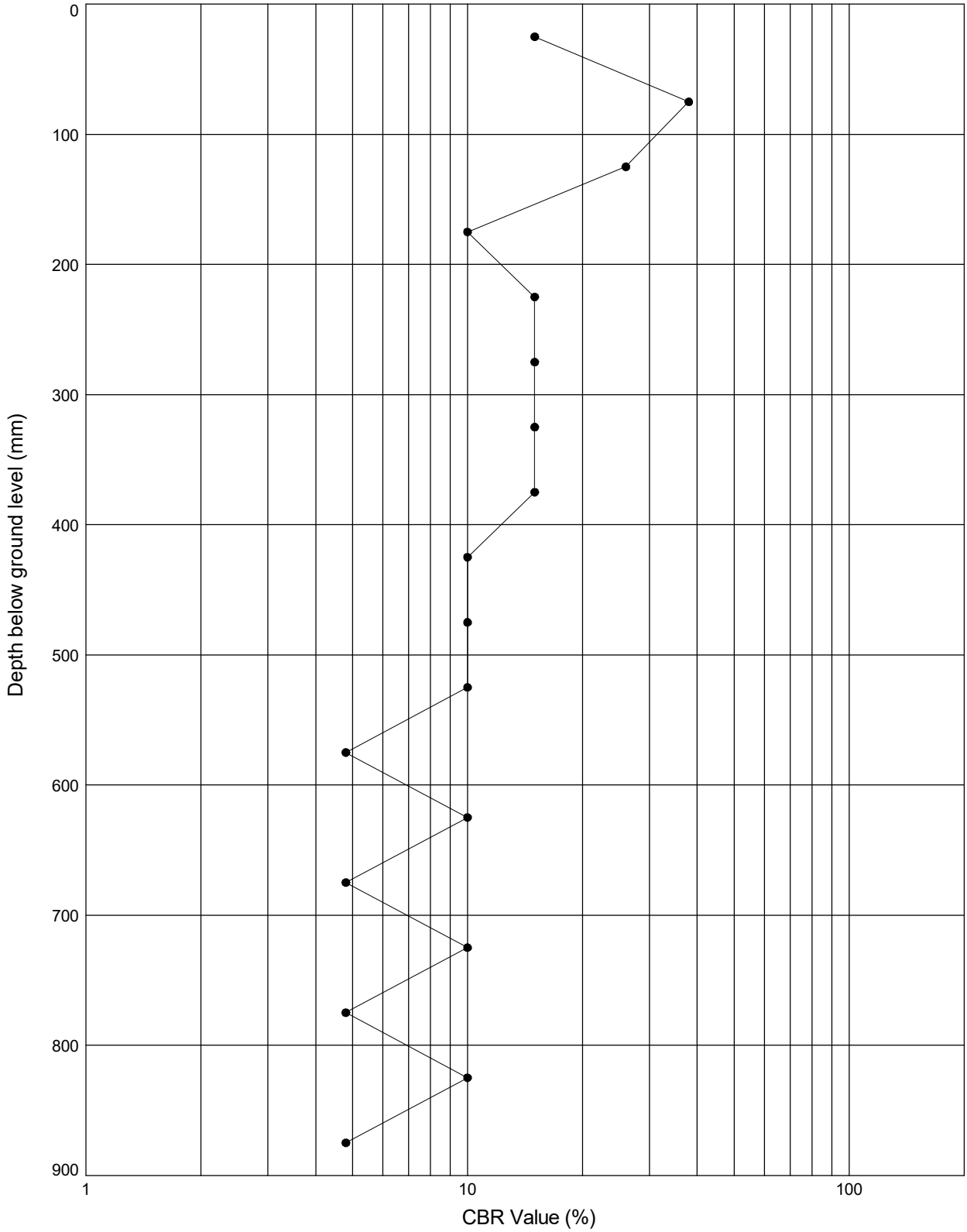
Notes: **CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.**

	Compiled By	Date	Checked By	Date
RSK Environment Ltd 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT		**08/01/21**		
	Contract **North London Busiess Park - Phase 1**		Contract Ref: **1921321**	

DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TP6** Test Date : **09.10.20** Test Number : **1**

Ground Level (m AOD): **52.52** National Grid Co-ordinates: **E:528167.3 N:193364.1**



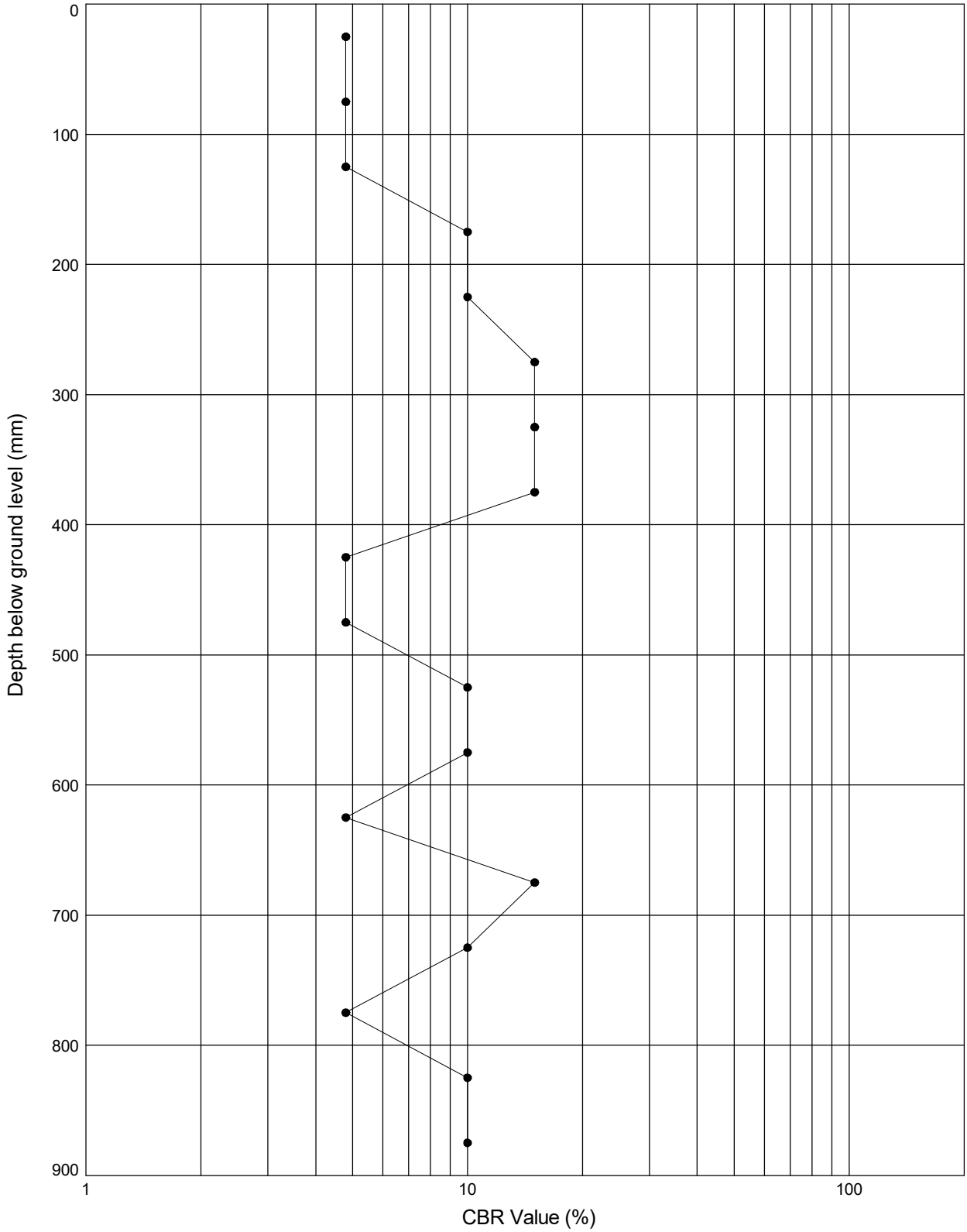
Notes: **CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.**

RSK Environment Ltd 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT	Compiled By	Date	Checked By	Date
		**08/01/21**		
	Contract **North London Busiess Park - Phase 1**		Contract Ref: **1921321**	

DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TP10** Test Date : **09.10.20** Test Number : **1**

Ground Level (m AOD): **54.22** National Grid Co-ordinates: **E:528073.9 N:193496.3**



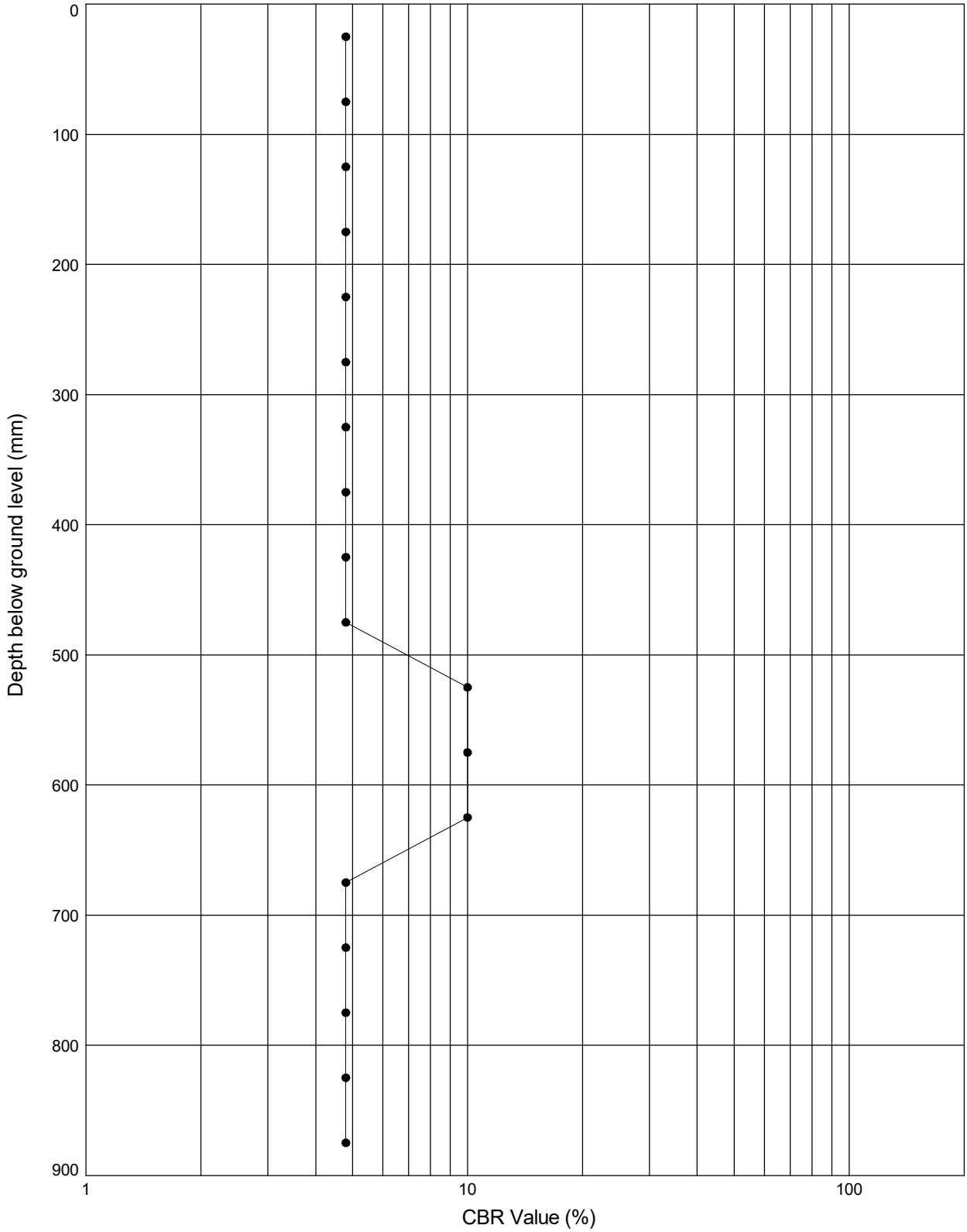
Notes: **CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.**

RSK Environment Ltd 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT	Compiled By	Date	Checked By	Date
		**08/01/21**		
	Contract **North London Busiess Park - Phase 1**		Contract Ref: **1921321**	

DCP TEST RESULTS - DEPTH vs CBR VALUE

Position Ref : **TP13** Test Date : **09.10.20** Test Number : **1**

Ground Level (m AOD): **50.56** National Grid Co-ordinates: **E:528177.9 N:193556.1**



Notes: **CBR values calculated after TRRL Road Note 8 method. Values over 100% are plotted on the 100% line.**

	Compiled By	Date	Checked By	Date
RSK Environment Ltd 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT		**08/01/21**		
	Contract **North London Busiess Park - Phase 1**		Contract Ref: **1921321**	

APPENDIX I
GROUND GAS MONITORING DATA

GAS MONITORING FIELD SHEET

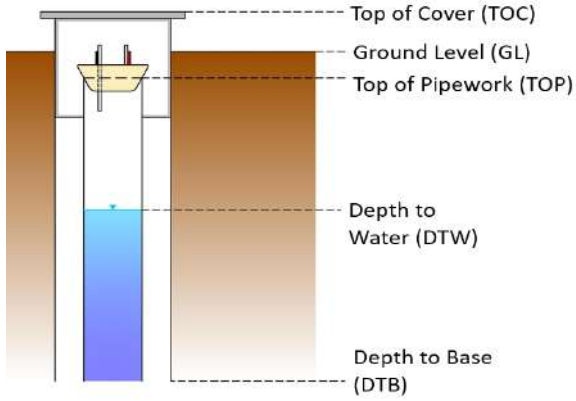
Monitoring Date:	11/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	19	Device:	GFM	
		Weather:	SUNNY	Serial Number:	10941	
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling		1		
Exploratory Position ID:	BH1	Monitoring Round Number:	1	Test Number:		
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	09:58	09:59	1012		Observations (e.g. on-site activities):	
Time End (hh:mm)	09:59	10:04				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.0			0.0	0.0
10	0.0	15	0.0	3.4	20.5			0.0	0.1
15	0.0	30	0.0	3.4	19.4			0.0	0.0
20	0.0	60	0.0	3.4	18.7			0.0	0.0
25	0.0	90	0.0	3.4	18.3			0.0	0.0
30	0.0	120	0.0	3.4	18.3			0.0	0.0
40	0.0	180	0.0	3.4	18.2			0.0	0.0
50	0.0	240	0.0	3.4	18.2			0.0	0.0
60	0.0	300	0.0	3.4	18.2			0.0	0.0

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)		

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.92	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business pArk	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	1

GAS MONITORING FIELD SHEET

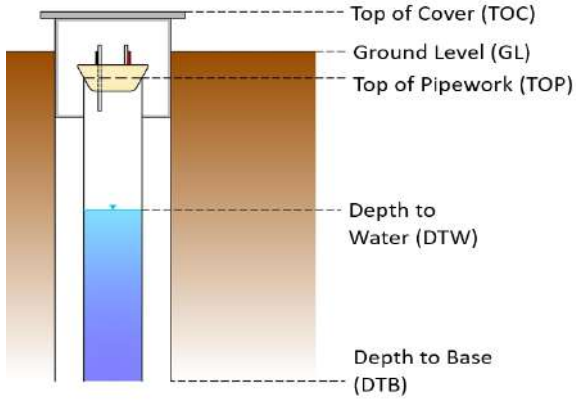
Monitoring Date:	11/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):	
Pre-Testing Remarks:		Air Temperature: °C	19	Device:	GFM
		Weather:	SUNNY	Serial Number:	10941
		Ground Conditions:	DRY	Daily Check:	
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT	
		Tidal State: (if applicable) High / Low / Rising / Falling		1	
Exploratory Position ID:	BH2	Monitoring Round Number:	1	Test Number:	1
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	09:48	09:49	1012		Observations (e.g. on-site activities):	
Time End (hh:mm)	09:49	09:54				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	22.2			0.0	0.0
10	0.0	15	0.0	5.0	19.6			0.0	0.0
15	0.0	30	0.0	6.0	17.1			0.0	0.0
20	0.0	60	0.0	5.1	16.3			0.0	0.0
25	0.0	90	0.0	5.2	15.8			0.0	0.0
30	0.0	120	0.0	5.2	15.6			0.0	0.0
40	0.0	180	0.0	5.2	15.5			0.0	0.0
50	0.0	240	0.0	5.2	15.5			0.0	0.0
60	0.0	300	0.0	6.2	15.5			0.0	0.0

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.	
Stage 1 gas flow - Steady State (l/h)			

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	4.8	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.97	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	North London Business Park	Data Collected By:	AM
	Project Manager / Engineer:	AK/AM	Checked:	
	Contract Ref:	1921321	Page number:	2

GAS MONITORING FIELD SHEET

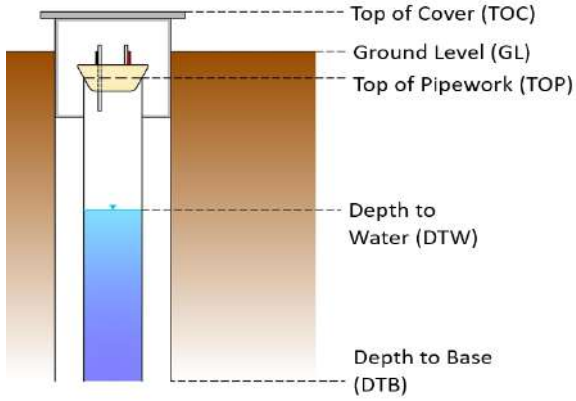
Monitoring Date:	11/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	19	Device:	GFM	
		Weather:	SUNNY	Serial Number:	10941	
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH3	Monitoring Round Number:	1	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	09:34	09:35	1012		Observations (e.g. on-site activities):	
Time End (hh:mm)	09:35	09:40				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.4			0.0	0.0
10	0.0	15	0.0	0.9	21.3			0.0	0.1
15	0.0	30	0.0	1.5	20.1			0.0	0.1
20	0.0	60	0.0	1.5	19.6			0.0	0.1
25	0.0	90	0.0	1.5	19.5			0.0	0.0
30	0.0	120	0.0	1.5	19.5			0.0	0.1
40	0.0	180	0.0	1.5	19.4			0.0	0.1
50	0.0	240	0.0	1.5	19.4			0.0	0.1
60	0.0	300	0.0	1.5	19.4			0.0	0.1

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.	
Stage 1 gas flow - Steady State (l/h)			

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	3.93	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.9	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	North London Business Park	Data Collected By:	AM
	Project Manager / Engineer:	AK/AM	Checked:	
	Contract Ref:	1921321	Page number:	3

GAS MONITORING FIELD SHEET

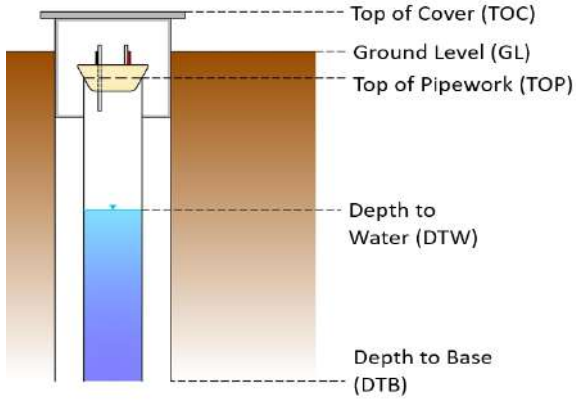
Monitoring Date:	11/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	19	Device:	GFM	
		Weather:	OVERCAST	Serial Number:		
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		NONE		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH4	Monitoring Round Number:	1	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	09:22	09:23	1012		Observations (e.g. on-site activities):	
Time End (hh:mm)	09:23	09:28				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.5			0.0	0.0
10	0.0	15	0.0	6.8	19.0			0.0	0.0
15	0.0	30	0.0	7.3	17.6			0.0	0.0
20	0.0	60	0.0	7.3	15.0			0.0	0.0
25	0.0	90	0.0	7.5	11.6			0.0	0.0
30	0.0	120	0.0	7.5	11.5			0.0	0.0
40	0.0	180	0.0	7.6	11.4			0.0	0.0
50	0.0	240	0.0	7.6	11.4			0.0	0.0
60	0.0	300	0.0	7.6	11.4			0.0	0.0

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.	
Stage 1 gas flow - Steady State (l/h)			

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.79	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	North London Business Park	Data Collected By:	AM
	Project Manager / Engineer:	AK/AM	Checked:	
	Contract Ref:	1921321	Page number:	4

GAS MONITORING FIELD SHEET

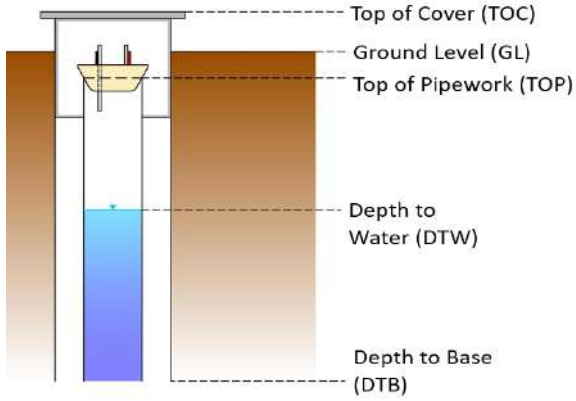
Monitoring Date:	11/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):			
Pre-Testing Remarks:		Air Temperature: °C	19	Device:	GFM		
		Weather:	OVERCAST	Serial Number:	10941		
		Ground Conditions:	DRY	Daily Check:			
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT			
		Tidal State: (if applicable) High / Low / Rising / Falling					
Exploratory Position ID:	BH5	Monitoring Round Number:	1	Test Number:	1		
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40		

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	10:25	10:26	1012		Observations (e.g. on-site activities):	
Time End (hh:mm)	10:26	10:31				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	22.4			0.0	0.0
10	0.0	15	0.0	5.1	19.9			0.0	0.1
15	0.0	30	0.0	5.2	16.8			0.0	0.0
20	0.0	60	0.0	5.3	16.1			0.0	0.0
25	0.0	90	0.0	5.3	15.8			0.0	0.0
30	0.0	120	0.0	5.3	15.6			0.0	0.0
40	0.0	180	0.0	5.3	15.5			0.0	0.0
50	0.0	240	0.0	5.3	15.5			0.0	0.0
60	0.0	300	0.0	5.3	15.5			0.0	0.0

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.	
Stage 1 gas flow - Steady State (l/h)			

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	2.8	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.95	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	North London Business Park	Data Collected By:	AM
	Project Manager / Engineer:	AK/AM	Checked:	
	Contract Ref:	1921321	Page number:	5

GAS MONITORING FIELD SHEET

Monitoring Date:	11/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):	

Pre-Testing Remarks:		Air Temperature: °C		Device:	GFM
		Weather:		Serial Number:	10941
		Ground Conditions:		Daily Check:	
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT	
		Tidal State: (if applicable) High / Low / Rising / Falling			

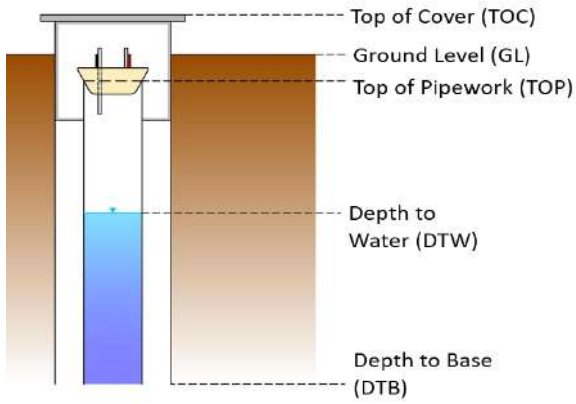
Exploratory Position ID:	BH6	Monitoring Round Number:	1	Test Number:	1
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	10:09	10:10	1012		Observations (e.g. on-site activities):	
Time End (hh:mm)	10:10	10:15				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.2			0.0	0.0
10	0.0	15	0.0	1.7	21.0			0.0	0.0
15	0.0	30	0.0	1.7	20.6			0.0	0.0
20	0.0	60	0.0	1.7	20.4			0.0	0.0
25	0.0	90	0.0	1.7	20.2			0.0	0.0
30	0.0	120	0.0	1.7	20.2			0.0	0.0
40	0.0	180	0.0	1.7	20.2			0.0	0.0
50	0.0	240	0.0	1.7	20.2			0.0	0.0
60	0.0	300	0.0	1.7	20.2			0.0	0.0

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)		

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.97	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	6

GAS MONITORING FIELD SHEET

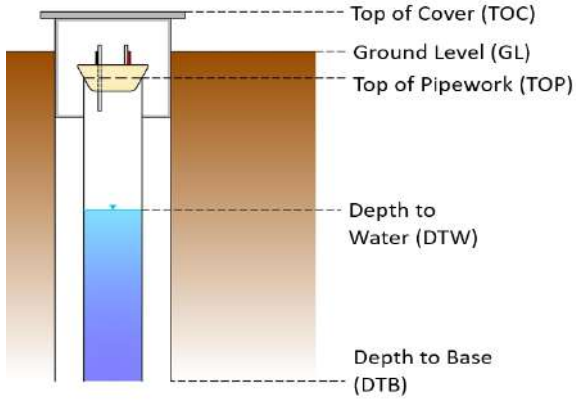
Monitoring Date:	11/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C		Device:	GFM	
		Weather:		Serial Number:	10941	
		Ground Conditions:		Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH7	Monitoring Round Number:	1	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	10:50	10:51	1012		Observations (e.g. on-site activities):	
Time End (hh:mm)	10:51	10:56				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	22.1			0.0	0.0
10	0.0	15	0.0	0.1	18.9			0.0	0.1
15	0.0	30	0.0	0.1	15.5			0.0	0.1
20	0.0	60	0.0	0.1	15.1			0.0	0.1
25	0.0	90	0.0	0.1	14.6			0.0	0.1
30	0.0	120	0.0	0.1	14.0			0.0	0.1
40	0.0	180	0.0	0.1	13.7			0.0	0.1
50	0.0	240	0.0	0.1	13.6			0.0	0.1
60	0.0	300	0.0	0.1	13.6			0.0	0.1

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.	
Stage 1 gas flow - Steady State (l/h)			

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.98	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	7

GAS MONITORING FIELD SHEET

Monitoring Date:	11/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):	

Pre-Testing Remarks:		Air Temperature: °C		Device:	GFM
		Weather:		Serial Number:	10941
		Ground Conditions:		Daily Check:	
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT	
		Tidal State: (if applicable) High / Low / Rising / Falling			

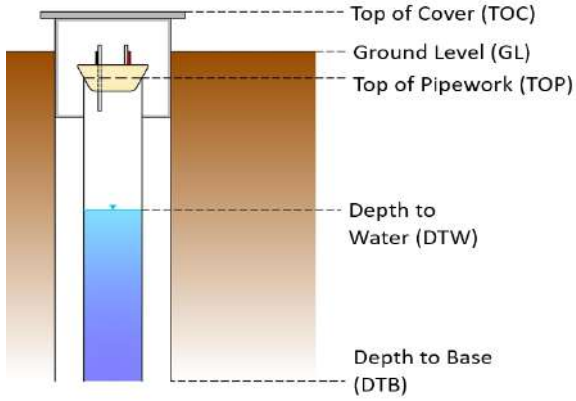
Exploratory Position ID:	BH8	Monitoring Round Number:	1	Test Number:	1
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	10:36	10:37	1012		Observations (e.g. on-site activities):	
Time End (hh:mm)	10:37	10:42				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	22.3			0.0	0.0
10	0.0	15	0.0	7.3	18.7			0.0	0.0
15	0.0	30	0.0	7.4	15.6			0.0	0.0
20	0.0	60	0.0	7.5	13.4			0.0	0.0
25	0.0	90	0.0	7.5	12.9			0.0	0.0
30	0.0	120	0.0	7.5	12.6			0.0	0.0
40	0.0	180	0.0	7.5	12.6			0.0	0.0
50	0.0	240	0.0	7.5	12.5			0.0	0.0
60	0.0	300	0.0	7.5	12.5			0.0	0.0

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)		

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.91	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	North London Business Park	Data Collected By:	JW
	Project Manager / Engineer:	AK/AM	Checked:	
	Contract Ref:	1921321	Page number:	

GAS MONITORING FIELD SHEET

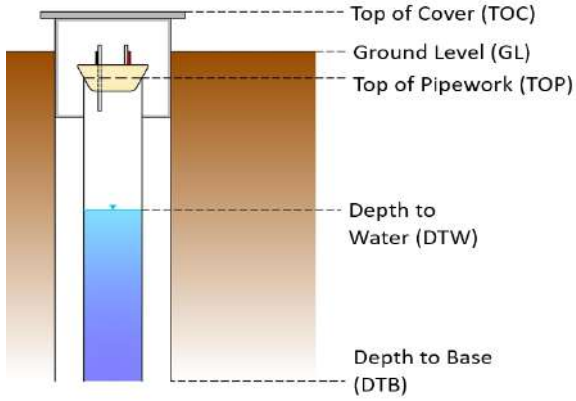
Monitoring Date:	28/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	17	Device:	GFM	
		Weather:	SUNNY	Serial Number:	10941	
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH1	Monitoring Round Number:	2	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	11:30	11:31	1008		Observations (e.g. on-site activities):	
Time End (hh:mm)	11:31	11:36				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.1			0.0	
10	0.0	15	0.0	2.8	20.5			0.0	
15	0.0	30	0.0	2.9	19.6			0.0	
20	0.0	60	0.0	2.9	19.1			0.0	
25	0.0	90	0.0	2.9	18.9			0.0	
30	0.0	120	0.0	2.9	18.8			0.0	
40	0.0	180	0.0	2.9	18.8			0.0	
50	0.0	240	0.0	2.9	18.7			0.0	
60	0.0	300	0.0	2.9	18.7			0.0	

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.93	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	Noth London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	1

GAS MONITORING FIELD SHEET

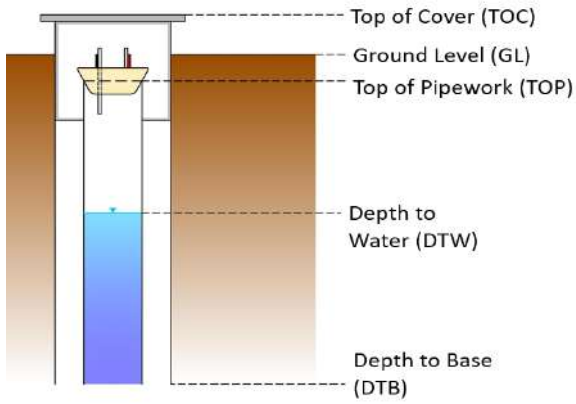
Monitoring Date:	28/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):			
Pre-Testing Remarks:		Air Temperature: °C	17	Device:	GFM		
		Weather:	SUNNY	Serial Number:	10941		
		Ground Conditions:	DRY	Daily Check:			
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT			
		Tidal State: (if applicable) High / Low / Rising / Falling					
Exploratory Position ID:	BH2	Monitoring Round Number:	2	Test Number:	1		
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40		

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	11:20	11:21	1008		Observations (e.g. on-site activities):	
Time End (hh:mm)	11:21	11:26				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.2			0.0	
10	0.0	15	0.0	4.7	20.2			0.0	
15	0.0	30	0.0	4.9	18.3			0.0	
20	0.0	60	0.0	4.9	17.1			0.0	
25	0.0	90	0.0	4.9	16.8			0.0	
30	0.0	120	0.0	4.9	16.7			0.0	
40	0.0	180	0.0	4.9	16.6			0.0	
50	0.0	240	0.0	4.9	16.5			0.0	
60	0.0	300	0.0	4.9	16.5			0.0	

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)		Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.98	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	2

GAS MONITORING FIELD SHEET

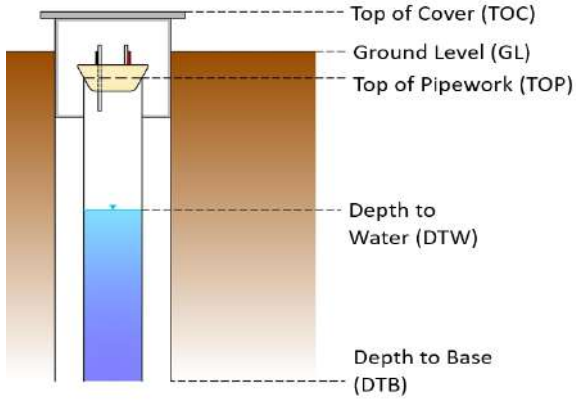
Monitoring Date:	28/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):			
Pre-Testing Remarks:		Air Temperature: °C	17	Device:	GFM		
		Weather:	SUNNY	Serial Number:	10941		
		Ground Conditions:	DRY	Daily Check:			
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT			
		Tidal State: (if applicable) High / Low / Rising / Falling					
Exploratory Position ID:	BH3	Monitoring Round Number:	2	Test Number:	1		
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40		

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	11:10	11:11	1008		Observations (e.g. on-site activities):	
Time End (hh:mm)	11:11	11:16				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	20.5			0.0	
10	0.0	15	0.0	1.6	20.4			0.0	
15	0.0	30	0.0	1.6	20.0			0.0	
20	0.0	60	0.0	1.6	19.6			0.0	
25	0.0	90	0.0	1.6	19.6			0.0	
30	0.0	120	0.0	1.6	19.5			0.0	
40	0.0	180	0.0	1.6	19.5			0.0	
50	0.0	240	0.0	1.6	19.5			0.0	
60	0.0	300	0.0	1.6	19.5			0.0	

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)		Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.92	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	North London Business Park	Data Collected By:	AM
	Project Manager / Engineer:	AK/AM	Checked:	
	Contract Ref:	1921321	Page number:	3

GAS MONITORING FIELD SHEET

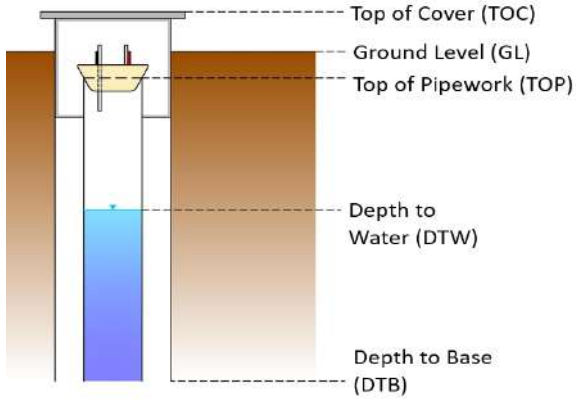
Monitoring Date:	28/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	17	Device:	GFM	
		Weather:	SUNNY	Serial Number:	10941	
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH4	Monitoring Round Number:	2	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	10:55	10:56	1008		Observations (e.g. on-site activities):	
Time End (hh:mm)	10:56	11:01				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.1	0	0.0	0.0	21.1			0.0	
10	0.0	15	0.0	6.8	18.7			0.0	
15	0.0	30	0.0	6.9	17.0			0.0	
20	0.0	60	0.0	6.9	15.4			0.0	
25	0.0	90	0.0	7.0	15.0			0.0	
30	0.0	120	0.0	7.0	14.8			0.0	
40	0.0	180	0.0	7.0	14.7			0.0	
50	0.0	240	0.0	7.0	14.6			0.0	
60	0.0	300	0.0	7.0	14.6			0.0	

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.83	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	4

GAS MONITORING FIELD SHEET

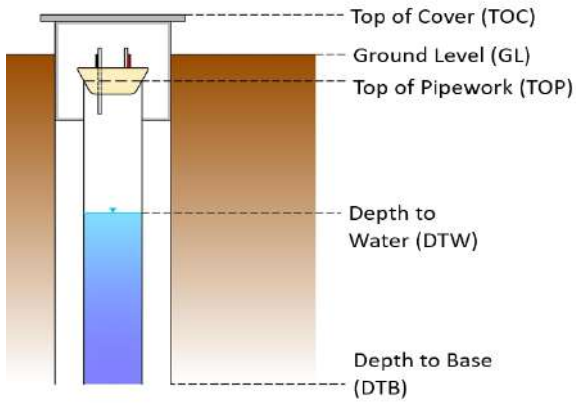
Monitoring Date:	28/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	17	Device:	GFM	
		Weather:	SUNNY	Serial Number:	10941	
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH5	Monitoring Round Number:	2	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	12:16	12:17	1008		Observations (e.g. on-site activities):	
Time End (hh:mm)	12:17	12:22				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.1			0.0	
10	0.0	15	0.0	4.8	20.4			0.0	
15	0.0	30	0.0	4.9	18,0			0.0	
20	0.0	60	0.0	5.1	17.4			0.0	
25	0.0	90	0.0	5.1	16.8			0.0	
30	0.0	120	0.0	5.1	16.5			0.0	
40	0.0	180	0.0	5.1	16.2			0.0	
50	0.0	240	0.0	5.1	16.0			0.0	
60	0.0	300	0.0	5.1	16.0			0.0	

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)		Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)		Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	5

GAS MONITORING FIELD SHEET

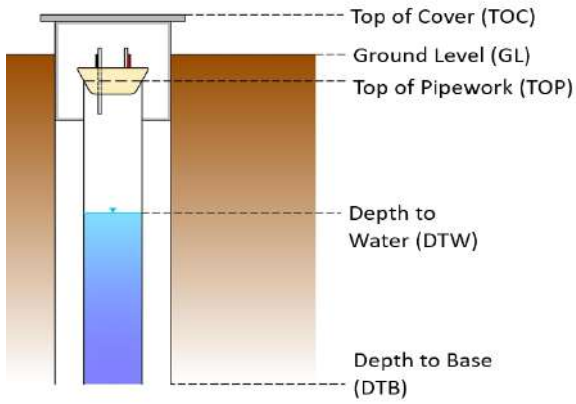
Monitoring Date:	28/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	17	Device:	GFM	
		Weather:	SUNNY	Serial Number:	10941	
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH6	Monitoring Round Number:	2	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	11:40	11:41	1008		Observations (e.g. on-site activities):	
Time End (hh:mm)	11:41	11:46				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.1			0.0	
10	0.0	15	0.0	1.3	21.0			0.0	
15	0.0	30	0.0	1.4	20.6			0.0	
20	0.0	60	0.0	1.4	20.2			0.0	
25	0.0	90	0.0	1.4	20.1			0.0	
30	0.0	120	0.0	1.4	20.1			0.0	
40	0.0	180	0.0	1.4	20.1			0.0	
50	0.0	240	0.0	1.4	20.0			0.0	
60	0.0	300	0.0	1.4	20.0			0.0	

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.97	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	6

GAS MONITORING FIELD SHEET

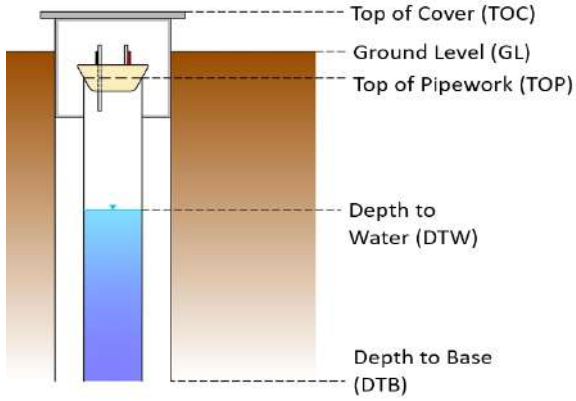
Monitoring Date:	28/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	17	Device:	GFM	
		Weather:	SUNNY	Serial Number:	10941	
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH7	Monitoring Round Number:	2	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	12:06	12:07	1008		Observations (e.g. on-site activities):	
Time End (hh:mm)	12:06	12:12				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.0			0.0	
10	0.0	15	0.0	0.4	17.3			0.0	
15	0.0	30	0.0	0.4	16.0			0.0	
20	0.0	60	0.0	0.4	15.2			0.0	
25	0.0	90	0.0	0.4	14.6			0.0	
30	0.0	120	0.0	0.4	14.5			0.0	
40	0.0	180	0.0	0.4	14.5			0.0	
50	0.0	240	0.0	0.4	14.5			0.0	
60	0.0	300	0.0	0.4	14.5			0.0	

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)		

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.97	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	7

GAS MONITORING FIELD SHEET

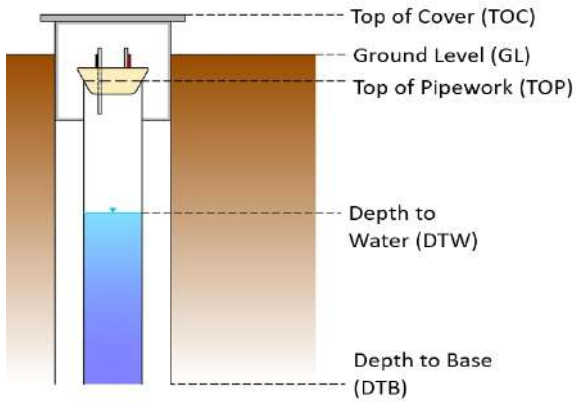
Monitoring Date:	28/09/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	117	Device:	GFM	
		Weather:	SUNNY	Serial Number:	10941	
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH8	Monitoring Round Number:	2	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	11:54	11:55	1008		Observations (e.g. on-site activities):	
Time End (hh:mm)	11:55	12:00				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.2			0.0	
10	0.0	15	0.0	9.0	17.4			0.0	
15	0.0	30	0.0	9.1	15.2			0.0	
20	0.0	60	0.0	9.2	12.5			0.0	
25	0.0	90	0.0	9.3	12.0			0.0	
30	0.0	120	0.0	9.3	11.6			0.0	
40	0.0	180	0.0	9.4	11.3			0.0	
50	0.0	240	0.0	9.4	11.2			0.0	
60	0.0	300	0.0	9.4	11.2			0.0	

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.91	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	8

GAS MONITORING FIELD SHEET

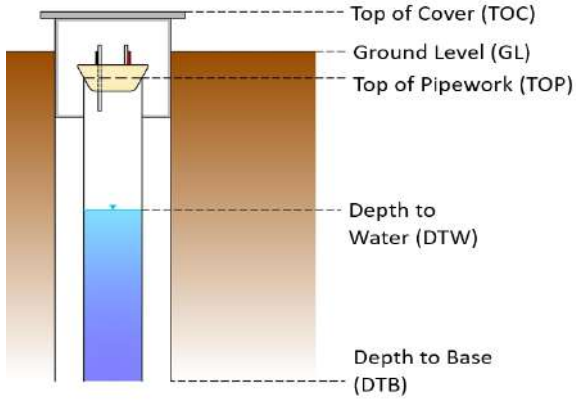
Monitoring Date:	09/10/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	15	Device:	GA5000	
		Weather:	OVERCAST	Serial Number:		
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		LIGHT		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH1	Monitoring Round Number:	3	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	09:45	09:46	1015	4.29	Observations (e.g. on-site activities):	
Time End (hh:mm)	09:46	09:51				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.1	20.9				
10	0.0	15	0.0	3.5	18.6				
15	0.0	30	0.0	3.5	17.3				
20	0.0	60	0.0	3.5	17.2				
25	0.0	90	0.0	3.5	17.1				
30	0.0	120	0.0	3.5	17.1				
40	0.0	180	0.0	3.5	17.1				
50	0.0	240	0.0	3.5	17.1				
60	0.0	300	0.0	3.5	17.1				

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	4.2	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.93	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	Noth London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	1

GAS MONITORING FIELD SHEET

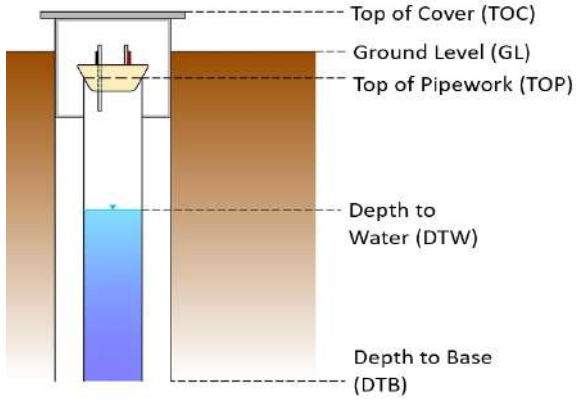
Monitoring Date:	09/10/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	14	Device:	GA5000	
		Weather:	OVERCAST	Serial Number:		
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		NONE		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH2	Monitoring Round Number:	3	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	09:35	09:36	1015	0.1	Observations (e.g. on-site activities):	
Time End (hh:mm)	09:36	09:41				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.1	21.0	0	0		
10	0.0	15	0.0	6.1	17.3	1	0		
15	0.0	30	0.0	6.2	13.2	1	0		
20	0.0	60	0.0	6.3	12.7	0	0		
25	0.0	90	0.0	6.2	12.6	0	0		
30	0.0	120	0.0	6.3	12.6	0	0		
40	0.0	180	0.0	6.3	12.6	0	0		
50	0.0	240	0.0	6.3	12.6	0	0		
60	0.0	300	0.0	6.3	12.6	0	0		

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	4.83	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.98	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	2

GAS MONITORING FIELD SHEET

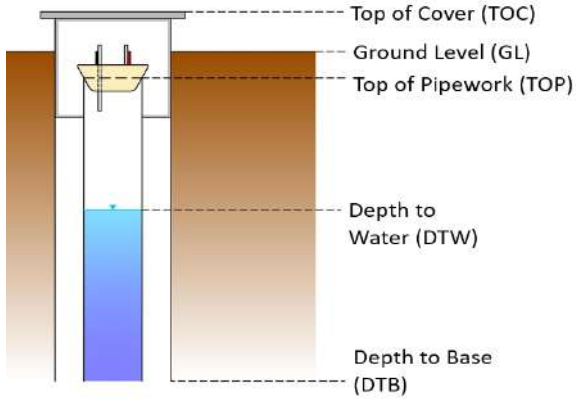
Monitoring Date:	09/10/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	15	Device:	GA5000	
		Weather:	OVERCAST	Serial Number:		
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		NONE		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH3	Monitoring Round Number:	3	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	09:25	09:26	1015	26.19	Observations (e.g. on-site activities):	
Time End (hh:mm)	09:26	09:31				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	20.6	0	0		
10	0.0	15	0.0	1.2	19.8	2	0		
15	0.0	30	0.0	1.2	18.3	1	0		
20	0.0	60	0.0	1.2	18.2	1	0		
25	0.0	90	0.0	1.2	18.2	1	0		
30	0.0	120	0.0	1.2	18.2	1	0		
40	0.0	180	0.0	1.2	18.2	1	0		
50	0.0	240	0.0	1.2	18.2	1	0		
60	0.0	300	0.0	1.2	18.2	1	0		

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.	
Stage 1 gas flow - Steady State (l/h)	0.0		

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	0.8	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.93	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	3

GAS MONITORING FIELD SHEET

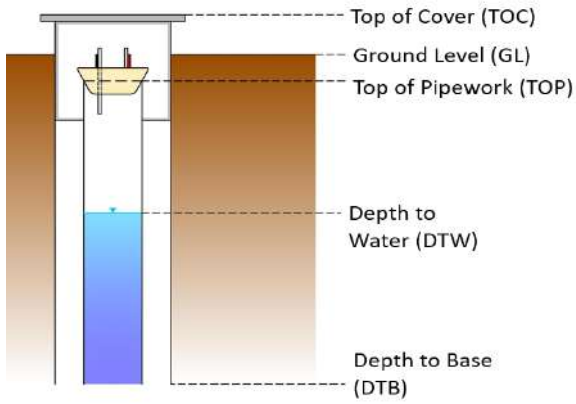
Monitoring Date:	09/10/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	13	Device:	GA5000	
		Weather:	CLEAR	Serial Number:		
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		NONE		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH4	Monitoring Round Number:	3	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)	09:16	09:17	1014	5.68	Observations (e.g. on-site activities):	
Time End (hh:mm)	09:17	09:22				

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.0	21.1	0	0		
10	0.0	15	0.0	5.2	18.1	0	0		
15	0.0	30	0.0	4.3	12.6	1	0		
20	0.0	60	0.0	5.4	10.3	0	0		
25	0.0	90	0.0	5.3	10.1	0	0		
30	0.0	120	0.0	5.3	10.1	0	0		
40	0.0	180	0.0	5.3	10.1	0	0		
50	0.0	240	0.0	5.3	10.1	0	0		
60	0.0	300	0.0	5.3	10.1	0	0		

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.83	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	4

GAS MONITORING FIELD SHEET

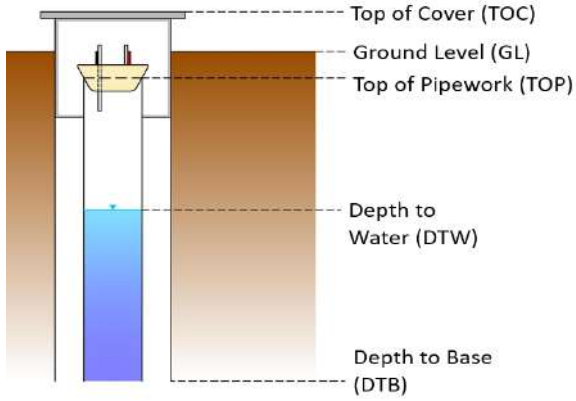
Monitoring Date:	09/10/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	15	Device:	GA5000	
		Weather:	CLEAR	Serial Number:		
		Ground Conditions:		Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		NONE		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH5	Monitoring Round Number:	3	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)			1015	6.18	Observations (e.g. on-site activities):	
Time End (hh:mm)						

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.2	20.7	0	0		
10	0.0	15	0.0	4.8	16.9	1	0		
15	0.0	30	0.0	4.8	11.2	0	0		
20	0.0	60	0.0	4.9	10.6	0	0		
25	0.0	90	0.0	4.9	10.6	0	0		
30	0.0	120	0.0	4.9	10.5	0	0		
40	0.0	180	0.0	4.9	10.5	0	0		
50	0.0	240	0.0	4.9	10.5	0	0		
60	0.0	300	0.0	4.9	10.5	0	0		

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.	
Stage 1 gas flow - Steady State (l/h)	0.0		

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	1.81	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.95	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	5

GAS MONITORING FIELD SHEET

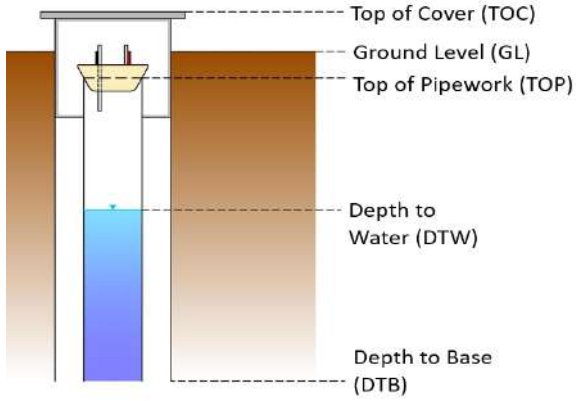
Monitoring Date:	09/10/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):			
Pre-Testing Remarks:		Air Temperature: °C	15	Device:	GA5000		
		Weather:	OVERCAST	Serial Number:			
		Ground Conditions:		Daily Check:			
		Wind: NONE / LIGHT / MEDIUM / STRONG		NONE			
		Tidal State: (if applicable) High / Low / Rising / Falling					
Exploratory Position ID:	BH6	Monitoring Round Number:	3	Test Number:	1		
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40		

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)			1015	7.3	Observations (e.g. on-site activities):	
Time End (hh:mm)						

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.1	21.0	0	0		
10	0.0	15	0.0	1.9	18.2	0	0		
15	0.0	30	0.0	1.9	17.4	0	0		
20	0.0	60	0.0	1.9	17.0	0	0		
25	0.0	90	0.0	1.9	17.0	0	0		
30	0.0	120	0.0	1.9	17.0	0	0		
40	0.0	180	0.0	1.9	17.0	0	0		
50	0.0	240	0.0	1.9	17.0	0	0		
60	0.0	300	0.0	1.9	17.0	0	0		

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	5	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	6

GAS MONITORING FIELD SHEET

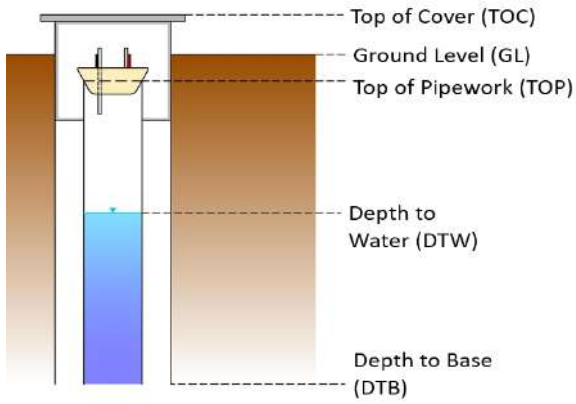
Monitoring Date:	09/10/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	15	Device:	GA5000	
		Weather:	OVERCAST	Serial Number:		
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		NONE		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH7	Monitoring Round Number:	3	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)			1015	6.25	Observations (e.g. on-site activities):	
Time End (hh:mm)						

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.3	20.8	0	0		
10	0.0	15	0.0	0.8	12.7	1	0		
15	0.0	30	0.0	0.9	8.8	0	0		
20	0.0	60	0.0	1.0	8.5	0	0		
25	0.0	90	0.0	1.0	8.4	0	0		
30	0.0	120	0.0	1.0	8.4	0	0		
40	0.0	180	0.0	1.0	8.4	0	0		
50	0.0	240	0.0	1.0	8.4	0	0		
60	0.0	300	0.0	1.0	8.4	0	0		

Stage 1 gas flow - Peak (l/h)		**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.	
Stage 1 gas flow - Steady State (l/h)			

STAGE 3 WATER LEVEL OBSERVATION	Depth (from datum) to water (DTW): (m)	DRY	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.97	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:

Samples Taken: Yes / No	
Sample Media: Gas/Water	
Gas Cannister Start (mb)	
Gas Cannister End (mb)	
Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

Contract Name:	North London Business Park	Data Collected By:	AM
Project Manager / Engineer:	AK/AM	Checked:	
Contract Ref:	1921321	Page number:	7

GAS MONITORING FIELD SHEET

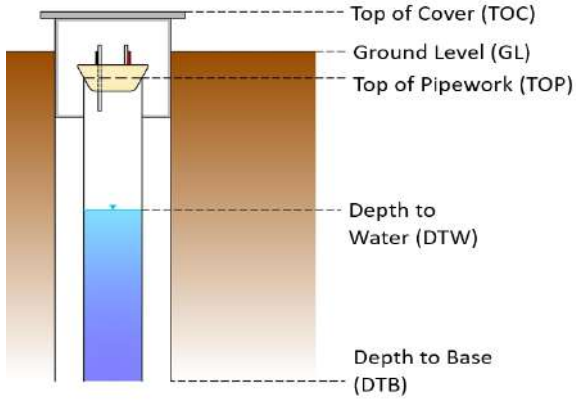
Monitoring Date:	09/10/2020	Measurement datum: TOC / GL / TOP / Other	TOC	Offset to GL (m):		
Pre-Testing Remarks:		Air Temperature: °C	15	Device:	GA5000	
		Weather:	OVERCAST	Serial Number:		
		Ground Conditions:	DRY	Daily Check:		
		Wind: NONE / LIGHT / MEDIUM / STRONG		NONE		
		Tidal State: (if applicable) High / Low / Rising / Falling				
Exploratory Position ID:	BH8	Monitoring Round Number:	3	Test Number:	1	
Install Type: SINGLE / DOUBLE	SINGLE	Pipe Ref: 1) Shallow 2) Deep	1	Pipe Diameter: 19mm/ 40mm / 50mm / Other (mm)	40	

Time of Monitoring (hh:mm)	Flow readings	Gas readings	Atmospheric Pressure (mb)	Differential Pressure (mb)	Gas tap: SINGLE / DOUBLE	SINGLE
Time Start (hh:mm)			1015	3.05	Observations (e.g. on-site activities):	
Time End (hh:mm)						

Stage 1 Flow Readings	**Stage 1** Flow Readings	**Stage 2** Gas Monitoring:	Methane (%/vol)	Carbon Dioxide (%/vol)	Oxygen (%/vol)	Carbon monoxide (ppm)	Hydrogen sulphide (ppm)	LEL (%)	PID (ppm)
Time of flow monitoring (sec)	Flow Reading (l/hr)	Time of gas monitoring (sec)							
5	0.0	0	0.0	0.2	21.0	0	0		
10	0.0	15	0.0	8.6	14.2	1	0		
15	0.0	30	0.0	8.7	10.5	0	0		
20	0.0	60	0.0	8.7	10.1	0	0		
25	0.0	90	0.0	8.7	10.1	0	0		
30	0.0	120	0.0	8.7	10.0	0	0		
40	0.0	180	0.0	8.7	10.0	0	0		
50	0.0	240	0.0	8.7	10.0	0	0		
60	0.0	300	0.0	8.7	10.0	0	0		

Stage 1 gas flow - Peak (l/h)	0.0	**Note:** Flow should be recorded at 5 second intervals up to 30 seconds, 10 second intervals to 2 minutes and 30 second intervals up to 3 minutes or until steady-state readings are obtained. Typically, steady state conditions occur within 30 seconds to a minute. The differential pressure reading (in Pa) should also be recorded during this period.
Stage 1 gas flow - Steady State (l/h)	0.0	

STAGE 3 WATER LEVEL OBSERVATION						
	Depth (from datum) to water (DTW): (m)	3.05	Time:		LNAPL Top (from datum) (m):	
	Depth (from datum) to well base (DTB): (m)	4.91	Purge Start:		DNAPL Top (from datum) (m):	
	Hole Purged: Yes / No		Purge End:		Water Observations:	
	Purge Volume: (ltrs)		Post-Purge (DTW) (m)			



Post testing remarks:	Samples Taken: Yes / No	
	Sample Media: Gas/Water	
	Gas Cannister Start (mb)	
	Gas Cannister End (mb)	
	Gas Cannister Duration (mins)	

Depth (from datum)	Sample Ref	Type (EW / G)	Container

RSK	Contract Name:	North London Business Park	Data Collected By:	AM
	Project Manager / Engineer:	AK/AM	Checked:	
	Contract Ref:	1921321	Page number:	8

APPENDIX J
LABORATORY CERTIFICATES FOR SOIL ANALYSIS

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/08313
Issue Number: 1 **Date:** 05 October, 2020

Client:
RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew Kent
Project Name: North London Business Park (N.L.B.P)
Project Ref: 1921321
Order No: N/A
Date Samples Received: 18/08/20
Date Instructions Received: 01/10/20
Date Analysis Completed: 05/10/20

Prepared by:

Sophie France
Client Service Manager

Approved by:

Holly Neary-King
Client Services Supervisor

Envirolab Job Number: 20/08313

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08313/1							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH3									
Depth to Top	0.40									
Depth To Bottom										
Date Sampled	13-Aug-20									
Sample Type	Soil - ES									
Sample Matrix Code	6AE									
% Stones >10mm$_A$	18.1							% w/w	0.1	A-T-044
pH$_D$ M#	7.92							pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$ M#	0.02							g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$ M#	360							mg/kg	200	A-T-028s
Total Organic Carbon$_D$ M#	0.75							% w/w	0.03	A-T-032s
Arsenic$_D$ M#	13							mg/kg	1	A-T-024s
Cadmium$_D$ M#	1.1							mg/kg	0.5	A-T-024s
Copper$_D$ M#	51							mg/kg	1	A-T-024s
Chromium$_D$ M#	37							mg/kg	1	A-T-024s
Lead$_D$ M#	61							mg/kg	1	A-T-024s
Mercury$_D$	0.68							mg/kg	0.17	A-T-024s
Nickel$_D$ M#	34							mg/kg	1	A-T-024s
Selenium$_D$ M#	<1							mg/kg	1	A-T-024s
Zinc$_D$ M#	100							mg/kg	5	A-T-024s

Envirolab Job Number: 20/08313

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08313/1							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH3									
Depth to Top	0.40									
Depth To Bottom										
Date Sampled	13-Aug-20									
Sample Type	Soil - ES									
Sample Matrix Code	6AE									
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_D^{\#}$	NAD									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A									A-T-045

Envirolab Job Number: 20/08313

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08313/1							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH3									
Depth to Top	0.40									
Depth To Bottom										
Date Sampled	13-Aug-20									
Sample Type	Soil - ES									
Sample Matrix Code	6AE									
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.18							mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.24							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.27							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.14							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.09							mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.24							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.25							mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.16							mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.07							mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.25							mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	1.89							mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/08313

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08313/1							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH3									
Depth to Top	0.40									
Depth To Bottom										
Date Sampled	13-Aug-20									
Sample Type	Soil - ES									
Sample Matrix Code	6AE									
TPH CWG										
Ali >C5-C6$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1							mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1							mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	5							mg/kg	1	A-T-055s
Total Aliphatics$_A$	5							mg/kg	1	A-T-055s
Aro >C5-C7$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1							mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1							mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1							mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	<1							mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	11							mg/kg	1	A-T-055s
Total Aromatics$_A$	12							mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	16							mg/kg	1	A-T-055s
BTEX - Benzene$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01							mg/kg	0.01	A-T-022s

REPORT NOTES

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: RSK Environment Ltd Hemel, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, UK, HP3 9RT

Project: North London Business Park (N.L.B.P)

Clients Project No: 1921321

Project No: 20/08313

Date Received: 01/10/2020 (am)

Cool Box Temperatures (°C): 16.4, 19.4

Lab Sample ID	20/08313/1
Client Sample No	
Client Sample ID/Depth	BH3 0.40m
Date Sampled	13/08/20
Deviation Code	
F	✓

Key
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	20/08313/1
Client Sample No	
Client Sample ID/Depth	BH3 0.40m
Date Sampled	13/08/20
PAH-16MS	✓
Sulphate (acid soluble)	✓
Sulphate (water sol 2:1)	✓
EPHCWG	✓
VPHCWG	✓
Total Organic Carbon	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/07394
Issue Number: 1 **Date:** 17 September, 2020

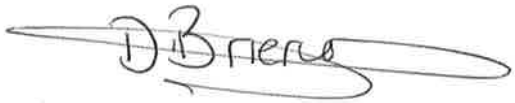
Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Alex Marcelo/Andrew Kent
Project Name: North London Business Park (N.L.B.P)
Project Ref: 1921321
Order No: N/A
Date Samples Received: 25/08/20
Date Instructions Received: 04/09/20
Date Analysis Completed: 17/09/20

Prepared by:

Richard Wong
Client Manager

Approved by:



Danielle Brierley
Client Manager

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP2	TP2	TP3	TP4	TP5	TP6			
Depth to Top	0.50	0.10	0.70	0.50	0.80	0.60	0.10			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5AE	6AE	5AE	6ABE	6AE	5AB	6ABE			
% Stones >10mm$_A$	4.0	11.2	22.3	25.7	36.3	14.6	19.2	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.12	6.91	8.01	8.14	8.07	7.76	7.77	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.12	<0.01	0.05	<0.01	0.04	0.12	<0.01	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	300	450	<200	300	370	490	670	mg/kg	200	A-T-028s
Arsenic$_D$$^{M\#}$	2	18	2	4	3	2	16	mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$	0.7	0.8	0.5	0.7	1.9	0.6	4.1	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	75	87	23	302	3550	97	173	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	54	28	43	36	48	42	48	mg/kg	1	A-T-024s
Lead$_D$$^{M\#}$	18	219	19	115	459	49	563	mg/kg	1	A-T-024s
Mercury$_D$	0.84	2.00	0.30	0.60	0.49	0.56	1.56	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	47	27	26	45	142	34	54	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	2	<1	<1	1	<2	2	2	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	104	162	61	239	701	114	509	mg/kg	5	A-T-024s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP2	TP2	TP3	TP4	TP5	TP6			
Depth to Top	0.50	0.10	0.70	0.50	0.80	0.60	0.10			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5AE	6AE	5AE	6ABE	6AE	5AB	6ABE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_D^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP2	TP2	TP3	TP4	TP5	TP6			
Depth to Top	0.50	0.10	0.70	0.50	0.80	0.60	0.10			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5AE	6AE	5AE	6ABE	6AE	5AB	6ABE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	0.02	<0.01	<0.01	0.11	<0.01	0.10	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	0.02	<0.01	0.06	0.09	0.02	0.20	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	0.05	<0.02	0.06	0.44	0.03	1.29	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	0.30	<0.04	0.29	2.85	0.17	2.58	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	0.31	<0.04	0.42	2.31	0.25	1.75	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	0.44	<0.05	0.50	2.65	0.29	2.02	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	0.23	<0.05	0.36	1.28	0.30	0.89	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	0.16	<0.07	0.15	0.92	0.10	0.69	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	0.40	<0.06	0.36	2.50	0.23	2.37	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	0.04	<0.04	0.06	0.27	0.05	0.15	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	0.56	<0.08	0.40	5.27	0.25	8.67	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	0.01	<0.01	<0.01	0.08	<0.01	0.31	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	0.27	<0.03	0.41	1.67	0.33	1.11	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.04	0.27	<0.03	0.07	1.40	0.07	4.40	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	0.50	<0.07	0.42	4.69	0.27	7.48	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	3.58	<0.08	3.56	26.5	2.36	34	mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP2	TP2	TP3	TP4	TP5	TP6			
Depth to Top	0.50	0.10	0.70	0.50	0.80	0.60	0.10			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5AE	6AE	5AE	6ABE	6AE	5AB	6ABE			
VOC										
Dichlorodifluoromethane$_A$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Chloromethane$_A$	-	-	-	-	<10	-	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromomethane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Chloroethane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Trichlorofluoromethane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1-Dichloroethene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Carbon Disulphide$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Dichloromethane$_A$	-	-	-	-	<5	-	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1-Dichloroethane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
2,2-Dichloropropane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromochloromethane$_A$#	-	-	-	-	<5	-	-	µg/kg	5	A-T-006s
Chloroform$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1-Dichloropropene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Carbon Tetrachloride$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2-Dichloroethane$_A$#	-	-	-	-	<2	-	-	µg/kg	2	A-T-006s
Benzene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Trichloroethene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2-Dichloropropane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Dibromomethane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromodichloromethane$_A$#	-	-	-	-	<10	-	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Toluene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,3-Dichloropropane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Tetrachloroethene$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Dibromochloromethane$_A$#	-	-	-	-	<3	-	-	µg/kg	3	A-T-006s
1,2-Dibromoethane$_A$#	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s

Lab Sample ID	20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP2	TP2	TP3	TP4	TP5	TP6			
Depth to Top	0.50	0.10	0.70	0.50	0.80	0.60	0.10			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5AE	6AE	5AE	6ABE	6AE	5AB	6ABE			
Chlorobenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	-	-	-	-	<2	-	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	-	-	-	-	<2	-	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	-	-	-	-	<3	-	-	µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	-	-	-	-	<3	-	-	µg/kg	3	A-T-006s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP1	TP2	TP2	TP3	TP4	TP5	TP6			
Depth to Top	0.50	0.10	0.70	0.50	0.80	0.60	0.10			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	5AE	6AE	5AE	6ABE	6AE	5AB	6ABE			
TPH CWG										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	<1	<1	2	2	2	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	1	4	2	8	34	6	10	mg/kg	1	A-T-055s
Total Aliphatics$_A$	1	4	2	10	36	8	10	mg/kg	1	A-T-055s
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1	<1	<1	2	4	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	<1	5	2	22	33	2	5	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	1	25	12	79	144	10	30	mg/kg	1	A-T-055s
Total Aromatics$_A$	1	30	14	103	180	12	34	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	2	34	15	113	217	20	44	mg/kg	1	A-T-055s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/8	20/07394/9	20/07394/10	20/07394/11	20/07394/12	20/07394/13	20/07394/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP6	TP7	TP8	TP9	TP10	TP11	TP12			
Depth to Top	0.40	0.10	0.50	0.30	1.50	0.50	1.00			
Depth To Bottom										
Date Sampled	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	25-Aug-20	24-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6ABE	6ABE	6ABE	6ABE	5AE	6ABE	5AE			
% Stones >10mm$_A$	13.2	20.6	46.0	33.7	<0.1	27.3	6.6	% w/w	0.1	A-T-044
pH$_D$[M#]	7.86	7.80	8.39	7.92	8.11	8.16	8.12	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$[M#]	<0.01	<0.01	0.04	<0.01	0.25	0.01	0.18	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$[M#]	360	1200	490	270	790	210	520	mg/kg	200	A-T-028s
Total Organic Carbon$_D$[M#]	-	-	1.08	0.74	-	-	-	% w/w	0.03	A-T-032s
Arsenic$_D$[M#]	6	8	4	11	3	4	2	mg/kg	1	A-T-024s
Cadmium$_D$[M#]	1.0	0.7	<0.5	0.7	1.8	0.6	1.2	mg/kg	0.5	A-T-024s
Copper$_D$[M#]	419	35	36	33	528	69	129	mg/kg	1	A-T-024s
Chromium$_D$[M#]	40	33	21	21	53	31	48	mg/kg	1	A-T-024s
Lead$_D$[M#]	172	40	160	52	181	47	55	mg/kg	1	A-T-024s
Mercury$_D$	0.71	0.82	0.91	0.34	0.76	0.36	0.32	mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	54	33	19	25	79	30	53	mg/kg	1	A-T-024s
Selenium$_D$[M#]	2	5	<1	<1	3	<1	2	mg/kg	1	A-T-024s
Zinc$_D$[M#]	290	98	104	111	362	88	131	mg/kg	5	A-T-024s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/8	20/07394/9	20/07394/10	20/07394/11	20/07394/12	20/07394/13	20/07394/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP6	TP7	TP8	TP9	TP10	TP11	TP12			
Depth to Top	0.40	0.10	0.50	0.30	1.50	0.50	1.00			
Depth To Bottom										
Date Sampled	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	25-Aug-20	24-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6ABE	6ABE	6ABE	6ABE	5AE	6ABE	5AE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_D^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/8	20/07394/9	20/07394/10	20/07394/11	20/07394/12	20/07394/13	20/07394/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP6	TP7	TP8	TP9	TP10	TP11	TP12			
Depth to Top	0.40	0.10	0.50	0.30	1.50	0.50	1.00			
Depth To Bottom										
Date Sampled	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	25-Aug-20	24-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6ABE	6ABE	6ABE	6ABE	5AE	6ABE	5AE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	0.01	<0.01	0.01	<0.01	0.01	0.02	0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	0.02	<0.01	0.02	0.01	0.01	0.03	0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	0.05	<0.02	0.04	<0.02	0.06	0.07	0.03	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.47	0.08	0.18	0.08	0.32	0.43	0.14	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.44	0.08	0.19	0.08	0.27	0.67	0.14	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.61	0.12	0.26	0.10	0.48	0.81	0.19	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.31	0.06	0.20	0.06	0.18	0.55	0.09	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.20	<0.07	0.08	<0.07	0.15	0.25	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.56	0.10	0.23	0.10	0.41	0.53	0.19	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	0.06	<0.04	<0.04	<0.04	<0.04	0.10	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.84	0.14	0.30	0.10	0.66	0.74	0.29	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	0.01	<0.01	<0.01	<0.01	0.01	0.02	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.38	0.07	0.21	0.07	0.23	0.64	0.11	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.27	0.04	0.12	<0.03	0.17	0.26	0.15	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.76	0.13	0.27	0.10	0.58	0.74	0.28	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	4.99	0.82	2.11	0.70	3.54	5.86	1.63	mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/8	20/07394/9	20/07394/10	20/07394/11	20/07394/12	20/07394/13	20/07394/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP6	TP7	TP8	TP9	TP10	TP11	TP12			
Depth to Top	0.40	0.10	0.50	0.30	1.50	0.50	1.00			
Depth To Bottom										
Date Sampled	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	25-Aug-20	24-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6ABE	6ABE	6ABE	6ABE	5AE	6ABE	5AE			
TPH CWG										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	2	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	<1	5	<1	<1	2	1	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	5	8	47	1	5	5	3	mg/kg	1	A-T-055s
Total Aliphatics$_A$	5	8	54	1	5	7	4	mg/kg	1	A-T-055s
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1	<1	2	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	3	2	6	1	5	4	2	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	28	25	79	8	24	30	10	mg/kg	1	A-T-055s
Total Aromatics$_A$	31	27	88	9	30	34	12	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	37	36	142	11	35	40	17	mg/kg	1	A-T-055s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/15	20/07394/16	20/07394/17	20/07394/18	20/07394/19	20/07394/20	20/07394/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP13	TP14	TP15	TP16	TP17	TP18	BH5			
Depth to Top	0.40	0.50	0.15	1.00	0.50	1.50	0.20			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	5AE	5AE	5AE	6ABE			
% Stones >10mm$_A$	6.1	<0.1	10.7	<0.1	<0.1	<0.1	17.9	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	7.20	7.79	7.65	8.13	8.34	8.24	7.95	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.02	0.06	<0.01	0.41	0.05	0.03	0.02	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	290	420	820	1300	200	210	1400	mg/kg	200	A-T-028s
Total Organic Carbon$_D$$^{M\#}$	-	1.29	-	-	0.17	-	-	% w/w	0.03	A-T-032s
Arsenic$_D$$^{M\#}$	4	3	4	2	3	<1	8	mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$	0.6	0.7	1.0	1.4	0.6	0.8	0.7	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	18	67	86	344	32	116	24	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	36	43	29	46	39	50	26	mg/kg	1	A-T-024s
Lead$_D$$^{M\#}$	25	102	81	73	17	26	112	mg/kg	1	A-T-024s
Mercury$_D$	0.24	0.40	0.38	0.38	<0.17	<0.17	1.33	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	23	28	31	60	39	48	25	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	3	4	<1	2	2	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	67	114	147	191	80	99	87	mg/kg	5	A-T-024s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/15	20/07394/16	20/07394/17	20/07394/18	20/07394/19	20/07394/20	20/07394/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP13	TP14	TP15	TP16	TP17	TP18	BH5			
Depth to Top	0.40	0.50	0.15	1.00	0.50	1.50	0.20			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	5AE	5AE	5AE	6ABE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_D^{\#}$	NAD	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/15	20/07394/16	20/07394/17	20/07394/18	20/07394/19	20/07394/20	20/07394/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP13	TP14	TP15	TP16	TP17	TP18	BH5			
Depth to Top	0.40	0.50	0.15	1.00	0.50	1.50	0.20			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	5AE	5AE	5AE	6ABE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01	0.13	0.04	0.04	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	0.11	0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02	0.08	0.22	0.10	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	0.07	0.15	0.15	1.64	0.68	0.10	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	0.08	0.16	0.09	1.34	0.73	0.13	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	0.11	0.22	0.14	1.73	0.82	0.13	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	0.07	0.12	<0.05	0.68	0.47	0.11	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07	0.58	0.31	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	0.10	0.19	0.19	1.64	0.77	0.13	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04	0.15	0.16	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	0.10	0.21	0.47	2.57	0.86	0.16	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01	0.04	0.02	0.02	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	0.07	0.12	0.06	0.88	0.69	0.13	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03	0.06	0.26	0.53	0.17	0.05	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	0.09	0.20	0.35	2.32	0.80	0.15	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	0.69	1.43	1.96	14.4	6.63	1.09	mg/kg	0.01	A-T-019s

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Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/15	20/07394/16	20/07394/17	20/07394/18	20/07394/19	20/07394/20	20/07394/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP13	TP14	TP15	TP16	TP17	TP18	BH5			
Depth to Top	0.40	0.50	0.15	1.00	0.50	1.50	0.20			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	5AE	5AE	5AE	6ABE			
VOC										
Dichlorodifluoromethane$_{A}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Chloromethane$_{A}$	-	-	-	<10	-	-	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Bromomethane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Chloroethane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Trichlorofluoromethane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,1-Dichloroethene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Carbon Disulphide$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Dichloromethane$_{A}$	-	-	-	<5	-	-	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,1-Dichloroethane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
2,2-Dichloropropane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Bromochloromethane$_{A}^{\#}$	-	-	-	<5	-	-	-	µg/kg	5	A-T-006s
Chloroform$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,1-Dichloropropene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Carbon Tetrachloride$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,2-Dichloroethane$_{A}^{\#}$	-	-	-	<2	-	-	-	µg/kg	2	A-T-006s
Benzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Trichloroethene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,2-Dichloropropane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Dibromomethane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Bromodichloromethane$_{A}^{\#}$	-	-	-	<10	-	-	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Toluene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,3-Dichloropropane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Tetrachloroethene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Dibromochloromethane$_{A}^{\#}$	-	-	-	<3	-	-	-	µg/kg	3	A-T-006s
1,2-Dibromoethane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s

Lab Sample ID	20/07394/15	20/07394/16	20/07394/17	20/07394/18	20/07394/19	20/07394/20	20/07394/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP13	TP14	TP15	TP16	TP17	TP18	BH5			
Depth to Top	0.40	0.50	0.15	1.00	0.50	1.50	0.20			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	5AE	5AE	5AE	6ABE			
Chlorobenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	-	-	-	<2	-	-	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	-	-	-	<2	-	-	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	-	-	-	<3	-	-	-	µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	-	-	-	<1	-	-	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	-	-	-	<3	-	-	-	µg/kg	3	A-T-006s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/15	20/07394/16	20/07394/17	20/07394/18	20/07394/19	20/07394/20	20/07394/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP13	TP14	TP15	TP16	TP17	TP18	BH5			
Depth to Top	0.40	0.50	0.15	1.00	0.50	1.50	0.20			
Depth To Bottom										
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20	25-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	5AE	5AE	5AE	6ABE			
TPH CWG										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	10	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	599	14	4	3	7	18	13	mg/kg	1	A-T-055s
Total Aliphatics$_A$	609	14	4	3	7	18	13	mg/kg	1	A-T-055s
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	4	<1	<1	1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	234	1	2	21	5	8	3	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	428	21	17	45	22	63	38	mg/kg	1	A-T-055s
Total Aromatics$_A$	666	22	19	68	27	71	41	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	1270	36	23	71	34	89	54	mg/kg	1	A-T-055s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/25	20/07394/30	20/07394/40	20/07394/48	20/07394/55	20/07394/61	20/07394/62	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP3	TP7	TP15	TP16	BH1	TP3 + TP4	TP7 + TP8			
Depth to Top	0.75	0.50	0.80	0.50	1.75	0.75	0.50			
Depth To Bottom						0.80				
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	19-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code					5AE	6ABE	6ABE			
% Stones >10mm$_A$	-	-	-	-	9.3	25.7	45.8	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	-	-	-	-	7.96	8.16	10.84	pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	-	-	-	-	0.13	-	-	g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	-	-	-	-	650	-	-	mg/kg	200	A-T-028s
Total Organic Carbon$_D$$^{M\#}$	-	-	-	-	1.61	1.78	0.66	% w/w	0.03	A-T-032s
Arsenic$_D$$^{M\#}$	-	-	-	-	5	-	-	mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$	-	-	-	-	0.5	-	-	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	-	-	-	-	55	-	-	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	-	-	-	-	36	-	-	mg/kg	1	A-T-024s
Lead$_D$$^{M\#}$	-	-	-	-	48	-	-	mg/kg	1	A-T-024s
Mercury$_D$	-	-	-	-	0.34	-	-	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	-	-	-	-	28	-	-	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	-	-	-	-	<1	-	-	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	-	-	-	-	98	-	-	mg/kg	5	A-T-024s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/25	20/07394/30	20/07394/40	20/07394/48	20/07394/55	20/07394/61	20/07394/62	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP3	TP7	TP15	TP16	BH1	TP3 + TP4	TP7 + TP8			
Depth to Top	0.75	0.50	0.80	0.50	1.75	0.75	0.50			
Depth To Bottom						0.80				
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	19-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code					5AE	6ABE	6ABE			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_D^{\#}$	-	-	-	-	NAD	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	-	-	-	-	N/A	-	-			A-T-045

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/25	20/07394/30	20/07394/40	20/07394/48	20/07394/55	20/07394/61	20/07394/62	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP3	TP7	TP15	TP16	BH1	TP3 + TP4	TP7 + TP8			
Depth to Top	0.75	0.50	0.80	0.50	1.75	0.75	0.50			
Depth To Bottom						0.80				
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	19-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code					5AE	6ABE	6ABE			
PAH-16MS										
Acenaphthene$_A^{M\#}$	-	-	-	-	0.34	-	-	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	-	-	-	-	0.03	-	-	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	-	-	-	-	0.38	-	-	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-	-	-	-	0.78	-	-	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	-	-	-	-	0.74	-	-	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-	-	-	-	0.75	-	-	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-	-	-	-	0.53	-	-	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-	-	-	-	0.29	-	-	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	-	-	-	-	0.86	-	-	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	-	-	-	-	0.15	-	-	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	-	-	-	-	1.55	-	-	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	-	-	-	-	0.23	-	-	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-	-	-	-	0.65	-	-	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	-	-	-	-	<0.03	-	-	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	-	-	-	-	1.43	-	-	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	-	-	-	-	1.42	-	-	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	-	-	-	-	10.1	-	-	mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/25	20/07394/30	20/07394/40	20/07394/48	20/07394/55	20/07394/61	20/07394/62	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP3	TP7	TP15	TP16	BH1	TP3 + TP4	TP7 + TP8			
Depth to Top	0.75	0.50	0.80	0.50	1.75	0.75	0.50			
Depth To Bottom						0.80				
Date Sampled	24-Aug-20	24-Aug-20	25-Aug-20	25-Aug-20	19-Aug-20	24-Aug-20	26-Aug-20			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code					5AE	6ABE	6ABE			
TPH CWG										
Ali >C5-C6$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	-	-	-	<1	-	-	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	-	-	-	-	<1	-	-	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	-	-	-	-	<1	-	-	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	-	-	-	-	1	-	-	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	-	-	-	-	50	-	-	mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	-	-	-	51	-	-	mg/kg	1	A-T-055s
Aro >C5-C7$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	-	-	-	-	<1	-	-	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	-	-	-	<1	-	-	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	-	-	-	3	-	-	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	-	-	-	-	9	-	-	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	-	-	-	-	73	-	-	mg/kg	1	A-T-055s
Total Aromatics$_A$	-	-	-	-	86	-	-	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	-	-	-	-	136	-	-	mg/kg	1	A-T-055s
BTEX - Benzene$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	-	-	-	-	<0.01	-	-	mg/kg	0.01	A-T-022s

Envirolab Job Number: 20/07394

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/07394/63	20/07394/64						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP11 + TP13	TP15 +TP16								
Depth to Top	0.40	0.50								
Depth To Bottom	0.50	0.80								
Date Sampled	24-Aug-20	25-Aug-20								
Sample Type	Soil - ES	Soil - ES								
Sample Matrix Code	6AE	5AE								
% Stones >10mm$_A$	<0.1	<0.1						% w/w	0.1	A-T-044
pH$_D^{M\#}$	7.95	8.72						pH	0.01	A-T-031s
Total Organic Carbon$_D^{M\#}$	0.61	1.81						% w/w	0.03	A-T-032s

REPORT NOTES

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40℃).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25℃ / 11550µS/cm @ 20℃ fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: RSK Environment Ltd Hemel, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, UK, HP3 9RT

Project: North London Business Park (N.L.B.P)

Clients Project No: 1921321

Project No: 20/07394

Date Received: 04/09/2020 (am)

Cool Box Temperatures (°C): 15.9 - 18.0

Lab Sample ID	20/07394/55	20/07394/61	20/07394/62	20/07394/63	20/07394/64
Client Sample No					
Client Sample ID/Depth	BH1 1.75m	TP3 + TP4 0.75-0.80m	TP7 + TP8 0.50m	TP11 + TP13 0.40-0.50m	TP15 +TP16 0.50-0.80m
Date Sampled	19/08/20	24/08/20	26/08/20	24/08/20	25/08/20
Deviation Code					
B1 (no VPH)		✓	✓	✓	✓
F	✓				

Key

B1 (no VPH) *Separate container not supplied for VPH/BTEX analysis*

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	20/07394/55
Client Sample No	
Client Sample ID/Depth	BH1 1.75m
Date Sampled	19/08/20
PAH-16MS	✓
VPHCWG	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

envirolab
Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	20/07394
Issue Number:	1
Date:	17-Sep-20

Client: RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager:	Alex Marcelo/Andrew Kent
Project Name:	North London Business Park (N.L.B.P)
Project Ref:	1921321
Order No:	N/A
Date Samples Received:	25-Aug-20
Date Instructions Received:	4-Sep-20
Date Analysis Completed:	17-Sep-20

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

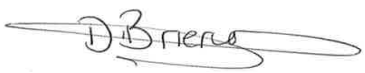
Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

Prepared by:

Richard Wong
Client Manager

Approved by:



Danielle Brierley
Client Manager

envirolab

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

Sample Details						Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	20/07394/61				
Client Sample Number								
Client Sample ID				TP3 + TP4				
Depth to Top				0.75				
Depth to Bottom				0.80				
Date Sampled				24/08/2020				
Sample Type				Soil - ES				
Sample Matrix Code				6ABE				
Solid Waste Analysis								
pH (pH Units)$_D$	A-T-031	N	N	**8.16**		-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.29**		-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**0.04**		-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N	**5.4**		-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**1.78**		3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**378**		100	-	-
Mineral Oil (mg/kg)$_A$	A-T-007	N	N	**30**		500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**		1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**		6	-	-
Eluate Analysis				**10:1**	**10:1**	**Limit values for compliance leaching test using**		
				mg/l	**mg/kg**	**BS EN 12457-2 at L/S 10 l/kg (mg/kg)**		
Arsenic	A-T-025	N	N	0.003	**0.030**	0.5	2	25
Barium	A-T-025	N	N	0.072	**0.720**	20	100	300
Cadmium	A-T-025	N	N	<0.001	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.002	**0.020**	0.5	10	70
Copper	A-T-025	N	N	0.315	**3.150**	2	50	100
Mercury	A-T-025	N	N	<0.0005	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.002	**0.020**	0.5	10	30
Nickel	A-T-025	N	N	0.009	**0.090**	0.4	10	40
Lead	A-T-025	N	N	0.082	**0.820**	0.5	10	50
Antimony	A-T-025	N	N	0.007	**0.070**	0.06	0.7	5
Selenium	A-T-025	N	N	0.003	**0.030**	0.1	0.5	7
Zinc	A-T-025	N	N	0.107	**1.070**	4	50	200
Chloride	A-T-026	N	N	3	**29**	800	15000	25000
Fluoride	A-T-026	N	N	0.9	**9.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	20	**199**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	64	**640**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<0.2	**<200**	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	8.0				
Conductivity (µS/cm)	A-T-037	N	N	128				
Mass Sample (kg)				0.206				
Dry Matter (%)	A-T-044	N	N	85.1				

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

Sample Details						Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	20/07394/62				
Client Sample Number						Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				TP7 + TP8				
Depth to Top				0.5				
Depth to Bottom								
Date Sampled				26/08/2020				
Sample Type				Soil - ES				
Sample Matrix Code				6ABE				
Solid Waste Analysis								
pH (pH Units)$_D$	A-T-031	N	N	**10.84**		-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.28**		-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**0.08**		-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N	**2.2**		-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.66**		3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**1.47**		100	-	-
Mineral Oil (mg/kg)$_A$	A-T-007	N	N	**148**		500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**		1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**		6	-	-
Eluate Analysis				**10:1**	**10:1**	**Limit values for compliance leaching test using**		
				mg/l	**mg/kg**	**BS EN 12457-2 at L/S 10 l/kg (mg/kg)**		
Arsenic	A-T-025	N	N	0.009	**0.090**	0.5	2	25
Barium	A-T-025	N	N	0.013	**0.130**	20	100	300
Cadmium	A-T-025	N	N	<0.001	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.003	**0.030**	0.5	10	70
Copper	A-T-025	N	N	0.010	**0.100**	2	50	100
Mercury	A-T-025	N	N	<0.0005	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	<0.001	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	<0.001	**<0.01**	0.4	10	40
Lead	A-T-025	N	N	0.040	**0.400**	0.5	10	50
Antimony	A-T-025	N	N	0.002	**0.020**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.015	**0.150**	4	50	200
Chloride	A-T-026	N	N	1	**11**	800	15000	25000
Fluoride	A-T-026	N	N	0.2	**2.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	18	**181**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	51	**510**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<0.2	**<200**	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	8.8				
Conductivity (µS/cm)	A-T-037	N	N	102				
Mass Sample (kg)				0.223				
Dry Matter (%)	A-T-044	N	N	78.5				

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

Sample Details						Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	20/07394/63				
Client Sample Number						Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				TP11 + TP13				
Depth to Top				0.4				
Depth to Bottom				0.50				
Date Sampled				24/08/2020				
Sample Type				Soil - ES				
Sample Matrix Code				6AE				
Solid Waste Analysis								
pH (pH Units)$_D$	A-T-031	N	N	**7.95**		-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.23**		-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**0.04**		-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N	**6.7**		-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.61**		3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**<0.08**		100	-	-
Mineral Oil (mg/kg)$_A$	A-T-007	N	N	**295**		500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**		1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**		6	-	-
Eluate Analysis				**10:1**	**10:1**	**Limit values for compliance leaching test using**		
				mg/l	**mg/kg**	**BS EN 12457-2 at L/S 10 l/kg (mg/kg)**		
Arsenic	A-T-025	N	N	0.001	**0.010**	0.5	2	25
Barium	A-T-025	N	N	0.011	**0.110**	20	100	300
Cadmium	A-T-025	N	N	<0.001	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.001	**0.010**	0.5	10	70
Copper	A-T-025	N	N	0.008	**0.080**	2	50	100
Mercury	A-T-025	N	N	<0.0005	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	<0.001	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	0.001	**0.010**	0.4	10	40
Lead	A-T-025	N	N	0.005	**0.050**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	0.001	**0.010**	0.1	0.5	7
Zinc	A-T-025	N	N	0.008	**0.080**	4	50	200
Chloride	A-T-026	N	N	4	**37**	800	15000	25000
Fluoride	A-T-026	N	N	0.4	**4.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	22	**217**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	53	**530**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<0.2	**<200**	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	8.2				
Conductivity (µS/cm)	A-T-037	N	N	106				
Mass Sample (kg)				0.203				
Dry Matter (%)	A-T-044	N	N	86				

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Sample Details						Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	20/07394/64				
Client Sample Number								
Client Sample ID				TP15 +TP16				
Depth to Top				0.5				
Depth to Bottom				0.80				
Date Sampled				25/08/2020				
Sample Type				Soil - ES				
Sample Matrix Code				5AE				
Solid Waste Analysis								
pH (pH Units)$_D$	A-T-031	N	N	**8.72**		-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.46**		-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**0.07**		-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N	**7.2**		-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**1.81**		3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**1.2**		100	-	-
Mineral Oil (mg/kg)$_A$	A-T-007	N	N	**<10**		500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**		1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**		6	-	-
Eluate Analysis				**10:1**	**10:1**	**Limit values for compliance leaching test using**		
				mg/l	**mg/kg**	**BS EN 12457-2 at L/S 10 l/kg (mg/kg)**		
Arsenic	A-T-025	N	N	<0.001	**<0.01**	0.5	2	25
Barium	A-T-025	N	N	0.024	**0.240**	20	100	300
Cadmium	A-T-025	N	N	<0.001	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	<0.001	**<0.01**	0.5	10	70
Copper	A-T-025	N	N	0.003	**0.030**	2	50	100
Mercury	A-T-025	N	N	<0.0005	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.008	**0.080**	0.5	10	30
Nickel	A-T-025	N	N	<0.001	**<0.01**	0.4	10	40
Lead	A-T-025	N	N	<0.001	**<0.01**	0.5	10	50
Antimony	A-T-025	N	N	0.002	**0.020**	0.06	0.7	5
Selenium	A-T-025	N	N	0.005	**0.050**	0.1	0.5	7
Zinc	A-T-025	N	N	0.004	**0.040**	4	50	200
Chloride	A-T-026	N	N	<1.00	**<10**	800	15000	25000
Fluoride	A-T-026	N	N	0.9	**9.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	72	**717**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	134	**1340**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<0.2	**<200**	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	8.2				
Conductivity (µS/cm)	A-T-037	N	N	267				
Mass Sample (kg)				0.214				
Dry Matter (%)	A-T-044	N	N	81.9				

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envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/07494
Issue Number: 1 **Date:** 21 September, 2020

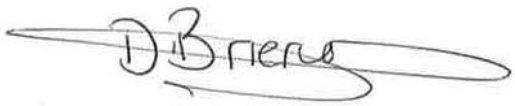
Client:
RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew Kent
Project Name: North London Business Park
Project Ref: 1921321
Order No: N/A
Date Samples Received: 28/08/20
Date Instructions Received: 08/09/20
Date Analysis Completed: 18/09/20

Prepared by:

Sophie France
Client Service Manager

Approved by:



Danielle Brierley
Client Manager

Envirolab Job Number: 20/07494

Client Project Name: North London Business Park

Client Project Ref: 1921321

Lab Sample ID	20/07494/1	20/07494/2	20/07494/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH4	BH6	BH7							
Depth to Top	0.75	0.50	1.50							
Depth To Bottom										
Date Sampled	02-Sep-20	21-Aug-20	02-Sep-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6ABE	6AE	6AE							
% Stones >10mm$_A$	8.6	7.9	19.0					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.38	6.73	10.12					pH	0.01	A-T-031s
Sulphate (water sol 2:1)$_D$$^{M\#}$	0.05	0.02	0.45					g/l	0.01	A-T-026s
Sulphate (acid soluble)$_D$$^{M\#}$	610	430	3500					mg/kg	200	A-T-028s
Arsenic$_D$$^{M\#}$	5	<1	3					mg/kg	1	A-T-024s
Cadmium$_D$$^{M\#}$	0.7	<0.5	0.6					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	159	93	170					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	37	34	45					mg/kg	1	A-T-024s
Lead$_D$$^{M\#}$	139	77	180					mg/kg	1	A-T-024s
Mercury$_D$	0.80	0.60	0.82					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	34	18	45					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	2	2	2					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	164	85	165					mg/kg	5	A-T-024s

Envirolab Job Number: 20/07494

Client Project Name: North London Business Park

Client Project Ref: 1921321

Lab Sample ID	20/07494/1	20/07494/2	20/07494/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH4	BH6	BH7							
Depth to Top	0.75	0.50	1.50							
Depth To Bottom										
Date Sampled	02-Sep-20	21-Aug-20	02-Sep-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6ABE	6AE	6AE							
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_D^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 20/07494

Client Project Name: North London Business Park

Client Project Ref: 1921321

Lab Sample ID	20/07494/1	20/07494/2	20/07494/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH4	BH6	BH7							
Depth to Top	0.75	0.50	1.50							
Depth To Bottom										
Date Sampled	02-Sep-20	21-Aug-20	02-Sep-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6ABE	6AE	6AE							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	0.05					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	0.02	<0.01	0.02					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	0.08	<0.02	0.09					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	0.51	<0.04	0.26					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	0.48	<0.04	0.28					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	0.59	<0.05	0.32					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	0.31	<0.05	0.18					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	0.22	<0.07	0.12					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	0.53	<0.06	0.28					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	0.08	<0.04	0.05					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	0.93	<0.08	0.49					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	0.02	<0.01	0.04					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	0.40	<0.03	0.25					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	0.27	<0.03	0.29					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	0.80	<0.07	0.45					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	5.24	<0.08	3.17					mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/07494

Client Project Name: North London Business Park

Client Project Ref: 1921321

Lab Sample ID	20/07494/1	20/07494/2	20/07494/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH4	BH6	BH7							
Depth to Top	0.75	0.50	1.50							
Depth To Bottom										
Date Sampled	02-Sep-20	21-Aug-20	02-Sep-20							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	6ABE	6AE	6AE							
TPH CWG										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	3					mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	2	<1	7					mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	15	2	15					mg/kg	1	A-T-055s
Total Aliphatics$_A$	18	2	25					mg/kg	1	A-T-055s
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	3					mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_A$	4	<1	3					mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	41	<1	7					mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	141	7	23					mg/kg	1	A-T-055s
Total Aromatics$_A$	186	7	35					mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35)$_A$	203	9	60					mg/kg	1	A-T-055s
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	0.07					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	0.02					mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

REPORT NOTES

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: RSK Environment Ltd Hemel, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, UK, HP3 9RT

Project: North London Business Park

Clients Project No: 1921321

Project No: 20/07494

Date Received: 08/09/2020 (am)

Cool Box Temperatures (°C): 16.9

Lab Sample ID	20/07494/2
Client Sample No	
Client Sample ID/Depth	BH6 0.50m
Date Sampled	21/08/20
Deviation Code	
F	✓

Key
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	20/07494/2
Client Sample No	
Client Sample ID/Depth	BH6 0.50m
Date Sampled	21/08/20
PAH-16MS	✓
VPHCWG	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/08234
Issue Number: 1 **Date:** 15 October, 2020

Client:
RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Andrew Kent
Project Name: North London Business Park (N.L.B.P)
Project Ref: 1921321
Order No: N/A
Date Samples Received: 29/09/20
Date Instructions Received: 29/09/20
Date Analysis Completed: 15/10/20

Prepared by:

Melanie Marshall
Laboratory Coordinator

Approved by:

Richard Wong
Client Manager

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 20/08234

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08234/1	20/08234/2	20/08234/3	20/08234/4	20/08234/5	20/08234/6	20/08234/7	Units	Limit of Detection	Method ref
Client Sample No	17	18	9	23	5	19	29			
Client Sample ID	BH1	BH2	BH3	BH3	BH4	BH4	BH4			
Depth to Top	10.50	11.00	4.50	15.00	1.60	9.00	15.00			
Depth To Bottom	11.00	11.50	5.00	15.50	2.00	9.50	15.50			
Date Sampled	19-Aug-20	17-Aug-20	13-Aug-20	13-Aug-20	02-Sep-20	02-Sep-20	02-Sep-20			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	5AE	5A	5AE	5A	5AE	5A	5AE			
% Stones >10mm$_A$	39.4	21.7	20.0	19.3	7.8	34.8	21.2	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.10	8.42	7.86	8.00	8.46	8.64	7.94	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	1270	165	2370	2330	124	72	1840	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.36	0.05	1.38	0.76	0.05	0.03	0.51	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.12	0.04	0.47	0.50	0.03	0.03	0.17	% w/w	0.01	A-T-024s

Envirolab Job Number: 20/08234

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08234/8	20/08234/9	20/08234/10	20/08234/11	20/08234/12	20/08234/13	20/08234/14	Units	Limit of Detection	Method ref
Client Sample No	18	32	6	12	22	5	9			
Client Sample ID	BH5	BH5	BH6	BH6	BH6	BH7	BH7			
Depth to Top	10.50	21.00	2.50	6.00	13.50	3.50	6.00			
Depth To Bottom	11.00	21.50	3.00	6.50	14.00	4.00	6.50			
Date Sampled	25-Aug-20	25-Aug-20	21-Aug-20	24-Aug-20	24-Aug-20	02-Sep-20	02-Sep-20			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	5A	5AE	5AE	5A	5AE	5A	5AE			
% Stones >10mm$_A$	2.0	26.9	35.1	37.4	16.3	33.8	26.4	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	7.79	8.23	8.14	8.05	8.39	8.06	7.74	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	2070	1200	232	1700	937	106	1940	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	1.26	0.17	0.07	0.61	0.29	0.03	1.41	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.52	0.38	0.05	0.28	0.40	0.02	0.70	% w/w	0.01	A-T-024s

Envirolab Job Number: 20/08234

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08234/15	20/08234/16	20/08234/17	20/08234/18	20/08234/19	20/08234/20	20/08234/21	Units	Limit of Detection	Method ref
Client Sample No	27	11	25	5	5	11	3			
Client Sample ID	BH7	BH8	BH8	BH1	BH1	BH1	BH2			
Depth to Top	19.50	6.00	16.50	2.50	2.70	6.00	1.50			
Depth To Bottom	20.00	6.50	17.00	3.00	3.00	6.50	2.00			
Date Sampled	02-Sep-20	27-Aug-20	28-Aug-20							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Matrix Code	5A	5A	5A	5A	5A	5A	5A			
% Stones >10mm$_A$	24.9	20.6	22.8	25.9	25.7	25.5	20.3	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.02	8.32	7.81	7.85	8.43	8.27	8.38	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	879	2060	2190	978	416	1710	772	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.20	1.19	0.42	0.16	0.06	0.43	0.13	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.38	0.52	0.31	0.41	0.04	0.18	0.27	% w/w	0.01	A-T-024s

Envirolab Job Number: 20/08234

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08234/22	20/08234/23	20/08234/24					Units	Limit of Detection	Method ref
Client Sample No	7	6	7							
Client Sample ID	BH2	BH5	BH8							
Depth to Top	3.50	2.50	3.50							
Depth To Bottom	4.00	3.00	4.00							
Date Sampled										
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	5A	5A	5A							
% Stones >10mm$_A$	23.5	20.6	17.0					% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.67	8.56	8.15					pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	450	430	1220					mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.08	0.07	0.32					% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.04	0.03	0.24					% w/w	0.01	A-T-024s

REPORT NOTES

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Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40℃).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25℃ / 11550µS/cm @ 20℃ fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: RSK Environment Ltd Hemel, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, UK, HP3 9RT

Project: North London Business Park (N.L.B.P)

Clients Project No: 1921321

Project No: 20/08234

Date Received: 29/09/2020 (am)

Cool Box Temperatures (°C): 10.4, 11.6, 10.8, 11.2

Lab Sample ID	20/08234/1	20/08234/2	20/08234/3	20/08234/4	20/08234/5	20/08234/6	20/08234/7	20/08234/8	20/08234/9	20/08234/10	20/08234/11
Client Sample No	17	18	9	23	5	19	29	18	32	6	12
Client Sample ID/Depth	BH1 10.50-11.00m	BH2 11.00-11.50m	BH3 4.50-5.00m	BH3 15.00-15.50m	BH4 1.60-2.00m	BH4 9.00-9.50m	BH4 15.00-15.50m	BH5 10.50-11.00m	BH5 21.00-21.50m	BH6 2.50-3.00m	BH6 6.00-6.50m
Date Sampled	19/08/20	17/08/20	13/08/20	13/08/20	02/09/20	02/09/20	02/09/20	25/08/20	25/08/20	21/08/20	24/08/20
Deviation Code											
E (no date)											
F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Lab Sample ID	20/08234/12	20/08234/13	20/08234/14	20/08234/15	20/08234/16	20/08234/17	20/08234/18	20/08234/19	20/08234/20	20/08234/21	20/08234/22
Client Sample No	22	5	9	27	11	25	5	5	11	3	7
Client Sample ID/Depth	BH6 13.50-14.00m	BH7 3.50-4.00m	BH7 6.00-6.50m	BH7 19.50-20.00m	BH8 6.00-6.50m	BH8 16.50-17.00m	BH1 2.50-3.00m	BH1 2.70-3.00m	BH1 6.00-6.50m	BH2 1.50-2.00m	BH2 3.50-4.00m
Date Sampled	24/08/20	02/09/20	02/09/20	02/09/20	27/08/20	28/08/20					
Deviation Code											
E (no date)							✓	✓	✓	✓	✓
F	✓	✓	✓	✓	✓	✓					

Lab Sample ID	20/08234/23	20/08234/24
Client Sample No	6	7
Client Sample ID/Depth	BH5 2.50-3.00m	BH8 3.50-4.00m
Date Sampled		
Deviation Code		
E (no date)	✓	✓
F		

Key
E (no date) *No sampling date provided (all results affected if not provided)*

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	20/08234/1	20/08234/2	20/08234/3	20/08234/4	20/08234/5	20/08234/6	20/08234/7	20/08234/8	20/08234/9	20/08234/10	20/08234/11
Client Sample No	17	18	9	23	5	19	29	18	32	6	12
Client Sample ID/Depth	BH1 10.50-11.00m	BH2 11.00-11.50m	BH3 4.50-5.00m	BH3 15.00-15.50m	BH4 1.60-2.00m	BH4 9.00-9.50m	BH4 15.00-15.50m	BH5 10.50-11.00m	BH5 21.00-21.50m	BH6 2.50-3.00m	BH6 6.00-6.50m
Date Sampled	19/08/20	17/08/20	13/08/20	13/08/20	02/09/20	02/09/20	02/09/20	25/08/20	25/08/20	21/08/20	24/08/20
Sulphate BRE (water sol 2:1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sulphate BRE (acid sol)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Lab Sample ID	20/08234/12	20/08234/13	20/08234/14	20/08234/15	20/08234/16	20/08234/17
Client Sample No	22	5	9	27	11	25
Client Sample ID/Depth	BH6 13.50-14.00m	BH7 3.50-4.00m	BH7 6.00-6.50m	BH7 19.50-20.00m	BH8 6.00-6.50m	BH8 16.50-17.00m
Date Sampled	24/08/20	02/09/20	02/09/20	02/09/20	27/08/20	28/08/20
Sulphate BRE (water sol 2:1)	✓	✓	✓	✓	✓	✓
Sulphate BRE (acid sol)	✓	✓	✓	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

APPENDIX K
LABORATORY CERTIFICATES FOR GEOTECHNICAL ANALYSIS

STRUCTURAL SOILS LTD

TEST REPORT

Report No. 584350-01 (00) 1774

Date 03-December-2020 Contract North London Business Park

Client RSK
Address 18 Frogmore Rd
Apsley
Hemel Hempstead
Hertfordshire
HP3 9RT
For the Attention of Alex Marcelo

Samples submitted by client	22-September-2020	Client Reference	1921321
Testing Started	29-September-2020	Client Order No.	n/a
Testing Completed	02-December-2020	Instruction Type	Written

Tests marked 'Not UKAS Accredited' in this report are not included in the UKAS Accreditation Schedule for our Laboratory.

UKAS Accredited Tests

1.01	Moisture Content (oven drying method) BS1377:Part 2:1990:clause 3.2 (superseded)*
1.03	Liquid Limit (one point method) & Plastic Limit BS1377:Part 2:1990,clause 4.4/5.3 (superseded)*
4.01	One-dimensional consolidation BS1377:Part 5:1990,clause 3.5 (superseded)*
4.04	Swelling test BS1377:Part 5:1990,clause 4.4
5.04	Undrained shear strength triaxial compression without pore pressure measurement (definitive method) 100mm diameter specimens BS1377:Part 7:1990,clause 8.4 (superseded)*

* This clause of BS1377 is no longer the most up to date method due to the publication of ISO17892

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of .
Test were undertaken on samples 'as received' unless otherwise stated.
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Structural Soils Ltd 18 Frogmore Rd Hemel Hempstead HP3 9RT Tel.01442 416661 e-mail dimitris.xirouchakis@soils.co.uk

TESTING VERIFICATION CERTIFICATE

1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **14/10/2020 13:48:44**.

Testing reported after this date is not covered by this Verification Certificate.

Approved Signatory
Sharon Cairns (Laboratory Manager)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU

	Contract:	Job No:
STRUCTURAL SOILS LTD	**North London Buisness Park (N.L.B.P)**	**584350**

TESTING VERIFICATION CERTIFICATE

1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **03/12/2020 10:36:39**.

Testing reported after this date is not covered by this Verification Certificate.

Approved Signatory
Alan Frost (Data Quality Manager)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU

STRUCTURAL SOILS LTD	Contract: **North London Business Park (N.L.B.P)**	Job No: **584350**

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Description of Sample
BH1	9	D	4.50	34	74	24	50	100	Brown CLAY
BH2	5	B	2.30	36	70	24	46	97	Brown slightly gravelly CLAY
BH3	11	D	6.00	29	74	23	51	99	Brown CLAY with some gypsum
BH3	21	D	13.50	34	70	23	47	100	Brown CLAY
BH4	7	B	2.50	34	72	25	47	99	Brown mottled orange slightly gravelly CLAY
BH4	26	B	13.50	30	69	23	46	85	Brown slightly gravelly CLAY
BH5	5	B	2.20	33	66	22	44	70	Brown mottled dark grey slightly gravelly organic CLAY
BH6	10	D	4.50	30	74	25	49	98	Brown mottled grey CLAY with some gypsum

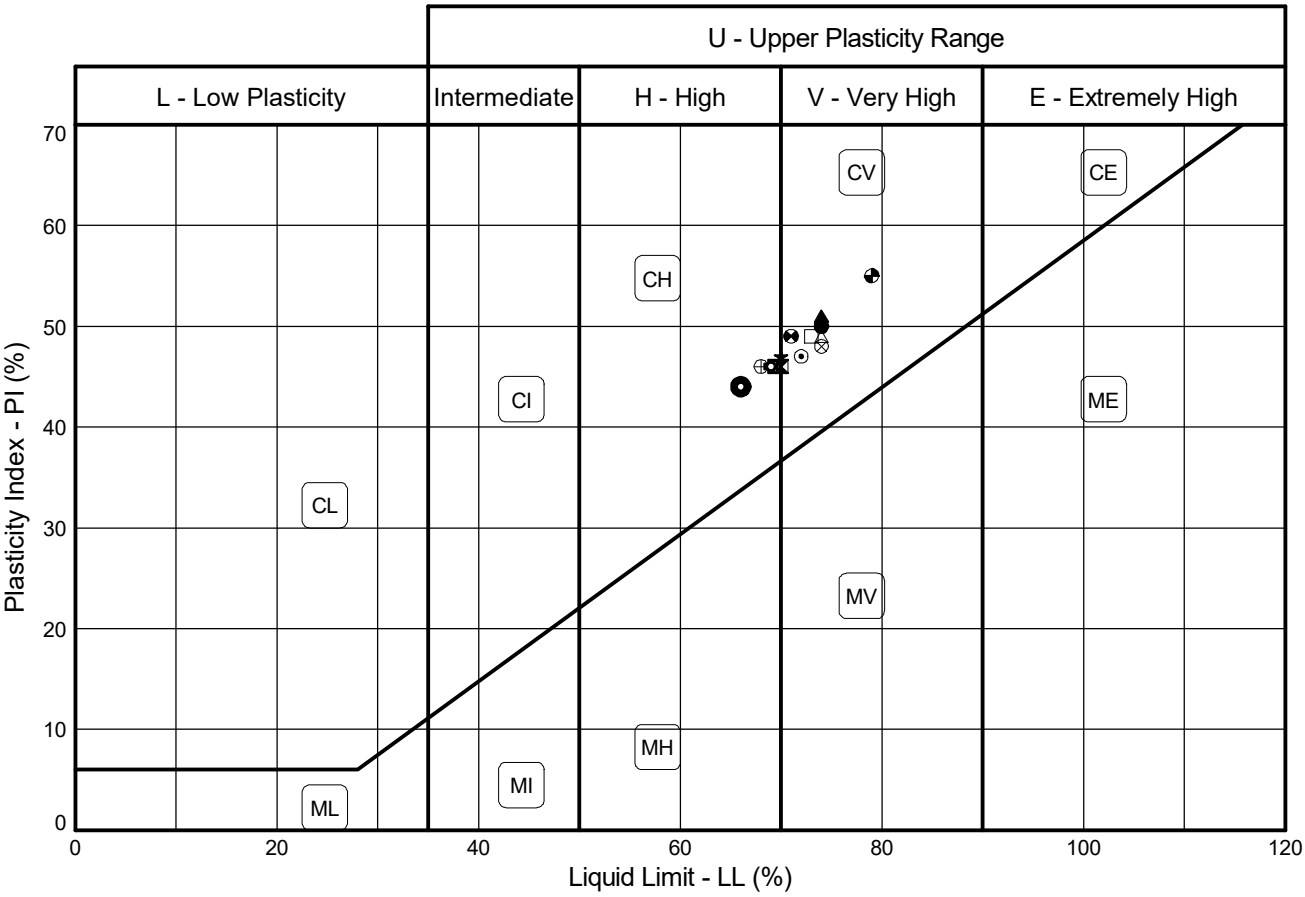
SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Description of Sample
BH6	26	D	16.50	30	74	26	48	100	Brown CLAY
BH7	3	D	2.40	32	68	22	46	99	Brown mottled light grey slightly sandy CLAY
BH7	11	D	7.50	31	73	24	49	98	Brown CLAY
BH8	5	B	2.00	30	71	22	49	100	Brown mottled red CLAY with occasional man-made material
BH8	29	D	19.50	32	79	24	55	100	Brown CLAY
TP1		D	1.00	28	73	23	50	98	Brown mottled dark grey and orange slightly sandy slightly gravelly CLAY

PLASTICITY CHART - PI Vs LL

In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	BH1	9D	4.50	3.2/4.4/5.3/5.4	4.2.4	34	74	24	50	100	H	
⊠	BH2	5B	2.30	3.2/4.4/5.3/5.4	4.2.4	36	70	24	46	97	H	
▲	BH3	11D	6.00	3.2/4.4/5.3/5.4	4.2.4	29	74	23	51	99	H	
★	BH3	21D	13.50	3.2/4.4/5.3/5.4	4.2.4	34	70	23	47	100	H	
⊙	BH4	7B	2.50	3.2/4.4/5.3/5.4	4.2.4	34	72	25	47	99	H	
✿	BH4	26B	13.50	3.2/4.4/5.3/5.4	4.2.4	30	69	23	46	85	H	
◉	BH5	5B	2.20	3.2/4.4/5.3/5.4	4.2.4	33	66	22	44	70	H	
△	BH6	10D	4.50	3.2/4.4/5.3/5.4	4.2.4	30	74	25	49	98	H	
⊗	BH6	26D	16.50	3.2/4.4/5.3/5.4	4.2.4	30	74	26	48	100	H	
⊕	BH7	3D	2.40	3.2/4.4/5.3/5.4	4.2.4	32	68	22	46	99	H	
□	BH7	11D	7.50	3.2/4.4/5.3/5.4	4.2.4	31	73	24	49	98	H	
⊠	BH8	5B	2.00	3.2/4.4/5.3/5.4	4.2.4	30	71	22	49	100	H	
◒	BH8	29D	19.50	3.2/4.4/5.3/5.4	4.2.3	32	79	24	55	100	H	

Tested in accordance with the following clauses of BS1377-2:1990.

3.2 - Moisture Content
4.3 - Cone Penetrometer Method
4.4 - One Point Cone Penetrometer Method
4.6 - One Point Casagrande Method
5.3 - Plastic Limit Method
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State
4.2.4 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

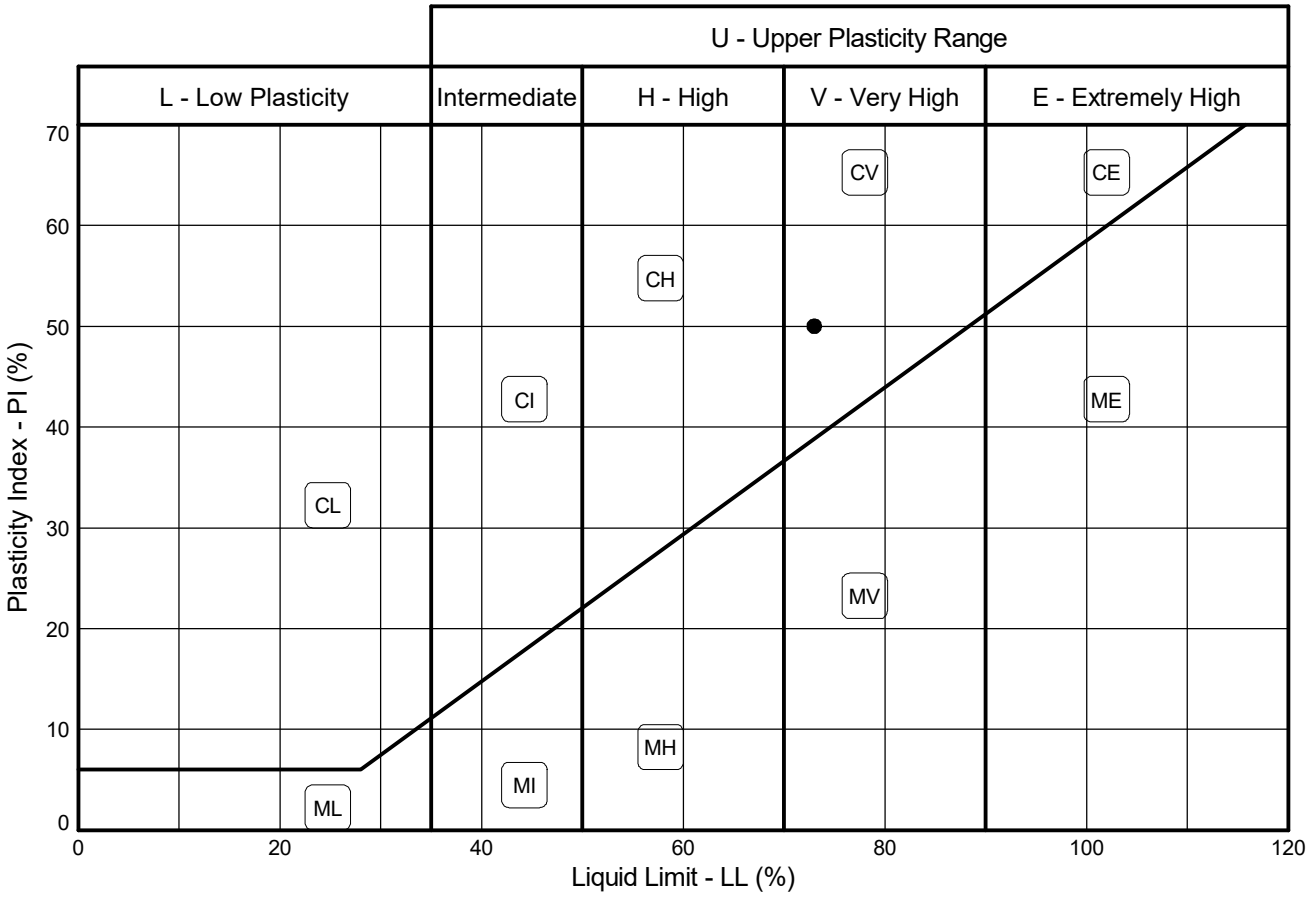
Compiled By		Date
SC	**SHARON CAIRNS**	**14/10/20**

Contract	Contract Ref:
North London Buisness Park (N.L.B.P)	**584350**

AGS

PLASTICITY CHART - PI Vs LL

In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	TP1	D	1.00	3.2/4.4/5.3/5.4	4.2.4	28	73	23	50	98	H	

Tested in accordance with the following clauses of BS1377-2:1990.

3.2 - Moisture Content
4.3 - Cone Penetrometer Method
4.4 - One Point Cone Penetrometer Method
4.6 - One Point Casagrande Method
5.3 - Plastic Limit Method
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State
4.2.4 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By		Date
SC	SHARON CAIRNS	14/10/20

Contract	Contract Ref:
North London Buisness Park (N.L.B.P)	584350

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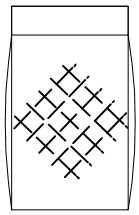
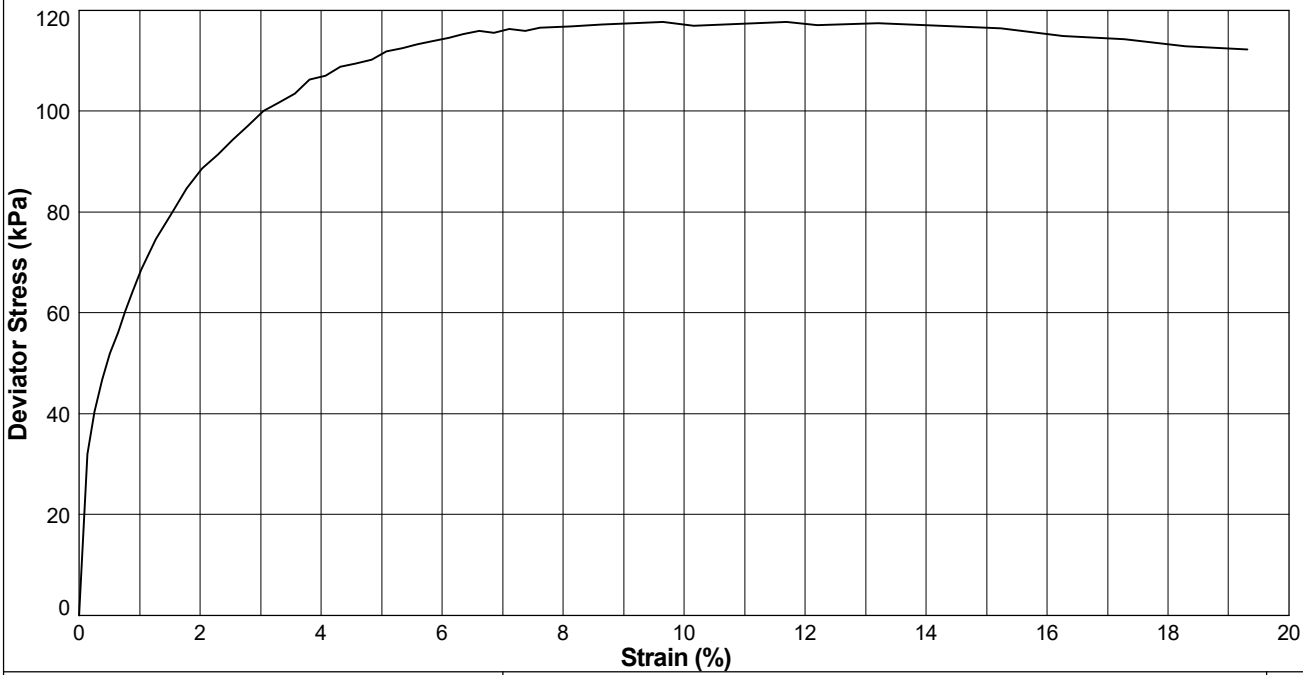
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH1** Sample Ref: **8** Sample Type: **U** Depth (m): **4.00**

Description : **Brown mottled orangish brown and light grey CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.31		
	Height	(mm)	196.79		
	Moisture Content	(%)	33		
	Bulk Density	(Mg/m^3)	1.92		
	Dry Density	(Mg/m^3)	1.44		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.83		
	Cell Pressure	(kPa)	80		
	Membrane Correction	(kPa)	0.94		
	Corrected Deviator Stress	(kPa)	118		
	Undrained Shear Strength	(kPa)	59		
FAILURE DETAILS	Strain at Failure	(%)	11.7		
	Mode of Failure 1 : **Semi-plastic (intermediate)**				



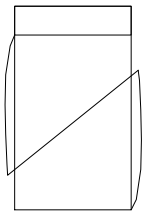
STRUCTURAL SOILS 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT	Compiled By		Date
	SC	SHARON CAIRNS	14/10/20
	Contract **North London Buisness Park (N.L.B.P)**	Contract Ref: **584350**	

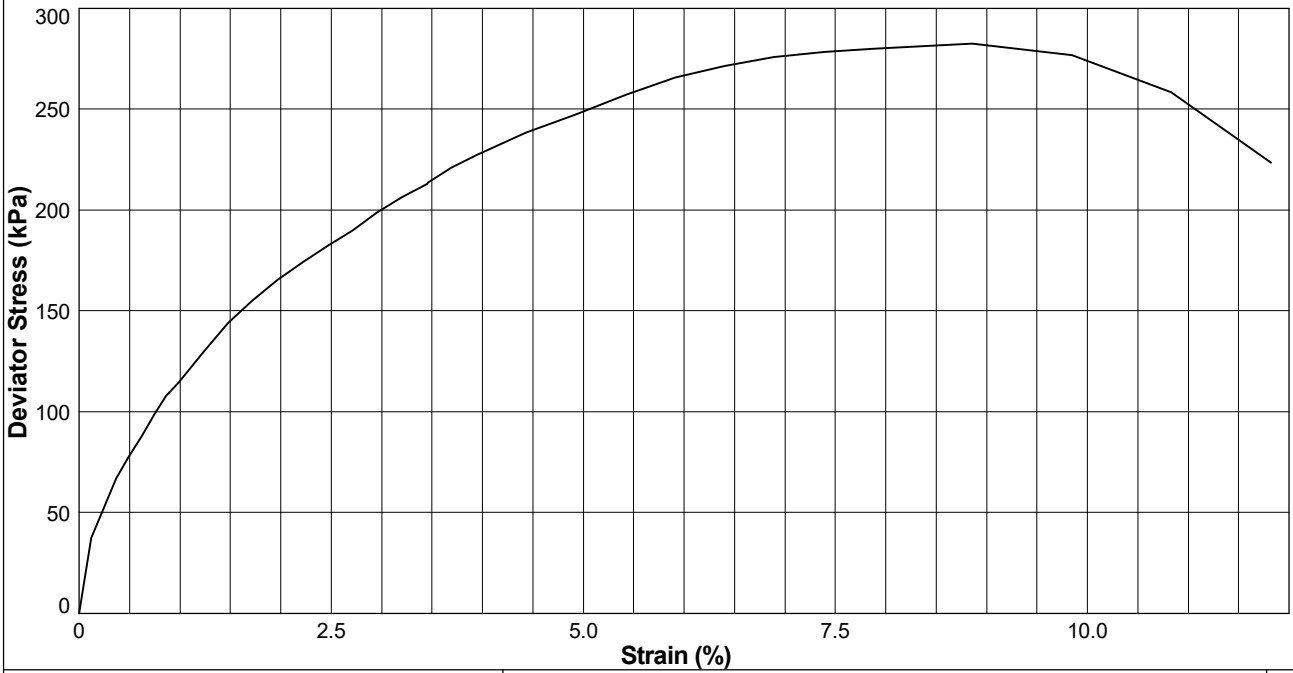
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH1** Sample Ref: **20** Sample Type: **U** Depth (m): **12.50**

Description : **Brown slightly sandy CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.28		
	Height	(mm)	203.07		
	Moisture Content	(%)	26		
	Bulk Density	(Mg/m^3)	2.00		
	Dry Density	(Mg/m^3)	1.58		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.20		
	Rate of Axial Displacement	(%/min)	1.28		
	Cell Pressure	(kPa)	250		
	Membrane Correction	(kPa)	0.40		
	Corrected Deviator Stress	(kPa)	283		
	Undrained Shear Strength	(kPa)	141		
FAILURE DETAILS	Strain at Failure	(%)	8.9		
	Mode of Failure 1 : **Brittle (shear plane)**				



STRUCTURAL SOILS
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By		Date
SC	SHARON CAIRNS	14/10/20

Contract	Contract Ref:
North London Buisness Park (N.L.B.P)	**584350**

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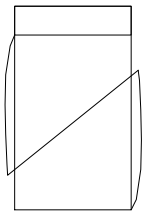
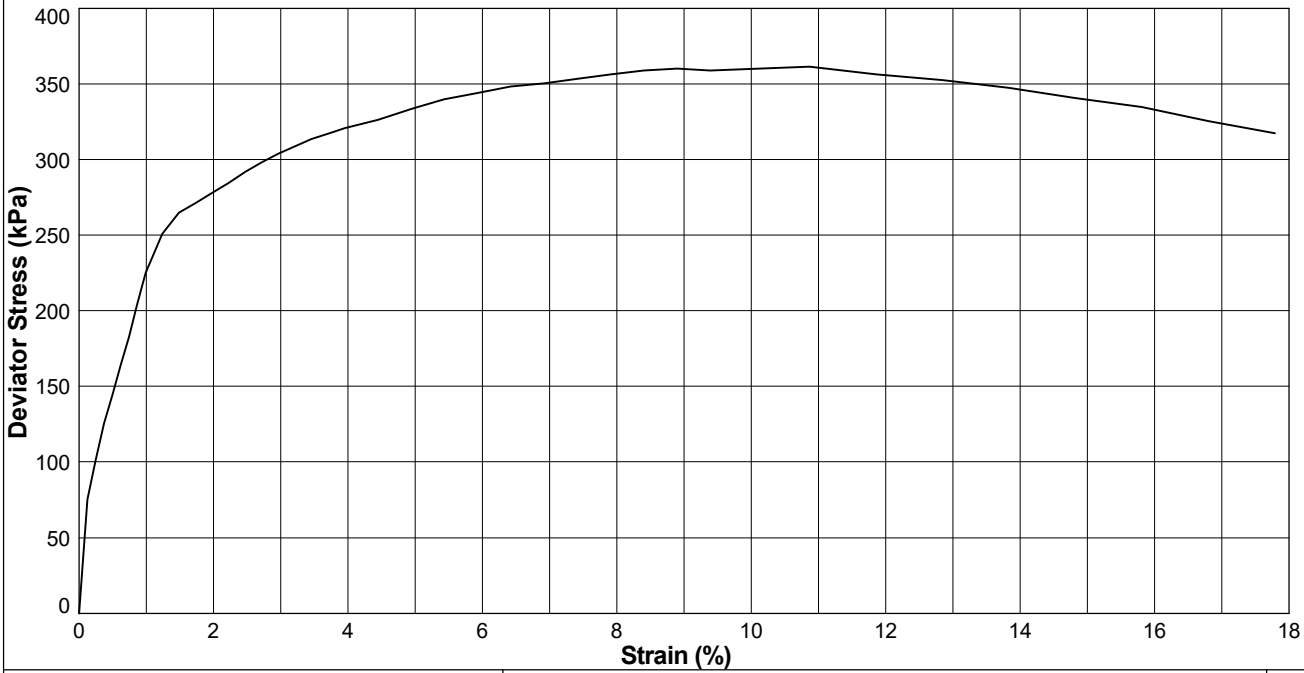
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH1** Sample Ref: **44** Sample Type: **U** Depth (m): **30.50**

Description : **Red mottled light grey CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.69		
	Height	(mm)	202.40		
	Moisture Content	(%)	24		
	Bulk Density	(Mg/m^3)	2.04		
	Dry Density	(Mg/m^3)	1.65		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.09		
	Cell Pressure	(kPa)	610		
	Membrane Correction	(kPa)	0.90		
	Corrected Deviator Stress	(kPa)	361		
	Undrained Shear Strength	(kPa)	181		
FAILURE DETAILS	Strain at Failure	(%)	10.9		
	Mode of Failure 1 : **Brittle (shear plane)**				



STRUCTURAL SOILS
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Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By		Date
SC	SHARON CAIRNS	14/10/20

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North London Buisness Park (N.L.B.P)	**584350**

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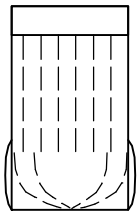
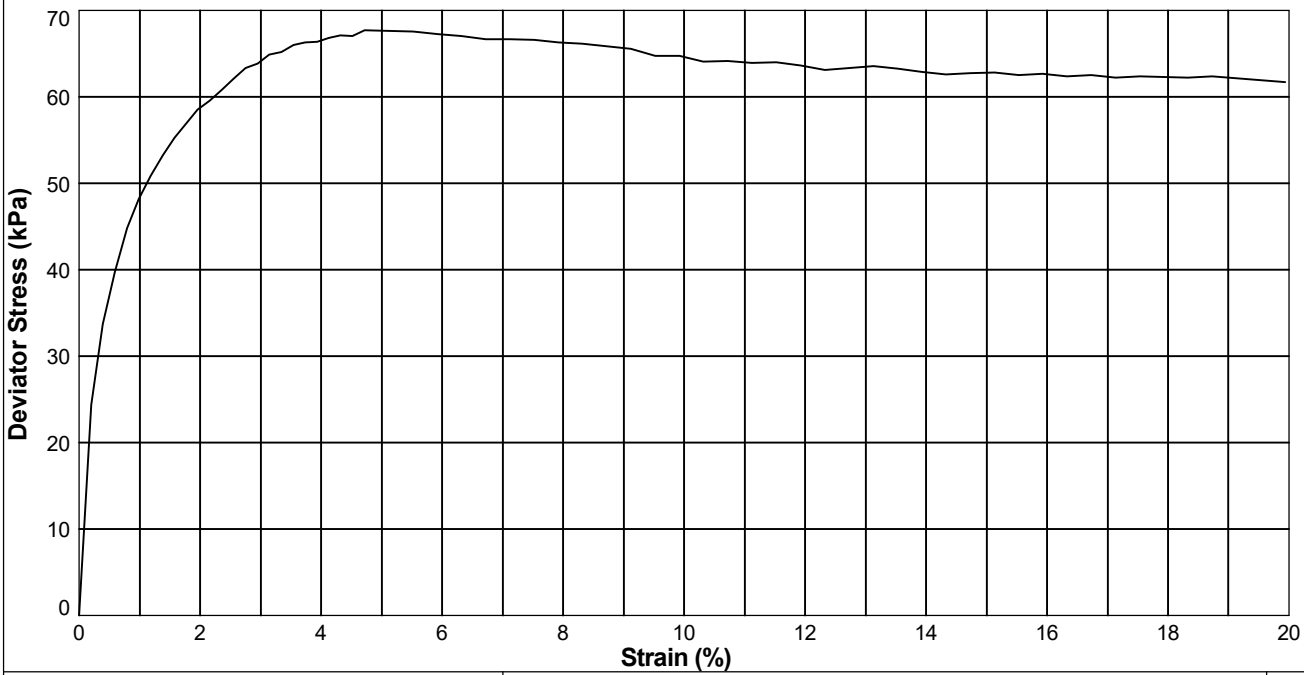
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH2** Sample Ref: **6** Sample Type: **U** Depth (m): **3.23**

Description : **Light brown mottled orange and black CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.19		
	Height	(mm)	201.06		
	Moisture Content	(%)	40		
	Bulk Density	(Mg/m^3)	1.81		
	Dry Density	(Mg/m^3)	1.30		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.25		
	Rate of Axial Displacement	(%/min)	1.34		
	Cell Pressure	(kPa)	60		
	Membrane Correction	(kPa)	0.31		
	Corrected Deviator Stress	(kPa)	68		
	Undrained Shear Strength	(kPa)	34		
FAILURE DETAILS	Strain at Failure	(%)	4.7		
	Mode of Failure 1 : **Semi-plastic (bulging, shear & axial splitting)**				



STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
	DAISY RICHARDS	30/11/20

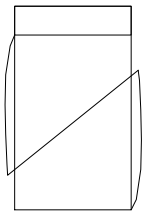
Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

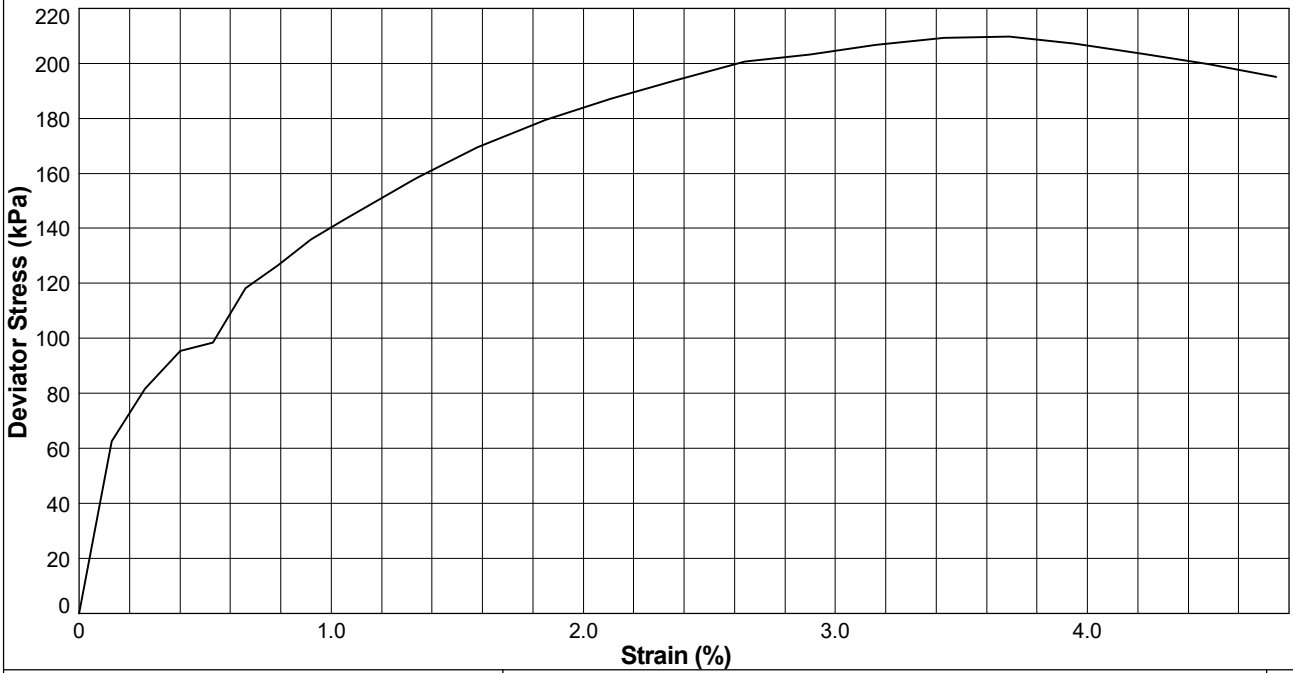
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH2** Sample Ref: **17** Sample Type: **U** Depth (m): **10.00**

Description : **Brown mottled orange CLAY with some gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.46**		
	Height	(mm)	**189.66**		
	Moisture Content	(%)	**29**		
	Bulk Density	(Mg/m^3)	**1.93**		
	Dry Density	(Mg/m^3)	**1.49**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.28**		
	Rate of Axial Displacement	(%/min)	**1.53**		
	Cell Pressure	(kPa)	**200**		
	Membrane Correction	(kPa)	**0.27**		
	Corrected Deviator Stress	(kPa)	**210**		
	Undrained Shear Strength	(kPa)	**105**		
FAILURE DETAILS	Strain at Failure	(%)	**3.7**		
	Mode of Failure 1 : **Brittle (shear plane)**				



STRUCTURAL SOILS
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By		Date
SC	**SHARON CAIRNS**	**14/10/20**

Contract	Contract Ref:
North London Buisness Park (N.L.B.P)	**584350**

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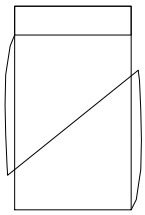
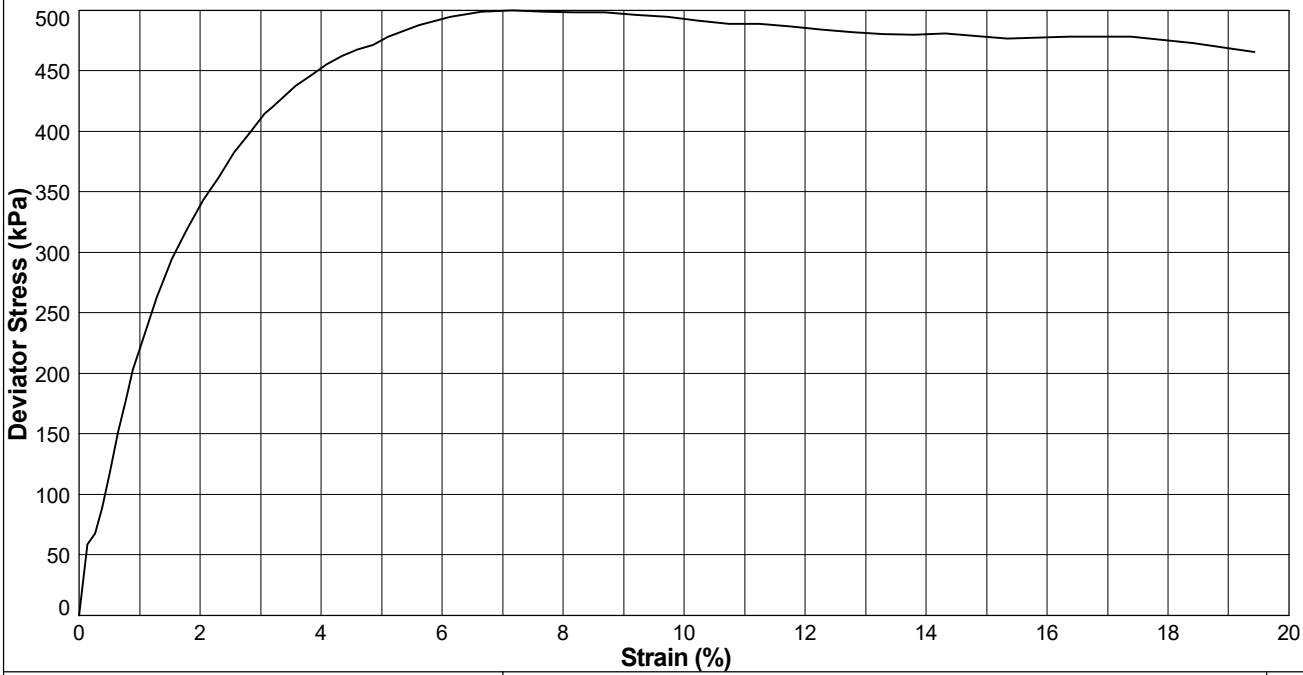
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH2** Sample Ref: **33** Sample Type: **U** Depth (m): **22.00**

Description : **Dark brown slightly sandy CLAY with possible gypsum**

STAGE NUMBER			**1**	**2**	**3**
SAMPLE DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**104.30**		
	Height	(mm)	**195.57**		
	Moisture Content	(%)	**20**		
	Bulk Density	(Mg/m^3)	**2.04**		
	Dry Density	(Mg/m^3)	**1.70**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.25**		
	Rate of Axial Displacement	(%/min)	**1.12**		
	Cell Pressure	(kPa)	**440**		
	Membrane Correction	(kPa)	**0.42**		
	Corrected Deviator Stress	(kPa)	**500**		
	Undrained Shear Strength	(kPa)	**250**		
FAILURE DETAILS	Strain at Failure	(%)	**7.2**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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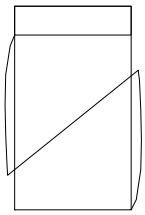
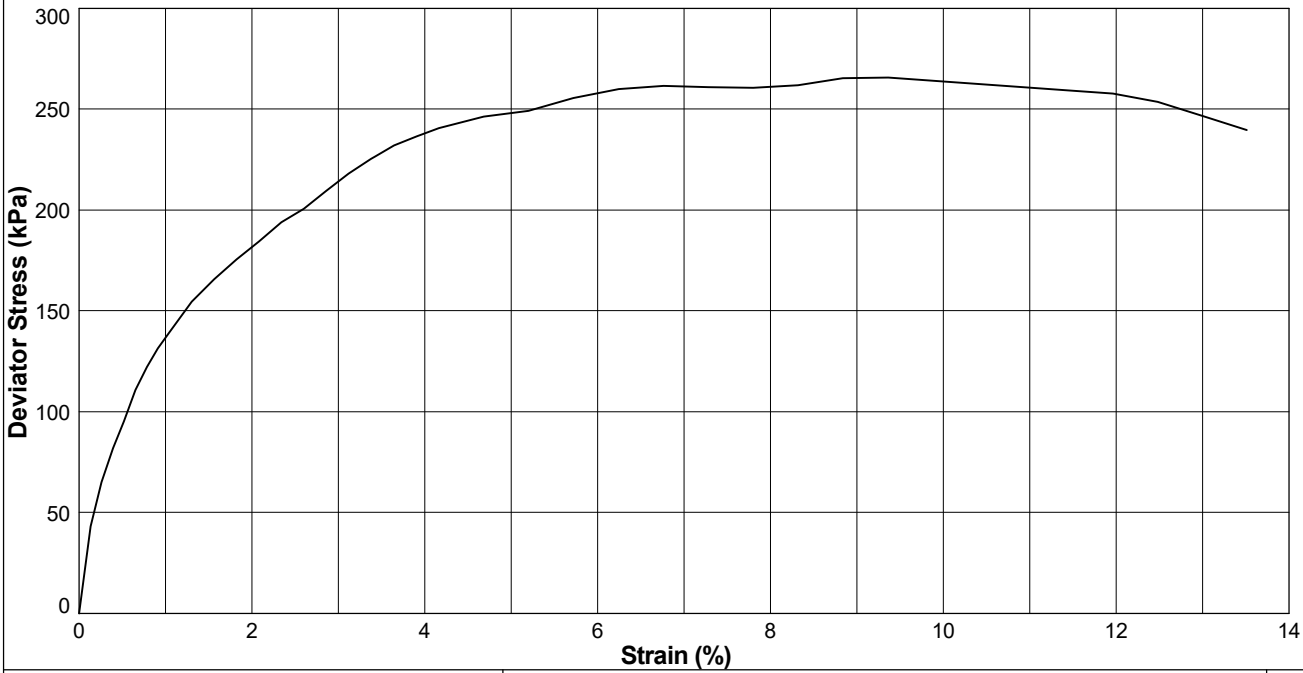
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH3** Sample Ref: **16** Sample Type: **U** Depth (m): **9.50**

Description : **Brown slightly sandy CLAY with some gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	104.02		
	Height	(mm)	192.38		
	Moisture Content	(%)	24		
	Bulk Density	(Mg/m^3)	1.97		
	Dry Density	(Mg/m^3)	1.59		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.24		
	Rate of Axial Displacement	(%/min)	1.40		
	Cell Pressure	(kPa)	190		
	Membrane Correction	(kPa)	0.50		
	Corrected Deviator Stress	(kPa)	266		
	Undrained Shear Strength	(kPa)	133		
FAILURE DETAILS	Strain at Failure	(%)	9.4		
	Mode of Failure 1 : **Brittle (shear plane)**				



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Hertfordshire
HP3 9RT

Compiled By		Date
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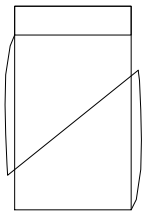
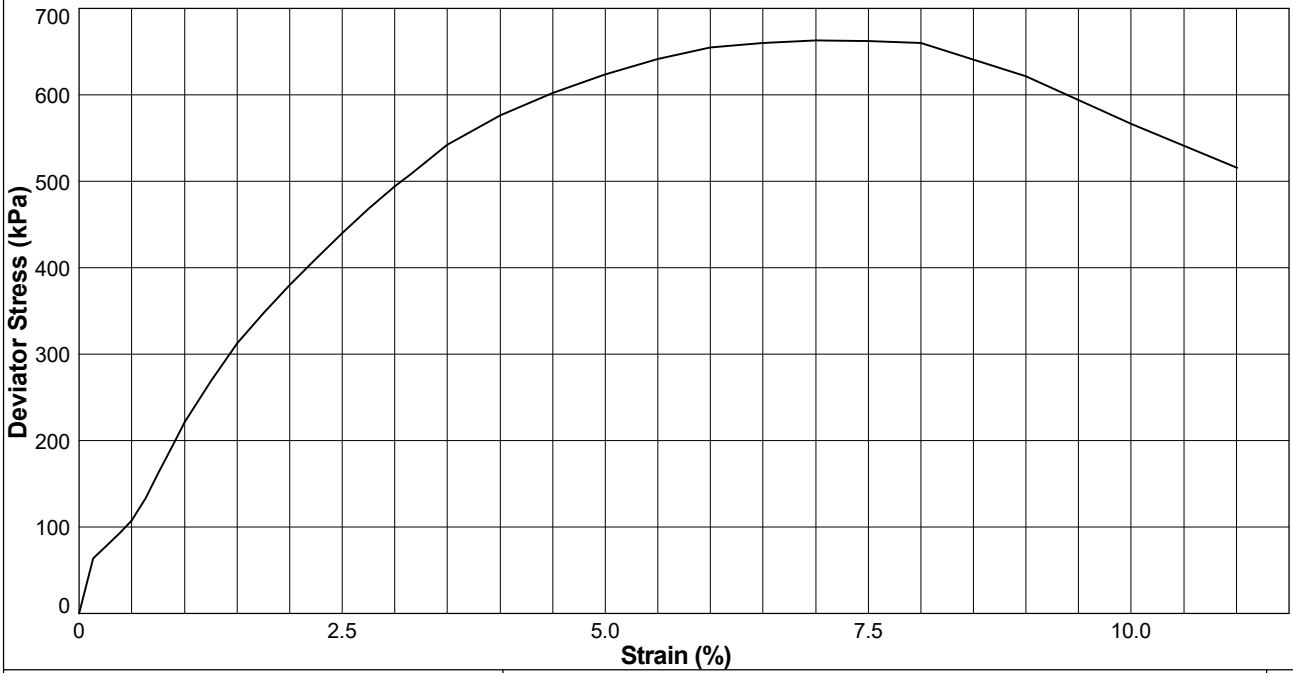
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH3** Sample Ref: **32** Sample Type: **U** Depth (m): **21.50**

Description : **Brown slightly sandy CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	102.91		
	Height	(mm)	199.90		
	Moisture Content	(%)	23		
	Bulk Density	(Mg/m^3)	2.02		
	Dry Density	(Mg/m^3)	1.64		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.30		
	Cell Pressure	(kPa)	430		
	Membrane Correction	(kPa)	0.64		
	Corrected Deviator Stress	(kPa)	663		
	Undrained Shear Strength	(kPa)	331		
FAILURE DETAILS	Strain at Failure	(%)	7.0		
	Mode of Failure 1 : **Brittle (shear plane)**				



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18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By		Date
SC	SHARON CAIRNS	14/10/20

Contract	Contract Ref:
North London Buisness Park (N.L.B.P)	**584350**

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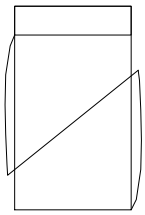
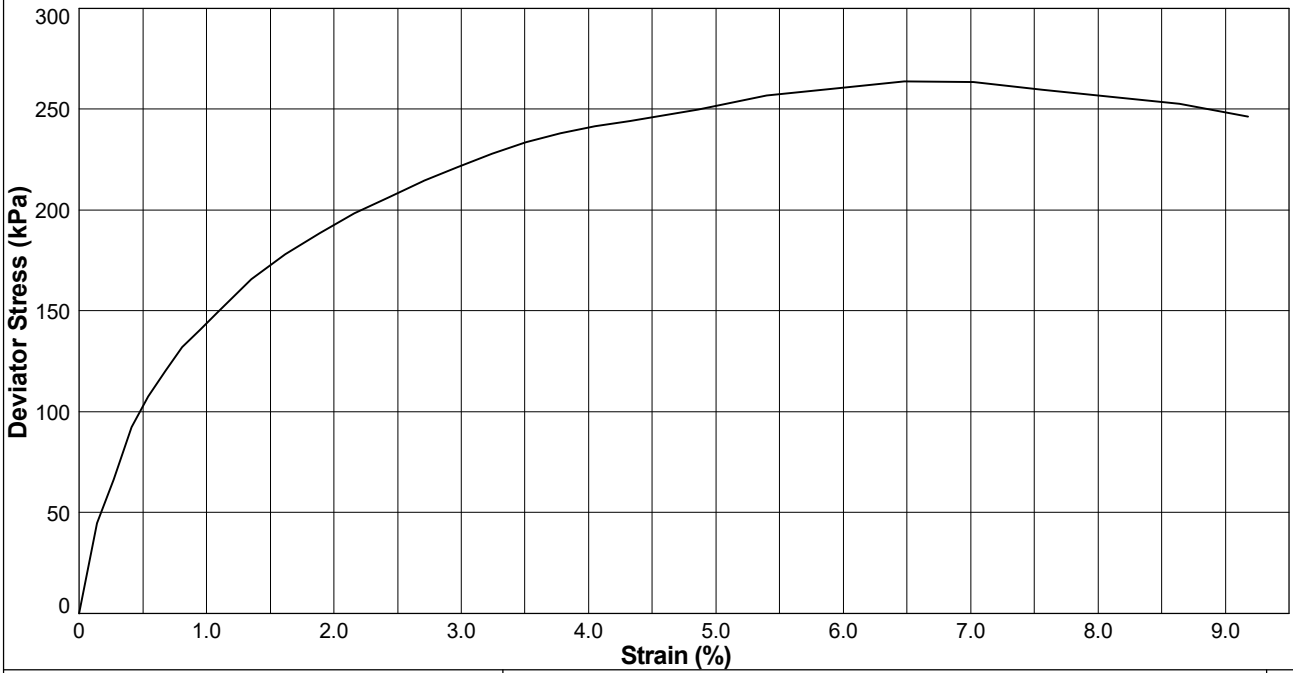
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH4** Sample Ref: **17** Sample Type: **U** Depth (m): **8.00**

Description : **Brown mottled orange CLAY with some gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	102.10		
	Height	(mm)	185.09		
	Moisture Content	(%)	27		
	Bulk Density	(Mg/m^3)	1.90		
	Dry Density	(Mg/m^3)	1.49		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.62		
	Cell Pressure	(kPa)	160		
	Membrane Correction	(kPa)	0.61		
	Corrected Deviator Stress	(kPa)	264		
	Undrained Shear Strength	(kPa)	132		
FAILURE DETAILS	Strain at Failure	(%)	6.5		
	Mode of Failure 1 : **Brittle (shear plane)**				



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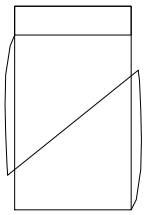
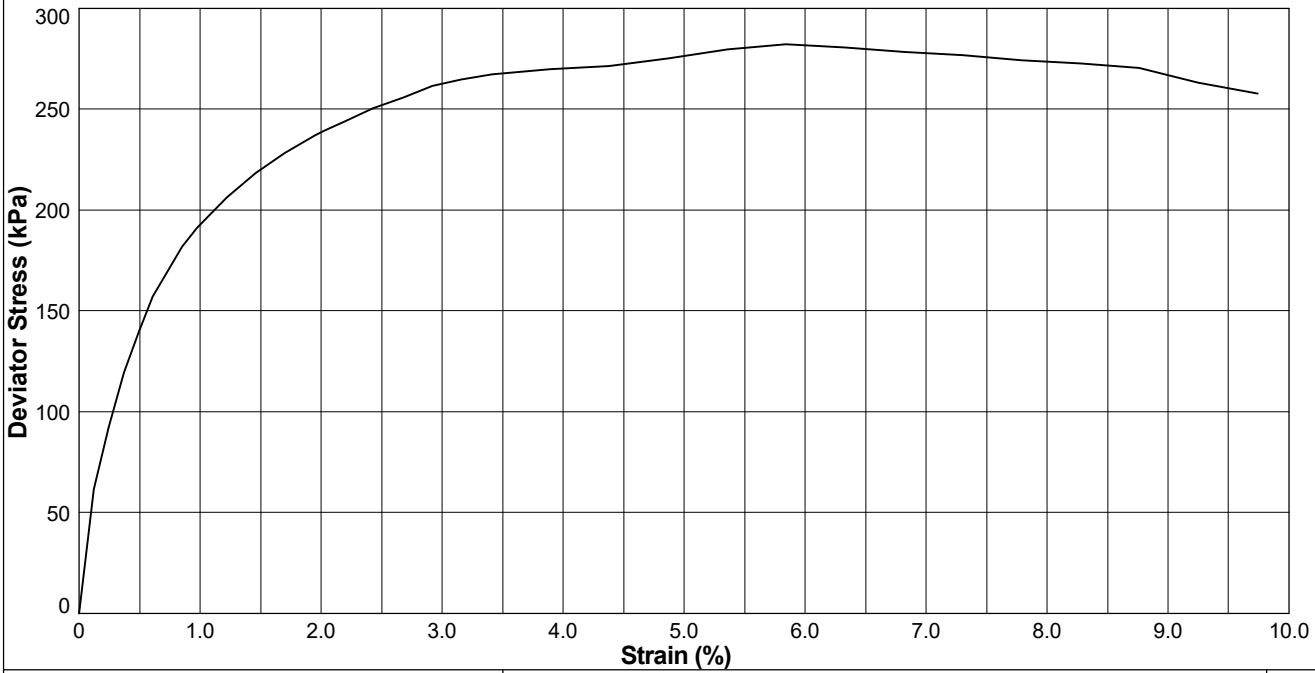
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH4** Sample Ref: **32** Sample Type: **U** Depth (m): **17.00**

Description : **Brown slightly sandy CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.56**		
	Height	(mm)	**205.41**		
	Moisture Content	(%)	**25**		
	Bulk Density	(Mg/m^3)	**2.00**		
	Dry Density	(Mg/m^3)	**1.60**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.42**		
	Rate of Axial Displacement	(%/min)	**1.17**		
	Cell Pressure	(kPa)	**340**		
	Membrane Correction	(kPa)	**0.61**		
	Corrected Deviator Stress	(kPa)	**282**		
	Undrained Shear Strength	(kPa)	**141**		
FAILURE DETAILS	Strain at Failure	(%)	**5.8**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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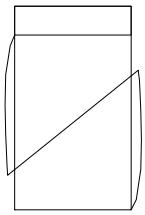
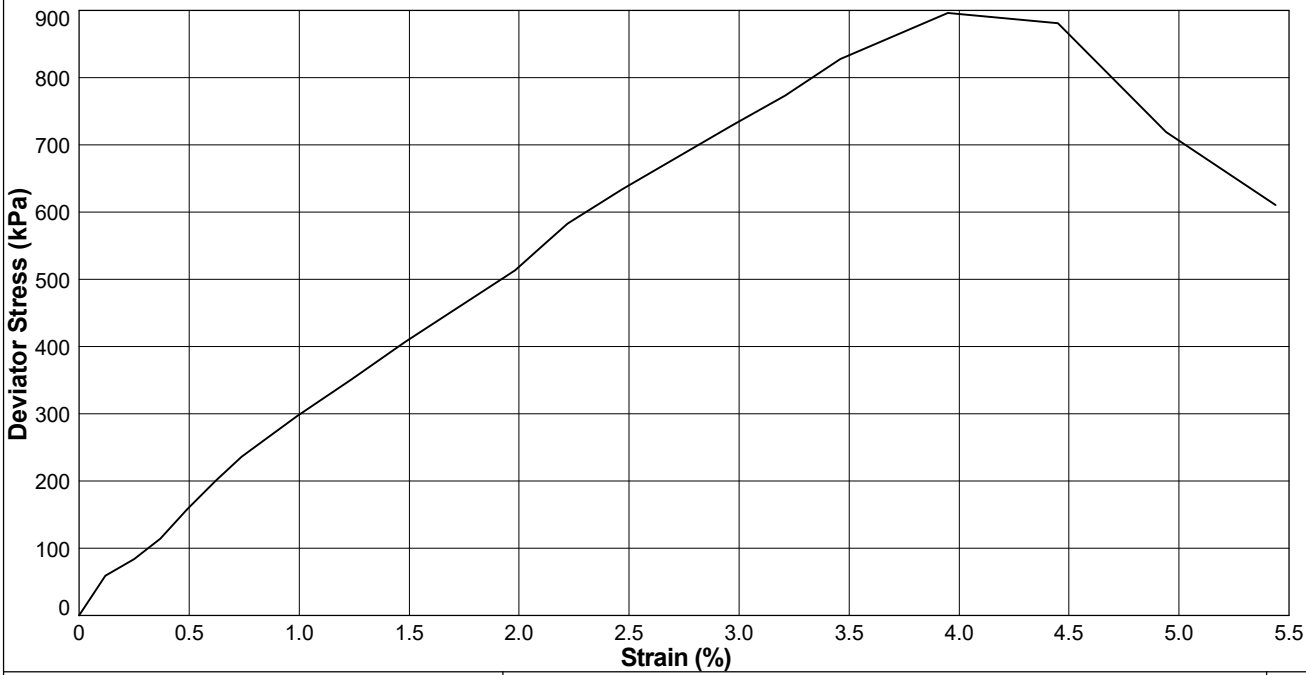
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH4** Sample Ref: **52** Sample Type: **U** Depth (m): **29.00**

Description : **Brown mottled grey slightly sandy CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.10		
	Height	(mm)	202.31		
	Moisture Content	(%)	24		
	Bulk Density	(Mg/m^3)	2.05		
	Dry Density	(Mg/m^3)	1.66		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.42		
	Rate of Axial Displacement	(%/min)	1.24		
	Cell Pressure	(kPa)	580		
	Membrane Correction	(kPa)	0.44		
	Corrected Deviator Stress	(kPa)	896		
	Undrained Shear Strength	(kPa)	448		
FAILURE DETAILS	Strain at Failure	(%)	4.0		
	Mode of Failure 1 : **Brittle (shear plane)**				



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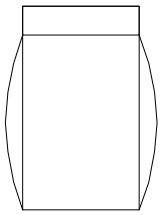
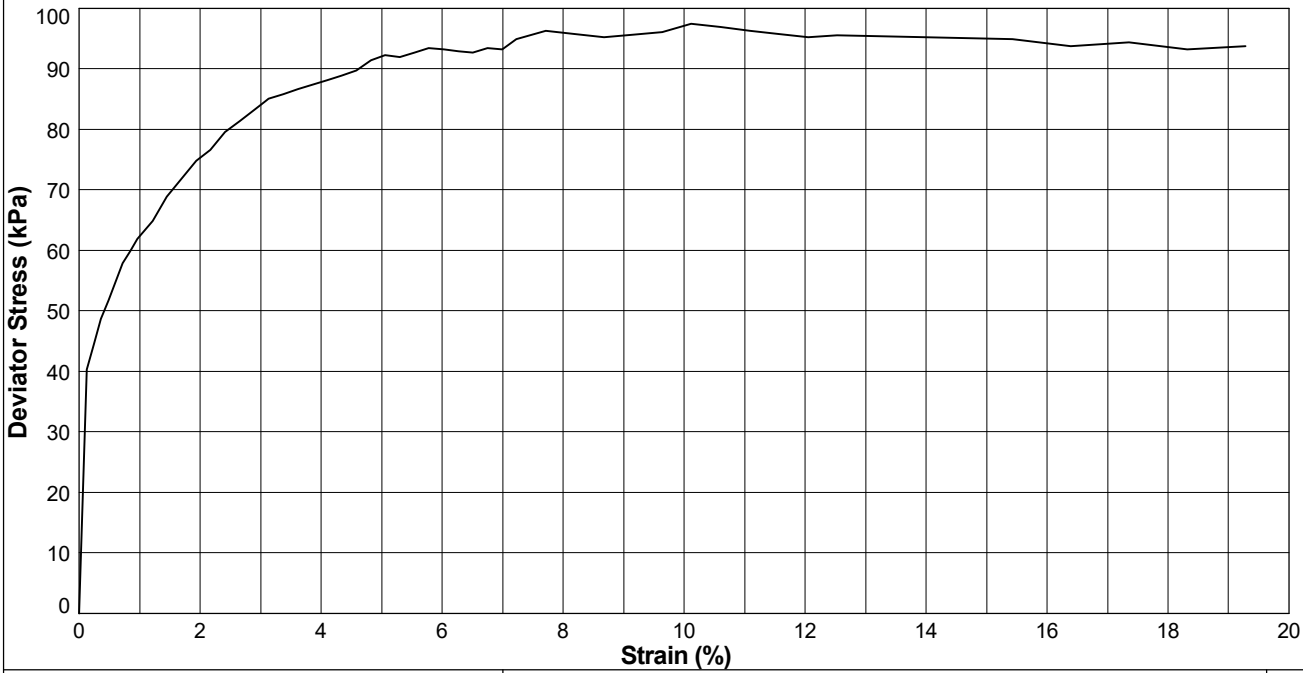
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH5** Sample Ref: **9** Sample Type: **U** Depth (m): **4.00**

Description : **Brown mottled orange and light grey slightly CLAY with some gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.55		
	Height	(mm)	207.45		
	Moisture Content	(%)	28		
	Bulk Density	(Mg/m^3)	1.93		
	Dry Density	(Mg/m^3)	1.51		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.83		
	Cell Pressure	(kPa)	89		
	Membrane Correction	(kPa)	0.86		
	Corrected Deviator Stress	(kPa)	97		
	Undrained Shear Strength	(kPa)	49		
FAILURE DETAILS	Strain at Failure	(%)	10.1		
	Mode of Failure 1 : **Plastic (Barrelling)**				



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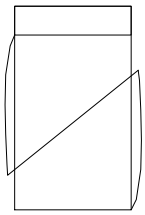
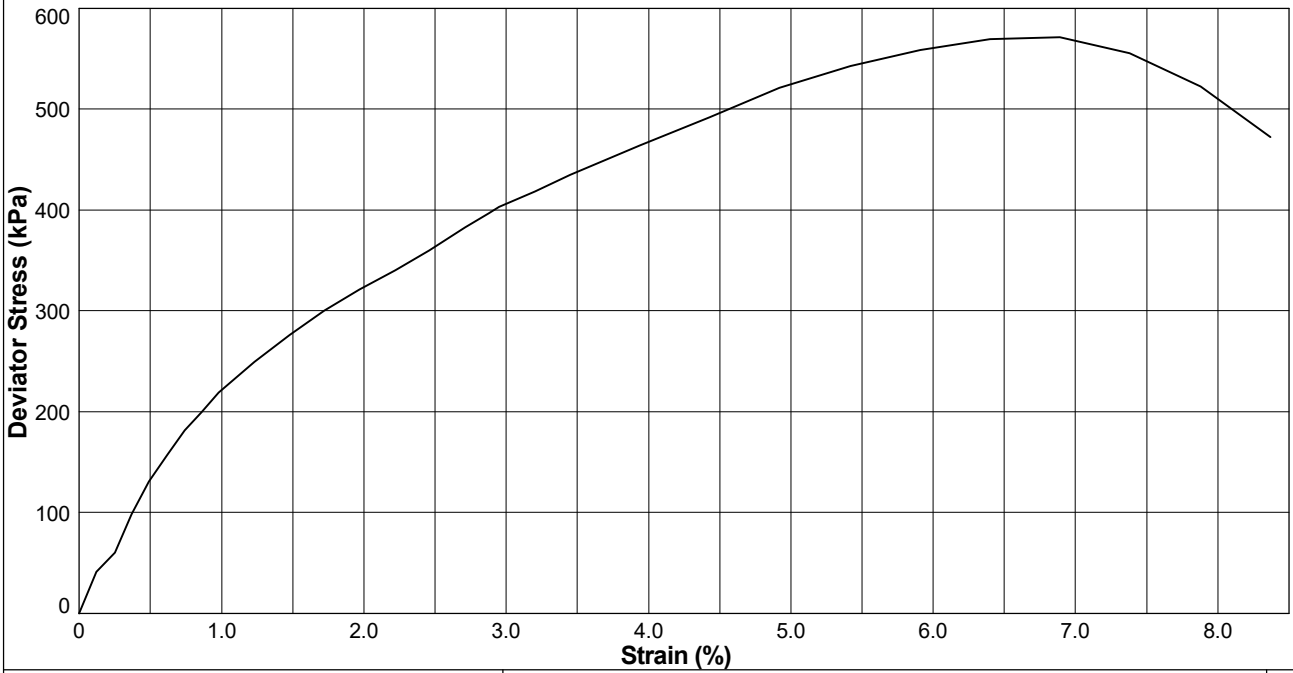
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH5** Sample Ref: **41** Sample Type: **U** Depth (m): **27.50**

Description : **Brown mottled grey slightly sandy CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.74		
	Height	(mm)	203.12		
	Moisture Content	(%)	25		
	Bulk Density	(Mg/m^3)	2.03		
	Dry Density	(Mg/m^3)	1.62		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.23		
	Cell Pressure	(kPa)	550		
	Membrane Correction	(kPa)	0.63		
	Corrected Deviator Stress	(kPa)	572		
	Undrained Shear Strength	(kPa)	286		
FAILURE DETAILS	Strain at Failure	(%)	6.9		
	Mode of Failure 1 : **Brittle (shear plane)**				



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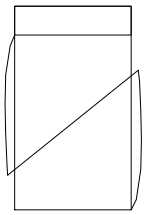
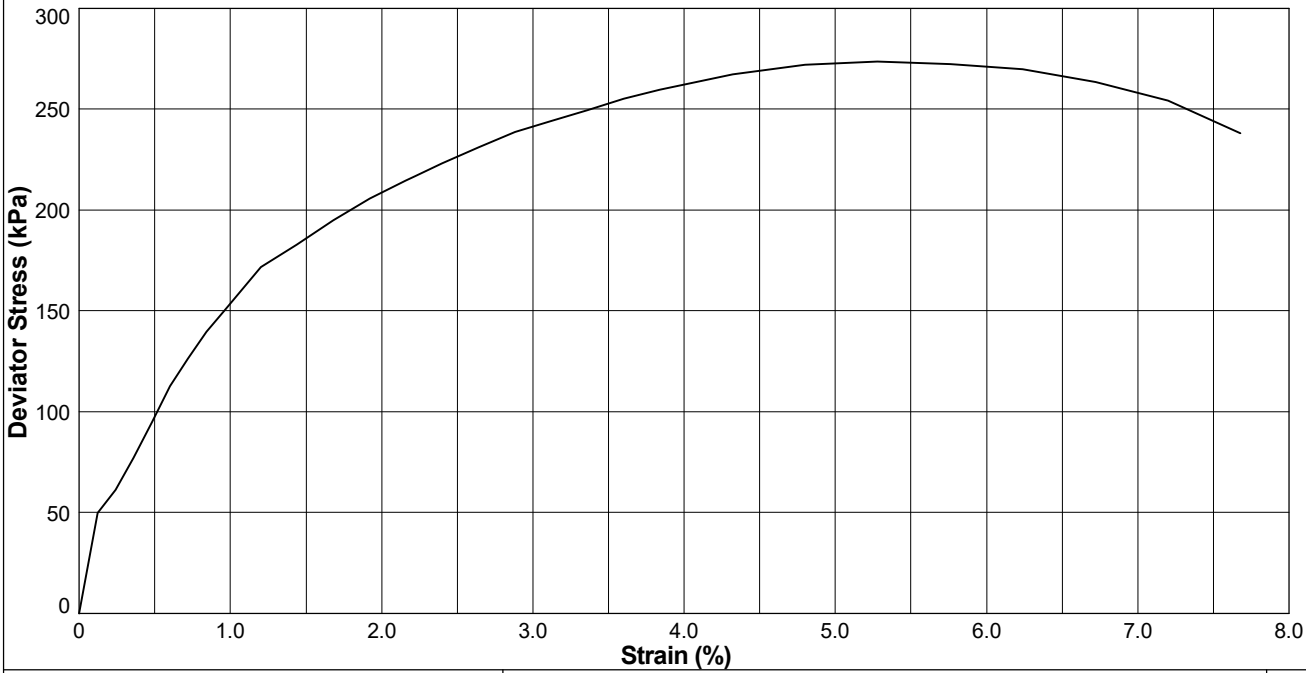
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH6** Sample Ref: **19** Sample Type: **U** Depth (m): **11.00**

Description : **Brown mottled grey CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.62		
	Height	(mm)	208.39		
	Moisture Content	(%)	25		
	Bulk Density	(Mg/m^3)	2.02		
	Dry Density	(Mg/m^3)	1.61		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.25		
	Cell Pressure	(kPa)	29		
	Membrane Correction	(kPa)	0.52		
	Corrected Deviator Stress	(kPa)	274		
	Undrained Shear Strength	(kPa)	137		
FAILURE DETAILS	Strain at Failure	(%)	5.3		
	Mode of Failure 1 : **Brittle (shear plane)**				



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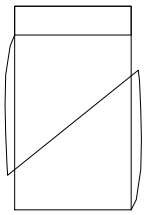
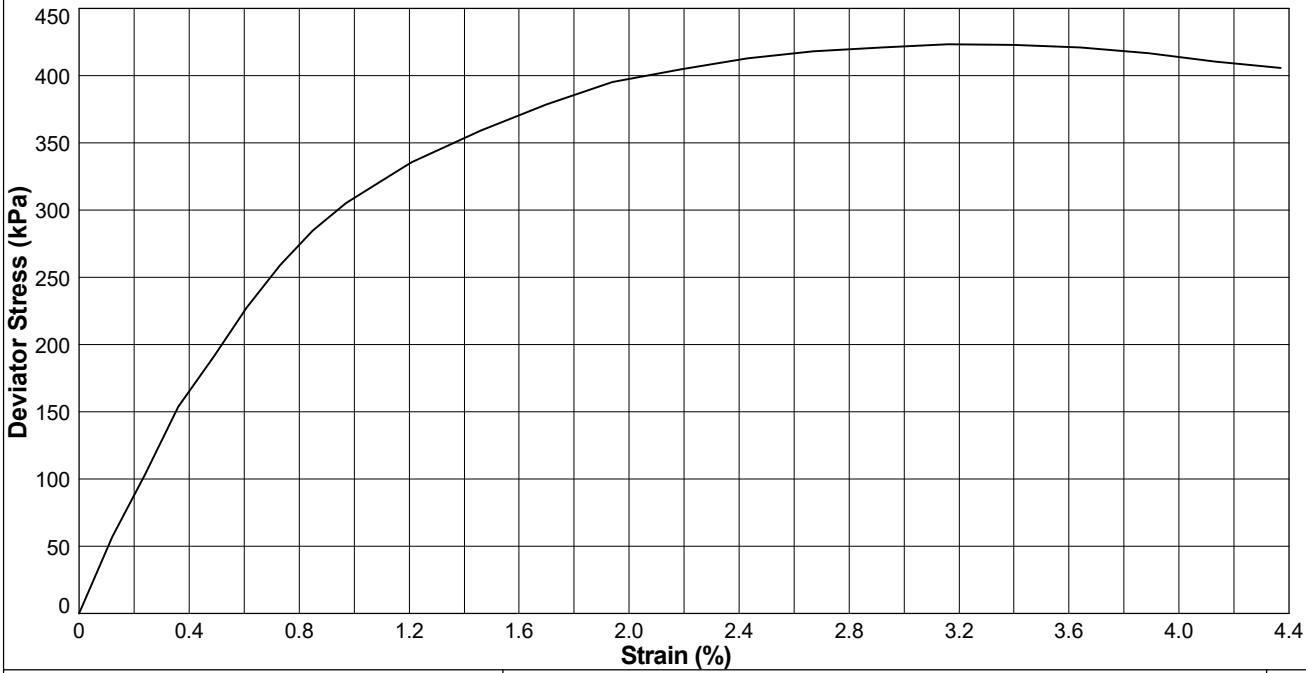
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH6** Sample Ref: **31** Sample Type: **U** Depth (m): **20.00**

Description : **Brown slightly sandy CLAY with possible gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.83		
	Height	(mm)	205.78		
	Moisture Content	(%)	23		
	Bulk Density	(Mg/m^3)	2.02		
	Dry Density	(Mg/m^3)	1.65		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.34		
	Rate of Axial Displacement	(%/min)	1.31		
	Cell Pressure	(kPa)	409		
	Membrane Correction	(kPa)	0.29		
	Corrected Deviator Stress	(kPa)	423		
	Undrained Shear Strength	(kPa)	212		
FAILURE DETAILS	Strain at Failure	(%)	3.2		
	Mode of Failure 1 : **Brittle (shear plane)**				



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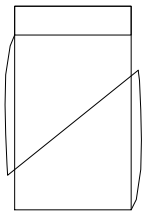
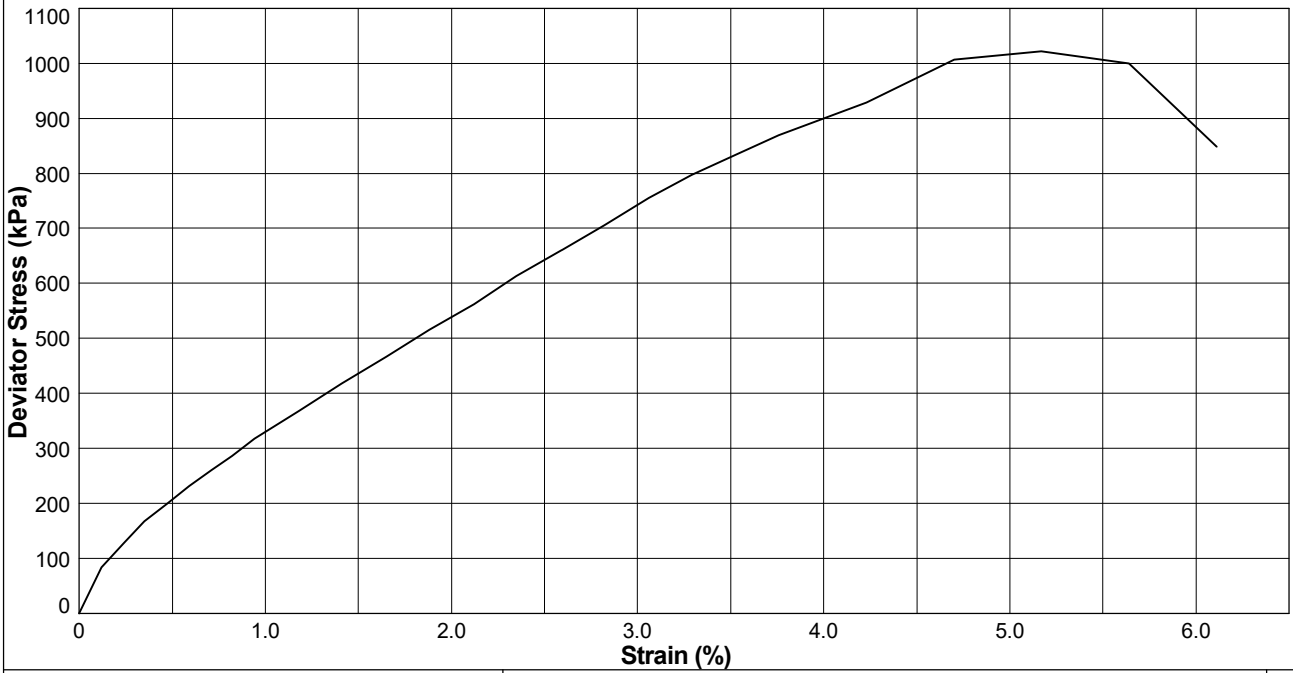
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH6** Sample Ref: **45** Sample Type: **U** Depth (m): **29.00**

Description : **Dark brown slightly sandy CLAY with possible gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.93		
	Height	(mm)	212.59		
	Moisture Content	(%)	20		
	Bulk Density	(Mg/m^3)	2.08		
	Dry Density	(Mg/m^3)	1.72		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.22		
	Rate of Axial Displacement	(%/min)	1.08		
	Cell Pressure	(kPa)	589		
	Membrane Correction	(kPa)	0.29		
	Corrected Deviator Stress	(kPa)	1022		
	Undrained Shear Strength	(kPa)	511		
FAILURE DETAILS	Strain at Failure	(%)	5.2		
	Mode of Failure 1 : **Brittle (shear plane)**				



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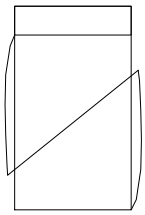
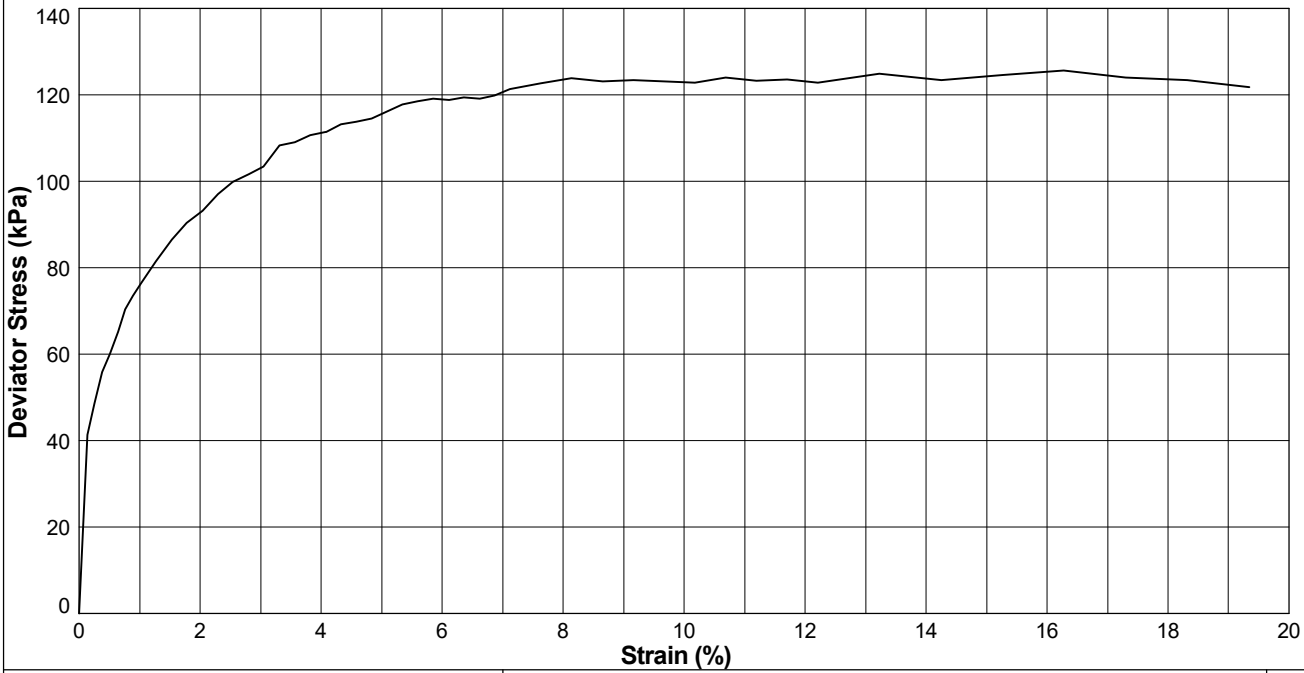
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH7** Sample Ref: **4** Sample Type: **U** Depth (m): **3.00**

Description : **Orangish brown mottled bluish grey slightly sandy CLAY with some gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.65		
	Height	(mm)	196.51		
	Moisture Content	(%)	31		
	Bulk Density	(Mg/m^3)	1.93		
	Dry Density	(Mg/m^3)	1.47		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.98		
	Cell Pressure	(kPa)	69		
	Membrane Correction	(kPa)	1.19		
	Corrected Deviator Stress	(kPa)	126		
	Undrained Shear Strength	(kPa)	63		
FAILURE DETAILS	Strain at Failure	(%)	16.3		
	Mode of Failure 1 : **Brittle (shear plane)**				



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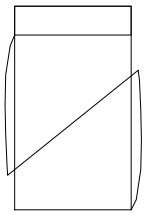
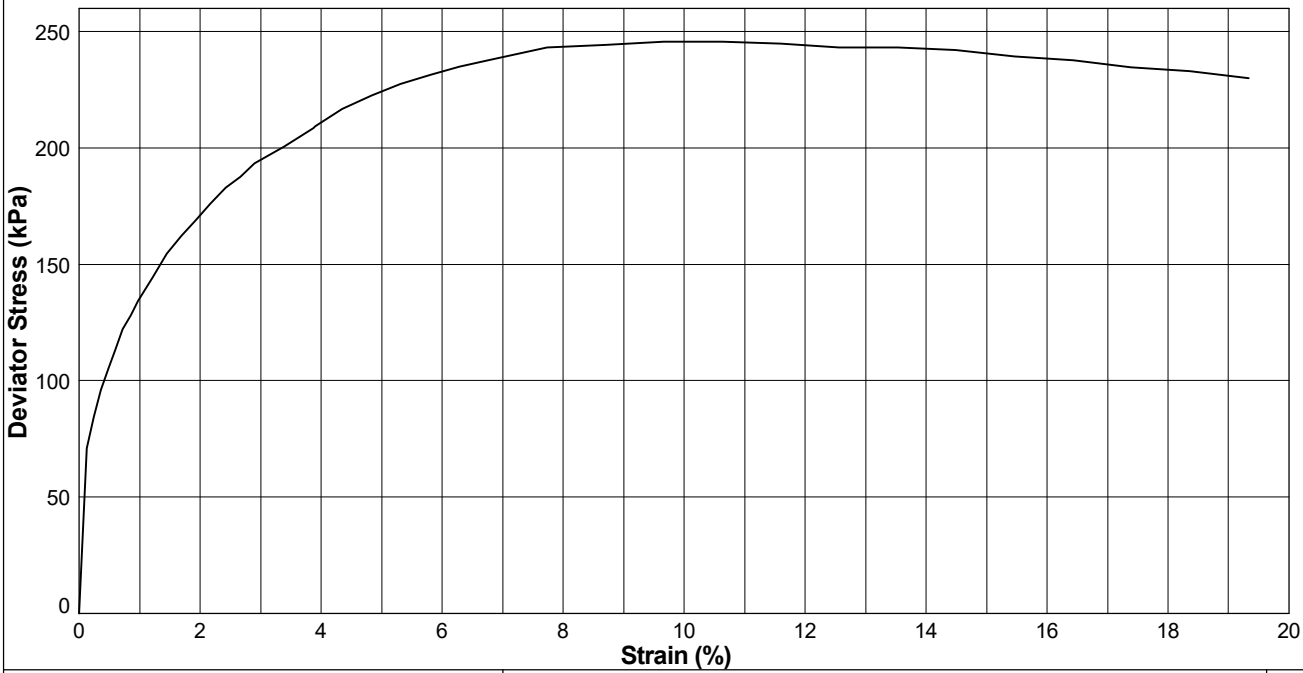
In accordance with BS1377 Part 7 Clause 8

Borehole: **BH7** Sample Ref: **12** Sample Type: **U** Depth (m): **8.00**

Description : **Brown CLAY with some gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.65		
	Height	(mm)	206.98		
	Moisture Content	(%)	25		
	Bulk Density	(Mg/m^3)	2.00		
	Dry Density	(Mg/m^3)	1.60		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.20		
	Rate of Axial Displacement	(%/min)	1.35		
	Cell Pressure	(kPa)	169		
	Membrane Correction	(kPa)	0.46		
	Corrected Deviator Stress	(kPa)	246		
	Undrained Shear Strength	(kPa)	123		
FAILURE DETAILS	Strain at Failure	(%)	10.6		
	Mode of Failure 1 : **Brittle (shear plane)**				



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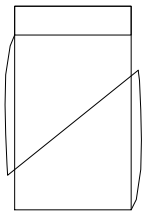
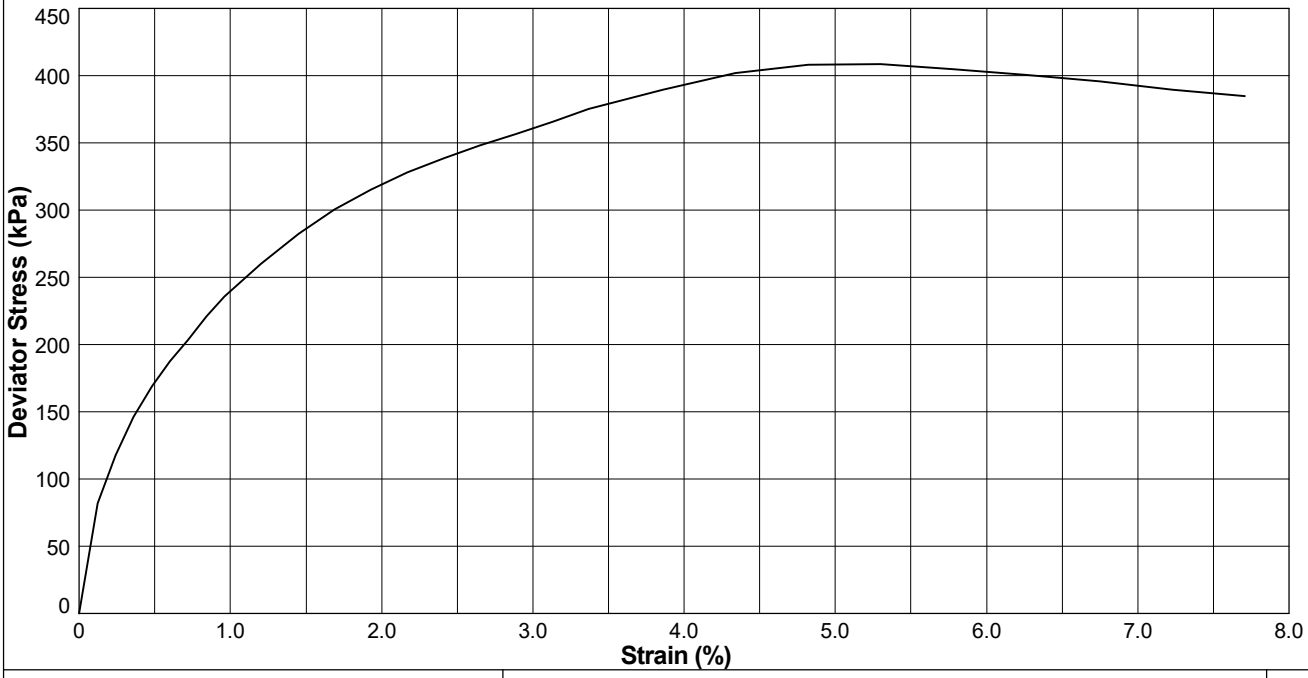
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH7** Sample Ref: **24** Sample Type: **U** Depth (m): **17.00**

Description : **Dark brown slightly sandy CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.56		
	Height	(mm)	207.50		
	Moisture Content	(%)	25		
	Bulk Density	(Mg/m^3)	2.05		
	Dry Density	(Mg/m^3)	1.64		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.28		
	Rate of Axial Displacement	(%/min)	1.20		
	Cell Pressure	(kPa)	349		
	Membrane Correction	(kPa)	0.38		
	Corrected Deviator Stress	(kPa)	409		
	Undrained Shear Strength	(kPa)	204		
FAILURE DETAILS	Strain at Failure	(%)	5.3		
	Mode of Failure 1 : **Brittle (shear plane)**				



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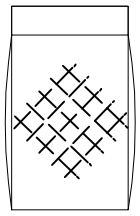
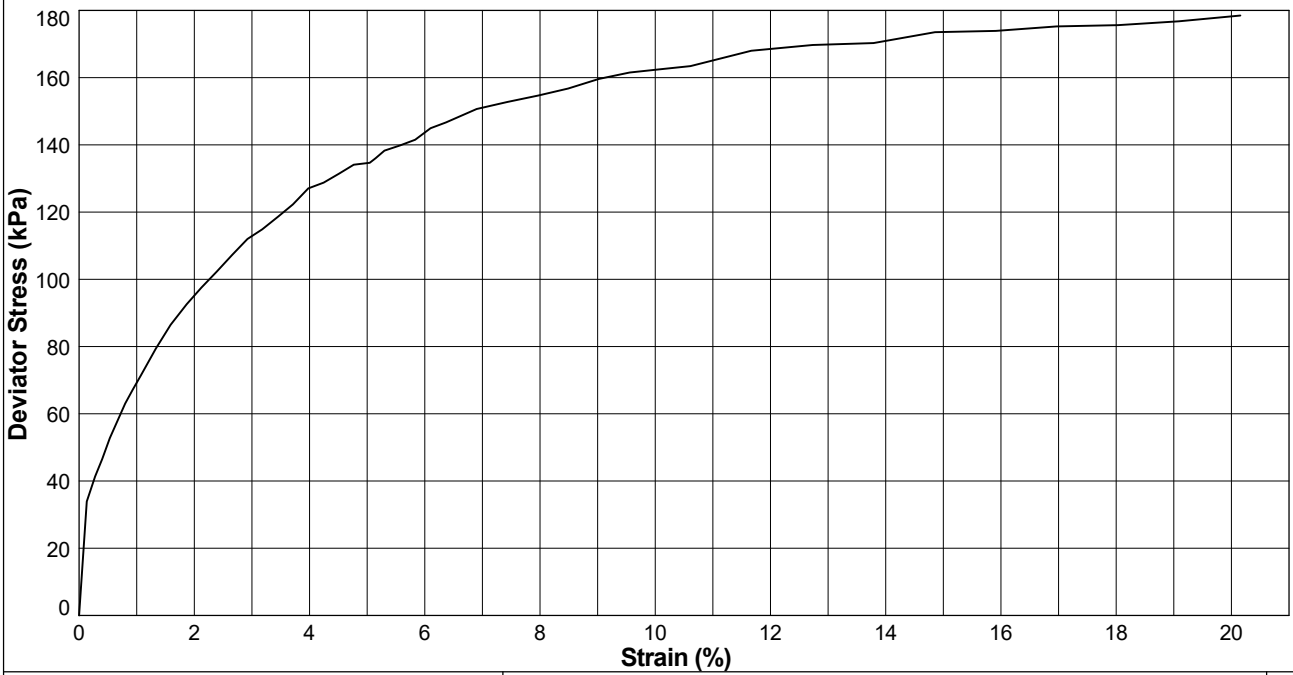
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH8** Sample Ref: **6** Sample Type: **U** Depth (m): **3.00**

Description : **Brown mottled orange CLAY with some gypsum**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.59		
	Height	(mm)	188.53		
	Moisture Content	(%)	27		
	Bulk Density	(Mg/m^3)	2.00		
	Dry Density	(Mg/m^3)	1.57		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.28		
	Rate of Axial Displacement	(%/min)	1.75		
	Cell Pressure	(kPa)	69		
	Membrane Correction	(kPa)	1.04		
	Corrected Deviator Stress	(kPa)	179		
	Undrained Shear Strength	(kPa)	89		
FAILURE DETAILS	Strain at Failure	(%)	20.2		
	Mode of Failure 1 : **Semi-plastic (intermediate)**				



STRUCTURAL SOILS
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Compiled By		Date
SC	SHARON CAIRNS	14/10/20

Contract	Contract Ref:
North London Buisness Park (N.L.B.P)	584350

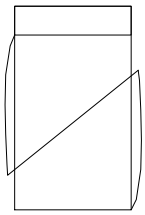
AGS

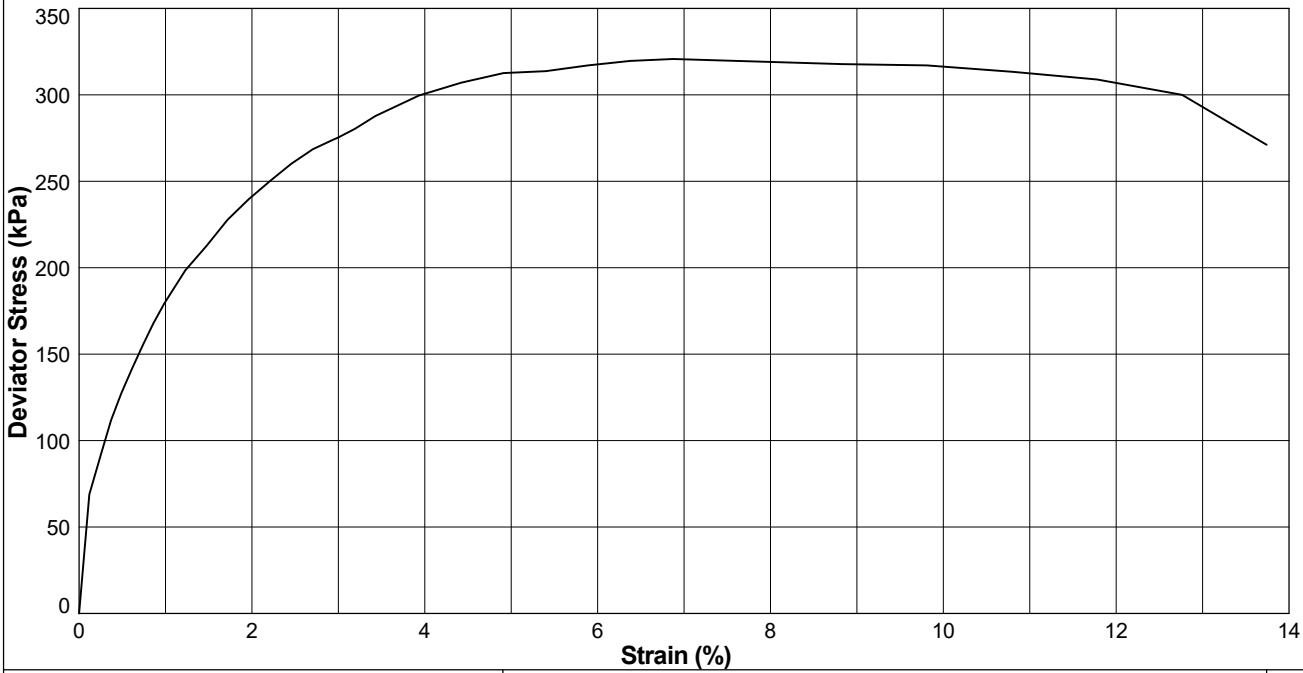
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH8** Sample Ref: **14** Sample Type: **U** Depth (m): **8.00**

Description : **Brown mottled orange CLAY with some gypsum**

STAGE NUMBER			**1**	**2**	**3**
SAMPLE DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.71**		
	Height	(mm)	**203.79**		
	Moisture Content	(%)	**25**		
	Bulk Density	(Mg/m^3)	**1.98**		
	Dry Density	(Mg/m^3)	**1.58**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.42**		
	Rate of Axial Displacement	(%/min)	**1.37**		
	Cell Pressure	(kPa)	**169**		
	Membrane Correction	(kPa)	**0.69**		
	Corrected Deviator Stress	(kPa)	**321**		
	Undrained Shear Strength	(kPa)	**160**		
FAILURE DETAILS	Strain at Failure	(%)	**6.9**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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HP3 9RT

Compiled By		Date
SC	**SHARON CAIRNS**	**14/10/20**

Contract	Contract Ref:
North London Buisness Park (N.L.B.P)	**584350**

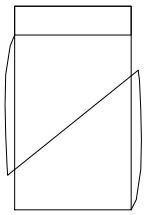
AGS

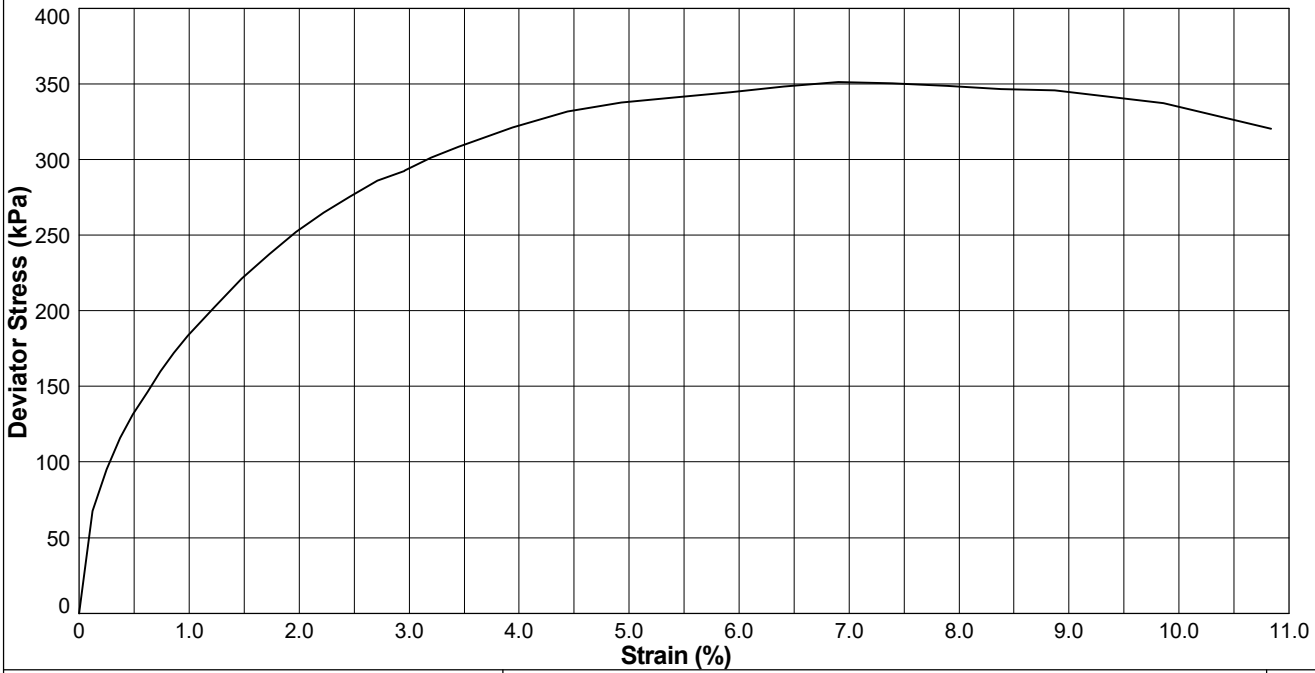
UNCONSOLIDATED QUICK UNDRAINED (SINGLE STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377 Part 7 Clause 8

Borehole: **BH8** Sample Ref: **22** Sample Type: **U** Depth (m): **14.00**

Description : **Brown CLAY**

STAGE NUMBER			1	2	3
SAMPLE DETAILS	Sample Condition		Undisturbed		
	Orientation of sample		Vertical		
	Diameter	(mm)	103.66		
	Height	(mm)	202.86		
	Moisture Content	(%)	27		
	Bulk Density	(Mg/m^3)	2.00		
	Dry Density	(Mg/m^3)	1.58		
TEST DETAILS	Membrane Type		Rubber		
	Membrane Thickness	(mm)	0.38		
	Rate of Axial Displacement	(%/min)	1.33		
	Cell Pressure	(kPa)	289		
	Membrane Correction	(kPa)	0.63		
	Corrected Deviator Stress	(kPa)	351		
	Undrained Shear Strength	(kPa)	176		
FAILURE DETAILS	Strain at Failure	(%)	6.9		
	Mode of Failure 1 : **Brittle (shear plane)**				



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Hertfordshire
HP3 9RT

Compiled By		Date
SC	SHARON CAIRNS	14/10/20

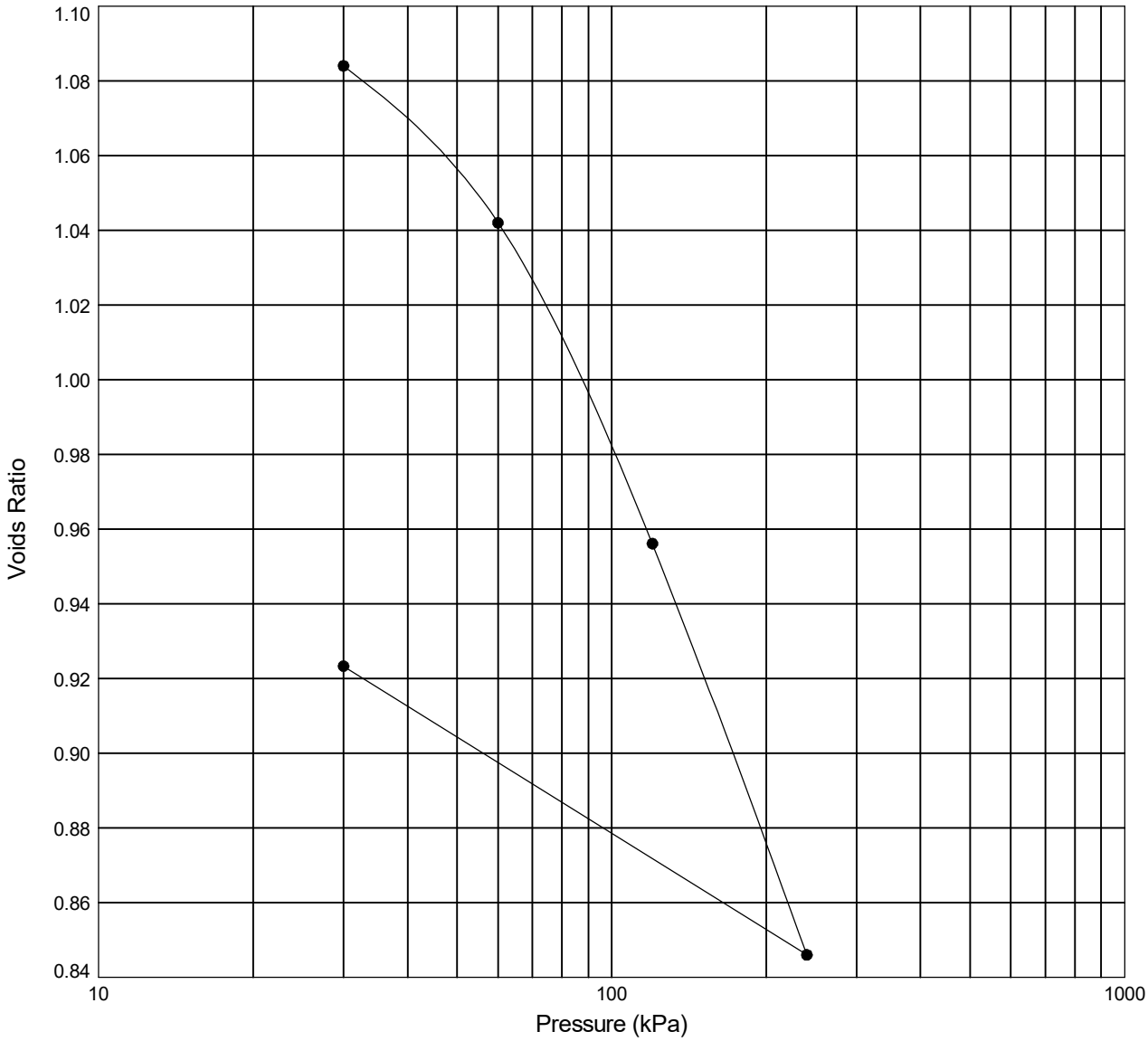
Contract	Contract Ref:
North London Buisness Park (N.L.B.P)	**584350**

AGS

ONE DIMENSIONAL CONSOLIDATION TEST

In accordance with BS1377 Part 5 Clause 3

Borehole: **BH2** Sample Ref: **6** Sample Type: **U** Depth (m): **3.03**



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%)	:	**44**	Moisture Content (%)	:	**39**
Bulk Density (Mg/m^3)	:	**1.77**	Bulk Density (Mg/m^3)	:	**1.88**
Dry Density (Mg/m^3)	:	**1.23**	Dry Density (Mg/m^3)	:	**1.35**
Void Ratio	:	**1.116**	Void Ratio	:	**0.9233**

Specimen Details			
Description	Height (mm)	:	**18.83**
Light brown CLAY	Diameter (mm)	:	**74.92**
	Particle Density (Mg/m^3) (assumed)	:	**2.60**
	Swelling Pressure (kPa)	:	**NA**

Test Results			
Pressure Range (kPa)	Mv (m^2/MN)	Cv (m^2/yr)	Voids Ratio
0 - 30	**0.50**	**28**	**1.084**
30 - 60	**0.68**	**18**	**1.042**
60 - 120	**0.70**	**5.5**	**0.9561**
120 - 240	**0.47**	**0.56**	**0.8460**
240 - 30	**NA**	**NA**	**0.9233**

Notes: Method of time-setting used: **T90.** Temperature range during test (degC): **18.5 - 20.9.**

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

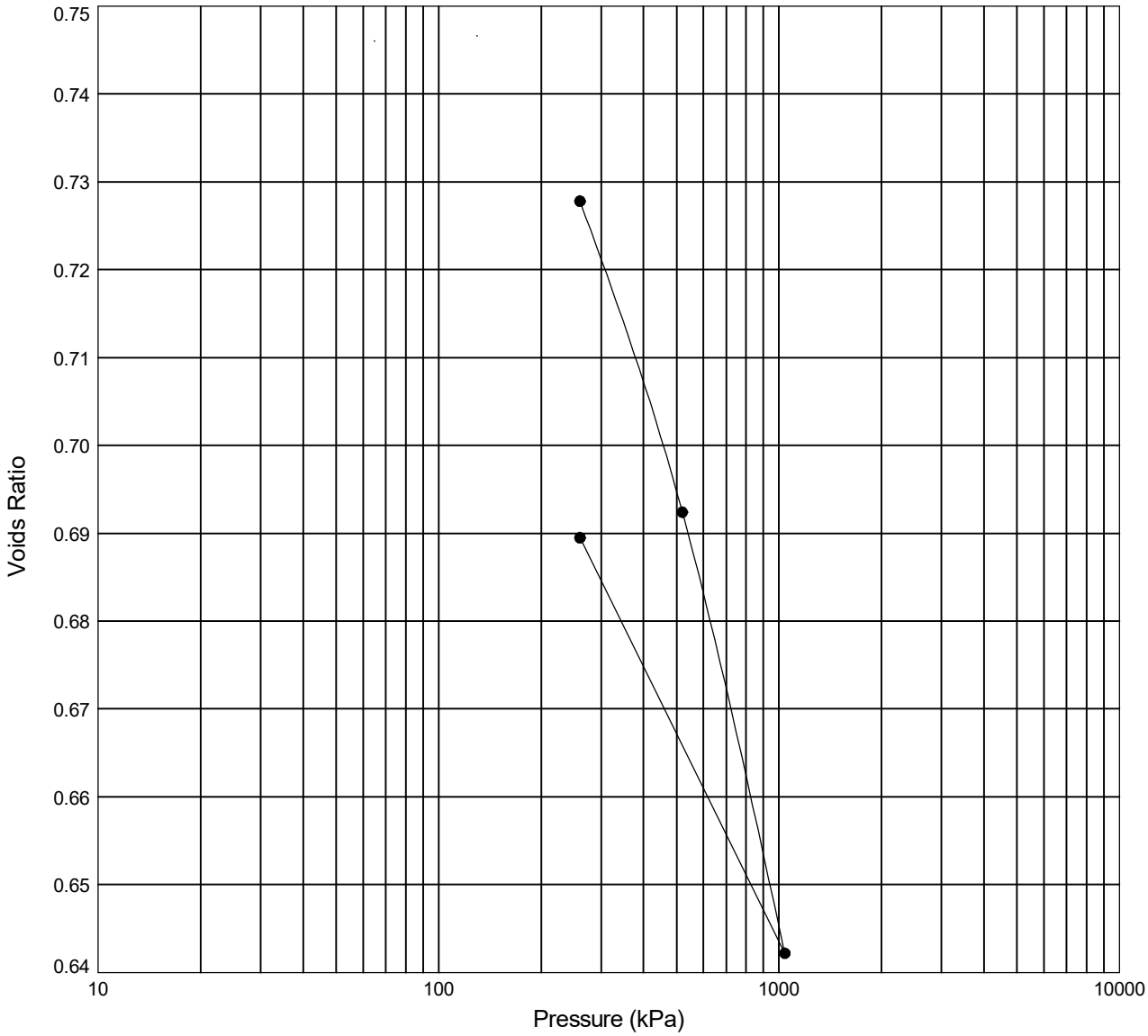
Compiled By		Date
D. Richards	**DAISY RICHARDS**	**30/11/20**

Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

ONE DIMENSIONAL CONSOLIDATION TEST

In accordance with BS1377 Part 5 Clause 3

Borehole: **BH5** Sample Ref: **U** Sample Type: **U** Depth (m): **6.59**



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%)	:	**30**	Moisture Content (%)	:	**29**
Bulk Density (Mg/m^3)	:	**1.96**	Bulk Density (Mg/m^3)	:	**2.03**
Dry Density (Mg/m^3)	:	**1.51**	Dry Density (Mg/m^3)	:	**1.57**
Void Ratio	:	**0.7517**	Void Ratio	:	**0.6895**

Specimen Details			
Description	Height (mm)	:	**19.02**
	Diameter (mm)	:	**74.97**
Yellowish brown CLAY with some gypsum	Particle Density (Mg/m^3) (assumed)	:	**2.65**
	Swelling Pressure (kPa)	:	**NA**

Test Results			
Pressure Range (kPa)	Mv (m^2/MN)	Cv (m^2/yr)	Voids Ratio
0 - 65	**Sample**	**Swelling**	**0.7460**
65 - 130	**Sample**	**Swelling**	**0.7466**
130 - 260	**0.083**	**10**	**0.7278**
260 - 520	**0.079**	**2.0**	**0.6924**
520 - 1040	**0.057**	**3.0**	**0.6422**
1040 - 260	**NA**	**NA**	**0.6895**

Notes: Method of time-setting used: **T90.** Temperature range during test (degC): **18 - 21.3.**

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1a Princess Street
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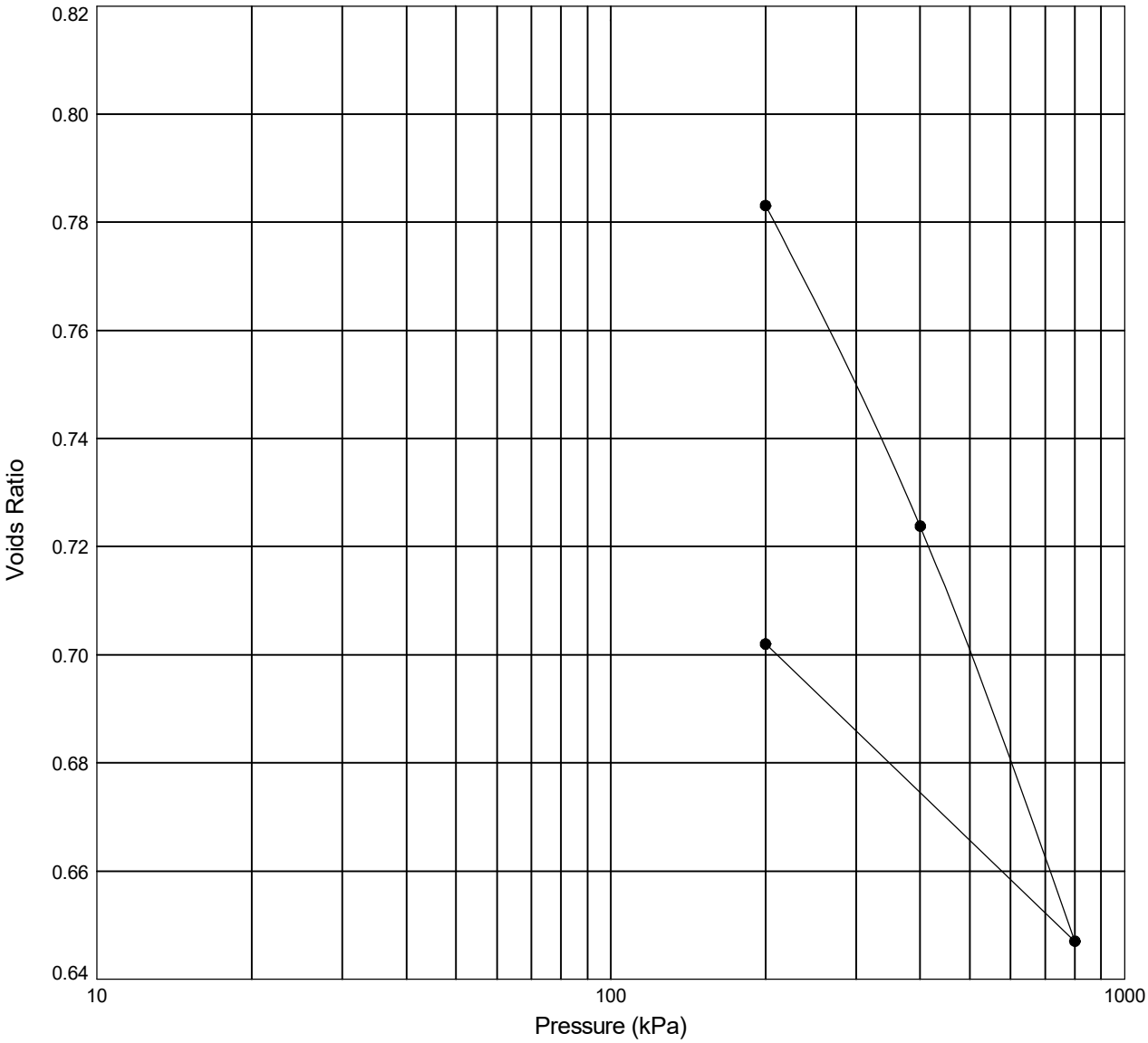
Compiled By		Date
D. Richards	**DAISY RICHARDS**	**30/11/20**

Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

ONE DIMENSIONAL CONSOLIDATION TEST

In accordance with BS1377 Part 5 Clause 3

Borehole: **BH6** Sample Ref: **U** Sample Type: **U** Depth (m): **5.05**



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%)	:	**32**	Moisture Content (%)	:	**31**
Bulk Density (Mg/m^3)	:	**1.91**	Bulk Density (Mg/m^3)	:	**2.04**
Dry Density (Mg/m^3)	:	**1.45**	Dry Density (Mg/m^3)	:	**1.56**
Void Ratio	:	**0.8285**	Void Ratio	:	**0.7020**

Specimen Details			
Description	Height (mm)	:	**19.04**
	Diameter (mm)	:	**74.88**
Brown CLAY with some gypsum	Particle Density (Mg/m^3) (assumed)	:	**2.65**
	Swelling Pressure (kPa)	:	**NA**

Test Results			
Pressure Range (kPa)	Mv (m^2/MN)	Cv (m^2/yr)	Voids Ratio
0 - 50	**Sample**	**Swelling**	**0.8200**
50 - 100	**Sample**	**Swelling**	**0.8173**
100 - 200	**0.19**	**12**	**0.7831**
200 - 400	**0.17**	**34**	**0.7238**
400 - 800	**0.11**	**17**	**0.6470**
800 - 200	**NA**	**NA**	**0.7020**

Notes: Method of time-setting used: **T90.** Temperature range during test (degC): **17.4 - 21.3.**

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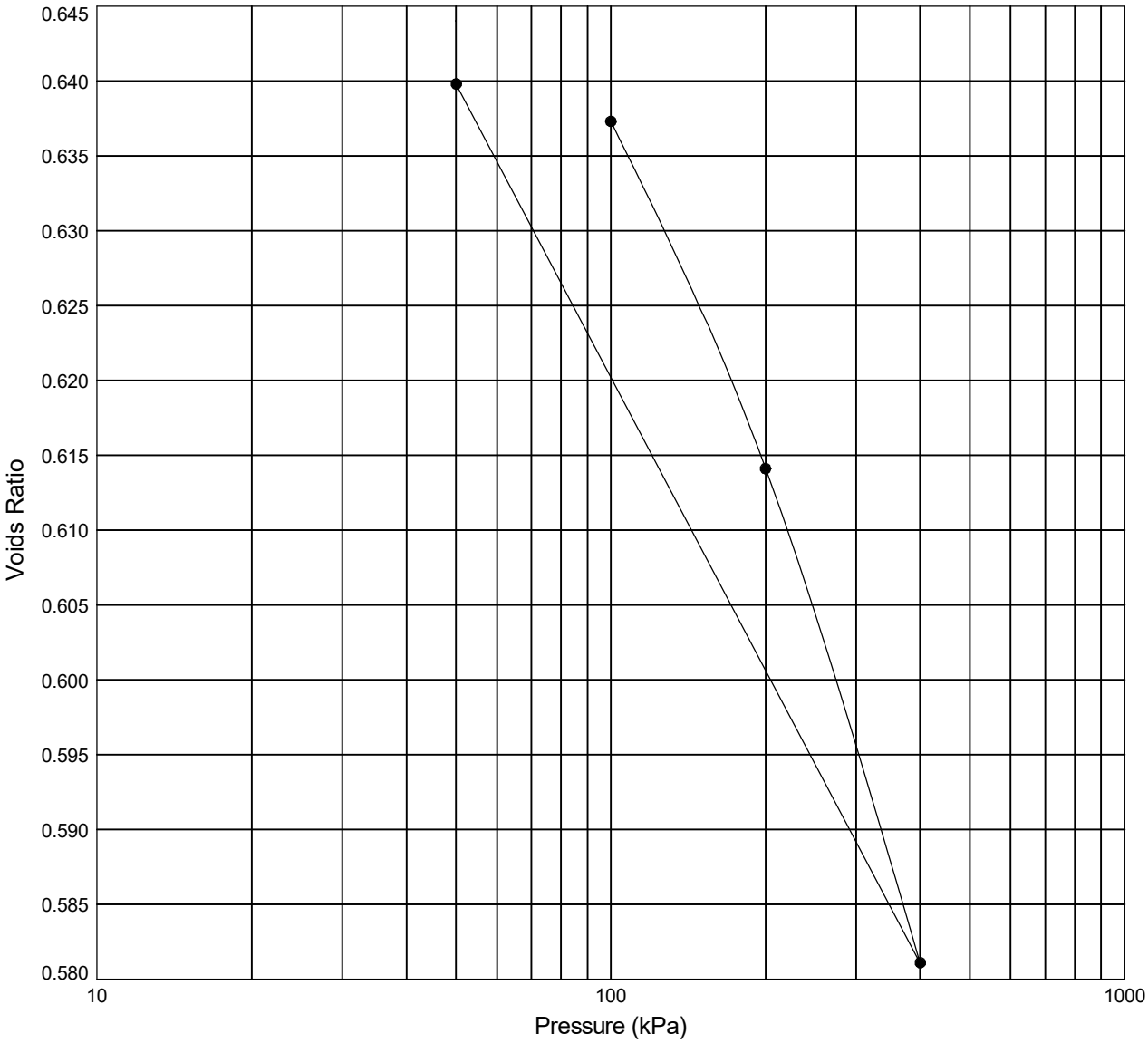
Compiled By	Date
THOMAS DAVIES	**30/11/20**

Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

ONE DIMENSIONAL CONSOLIDATION TEST

In accordance with BS1377 Part 5 Clause 3

Borehole: **BH8** Sample Ref: **U** Sample Type: **U** Depth (m): **5.07**



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%)	:	**26**	Moisture Content (%)	:	**27**
Bulk Density (Mg/m^3)	:	**2.02**	Bulk Density (Mg/m^3)	:	**2.06**
Dry Density (Mg/m^3)	:	**1.60**	Dry Density (Mg/m^3)	:	**1.62**
Void Ratio	:	**0.6516**	Void Ratio	:	**0.6398**

Specimen Details			
Description	Height (mm)	:	**19.02**
	Diameter (mm)	:	**75.00**
Yellowish brown CLAY with occasional gypsum	Particle Density (Mg/m^3) (assumed)	:	**2.65**
	Swelling Pressure (kPa)	:	**NA**

Test Results			
Pressure Range (kPa)	Mv (m^2/MN)	Cv (m^2/yr)	Voids Ratio
0 - 50	**Sample**	**Swelling**	**0.6440**
50 - 100	**0.082**	**44**	**0.6373**
100 - 200	**0.14**	**18**	**0.6141**
200 - 400	**0.10**	**19**	**0.5811**
400 - 50	**NA**	**NA**	**0.6398**

Notes: Method of time-setting used: **T90.** Temperature range during test (degC): **18 - 21.4.**

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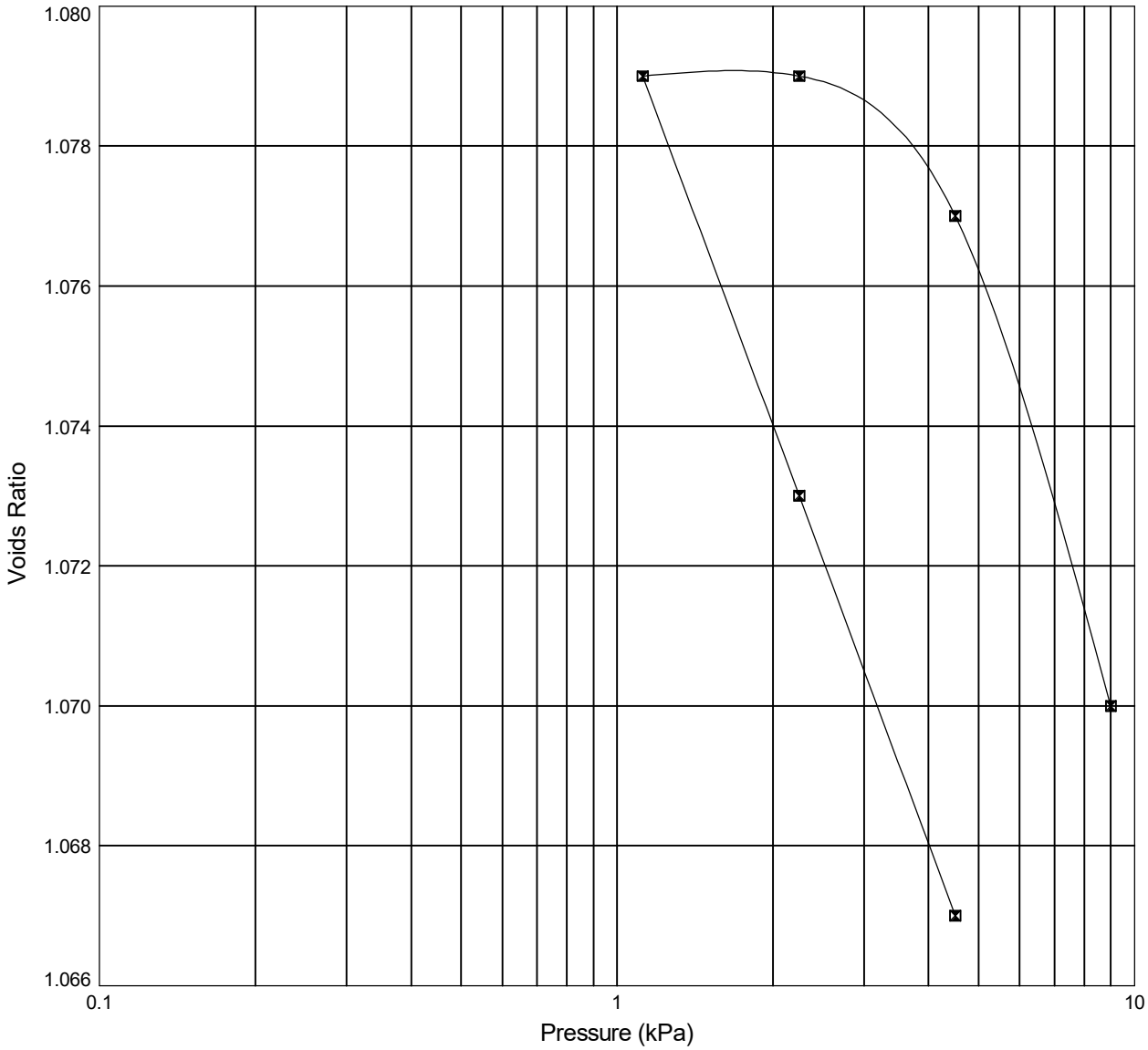
Compiled By	Date
DAISY RICHARDS	**30/11/20**

Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

MEASUREMENT OF SWELLING TEST

In accordance with BS1377:Part 5:1990

Borehole: **BH2** Sample Ref: **6** Sample Type: **U** Depth (m): **3.07**



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%)	:	**42**	Moisture Content (%)	:	**43**
Bulk Density (Mg/m^3)	:	**1.79**	Bulk Density (Mg/m^3)	:	**1.80**
Dry Density (Mg/m^3)	:	**1.26**	Dry Density (Mg/m^3)	:	**1.26**
Void Ratio	:	**1.061**	Void Ratio	:	**1.070**

Specimen Details			
Description	Height (mm)	:	**15.00**
Light brown CLAY	Diameter (mm)	:	**74.91**
	Particle Density (Mg/m^3) (assumed)	:	**2.60**
	Swelling Pressure (kPa)	:	**9**

Test Results			
Pressure Range (kPa)	Mv (m^2/MN)	Cv (m^2/yr)	Voids Ratio
9 - 4.5	**NA**	**NA**	**1.067**
4.5 - 2.25	**NA**	**NA**	**1.073**
2.25 - 1.12	**NA**	**NA**	**1.079**
1.12 - 2.25	**0.23**	**2.2**	**1.079**
2.25 - 4.5	**0.47**	**1.3**	**1.077**
4.5 - 9	**0.66**	**5.1**	**1.070**

Notes: Method of time-setting used: **T90.** Temperature range during test (degC): **16.1 - 21.1.**

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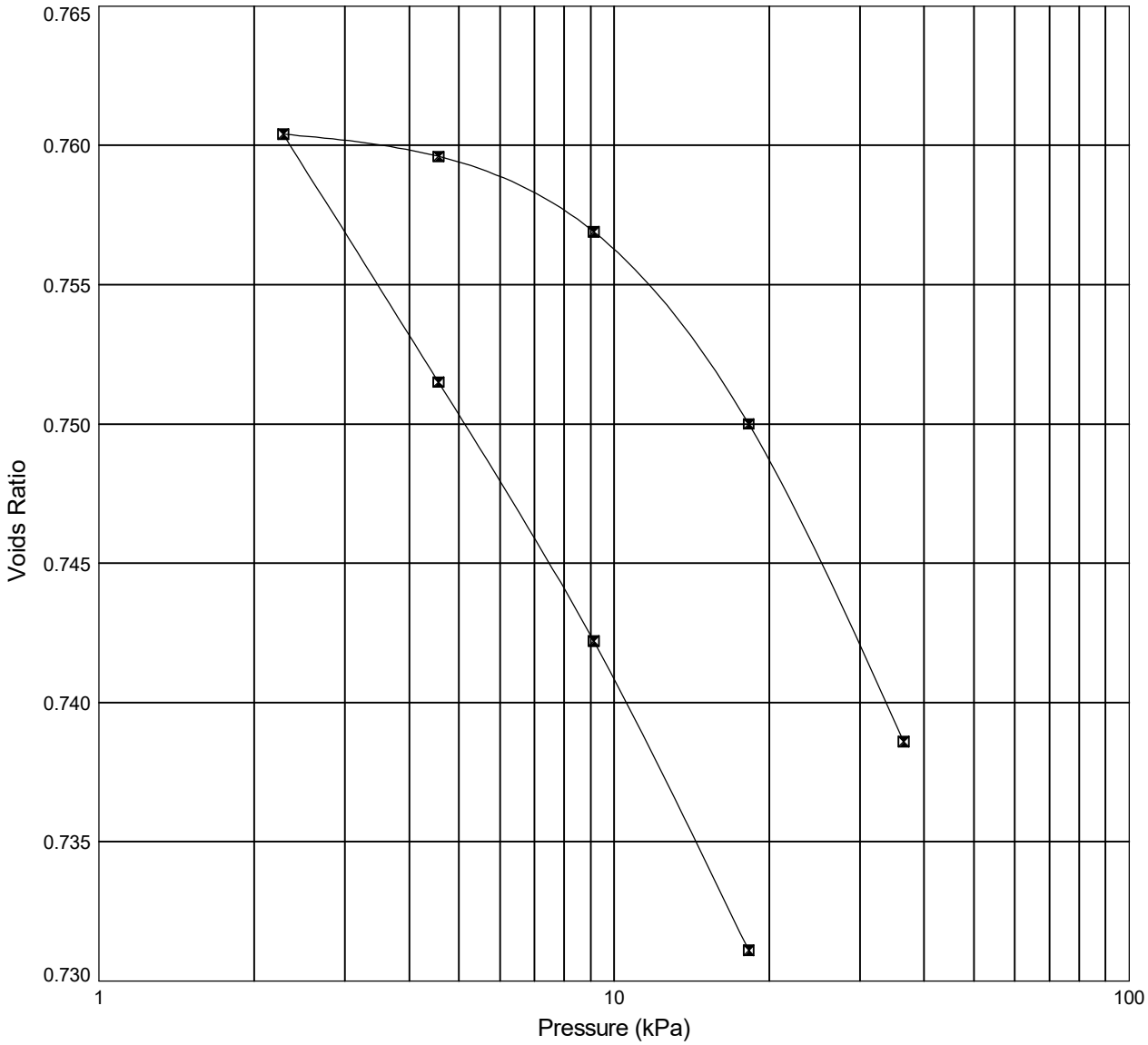
Compiled By	Date
DAISY RICHARDS	**30/11/20**

Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

MEASUREMENT OF SWELLING TEST

In accordance with BS1377:Part 5:1990

Borehole: **BH5** Sample Ref: **U** Sample Type: **U** Depth (m): **6.62**



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%)	:	**28**	Moisture Content (%)	:	**31**
Bulk Density (Mg/m^3)	:	**1.97**	Bulk Density (Mg/m^3)	:	**2.00**
Dry Density (Mg/m^3)	:	**1.54**	Dry Density (Mg/m^3)	:	**1.53**
Void Ratio	:	**0.7228**	Void Ratio	:	**0.7386**

Specimen Details			
Description	Height (mm)	:	**14.97**
	Diameter (mm)	:	**75.00**
Yellowish brown CLAY with some gypsum	Particle Density (Mg/m^3) (assumed)	:	**2.65**
	Swelling Pressure (kPa)	:	**36.5**

Test Results			
Pressure Range (kPa)	Mv (m^2/MN)	Cv (m^2/yr)	Voids Ratio
36.5 - 18.25	**NA**	**NA**	**0.7311**
18.25 - 9.12	**NA**	**NA**	**0.7422**
9.12 - 4.56	**NA**	**NA**	**0.7515**
4.56 - 2.28	**NA**	**NA**	**0.7604**
2.28 - 4.56	**0.20**	**1.3**	**0.7596**
4.56 - 9.12	**0.34**	**3.4**	**0.7569**
9.12 - 18.25	**0.43**	**3.8**	**0.7500**
18.25 - 36.5	**0.36**	**6.4**	**0.7386**

Notes: Method of time-setting used: **T90.** Temperature range during test (degC): **16.1 - 21.3.**

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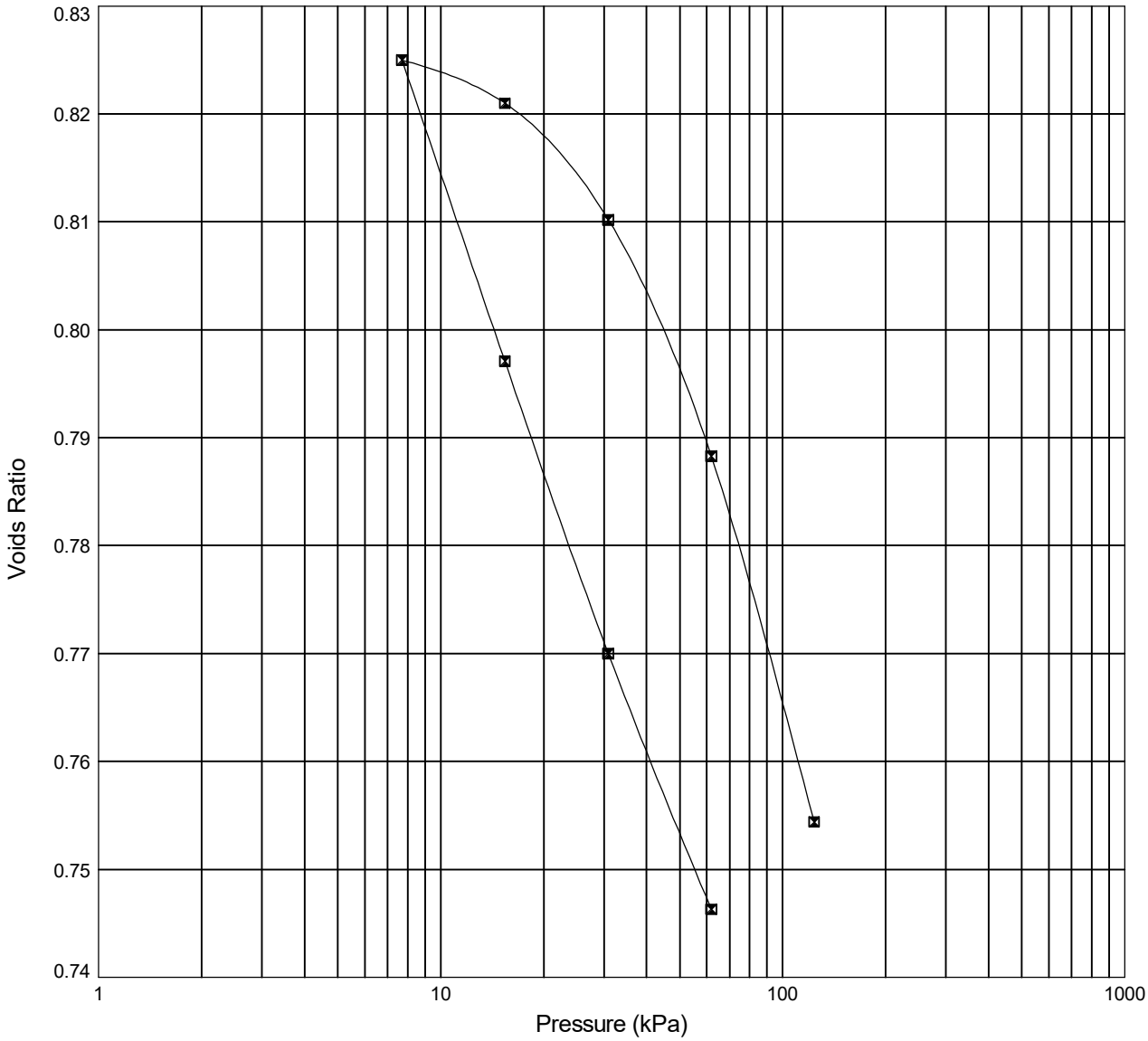
Compiled By		Date
D. Richards	**DAISY RICHARDS**	**30/11/20**

Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

MEASUREMENT OF SWELLING TEST

In accordance with BS1377:Part 5:1990

Borehole: **BH6** Sample Ref: **U** Sample Type: **U** Depth (m): **5.10**



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%)	:	**29**	Moisture Content (%)	:	**31**
Bulk Density (Mg/m^3)	:	**1.98**	Bulk Density (Mg/m^3)	:	**1.99**
Dry Density (Mg/m^3)	:	**1.53**	Dry Density (Mg/m^3)	:	**1.52**
Void Ratio	:	**0.7291**	Void Ratio	:	**0.7544**

Specimen Details			
Description	Height (mm)	:	**15.11**
	Diameter (mm)	:	**74.97**
Brown CLAY with some gypsum	Particle Density (Mg/m^3) (assumed)	:	**2.65**
	Swelling Pressure (kPa)	:	**123.5**

Test Results			
Pressure Range (kPa)	Mv (m^2/MN)	Cv (m^2/yr)	Voids Ratio
123.5 - 61.8	**NA**	**NA**	**0.7463**
61.8 - 30.9	**NA**	**NA**	**0.7700**
30.9 - 15.4	**NA**	**NA**	**0.7971**
15.4 - 7.7	**NA**	**NA**	**0.8250**
7.7 - 15.4	**0.29**	**10**	**0.8210**
15.4 - 30.9	**0.38**	**0.73**	**0.8102**
30.9 - 61.8	**0.39**	**0.27**	**0.7883**
61.8 - 123.5	**0.31**	**0.35**	**0.7544**

Notes: Method of time-setting used: **T90.** Temperature range during test (degC): **16.1 - 21.2.**

STRUCTURAL SOILS
1a Princess Street
Bedminster
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BS3 4AG

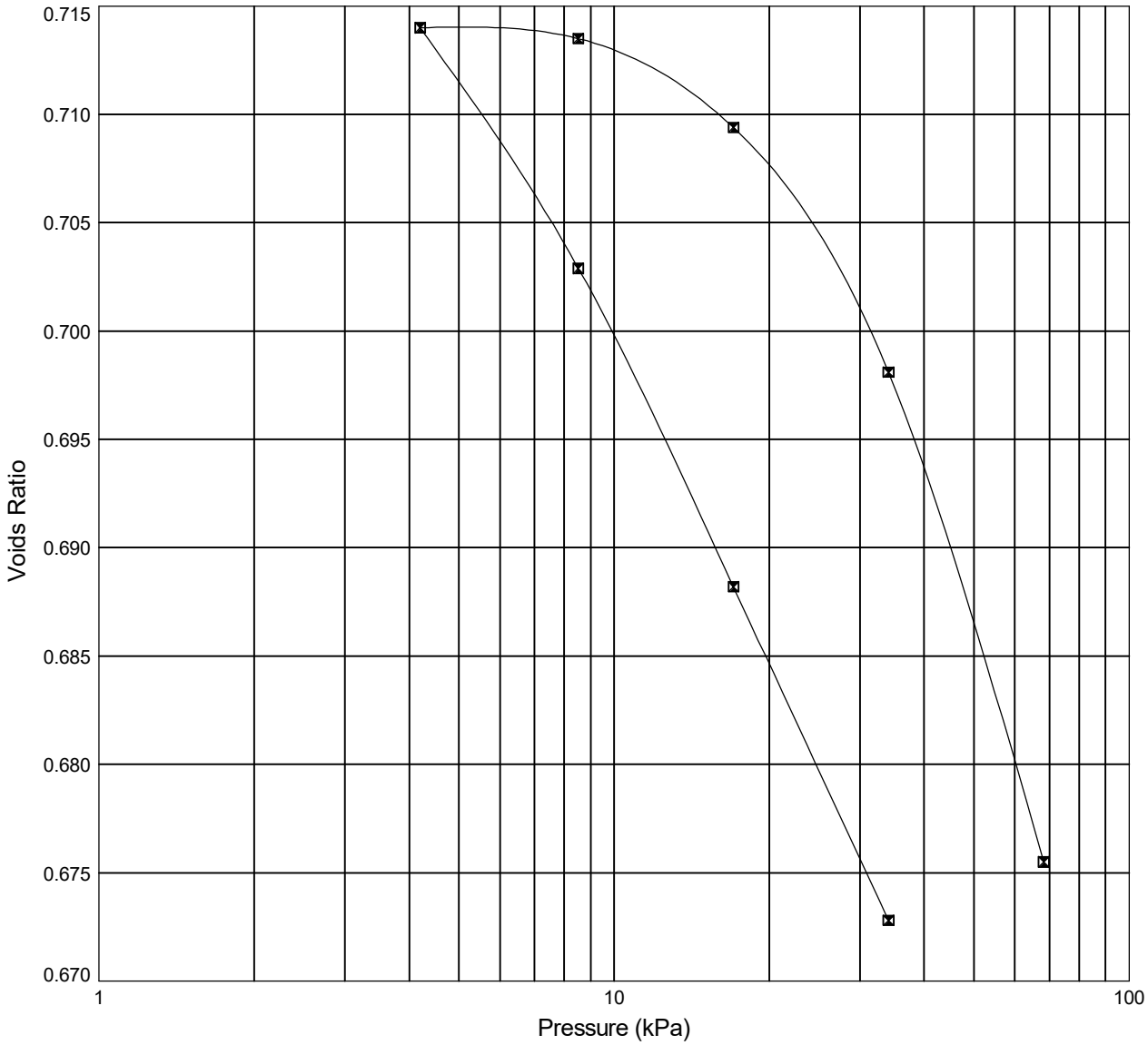
Compiled By		Date
D. Richards	**DAISY RICHARDS**	**03/12/20**

Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

MEASUREMENT OF SWELLING TEST

In accordance with BS1377:Part 5:1990

Borehole: **BH8** Sample Ref: **U** Sample Type: **U** Depth (m): **5.03**



Initial Specimen Condition			Final Specimen Condition		
Moisture Content (%)	:	**26**	Moisture Content (%)	:	**29**
Bulk Density (Mg/m^3)	:	**2.01**	Bulk Density (Mg/m^3)	:	**2.04**
Dry Density (Mg/m^3)	:	**1.60**	Dry Density (Mg/m^3)	:	**1.58**
Void Ratio	:	**0.6591**	Void Ratio	:	**0.6755**

Specimen Details			
Description	Height (mm)	:	**15.15**
	Diameter (mm)	:	**75.88**
Yellowish brown CLAY with occasional gypsum	Particle Density (Mg/m^3) (assumed)	:	**2.65**
	Swelling Pressure (kPa)	:	**68.2**

Test Results			
Pressure Range (kPa)	Mv (m^2/MN)	Cv (m^2/yr)	Voids Ratio
68.2 - 34.1	**NA**	**NA**	**0.6728**
34.1 - 17.05	**NA**	**NA**	**0.6882**
17.05 - 8.52	**NA**	**NA**	**0.7029**
8.52 - 4.2	**NA**	**NA**	**0.7140**
4.2 - 8.52	**0.059**	**6.6**	**0.7135**
8.52 - 17.05	**0.28**	**3.3**	**0.7094**
17.05 - 34.1	**0.39**	**2.2**	**0.6981**
34.1 - 68.2	**0.39**	**2.0**	**0.6755**

Notes: Method of time-setting used: **T90.** Temperature range during test (degC): **17.4 - 21.5.**

STRUCTURAL SOILS
1a Princess Street
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Compiled By		Date
D. Richards	**DAISY RICHARDS**	**30/11/20**

Contract	Contract Ref:
North London Business Park (N.L.B.P)	**584350**

APPENDIX L
LABORATORY CERTIFICATES FOR SURFACE WATER ANALYSIS

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/08709
Issue Number: 1 **Date:** 27 October, 2020

Client:
RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Alex Marcelo
Project Name: North London Business Park (N.L.B.P)
Project Ref: 1921321
Order No: N/A
Date Samples Received: 14/10/20
Date Instructions Received: 14/10/20
Date Analysis Completed: 24/10/20

Prepared by:

Melanie Marshall
Laboratory Coordinator

Approved by:

Danielle Brierley
Client Manager

UKAS TESTING
1247

Envirolab Job Number: 20/08709

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08709/1	20/08709/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SWS1	SWS2								
Depth to Top										
Depth To Bottom										
Date Sampled	09-Oct-20	09-Oct-20								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
pH (w)$_A^{\#}$	7.71	7.65						pH	0.01	A-T-031w
Sulphate (w)$_A^{\#}$	41	41						mg/l	1	A-T-026w
Arsenic (dissolved)$_A^{\#}$	<1	<1						µg/l	1	A-T-025w
Cadmium (dissolved)$_A^{\#}$	<0.2	<0.2						µg/l	0.2	A-T-025w
Copper (dissolved)$_A^{\#}$	2	3						µg/l	1	A-T-025w
Chromium (dissolved)$_A^{\#}$	<1	2						µg/l	1	A-T-025w
Lead (dissolved)$_A^{\#}$	1	<1						µg/l	1	A-T-025w
Mercury (dissolved)$_A^{\#}$	<0.1	<0.1						µg/l	0.1	A-T-025w
Nickel (dissolved)$_A^{\#}$	2	2						µg/l	1	A-T-025w
Selenium (dissolved)$_A^{\#}$	1	1						µg/l	1	A-T-025w
Zinc (dissolved)$_A^{\#}$	2	7						µg/l	1	A-T-025w

Envirolab Job Number: 20/08709

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08709/1	20/08709/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SWS1	SWS2								
Depth to Top										
Depth To Bottom										
Date Sampled	09-Oct-20	09-Oct-20								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
PAH 16MS (w)										
Acenaphthene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Acenaphthylene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Anthracene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(a)anthracene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(a)pyrene (w)$_A^{\#}$	0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w)$_A^{\#}$	0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Chrysene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Fluoranthene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Fluorene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Naphthalene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Phenanthrene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Pyrene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Total PAH 16MS (w)$_A^{\#}$	0.12	<0.01						µg/l	0.01	A-T-019w

Envirolab Job Number: 20/08709

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08709/1	20/08709/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SWS1	SWS2								
Depth to Top										
Depth To Bottom										
Date Sampled	09-Oct-20	09-Oct-20								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
TPH CWG (w)										
Ali >C5-C6 $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
Ali >C6-C8 $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
Ali >C8-C10 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Ali >C10-C12 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Ali >C12-C16 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Ali >C16-C21 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Ali >C21-C35 $(w)_A^{\#}$	15	<5						µg/l	5	A-T-055w
Total Aliphatics $(w)_A^{\#}$	15	<5						µg/l	5	A-T-055w
Aro >C5-C7 $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
Aro >C7-C8 $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
Aro >C8-C10 $(w)_A$	<5	<5						µg/l	5	A-T-055w
Aro >C10-C12 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Aro >C12-C16 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Aro >C16-C21 $(w)_A^{\#}$	7	<5						µg/l	5	A-T-055w
Aro >C21-C35 $(w)_A^{\#}$	29	<10						µg/l	10	A-T-055w
Total Aromatics $(w)_A$	36	<10						µg/l	10	A-T-055w
TPH (Ali & Aro >C5-C35) $(w)_A$	51	<10						µg/l	10	A-T-055w
BTEX - Benzene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
BTEX - Toluene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
BTEX - Ethyl Benzene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
BTEX - m & p Xylene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
BTEX - o Xylene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
MTBE $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w

REPORT NOTES

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

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Client: RSK Environment Ltd Hemel, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, UK, HP3 9RT

Project: North London Business Park (N.L.B.P)

Clients Project No: 1921321

Project No: 20/08709

Date Received: 14/10/2020 (am)

Cool Box Temperatures (°C): 9.6

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

APPENDIX M
GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH

Generic assessment criteria for human health: residential scenario with home-grown produce

Background

RSK's generic assessment criteria (GAC) were initially prepared following the publication by the Environment Agency (EA) of soil guideline value (SGV) and toxicological (TOX) reports, and associated publications in 2009[1]. RSK GAC were updated following the publication of GAC by LQM/CIEH in 2009[2]. RSK GAC are periodically revised when updated information on toxicological, land use or receptor parameters is published.

Updates to the RSK GAC

In 2014, the publication of Category 4 Screening Levels (C4SL)[3,4], as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3)[5] used in the generation of SGVs.

C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern (LLTC; see Section 2.3 of research project report SP1010[3]). Where a C4SL has been published, the RSK GAC duplicates the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and adopts them as GAC for these six substances.

For all other substances the C4SL exposure modifications, with the exception of the "top two" produce type approach taken in the C4SL, have been applied to the current RSK GAC. These include alterations to daily inhalation rates for residential and commercial scenarios, reducing soil adherence factors in children (age classes 1 to 12 only) for residential land use, reducing exposure frequency for dermal contact outdoors for residential land use, and updated produce type consumption rates (90th percentile) based on recent data from the National Diet and Nutrition Survey.

The RSK GAC have also been revised with updated toxicology published by LQM/CIEH in 2015[7] or by the USEPA[14], where a C4SL has not been published.

RSK GAC derivation for metals and organic compounds

Model selection

Soil assessment criteria (SAC) were calculated using the Contaminated Land Exposure Assessment (CLEA) tool v1.071, supporting EA guidance[5,8,9] and revised exposure scenarios published for the C4SL[3]. The SAC are also termed GAC.

Conceptual model

In accordance with SR3[5], the residential with home-grown produce scenario considers risks to a female child between the ages of 0 and 6 years old as the highest risk scenario. In accordance with Box 3.1 of SR3[5], the pathways considered for production of the SAC in the residential with home-grown produce scenario are

- direct soil and dust ingestion

- consumption of home-grown produce
- consumption of soil attached to home-grown produce
- dermal contact with soil and indoor dust
- inhalation of indoor and outdoor dust and vapours.

Figure 1 is a conceptual model illustrating these linkages.

In line with guidance in the EA SGV report for cadmium[1], the RSK GAC for cadmium has been derived based on estimates representative of lifetime exposure. Although young children are generally more likely to have higher exposures to soil contaminants, the renal toxicity of cadmium, and the derivation of the TDI_{oral} and TDI_{inh}, are based on considerations of the kidney burden accumulated over 50 years or so. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period.

With respect to volatilisation, the CLEA model assumes a simple linear partitioning of a chemical in the soil between the sorbed, dissolved and vapour phase[9]. The upper boundaries of this partitioning are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. The CLEA model estimates saturated soil concentrations where these limits are reached[9]. The CLEA software uses a traffic light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous- or vapour-based soil saturation limits. Model output cells are flagged red where the saturated soil concentration has been exceeded and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10%. In this case, further consideration of the following is required[9]:

- Free phase contamination may be present.
- Exposure from the vapour pathways will be over-predicted by the model, as in reality the vapour phase concentration will not increase at concentrations above saturation limits
- Where the vapour pathway contribution is greater than 90%, it is unlikely the relevant health criteria value (HCV) will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Where the vapour pathway is the predominant pathway (contributes greater than 90% of exposure) or the only exposure route considered and the cell is highlighted red (SAC exceeds saturation limit), the risk based on the assumed conceptual model is likely to be negligible as the vapour risk is assumed to be tolerable at maximum possible soil concentrations. In such circumstances, the vapour pathway exposure should be considered based on the presence of free phase or non-aqueous phase liquid sources and the measured concentrations of volatile organic compounds (VOC) in the vapour phase. Screening could be considered based on setting the SAC as the modelled soil saturation limits. However, as stated within the CLEA handbook[9], this is likely to not be practical in many cases because of the very low saturation limits and, in any case, is highly conservative.

It should also be noted that for mixtures of compounds, free phase may be present where soil (or groundwater) concentrations are well below saturation limits for individual compounds.

Where the vapour pathway is only one of the exposure pathways considered, an additional approach can then be utilised as detailed within Section 4.12 of the CLEA model handbook[9], which explains how to calculate an effective assessment criterion manually.

SR3[5] states that, as a general rule of thumb, it is recognised that estimating vapour phase concentrations from dissolved and sorbed phase contamination by petroleum hydrocarbons are

at least a factor of ten higher than those likely to be measured on-site. RSK has therefore applied an empirical subsurface to indoor air correction factor of 10 into the CLEA model chemical database for all petroleum hydrocarbon fractions (including BTEX, trimethylbenzenes and the polycyclic aromatic hydrocarbons (PAH) naphthalene, acenaphthene and acenaphthylene) to reduce this conservatism.

Input selection

The most up-to-date published chemical and toxicological data was obtained from EA Report SC050021/SR7[10], the EA TOX[1] reports, the C4SL SP1010 project report and associated appendices[3,6], the 2015 LQM/CIEH report[7] or the USEPA IRIS database[14]. Where a C4SL has been published, the RSK GAC have duplicated the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and has adopted them as GAC for these six substances. Toxicological and specific chemical parameters for 1,2,4-trimethylbenzene, barium and methyl tertiary-butyl ether (MTBE) were obtained from the CL:AIRE Soil Generic Assessment Criteria report[11].

For TPH, aromatic hydrocarbons C_5–C_8 were not modelled, as this range comprises benzene (>EC5-EC7) and toluene (>EC7-EC8), which are modelled separately.

Physical parameters

For the residential with home-grown produce scenario, the CLEA default building is a small, two-storey terrace house with a concrete ground-bearing slab. The house is assumed to have a 100m^2 private garden consisting of lawn and flowerbeds, incorporating a 20m^2 plot for growing fruit and vegetables consumed by the residents. SR3[5] notes this residential building type to be the most conservative in terms of potential for vapour intrusion. The building parameters used in the production of the RSK GACs are the default CLEA v1.06 inputs presented in Table 3.3 of SR3[3], with a dust loading factor detailed in Section 9.3 of SR3[5]. The parameters for a sandy loam soil type were used in line with Table 4.4 of SR3[5]. This includes a value of 6% for the percentage of soil organic matter (SOM) within the soil. In RSK's experience, this is rather high for many sites. To avoid undertaking site-specific risk assessments for SOM, RSK has produced an additional set of GAC for SOM of 1% and 2.5% for all substances using the CLEA tool.

Summary of modifications to the default CLEA SR3[5] input parameters for residential with home-grown produce land-use scenario

In summary, the RSK GAC were produced using the default input parameters for soil properties, the air dispersion model, building properties and the vapour model detailed in SR3[5]. Modifications to the default SR3[5] exposure scenarios based on the C4SL exposure scenarios[3] are presented in Tables 2 and 3 below.

The final selected GAC are presented by pathway in Table 4 and the combined GAC in Table 5.

Figure 1: Conceptual model for residential scenario with home-grown produce

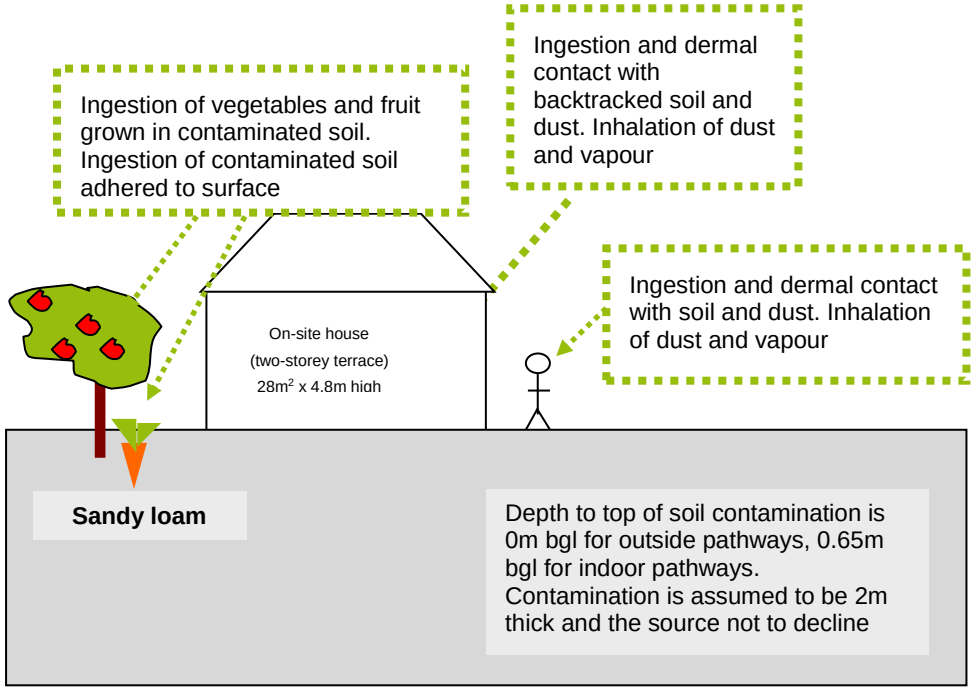

Table 1: Exposure assessment parameters for residential scenario with home-grown produce – inputs for CLEA model

Parameter	Value	Justification
Land use	Residential with homegrown produce	Chosen land use
Receptor	Female child age 1 to 6	Key generic assumption given in Box 3.1, SR3[5]
Building	Small terraced house	Key generic assumption given in Box 3.1, SR3. Small, two-storey terraced house chosen, as it is the most conservative residential building type in terms of protection from vapor intrusion (Section 3.4.6, SR3)[5]
Soil type	Sandy Loam	Most common UK soil type (Section 4.3.1, from Table 3.1, SR3)[5]
Start AC (age class)	1	Range of age classes corresponding to key generic assumption that the critical receptor is a young female child aged 0–6. From Box 3.1, SR3[5]
End AC (age class)	6	
SOM (%)	6	Representative of sandy loamy soil according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[13]
	1	To provide SAC for sites where SOM <6% as often observed by RSK
	2.5	
pH	7	Model default

Table 2: Residential with home-grown produce – modified home-grown produce data

Name	Consumption rate 90th percentile (g FW kg^{-1} BW day^{-1}) by age class						Dry weight conversion factor (g DW g^{-1} FW)	Home-grown fraction (average)	Home-grown fraction (high end)	Soil loading factor (g g^{-1} DW)	Preparation correction factor
	1	2	3	4	5	6					
Green vegetables	7.12	5.87	5.87	5.87	4.53	4.53	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	10.7	2.83	2.83	2.83	2.14	2.14	0.103	0.06	0.4	1.00E-03	1.00E+00
Tuber vegetables	16	6.6	6.6	6.6	4.95	4.95	0.21	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	1.83	3.39	3.39	3.39	2.24	2.24	0.058	0.06	0.4	1.00E-03	6.00E-01
Shrub fruit	2.23	0.46	0.46	0.46	0.19	0.19	0.166	0.09	0.6	1.00E-03	6.00E-01
Tree fruit	3.82	10.3	10.3	10.3	5.16	5.16	0.157	0.04	0.27	1.00E-03	6.00E-01
Justification	Table 3.4, SP1010 (3)						Table 6.3, SR3(5)	Table 4.19, SR3(5)		Table 6.3, SR3(5)	

Table 3: Residential with home-grown produce – modified and use and receptor data

Parameter	Unit	Age class					
		1	2	3	4	5	6
EF (soil and dust ingestion)	day yr^{-1}	180	365	365	365	365	365
EF (consumption of home-grown produce)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, indoor)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, outdoor)	day yr^{-1}	170	170	170	170	170	170
EF (inhalation of dust and vapour, indoor)	day yr^{-1}	365	365	365	365	365	365
EF (inhalation of dust and vapour, outdoor)	day yr^{-1}	365	365	365	365	365	365
Justification		Table 3.5, SP1010(3); Table 3.1, SR3(5)					
Soil to skin adherence factor (outdoor)	mg cm^{-2} day^{-1}	0.1	0.1	0.1	0.1	0.1	0.1
Justification		Table 3.5, SP1010(3)					
Inhalation rate	m^3 day^{-1}	5.4	8.0	8.9/f	10.1	10.1	10.1
Justification		Mean value USEPA, 2011(12); Table 3.2, SP1010(3)					
Notes: For **cadmium**, the exposure assessment for a residential land use is based on estimates representative of lifetime exposure AC1-18. This is because the TDI_{oral} and TDI_{inh} are based on considerations of the kidney burden accumulated over 50 years. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period. See the Environment Agency Science Report SC05002/ TOX 3(1), Science Report SC050021/Cadmium SGV(1) and the project report SP1010(3) for more information.							

References

1. Environment Agency (2009), 'Science Reports SC050021 - SGV and TOX reports for: benzene, toluene, ethylbenzene, xylene, mercury, selenium, nickel, arsenic, cadmium, phenol, dioxins, furans and dioxin-like PCBs'; 'Supplementary information for the derivation of SGV for: benzene, toluene, ethylbenzene, xylene, mercury, selenium, nickel, arsenic, cadmium, phenol, dioxins, furans and dioxin-like PCBs', and 'Contaminants in soil: updated collation of toxicological data and intake values for humans: benzene, toluene, ethylbenzene, xylene, mercury, selenium, nickel, arsenic, cadmium, phenol, dioxins, furans and dioxin-like PCBs'. Available at: https://www.gov.uk/government/publications/contaminants-in-soil-updated-collation-of-toxicological-data-and-intake-values-for-humans and https://www.gov.uk/government/publications/land-contamination-soil-guideline-values-sgvs (accessed 4 February 2015)

2. Nathanial, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D. (2009), *LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment*, second edition (Nottingham: Land Quality Press).

3. Contaminated Land: Applications in Real Environment (CL:AIRE) (2014). 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010.

4. Department for Environment, Food and Rural Affairs (Defra) (2014), 'SP1010: Development of Category 4 Screening Levels for assessment of land affected by contamination – Policy Companion Document', Revision 2.

5. Environment Agency (2009), *Science Report – SC050021/SR3. Updated technical background to the CLEA model* (Bristol: Environment Agency).

6. Contaminated Land: Applications in Real Environment (CL:AIRE) (2014). 'Appendices C to H). DEFRA research project SP1010'.

7. Nathanial, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathanial, J. F. (2015), *The LQM/CIEH S4ULs for Human Health Risk Assessment* (Nottingham: Land Quality Press).

8. Environment Agency (2009), *Human health toxicological assessment of contaminants in soil. Science Report – Final SC050021/SR2* (Bristol: Environment Agency).

9. Environment Agency (2009), *Science Report – SC050021/SR4 CLEA Software (version 1.05) Handbook* (Bristol: Environment Agency).

10. Environment Agency (2008), *Science Report SC050021/SR7. Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values* (Bristol: Environment Agency).

11. CL:AIRE (2010), *Soil Generic Assessment Criteria for Human Health Risk Assessment* (London: CL:AIRE).

12. USEPA (2011), *Exposure factors handbook*, EPA/600/R-090/052F (Washington, DC: Office of Research and Development).

13. Environment Agency (2009), 'Changes made to the CLEA framework documents after the three-month evaluation period in 2008', released January 2009.

14. USEPA (2010). Hydrogen cyanide and cyanide salts. Integrated Risk Information Systems (IRIS) Chemical Assessment Summary. September 2010. https://www.epa.gov/iris (accessed 9 December 2015)

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE

Table 4

Human Health Generic Assessment Criteria by Pathway for Residential With Home-Grown Produce Scenario

Compound	Notes	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Metals													
Arsenic	(a,b)	3.71E+01	5.26E+02	NR	NR	3.71E+01	5.26E+02	NR	NR	3.71E+01	5.26E+02	NR	NR
Barium	(b)	1.34E+03	NR	NR	NR	1.34E+03	NR	NR	NR	1.34E+03	NR	NR	NR
Beryllium		1.13E+02	1.72E+00	NR	NR	1.13E+02	1.72E+00	NR	NR	1.13E+02	1.72E+00	NR	NR
Boron		3.00E+02	5.20E+06	NR	NR	3.00E+02	5.20E+06	NR	NR	3.00E+02	5.20E+06	NR	NR
Cadmium	(a)	2.30E+01	4.88E+02	2.21E+01	NR	2.30E+01	4.88E+02	2.21E+01	NR	2.30E+01	4.88E+02	2.21E+01	NR
Chromium (III) - trivalent	(c)	1.84E+04	9.07E+02	NR	NR	1.84E+04	9.07E+02	NR	NR	1.84E+04	9.07E+02	NR	NR
Chromium (VI) - hexavalent	(a,d)	5.85E+01	2.06E+01	NR	NR	5.85E+01	2.06E+01	NR	NR	5.85E+01	2.06E+01	NR	NR
Copper		2.72E+03	1.41E+04	2.47E+03	NR	2.72E+03	1.41E+04	2.47E+03	NR	2.72E+03	1.41E+04	2.47E+03	NR
Lead	(a)	2.01E+02	NR	NR	NR	2.01E+02	NR	NR	NR	2.01E+02	NR	NR	NR
Elemental Mercury (Hg^0)	(d)	NR	2.35E-01	NR	4.31E+00	NR	5.60E-01	NR	1.07E+01	NR	1.22E+00	NR	2.58E+01
Inorganic Mercury (Hg^{2+})		3.95E+01	3.63E+03	3.91E+01	NR	3.95E+01	3.63E+03	3.91E+01	NR	3.95E+01	3.63E+03	3.91E+01	NR
Methyl Mercury (Hg^{4+})		1.26E+01	1.87E+01	7.52E+00	7.33E+01	1.26E+01	3.62E+01	9.34E+00	1.42E+02	1.26E+01	7.68E+01	1.08E+01	3.04E+02
Nickel	(d)	1.27E+02	1.81E+02	NR	NR	1.27E+02	1.81E+02	NR	NR	1.27E+02	1.81E+02	NR	NR
Selenium	(b)	2.58E+02	NR	NR	NR	2.58E+02	NR	NR	NR	2.58E+02	NR	NR	NR
Vanadium		4.13E+02	1.46E+03	NR	NR	4.13E+02	1.46E+03	NR	NR	4.13E+02	1.46E+03	NR	NR
Zinc	(b)	3.86E+03	3.63E+07	NR	NR	3.86E+03	3.63E+07	NR	NR	3.86E+03	3.63E+07	NR	NR
Cyanide (free)		1.37E+00	1.37E+04	1.37E+00	NR	1.37E+00	1.37E+04	1.37E+00	NR	1.37E+00	1.37E+04	1.37E+00	NR
Volatile Organic Compounds													
Benzene	(a)	2.62E-01	9.01E-01	2.03E-01	1.22E+03	5.39E-01	1.68E+00	4.08E-01	2.26E+03	1.16E+00	3.48E+00	8.72E-01	4.71E+03
Toluene		1.53E+02	9.08E+02	1.31E+02	8.69E+02	3.49E+02	2.00E+03	2.97E+02	1.92E+03	7.95E+02	4.55E+03	6.77E+02	4.36E+03
Ethylbenzene		1.10E+02	8.34E+01	4.74E+01	5.18E+02	2.61E+02	1.96E+02	1.12E+02	1.22E+03	6.00E+02	4.58E+02	2.60E+02	2.84E+03
Xylene - m		2.10E+02	8.25E+01	5.92E+01	6.25E+02	5.01E+02	1.95E+02	1.40E+02	1.47E+03	1.15E+03	4.56E+02	3.27E+02	3.46E+03
Xylene - o		1.92E+02	8.87E+01	6.07E+01	4.78E+02	4.56E+02	2.08E+02	1.43E+02	1.12E+03	1.05E+03	4.86E+02	3.32E+02	2.62E+03
Xylene - p		1.98E+02	7.93E+01	5.66E+01	5.76E+02	4.70E+02	1.86E+02	1.33E+02	1.35E+03	1.08E+03	4.36E+02	3.10E+02	3.17E+03
Total xylene		1.92E+02	7.93E+01	5.66E+01	6.25E+02	4.56E+02	1.86E+02	1.33E+02	1.47E+03	1.05E+03	4.36E+02	3.10E+02	3.46E+03
Methyl tertiary-Butyl ether (MTBE)		1.54E+02	1.04E+02	6.22E+01	2.04E+04	2.97E+02	1.69E+02	1.08E+02	3.31E+04	6.03E+02	3.21E+02	2.10E+02	6.27E+04
1,1,1,2 Tetrachloroethane		5.39E+00	1.54E+00	1.20E+00	2.60E+03	1.27E+01	3.56E+00	2.78E+00	6.02E+03	2.92E+01	8.29E+00	6.46E+00	1.40E+04
1,1,2,2-Tetrachloroethane		2.81E+00	3.92E+00	1.64E+00	2.67E+03	6.10E+00	8.04E+00	3.47E+00	5.46E+03	1.36E+01	1.76E+01	7.67E+00	1.20E+04
1,1,1-Trichloroethane		3.33E+02	9.01E+00	8.77E+00	1.43E+03	7.26E+02	1.84E+01	1.80E+01	2.92E+03	1.62E+03	4.04E+01	3.94E+01	6.39E+03
1,1,2 Trichloroethane		1.95E+00	1.25E+00	7.62E-01	4.03E+03	4.21E+00	2.55E+00	1.59E+00	8.21E+03	9.35E+00	5.59E+00	3.50E+00	1.80E+04
1,1-Dichloroethene		1.93E+01	3.29E-01	3.23E-01	2.23E+03	3.85E+01	5.82E-01	5.74E-01	3.94E+03	8.15E+01	1.17E+00	1.16E+00	7.94E+03
1,2-Dichloroethane		3.17E-02	9.20E-03	7.13E-03	3.41E+03	5.73E-02	1.33E-02	1.08E-02	4.91E+03	1.09E-01	2.28E-02	1.88E-02	8.43E+03
1,2,4-Trimethylbenzene		NR	1.76E+00	NR	4.74E+02	NR	4.26E+00	NR	1.16E+03	NR	9.72E+00	NR	2.76E+03
1,3,5-Trimethylbenzene	(e)	NR	NR	NR	2.30E+02	NR	NR	NR	5.52E+02	NR	NR	NR	1.30E+03
1,2-Dichloropropane		4.28E+00	3.40E-02	3.37E-02	1.19E+03	8.44E+00	6.00E-02	5.96E-02	2.11E+03	1.77E+01	1.21E-01	1.20E-01	4.24E+03
Carbon Tetrachloride (tetrachloromethane)		3.10E+00	2.58E-02	2.57E-02	1.52E+03	7.11E+00	5.65E-02	5.62E-02	3.32E+03	1.62E+01	1.28E-01	1.27E-01	7.54E+03
Chloroethane		NR	1.17E+01	NR	2.61E+03	NR	1.59E+01	NR	3.54E+03	NR	2.57E+01	NR	5.71E+03
Chloromethane		NR	1.17E-02	NR	1.91E+03	NR	1.38E-02	NR	2.24E+03	NR	1.85E-02	NR	2.99E+03
Cis 1,2 Dichloroethene		1.56E-01	NR	NR	3.94E+03	2.66E-01	NR	NR	6.61E+03	5.18E-01	NR	NR	1.29E+04
Dichloromethane		7.04E-01	3.05E+00	6.24E-01	7.27E+03	1.27E+00	4.06E+00	1.08E+00	9.68E+03	2.33E+00	6.42E+00	1.92E+00	1.53E+04
Tetrachloroethene		4.49E+00	1.79E-01	1.76E-01	4.24E+02	1.04E+01	4.02E-01	3.94E-01	9.51E+02	2.38E+01	9.21E-01	9.04E-01	2.18E+03
Trans 1,2 Dichloroethene		6.45E+00	2.76E-01	NR	3.42E+03	1.29E+01	4.99E-01	NR	6.17E+03	2.74E+01	1.02E+00	NR	1.26E+04
Trichloroethene		2.83E-01	1.72E-02	1.62E-02	1.54E+03	6.26E-01	3.59E-02	3.40E-02	3.22E+03	1.41E+00	7.98E-02	7.55E-02	7.14E+03
Vinyl Chloride (chloroethene)		3.82E-03	7.73E-04	6.43E-04	1.36E+03	6.87E-03	1.00E-03	8.73E-04	1.76E+03	1.25E-02	1.53E-03	1.36E-03	2.69E+03
Semi-Volatile Organic Compounds													
2-Chloronaphthalene		2.76E+02	5.39E+00	5.29E+00	1.14E+02	6.59E+02	1.33E+01	1.30E+01	2.80E+02	1.45E+03	3.17E+01	3.10E+01	6.69E+02
Acenaphthene		2.27E+02	4.86E+04	2.26E+02	5.70E+01	5.41E+02	1.18E+05	5.38E+02	1.41E+02	1.18E+03	2.68E+05	1.17E+03	3.36E+02
Acenaphthylene		1.85E+02	4.59E+04	1.84E+02	8.61E+01	4.42E+02	1.11E+05	4.40E+02	2.12E+02	9.78E+02	2.53E+05	9.74E+02	5.06E+02
Anthracene		2.43E+03	1.53E+05	2.39E+03	1.17E+00	5.53E+03	3.77E+05	5.45E+03	2.91E+00	1.10E+04	8.76E+05	1.09E+04	6.96E+00

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE

Table 4

Human Health Generic Assessment Criteria by Pathway for Residential With Home-Grown Produce Scenario

Compound	Notes	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Benzo(a)anthracene		1.01E+01	2.47E+01	7.18E+00	1.71E+00	1.42E+01	4.37E+01	1.07E+01	4.28E+00	1.69E+01	6.26E+01	1.33E+01	1.03E+01
Benzo(a)pyrene	(a)	4.96E+00	3.51E+01	NR	9.11E-01	4.96E+00	3.77E+01	NR	2.28E+00	4.96E+00	3.89E+01	NR	5.46E+00
Benzo(b)fluoranthene		2.96E+00	1.93E+01	2.56E+00	1.22E+00	3.89E+00	2.13E+01	3.29E+00	3.04E+00	4.43E+00	2.22E+01	3.69E+00	7.29E+00
Benzo(g,h,i)perylene		3.77E+02	1.87E+03	3.14E+02	1.54E-02	4.09E+02	1.94E+03	3.38E+02	3.85E-02	4.23E+02	1.97E+03	3.48E+02	9.23E-02
Benzo(k)fluoranthene		8.92E+01	5.41E+02	7.66E+01	6.87E-01	1.10E+02	5.76E+02	9.22E+01	1.72E+00	1.21E+02	5.91E+02	1.00E+02	4.12E+00
Chrysene		1.66E+01	1.19E+02	1.46E+01	4.40E-01	2.54E+01	1.49E+02	2.17E+01	1.10E+00	3.19E+01	1.66E+02	2.67E+01	2.64E+00
Dibenzo(a,h)anthracene		2.90E-01	1.45E+00	2.41E-01	3.93E-03	3.43E-01	1.64E+00	2.84E-01	9.82E-03	3.69E-01	1.74E+00	3.04E-01	2.36E-02
Fluoranthene		2.87E+02	3.83E+04	2.85E+02	1.89E+01	5.63E+02	8.87E+04	5.60E+02	4.73E+01	9.00E+02	1.83E+05	8.96E+02	1.13E+02
Fluorene		1.77E+02	6.20E+03	1.72E+02	3.09E+01	4.19E+02	1.53E+04	4.07E+02	7.65E+01	8.98E+02	3.62E+04	8.77E+02	1.83E+02
Hexachloroethane		2.68E-01	NR	NR	8.17E+00	6.57E-01	NR	NR	2.01E+01	1.55E+00	NR	NR	4.81E+01
Indeno(1,2,3-cd)pyrene		3.09E+01	2.12E+02	2.70E+01	6.13E-02	4.22E+01	2.38E+02	3.59E+01	1.53E-01	4.92E+01	2.50E+02	4.11E+01	3.68E-01
Naphthalene		2.78E+01	2.33E+01	1.27E+01	7.64E+01	6.66E+01	5.58E+01	3.04E+01	1.83E+02	1.53E+02	1.31E+02	7.06E+01	4.32E+02
Phenanthrene		9.85E+01	7.17E+03	9.72E+01	3.60E+01	2.24E+02	1.76E+04	2.22E+02	8.96E+01	4.48E+02	4.07E+04	4.43E+02	2.14E+02
Pyrene		6.25E+02	8.79E+04	6.20E+02	2.20E+00	1.25E+03	2.04E+05	1.24E+03	5.49E+00	2.05E+03	4.23E+05	2.04E+03	1.32E+01
Phenol		1.60E+02	4.58E+02	1.20E+02	2.42E+04	2.96E+02	6.95E+02	2.09E+02	3.81E+04	5.86E+02	1.19E+03	3.93E+02	7.03E+04
Total Petroleum Hydrocarbons													
Aliphatic hydrocarbons EC_5-EC_6		4.99E+03	4.24E+01	4.23E+01	3.04E+02	1.13E+04	7.79E+01	7.78E+01	5.58E+02	2.50E+04	1.61E+02	1.60E+02	1.15E+03
Aliphatic hydrocarbons >EC_6-EC_8		1.49E+04	1.04E+02	1.03E+02	1.44E+02	3.43E+04	2.31E+02	2.31E+02	3.22E+02	7.11E+04	5.29E+02	5.28E+02	7.36E+02
Aliphatic hydrocarbons >EC_8-EC_{10}		1.61E+03	2.68E+01	2.67E+01	7.77E+01	2.91E+03	6.55E+01	6.51E+01	1.90E+02	4.26E+03	1.56E+02	1.54E+02	4.51E+02
Aliphatic hydrocarbons >EC_{10}-EC_{12}		4.57E+03	1.33E+02	1.32E+02	4.75E+01	5.51E+03	3.31E+02	3.26E+02	1.18E+02	5.98E+03	7.93E+02	7.65E+02	2.83E+02
Aliphatic hydrocarbons >EC_{12}-EC_{16}		6.27E+03	1.11E+03	1.06E+03	2.37E+01	6.34E+03	2.78E+03	2.41E+03	5.91E+01	6.36E+03	6.67E+03	4.34E+03	1.42E+02
Aliphatic hydrocarbons >EC_{16}-EC_{35}	(b)	6.46E+04	NR	NR	8.48E+00	9.17E+04	NR	NR	2.12E+01	1.10E+05	NR	NR	5.09E+01
Aliphatic hydrocarbons >EC_{35}-EC_{44}	(b)	6.46E+04	NR	NR	8.48E+00	9.17E+04	NR	NR	2.12E+01	1.10E+05	NR	NR	5.09E+01
Aromatic hydrocarbons >EC8-EC_{10}		5.76E+01	4.74E+01	3.45E+01	6.13E+02	1.38E+02	1.16E+02	8.38E+01	1.50E+03	3.07E+02	2.77E+02	1.94E+02	3.58E+02
Aromatic hydrocarbons >EC_{10}-EC_{12}		8.29E+01	2.58E+02	7.52E+01	3.64E+02	1.96E+02	6.39E+02	1.79E+02	8.99E+02	4.25E+02	1.52E+03	3.91E+02	2.15E+03
Aromatic hydrocarbons >EC_{12}-EC_{16}		1.47E+02	2.85E+03	1.45E+02	1.69E+02	3.36E+02	7.07E+03	3.32E+02	4.19E+02	6.81E+02	1.68E+04	6.74E+02	1.00E+03
Aromatic hydrocarbons >EC_{16}-EC_{21}	(b)	2.63E+02	NR	NR	5.37E+01	5.45E+02	NR	NR	1.34E+02	9.34E+02	NR	NR	3.21E+02
Aromatic hydrocarbons >EC_{21}-EC_{35}	(b)	1.09E+03	NR	NR	4.83E+00	1.47E+03	NR	NR	1.21E+01	1.70E+03	NR	NR	2.90E+01
Aromatic hydrocarbons >EC_{35}-EC_{44}	(b)	1.09E+03	NR	NR	4.83E+00	1.47E+03	NR	NR	1.21E+01	1.70E+03	NR	NR	2.90E+01

Notes:

EC - equivalent carbon. SAC - soil assessment criteria.

The CLEA model output is colour coded depending upon whether the soil saturation limit has been exceeded.

Calculated SAC exceeds soil saturation limit and may significantly affect the interpretation of any exceedances as the contribution of the indoor and outdoor vapour pathway to total exposure is >10%.

Calculated SAC exceeds soil saturation limit but the exceedance will not affect the SAC significantly as the contribution of the indoor and outdoor vapour pathway to total exposure is <10%.

Calculated SAC does not exceed the soil saturation limit.

The SAC for organic compounds are dependant upon soil organic matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58. 1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs napthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway (Section 10.1.1, SR3)

(a) SAC for arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead are derived using the C4SL toxicology data.

(b) SAC for boron and selenium should not include the inhalation pathway as no expert group HCV has been derived; aliphatic and aromatic hydrocarbons >EC16 should not include inhalation pathway due to their non-volatile nature and inhalation exposure being minimal (oral, dermal and inhalation exposure is compared to the oral HCV); arsenic should only be based on oral contribution (rather than combined) owing to the relative small contribution from inhalation in accordance with the SGV report. The Oral SAC should be adopted for zinc and benzo(a)pyrene.

(c) SAC for CrIII should be based on the lower of the oral and inhalation SAC (see LQM/CIEH 2015 Section 6.8)

(d) SAC for elemental mercury, chromium VI and nickel should be based on the inhalation pathway only.

(e) SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data, SAC for 1,2,4 trimethylbenzene may be used.

Table 5
Human Health Generic Assessment Criteria for Residential with home-grown produce

Compound	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals			
Arsenic	37	37	37
Barium	1,300	1,300	1,300
Beryllium	1.7	1.7	1.7
Boron	300	300	300
Cadmium	22	22	22
Chromium (III) - trivalent	910	910	910
Chromium (VI) - hexavalent	21	21	21
Copper	2,500	2,500	2,500
Lead	200	200	200
Elemental Mercury (Hg^0)	0.2	0.6	1.2
Inorganic Mercury (Hg^{2+})	39	39	39
Methyl Mercury (Hg^{4+})	10	10	10
Nickel	130	130	130
Selenium	258	258	258
Vanadium	410	410	410
Zinc	3,900	3,900	3,900
Cyanide (free)	1.4	1.4	1.4
Volatile Organic Compounds			
Benzene	0.20	0.41	0.87
Toluene	130	300	680
Ethylbenzene	50	110	260
Xylene - m	59	140	327
Xylene - o	61	143	332
Xylene - p	57	133	310
Total xylene	57	133	310
Methyl tertiary-Butyl ether (MTBE)	60	110	210
1,1,1,2 Tetrachloroethane	1.20	2.78	6.46
1,1,2,2-Tetrachloroethane	1.6	3.5	7.7
1,1,1-Trichloroethane	9	18	39
1,1,2 Trichloroethane	0.8	1.6	3.5
1,1-Dichloroethene	0.32	0.57	1.16
1,2-Dichloroethane	0.007	0.011	0.019
1,2,4-Trimethylbenzene	1.8	4.3	9.7
1,3,5-Trimethylbenzene	NR	NR	NR
1,2-Dichloropropane	0.034	0.060	0.120
Carbon Tetrachloride (tetrachloromethane)	0.026	0.056	0.127
Chloroethane	11.7	15.9	25.7
Chloromethane	0.012	0.014	0.019
Cis 1,2 Dichloroethene	0.16	0.27	0.52
Dichloromethane	0.62	1.08	1.92
Tetrachloroethene	0.2	0.4	0.9
Trans 1,2 Dichloroethene	0.28	0.50	1.02
Trichloroethene	0.02	0.03	0.08
Vinyl Chloride (chloroethene)	0.0006	0.0009	0.0014
Semi-Volatile Organic Compounds			
2-Chloronaphthalene	5	13	31
Acenaphthene	230	540	1,170
Acenaphthylene	180	440	970
Anthracene	2,400	5,500	10,900
Benzo(a)anthracene	7	11	13
Benzo(a)pyrene	5	5	5
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(g,h,i)perylene	310	340	350
Benzo(k)fluoranthene	77	92	100
Chrysene	15	22	27
Dibenzo(a,h)anthracene	0.24	0.28	0.30
Fluoranthene	290	560	900
Fluorene	170	410	880
Hexachloroethane	0.27	0.66	1.55
Indeno(1,2,3-cd)pyrene	27	36	41
Naphthalene	13	30	71
Phenanthrene	100	220	440
Pyrene	620	1,240	2,040
Phenol	120	210	390
Total Petroleum Hydrocarbons			
Aliphatic hydrocarbons EC_5-EC_6	42	78	160
Aliphatic hydrocarbons >EC_6-EC_8	100	230	530
Aliphatic hydrocarbons >EC_8-EC_{10}	27	65	154
Aliphatic hydrocarbons >EC_{10}-EC_{12}	130 (48)	330 (118)	760 (283)
Aliphatic hydrocarbons >EC_{12}-EC_{16}	1,100 (24)	2,400 (59)	4,300 (142)
Aliphatic hydrocarbons >EC_{16}-EC_{35}	65,000 (8)	92,000 (21)	110,000
Aliphatic hydrocarbons >EC_{35}-EC_{44}	65,000 (8)	92,000 (21)	110,000
Aromatic hydrocarbons >EC_8-EC_{10}	30	80	190
Aromatic hydrocarbons >EC_{10}-EC_{12}	80	180	390
Aromatic hydrocarbons >EC_{12}-EC_{16}	140	330	670
Aromatic hydrocarbons >EC_{16}-EC_{21}	260	540	930
Aromatic hydrocarbons >EC_{21}-EC_{35}	1,100	1,500	1,700
Aromatic hydrocarbons >EC_{35}-EC_{44}	1,100	1,500	1,700
Minerals			
Asbestos	Stage 1 test – No asbestos detected with ID; Stage 2 test - <0.001% dry weight (exceedance of either equates to an exceedance of the GAC)[1]		

Notes:
'-' Generic assessment criteria not calculated owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.
NR - SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data, SAC for 1,2,4 trimethylbenzene may be used
EC - equivalent carbon. SAC - soil assessment criteria.
[1] LOD for weight of asbestos per unit weight of soil calculated on a dry weight basis using PLM, handpicking and gravimetry.

The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58.
1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs napthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway, section 10.1.1, SR3.

(VALUE IN BRACKETS)
RSK has adopted an approach for petroleum hydrocarbons in accordance with LQM/CIEH whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the SAC with the corresponding solubility or vapour saturation limits given in brackets.

APPENDIX N
GENERIC ASSESSMENT CRITERIA FOR PHYTOTOXIC EFFECTS

Project name	North London Business Park
Project code	1921321
Client name	Comer Homes Group
Address	Oakleigh Road South Barnet N11 1NP
NGR	528088, 193479
Land use	Phytotoxic (pH >7.0)
SOM	1%
GAC version	2012_01

Notes

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects	Lab sample ID	20/07394/55	20/08313/1	20/07494/1	20/07394/21	20/07494/2	20/07494/3	20/07394/1	20/07394/2	20/07394/3	20/07394/4
									Client sample ID	BH1	BH3	BH4	BH5	BH6	BH7	TP1	TP2	TP2	TP3
									Depth to top	1.75	0.4	0.75	0.2	0.5	1.5	0.5	0.1	0.7	0.5
									Depth to bottom										
									Date sampled	19/08/20	13/08/20	02/09/20	25/08/20	21/08/20	02/09/20	24/08/20	24/08/20	24/08/20	24/08/20
Metals and Inorganics																			
Arsenic	mg/kg			18	<1	26	24	2		5	13	5	8	<1	3	2	18	2	4
Cadmium	mg/kg	3		4.1	<0.5	26	24	2		0.5	1.1	0.7	0.7	<0.5	0.6	0.7	0.8	0.5	0.7
Chromium	mg/kg			54	21	26	26	0		36	37	37	26	34	45	54	28	43	36
Copper	mg/kg	200		3550	18	26	26	0		55	51	159	24	93	170	75	87	23	302
Lead	mg/kg	300		563	17	26	26	0		48	61	139	112	77	180	18	219	19	115
Mercury	mg/kg	1		2	<0.17	26	24	2		0.34	0.68	0.8	1.33	0.6	0.82	0.84	2	0.3	0.6
Nickel	mg/kg	110		142	18	26	26	0		28	34	34	25	18	45	47	27	26	45
Selenium	mg/kg			5	<1	26	15	11		<1	<1	2	2	2	2	2	<1	<1	1
Zinc	mg/kg	300		701	61	26	26	0		98	100	164	87	85	165	104	162	61	239
Asbestos																			
Asbestos in soil						26	0	26		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Petroleum Hydrocarbons																			
Ali >C5-C6	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C6-C8	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C8-C10	mg/kg				<1	26	0	26		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ali >C10-C12	mg/kg				<1	26	0	26		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ali >C12-C16	mg/kg			3	<1	26	2	24		<1	<1	<1	<1	<1	3	<1	<1	<1	<1
Ali >C16-C21	mg/kg			10	<1	26	10	16		1	<1	2	<1	<1	7	<1	<1	<1	2
Ali >C21-C35	mg/kg			599	1	26	26	0		50	5	15	13	2	15	1	4	2	8
Ali >C16-C35 calculated	mg/kg			609	1	26	26	0		51	5	17	13	2	22	1	4	2	10
Total Aliphatics	mg/kg			609	1	26	26	0		51	5	18	13	2	25	1	4	2	10
Aro >C5-C7	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C7-C8	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C8-C10	mg/kg			3	<1	26	1	25		<1	<1	<1	<1	<1	3	<1	<1	<1	<1
Aro >C10-C12	mg/kg				<1	26	0	26		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aro >C12-C16	mg/kg			4	<1	26	8	18		3	<1	4	<1	<1	3	<1	<1	<1	2
Aro >C16-C21	mg/kg			234	<1	26	23	3		9	<1	41	3	<1	7	<1	5	2	22
Aro >C21-C35	mg/kg			428	1	26	26	0		73	11	141	38	7	23	1	25	12	79
Total Aromatics	mg/kg			666	1	26	26	0		86	12	186	41	7	35	1	30	14	103
TPH (Ali & Aro)	mg/kg			1270	2	26	26	0		136	16	203	54	9	60	2	34	15	113
BTEX - Benzene	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Toluene	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - o Xylene	mg/kg			0.02	<0.01	26	1	25		<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01
BTEX - m & p Xylene	mg/kg			0.07	<0.01	26	1	25		<0.01	<0.01	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	<0.01	<0.01
MTBE	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Polycyclic aromatic hydrocarbons																			
Acenaphthene	mg/kg			0.34	<0.01	26	13	13		0.34	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	0.02	<0.01	<0.01
Acenaphthylene	mg/kg			0.2	<0.01	26	16	10		0.03	<0.01	0.02	<0.01	<0.01	0.02	<0.01	0.02	<0.01	0.06
Anthracene	mg/kg			1.29	<0.02	26	16	10		0.38	<0.02	0.08	<0.02	<0.02	0.09	<0.02	0.05	<0.02	0.06
Benzo(a)anthracene	mg/kg			2.85	<0.04	26	22	4		0.78	0.18	0.51	0.1	<0.04	0.26	<0.04	0.3	<0.04	0.29

Project name	North London Business Park
Project code	1921321
Client name	Comer Homes Group
Address	Oakleigh Road South Barnet N11 1NP
NGR	528088, 193479
Land use	Phytotoxic (pH >7.0)
SOM	1%
GAC version	2012_01

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete	Lab sample ID	20/07394/25	20/07394/61	20/07394/5	20/07394/6	20/07394/7	20/07394/8	20/07394/9	20/07394/30	20/07394/62	20/07394/10
									Client sample ID	TP3	TP3 + TP4	TP4	TP5	TP6	TP6	TP7	TP7	TP7 + TP8	TP8
									Depth to top	0.75	0.75	0.8	0.6	0.1	0.4	0.1	0.5	0.5	0.5
									Depth to bottom		0.8								
									Date sampled	24/08/20	24/08/20	24/08/20	24/08/20	26/08/20	26/08/20	26/08/20	24/08/20	26/08/20	26/08/20
Metals and Inorganics																			
Arsenic	mg/kg			18	<1	26	24	2				3	2	16	6	8			4
Cadmium	mg/kg	3		4.1	<0.5	26	24	2				1.9	0.6	4.1	1	0.7			<0.5
Chromium	mg/kg			54	21	26	26	0				48	42	48	40	33			21
Copper	mg/kg	200		3550	18	26	26	0				3550	97	173	419	35			36
Lead	mg/kg	300		563	17	26	26	0				459	49	563	172	40			160
Mercury	mg/kg	1		2	<0.17	26	24	2				0.49	0.56	1.56	0.71	0.82			0.91
Nickel	mg/kg	110		142	18	26	26	0				142	34	54	54	33			19
Selenium	mg/kg			5	<1	26	15	11				<2	2	2	2	5			<1
Zinc	mg/kg	300		701	61	26	26	0				701	114	509	290	98			104
Asbestos																			
Asbestos in soil						26	0	26				NAD	NAD	NAD	NAD	NAD			NAD
Petroleum Hydrocarbons																			
Ali >C5-C6	mg/kg				<0.01	26	0	26				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
Ali >C6-C8	mg/kg				<0.01	26	0	26				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
Ali >C8-C10	mg/kg				<1	26	0	26				<1	<1	<1	<1	<1			<1
Ali >C10-C12	mg/kg				<1	26	0	26				<1	<1	<1	<1	<1			<1
Ali >C12-C16	mg/kg			3	<1	26	2	24				<1	<1	<1	<1	<1			2
Ali >C16-C21	mg/kg			10	<1	26	10	16				2	2	<1	<1	<1			5
Ali >C21-C35	mg/kg			599	1	26	26	0				34	6	10	5	8			47
Ali >C16-C35 calculated	mg/kg			609	1	26	26	0				36	8	10	5	8			52
Total Aliphatics	mg/kg			609	1	26	26	0				36	8	10	5	8			54
Aro >C5-C7	mg/kg				<0.01	26	0	26				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
Aro >C7-C8	mg/kg				<0.01	26	0	26				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
Aro >C8-C10	mg/kg			3	<1	26	1	25				<1	<1	<1	<1	<1			<1
Aro >C10-C12	mg/kg				<1	26	0	26				<1	<1	<1	<1	<1			<1
Aro >C12-C16	mg/kg			4	<1	26	8	18				4	<1	<1	<1	<1			2
Aro >C16-C21	mg/kg			234	<1	26	23	3				33	2	5	3	2			6
Aro >C21-C35	mg/kg			428	1	26	26	0				144	10	30	28	25			79
Total Aromatics	mg/kg			666	1	26	26	0				180	12	34	31	27			88
TPH (Ali & Aro)	mg/kg			1270	2	26	26	0				217	20	44	37	36			142
BTEX - Benzene	mg/kg				<0.01	26	0	26				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
BTEX - Toluene	mg/kg				<0.01	26	0	26				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
BTEX - Ethyl Benzene	mg/kg				<0.01	26	0	26				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
BTEX - o Xylene	mg/kg			0.02	<0.01	26	1	25				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
BTEX - m & p Xylene	mg/kg			0.07	<0.01	26	1	25				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
MTBE	mg/kg				<0.01	26	0	26				<0.01	<0.01	<0.01	<0.01	<0.01			<0.01
Polycyclic aromatic hydrocarbons																			
Acenaphthene	mg/kg			0.34	<0.01	26	13	13				0.11	<0.01	0.1	0.01	<0.01			0.01
Acenaphthylene	mg/kg			0.2	<0.01	26	16	10				0.09	0.02	0.2	0.02	<0.01			0.02
Anthracene	mg/kg			1.29	<0.02	26	16	10				0.44	0.03	1.29	0.05	<0.02			0.04
Benzo(a)anthracene	mg/kg			2.85	<0.04	26	22	4				2.85	0.17	2.58	0.47	0.08			0.18

Project name	North London Business Park
Project code	1921321
Client name	Comer Homes Group
Address	Oakleigh Road South Barnet N11 1NP
NGR	528088, 193479
Land use	Phytotoxic (pH >7.0)
SOM	1%
GAC version	2012_01

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete	Lab sample ID	20/07394/11	20/07394/12	20/07394/13	20/07394/63	20/07394/14	20/07394/15	20/07394/16	20/07394/17	20/07394/40	20/07394/64
									Client sample ID	TP9	TP10	TP11	TP11 + TP13	TP12	TP13	TP14	TP15	TP15	TP15 +TP16
									Depth to top	0.3	1.5	0.5	0.4	1	0.4	0.5	0.15	0.8	0.5
									Depth to bottom				0.5						0.8
									Date sampled	26/08/20	25/08/20	24/08/20	24/08/20	25/08/20	24/08/20	24/08/20	25/08/20	25/08/20	25/08/20
Metals and Inorganics																			
Arsenic	mg/kg			18	<1	26	24	2		11	3	4		2	4	3	4		
Cadmium	mg/kg	3		4.1	<0.5	26	24	2		0.7	1.8	0.6		1.2	0.6	0.7	1		
Chromium	mg/kg			54	21	26	26	0		21	53	31		48	36	43	29		
Copper	mg/kg	200		3550	18	26	26	0		33	528	69		129	18	67	86		
Lead	mg/kg	300		563	17	26	26	0		52	181	47		55	25	102	81		
Mercury	mg/kg	1		2	<0.17	26	24	2		0.34	0.76	0.36		0.32	0.24	0.4	0.38		
Nickel	mg/kg	110		142	18	26	26	0		25	79	30		53	23	28	31		
Selenium	mg/kg			5	<1	26	15	11		<1	3	<1		2	<1	<1	3		
Zinc	mg/kg	300		701	61	26	26	0		111	362	88		131	67	114	147		
Asbestos																			
Asbestos in soil						26	0	26		NAD	NAD	NAD		NAD	NAD	NAD	NAD		
Petroleum Hydrocarbons																			
Ali >C5-C6	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
Ali >C6-C8	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
Ali >C8-C10	mg/kg				<1	26	0	26		<1	<1	<1		<1	<1	<1	<1		
Ali >C10-C12	mg/kg				<1	26	0	26		<1	<1	<1		<1	<1	<1	<1		
Ali >C12-C16	mg/kg			3	<1	26	2	24		<1	<1	<1		<1	<1	<1	<1		
Ali >C16-C21	mg/kg			10	<1	26	10	16		<1	<1	2		1	10	<1	<1		
Ali >C21-C35	mg/kg			599	1	26	26	0		1	5	5		3	599	14	4		
Ali >C16-C35 calculated	mg/kg			609	1	26	26	0		1	5	7		4	609	14	4		
Total Aliphatics	mg/kg			609	1	26	26	0		1	5	7		4	609	14	4		
Aro >C5-C7	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
Aro >C7-C8	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
Aro >C8-C10	mg/kg			3	<1	26	1	25		<1	<1	<1		<1	<1	<1	<1		
Aro >C10-C12	mg/kg				<1	26	0	26		<1	<1	<1		<1	<1	<1	<1		
Aro >C12-C16	mg/kg			4	<1	26	8	18		<1	<1	<1		<1	4	<1	<1		
Aro >C16-C21	mg/kg			234	<1	26	23	3		1	5	4		2	234	1	2		
Aro >C21-C35	mg/kg			428	1	26	26	0		8	24	30		10	428	21	17		
Total Aromatics	mg/kg			666	1	26	26	0		9	30	34		12	666	22	19		
TPH (Ali & Aro)	mg/kg			1270	2	26	26	0		11	35	40		17	1270	36	23		
BTEX - Benzene	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
BTEX - Toluene	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
BTEX - Ethyl Benzene	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
BTEX - o Xylene	mg/kg			0.02	<0.01	26	1	25		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
BTEX - m & p Xylene	mg/kg			0.07	<0.01	26	1	25		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
MTBE	mg/kg				<0.01	26	0	26		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01		
Polycyclic aromatic hydrocarbons																			
Acenaphthene	mg/kg			0.34	<0.01	26	13	13		<0.01	0.01	0.02		0.01	<0.01	<0.01	<0.01		
Acenaphthylene	mg/kg			0.2	<0.01	26	16	10		0.01	0.01	0.03		0.01	<0.01	<0.01	<0.01		
Anthracene	mg/kg			1.29	<0.02	26	16	10		<0.02	0.06	0.07		0.03	<0.02	<0.02	<0.02		
Benzo(a)anthracene	mg/kg			2.85	<0.04	26	22	4		0.08	0.32	0.43		0.14	<0.04	0.07	0.15		

Project name	North London Business Park
Project code	1921321
Client name	Comer Homes Group
Address	Oakleigh Road South Barnet N11 1NP
NGR	528088, 193479
Land use	Phytotoxic (pH >7.0)
SOM	1%
GAC version	2012_01

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete	Lab sample ID: 20/07394/18	20/07394/48	20/07394/19	20/07394/20
									Client sample ID: TP16	TP16	TP17	TP18
									Depth to top: 1	0.5	0.5	1.5
									Depth to bottom:			
									Date sampled: 25/08/20	25/08/20	25/08/20	25/08/20
Metals and Inorganics												
Arsenic	mg/kg			18	<1	26	24	2	2		3	<1
Cadmium	mg/kg	3		4.1	<0.5	26	24	2	1.4		0.6	0.8
Chromium	mg/kg			54	21	26	26	0	46		39	50
Copper	mg/kg	200		3550	18	26	26	0	344		32	116
Lead	mg/kg	300		563	17	26	26	0	73		17	26
Mercury	mg/kg	1		2	<0.17	26	24	2	0.38		<0.17	<0.17
Nickel	mg/kg	110		142	18	26	26	0	60		39	48
Selenium	mg/kg			5	<1	26	15	11	4		<1	2
Zinc	mg/kg	300		701	61	26	26	0	191		80	99
Asbestos												
Asbestos in soil						26	0	26	NAD		NAD	NAD
Petroleum Hydrocarbons												
Ali >C5-C6	mg/kg				<0.01	26	0	26	<0.01		<0.01	<0.01
Ali >C6-C8	mg/kg				<0.01	26	0	26	<0.01		<0.01	<0.01
Ali >C8-C10	mg/kg				<1	26	0	26	<1		<1	<1
Ali >C10-C12	mg/kg				<1	26	0	26	<1		<1	<1
Ali >C12-C16	mg/kg			3	<1	26	2	24	<1		<1	<1
Ali >C16-C21	mg/kg			10	<1	26	10	16	<1		<1	<1
Ali >C21-C35	mg/kg			599	1	26	26	0	3		7	18
Ali >C16-C35 calculated	mg/kg			609	1	26	26	0	3		7	18
Total Aliphatics	mg/kg			609	1	26	26	0	3		7	18
Aro >C5-C7	mg/kg				<0.01	26	0	26	<0.01		<0.01	<0.01
Aro >C7-C8	mg/kg				<0.01	26	0	26	<0.01		<0.01	<0.01
Aro >C8-C10	mg/kg			3	<1	26	1	25	<1		<1	<1
Aro >C10-C12	mg/kg				<1	26	0	26	<1		<1	<1
Aro >C12-C16	mg/kg			4	<1	26	8	18	1		<1	<1
Aro >C16-C21	mg/kg			234	<1	26	23	3	21		5	8
Aro >C21-C35	mg/kg			428	1	26	26	0	45		22	63
Total Aromatics	mg/kg			666	1	26	26	0	68		27	71
TPH (Ali & Aro)	mg/kg			1270	2	26	26	0	71		34	89
BTEX - Benzene	mg/kg				<0.01	26	0	26	<0.01		<0.01	<0.01
BTEX - Toluene	mg/kg				<0.01	26	0	26	<0.01		<0.01	<0.01
BTEX - Ethyl Benzene	mg/kg				<0.01	26	0	26	<0.01		<0.01	<0.01
BTEX - o Xylene	mg/kg			0.02	<0.01	26	1	25	<0.01		<0.01	<0.01
BTEX - m & p Xylene	mg/kg			0.07	<0.01	26	1	25	<0.01		<0.01	<0.01
MTBE	mg/kg				<0.01	26	0	26	<0.01		<0.01	<0.01
Polycyclic aromatic hydrocarbons												
Acenaphthene	mg/kg			0.34	<0.01	26	13	13	0.13		0.04	0.04
Acenaphthylene	mg/kg			0.2	<0.01	26	16	10	<0.01		0.11	0.01
Anthracene	mg/kg			1.29	<0.02	26	16	10	0.08		0.22	0.1
Benzo(a)anthracene	mg/kg			2.85	<0.04	26	22	4	0.15		1.64	0.68

									Lab sample ID	20/07394/55	20/08313/1	20/07494/1	20/07394/21	20/07494/2	20/07494/3	20/07394/1	20/07394/2	20/07394/3	20/07394/4
									Client sample ID	BH1	BH3	BH4	BH5	BH6	BH7	TP1	TP2	TP2	TP3
									Depth to top	1.75	0.4	0.75	0.2	0.5	1.5	0.5	0.1	0.7	0.5
									Depth to bottom										
									Date sampled	19/08/20	13/08/20	02/09/20	25/08/20	21/08/20	02/09/20	24/08/20	24/08/20	24/08/20	24/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects												
Benzo(a)pyrene	mg/kg			2.31	<0.04	26	22	4		0.74	0.24	0.48	0.13	<0.04	0.28	<0.04	0.31	<0.04	0.42
Benzo(b)fluoranthene	mg/kg			2.65	<0.05	26	22	4		0.75	0.27	0.59	0.13	<0.05	0.32	<0.05	0.44	<0.05	0.5
Benzo(ghi)perylene	mg/kg			1.28	<0.05	26	21	5		0.53	0.14	0.31	0.11	<0.05	0.18	<0.05	0.23	<0.05	0.36
Benzo(k)fluoranthene	mg/kg			0.92	<0.07	26	15	11		0.29	0.09	0.22	<0.07	<0.07	0.12	<0.07	0.16	<0.07	0.15
Chrysene	mg/kg			2.5	<0.06	26	22	4		0.86	0.24	0.53	0.13	<0.06	0.28	<0.06	0.4	<0.06	0.36
Dibenzo(ah)anthracene	mg/kg			0.27	<0.04	26	12	14		0.15	<0.04	0.08	<0.04	<0.04	0.05	<0.04	0.04	<0.04	0.06
Fluoranthene	mg/kg			8.67	<0.08	26	22	4		1.55	0.25	0.93	0.16	<0.08	0.49	<0.08	0.56	<0.08	0.4
Fluorene	mg/kg			0.31	<0.01	26	12	14		0.23	<0.01	0.02	<0.01	<0.01	0.04	<0.01	0.01	<0.01	<0.01
Indeno(123-cd)pyrene	mg/kg			1.67	<0.03	26	22	4		0.65	0.16	0.4	0.13	<0.03	0.25	<0.03	0.27	<0.03	0.41
Naphthalene	mg/kg				<0.03	26	0	26		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Phenanthrene	mg/kg			4.4	<0.03	26	21	5		1.43	0.07	0.27	0.05	<0.03	0.29	0.04	0.27	<0.03	0.07
Pyrene	mg/kg			7.48	<0.07	26	22	4		1.42	0.25	0.8	0.15	<0.07	0.45	<0.07	0.5	<0.07	0.42
Total PAH-16MS	mg/kg			34	<0.08	26	22	4		10.1	1.89	5.24	1.09	<0.08	3.17	<0.08	3.58	<0.08	3.56
Volatile Organic Compounds (VOC)																			
1,1,1,2-Tetrachloroethane	mg/kg				<0.001	2	0	2											
1,1,1-Trichloroethane	mg/kg				<0.001	2	0	2											
1,1,2,2-Tetrachloroethane	mg/kg				<0.001	2	0	2											
1,1,2-Trichloroethane	mg/kg				<0.001	2	0	2											
1,1-Dichloroethane	mg/kg				<0.001	2	0	2											
1,1-Dichloroethene	mg/kg				<0.001	2	0	2											
1,1-Dichloropropene	mg/kg				<0.001	2	0	2											
1,2,3-Trichlorobenzene	mg/kg				<0.003	2	0	2											
1,2,3-Trichloropropane	mg/kg				<0.001	2	0	2											
1,2,4-Trichlorobenzene	mg/kg				<0.003	2	0	2											
1,2,4-Trimethylbenzene	mg/kg				<0.001	2	0	2											
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	2	0	2											
1,2-Dibromoethane	mg/kg				<0.001	2	0	2											
1,2-Dichlorobenzene	mg/kg				<0.001	2	0	2											
1,2-Dichloroethane	mg/kg				<0.002	2	0	2											
1,2-Dichloropropane	mg/kg				<0.001	2	0	2											
1,3,5-Trimethylbenzene	mg/kg				<0.001	2	0	2											
1,3-Dichlorobenzene	mg/kg				<0.001	2	0	2											
1,3-Dichloropropane	mg/kg				<0.001	2	0	2											
1,4-Dichlorobenzene	mg/kg				<0.001	2	0	2											
2,2-Dichloropropane	mg/kg				<0.001	2	0	2											
2-Chlorotoluene	mg/kg				<0.001	2	0	2											
4-Chlorotoluene	mg/kg				<0.001	2	0	2											
4-Isopropyltoluene	mg/kg				<0.001	2	0	2											
Benzene	mg/kg				<0.001	2	0	2											
Bromobenzene	mg/kg				<0.001	2	0	2											
Bromochloromethane	mg/kg				<0.005	2	0	2											
Bromodichloromethane	mg/kg				<0.01	2	0	2											
Bromoform	mg/kg				<0.001	2	0	2											
Bromomethane	mg/kg				<0.001	2	0	2											
Carbon Disulphide	mg/kg				<0.001	2	0	2											
Carbon Tetrachloride	mg/kg				<0.001	2	0	2											
Chlorobenzene	mg/kg				<0.001	2	0	2											
Chloroethane	mg/kg				<0.001	2	0	2											
Chloroform	mg/kg				<0.001	2	0	2											
Chloromethane	mg/kg				<0.01	2	0	2											
cis 1,2-Dichloroethene	mg/kg				<0.001	2	0	2											
cis 1,3-Dichloropropene	mg/kg				<0.001	2	0	2											
Dibromochloromethane	mg/kg				<0.003	2	0	2											
Dibromomethane	mg/kg				<0.001	2	0	2											

								Lab sample ID	20/07394/25	20/07394/61	20/07394/5	20/07394/6	20/07394/7	20/07394/8	20/07394/9	20/07394/30	20/07394/62	20/07394/10
								Client sample ID	TP3	TP3 + TP4	TP4	TP5	TP6	TP6	TP7	TP7	TP7 + TP8	TP8
								Depth to top	0.75	0.75	0.8	0.6	0.1	0.4	0.1	0.5	0.5	0.5
								Depth to bottom		0.8								
								Date sampled	24/08/20	24/08/20	24/08/20	24/08/20	26/08/20	26/08/20	26/08/20	24/08/20	26/08/20	26/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete										
Benzo(a)pyrene	mg/kg			2.31	<0.04	26	22	4			2.31	0.25	1.75	0.44	0.08			0.19
Benzo(b)fluoranthene	mg/kg			2.65	<0.05	26	22	4			2.65	0.29	2.02	0.61	0.12			0.26
Benzo(ghi)perylene	mg/kg			1.28	<0.05	26	21	5			1.28	0.3	0.89	0.31	0.06			0.2
Benzo(k)fluoranthene	mg/kg			0.92	<0.07	26	15	11			0.92	0.1	0.69	0.2	<0.07			0.08
Chrysene	mg/kg			2.5	<0.06	26	22	4			2.5	0.23	2.37	0.56	0.1			0.23
Dibenzo(ah)anthracene	mg/kg			0.27	<0.04	26	12	14			0.27	0.05	0.15	0.06	<0.04			<0.04
Fluoranthene	mg/kg			8.67	<0.08	26	22	4			5.27	0.25	8.67	0.84	0.14			0.3
Fluorene	mg/kg			0.31	<0.01	26	12	14			0.08	<0.01	0.31	0.01	<0.01			<0.01
Indeno(123-cd)pyrene	mg/kg			1.67	<0.03	26	22	4			1.67	0.33	1.11	0.38	0.07			0.21
Naphthalene	mg/kg				<0.03	26	0	26			<0.03	<0.03	<0.03	<0.03	<0.03			<0.03
Phenanthrene	mg/kg			4.4	<0.03	26	21	5			1.4	0.07	4.4	0.27	0.04			0.12
Pyrene	mg/kg			7.48	<0.07	26	22	4			4.69	0.27	7.48	0.76	0.13			0.27
Total PAH-16MS	mg/kg			34	<0.08	26	22	4			26.5	2.36	34	4.99	0.82			2.11
Volatile Organic Compounds (VOC)																		
1,1,1,2-Tetrachloroethane	mg/kg				<0.001	2	0	2			<0.001							
1,1,1-Trichloroethane	mg/kg				<0.001	2	0	2			<0.001							
1,1,2,2-Tetrachloroethane	mg/kg				<0.001	2	0	2			<0.001							
1,1,2-Trichloroethane	mg/kg				<0.001	2	0	2			<0.001							
1,1-Dichloroethane	mg/kg				<0.001	2	0	2			<0.001							
1,1-Dichloroethene	mg/kg				<0.001	2	0	2			<0.001							
1,1-Dichloropropene	mg/kg				<0.001	2	0	2			<0.001							
1,2,3-Trichlorobenzene	mg/kg				<0.003	2	0	2			<0.003							
1,2,3-Trichloropropane	mg/kg				<0.001	2	0	2			<0.001							
1,2,4-Trichlorobenzene	mg/kg				<0.003	2	0	2			<0.003							
1,2,4-Trimethylbenzene	mg/kg				<0.001	2	0	2			<0.001							
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	2	0	2			<0.002							
1,2-Dibromoethane	mg/kg				<0.001	2	0	2			<0.001							
1,2-Dichlorobenzene	mg/kg				<0.001	2	0	2			<0.001							
1,2-Dichloroethane	mg/kg				<0.002	2	0	2			<0.002							
1,2-Dichloropropane	mg/kg				<0.001	2	0	2			<0.001							
1,3,5-Trimethylbenzene	mg/kg				<0.001	2	0	2			<0.001							
1,3-Dichlorobenzene	mg/kg				<0.001	2	0	2			<0.001							
1,3-Dichloropropane	mg/kg				<0.001	2	0	2			<0.001							
1,4-Dichlorobenzene	mg/kg				<0.001	2	0	2			<0.001							
2,2-Dichloropropane	mg/kg				<0.001	2	0	2			<0.001							
2-Chlorotoluene	mg/kg				<0.001	2	0	2			<0.001							
4-Chlorotoluene	mg/kg				<0.001	2	0	2			<0.001							
4-Isopropyltoluene	mg/kg				<0.001	2	0	2			<0.001							
Benzene	mg/kg				<0.001	2	0	2			<0.001							
Bromobenzene	mg/kg				<0.001	2	0	2			<0.001							
Bromochloromethane	mg/kg				<0.005	2	0	2			<0.005							
Bromodichloromethane	mg/kg				<0.01	2	0	2			<0.01							
Bromoform	mg/kg				<0.001	2	0	2			<0.001							
Bromomethane	mg/kg				<0.001	2	0	2			<0.001							
Carbon Disulphide	mg/kg				<0.001	2	0	2			<0.001							
Carbon Tetrachloride	mg/kg				<0.001	2	0	2			<0.001							
Chlorobenzene	mg/kg				<0.001	2	0	2			<0.001							
Chloroethane	mg/kg				<0.001	2	0	2			<0.001							
Chloroform	mg/kg				<0.001	2	0	2			<0.001							
Chloromethane	mg/kg				<0.01	2	0	2			<0.01							
cis 1,2-Dichloroethene	mg/kg				<0.001	2	0	2			<0.001							
cis 1,3-Dichloropropene	mg/kg				<0.001	2	0	2			<0.001							
Dibromochloromethane	mg/kg				<0.003	2	0	2			<0.003							
Dibromomethane	mg/kg				<0.001	2	0	2			<0.001							

								Lab sample ID	20/07394/11	20/07394/12	20/07394/13	20/07394/63	20/07394/14	20/07394/15	20/07394/16	20/07394/17	20/07394/40	20/07394/64
								Client sample ID	TP9	TP10	TP11	TP11 + TP13	TP12	TP13	TP14	TP15	TP15	TP15 +TP16
								Depth to top	0.3	1.5	0.5	0.4	1	0.4	0.5	0.15	0.8	0.5
								Depth to bottom				0.5						0.8
								Date sampled	26/08/20	25/08/20	24/08/20	24/08/20	25/08/20	24/08/20	24/08/20	25/08/20	25/08/20	25/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete										
Benzo(a)pyrene	mg/kg			2.31	<0.04	26	22	4	0.08	0.27	0.67		0.14	<0.04	0.08	0.16		
Benzo(b)fluoranthene	mg/kg			2.65	<0.05	26	22	4	0.1	0.48	0.81		0.19	<0.05	0.11	0.22		
Benzo(ghi)perylene	mg/kg			1.28	<0.05	26	21	5	0.06	0.18	0.55		0.09	<0.05	0.07	0.12		
Benzo(k)fluoranthene	mg/kg			0.92	<0.07	26	15	11	<0.07	0.15	0.25		<0.07	<0.07	<0.07	<0.07		
Chrysene	mg/kg			2.5	<0.06	26	22	4	0.1	0.41	0.53		0.19	<0.06	0.1	0.19		
Dibenzo(ah)anthracene	mg/kg			0.27	<0.04	26	12	14	<0.04	<0.04	0.1		<0.04	<0.04	<0.04	<0.04		
Fluoranthene	mg/kg			8.67	<0.08	26	22	4	0.1	0.66	0.74		0.29	<0.08	0.1	0.21		
Fluorene	mg/kg			0.31	<0.01	26	12	14	<0.01	0.01	0.02		<0.01	<0.01	<0.01	<0.01		
Indeno(123-cd)pyrene	mg/kg			1.67	<0.03	26	22	4	0.07	0.23	0.64		0.11	<0.03	0.07	0.12		
Naphthalene	mg/kg				<0.03	26	0	26	<0.03	<0.03	<0.03		<0.03	<0.03	<0.03	<0.03		
Phenanthrene	mg/kg			4.4	<0.03	26	21	5	<0.03	0.17	0.26		0.15	<0.03	<0.03	0.06		
Pyrene	mg/kg			7.48	<0.07	26	22	4	0.1	0.58	0.74		0.28	<0.07	0.09	0.2		
Total PAH-16MS	mg/kg			34	<0.08	26	22	4	0.7	3.54	5.86		1.63	<0.08	0.69	1.43		
Volatile Organic Compounds (VOC)																		
1,1,1,2-Tetrachloroethane	mg/kg				<0.001	2	0	2										
1,1,1-Trichloroethane	mg/kg				<0.001	2	0	2										
1,1,2,2-Tetrachloroethane	mg/kg				<0.001	2	0	2										
1,1,2-Trichloroethane	mg/kg				<0.001	2	0	2										
1,1-Dichloroethane	mg/kg				<0.001	2	0	2										
1,1-Dichloroethene	mg/kg				<0.001	2	0	2										
1,1-Dichloropropene	mg/kg				<0.001	2	0	2										
1,2,3-Trichlorobenzene	mg/kg				<0.003	2	0	2										
1,2,3-Trichloropropane	mg/kg				<0.001	2	0	2										
1,2,4-Trichlorobenzene	mg/kg				<0.003	2	0	2										
1,2,4-Trimethylbenzene	mg/kg				<0.001	2	0	2										
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	2	0	2										
1,2-Dibromoethane	mg/kg				<0.001	2	0	2										
1,2-Dichlorobenzene	mg/kg				<0.001	2	0	2										
1,2-Dichloroethane	mg/kg				<0.002	2	0	2										
1,2-Dichloropropane	mg/kg				<0.001	2	0	2										
1,3,5-Trimethylbenzene	mg/kg				<0.001	2	0	2										
1,3-Dichlorobenzene	mg/kg				<0.001	2	0	2										
1,3-Dichloropropane	mg/kg				<0.001	2	0	2										
1,4-Dichlorobenzene	mg/kg				<0.001	2	0	2										
2,2-Dichloropropane	mg/kg				<0.001	2	0	2										
2-Chlorotoluene	mg/kg				<0.001	2	0	2										
4-Chlorotoluene	mg/kg				<0.001	2	0	2										
4-Isopropyltoluene	mg/kg				<0.001	2	0	2										
Benzene	mg/kg				<0.001	2	0	2										
Bromobenzene	mg/kg				<0.001	2	0	2										
Bromochloromethane	mg/kg				<0.005	2	0	2										
Bromodichloromethane	mg/kg				<0.01	2	0	2										
Bromoform	mg/kg				<0.001	2	0	2										
Bromomethane	mg/kg				<0.001	2	0	2										
Carbon Disulphide	mg/kg				<0.001	2	0	2										
Carbon Tetrachloride	mg/kg				<0.001	2	0	2										
Chlorobenzene	mg/kg				<0.001	2	0	2										
Chloroethane	mg/kg				<0.001	2	0	2										
Chloroform	mg/kg				<0.001	2	0	2										
Chloromethane	mg/kg				<0.01	2	0	2										
cis 1,2-Dichloroethene	mg/kg				<0.001	2	0	2										
cis 1,3-Dichloropropene	mg/kg				<0.001	2	0	2										
Dibromochloromethane	mg/kg				<0.003	2	0	2										
Dibromomethane	mg/kg				<0.001	2	0	2										

								Lab sample ID	20/07394/18	20/07394/48	20/07394/19	20/07394/20
								Client sample ID	TP16	TP16	TP17	TP18
								Depth to top	1	0.5	0.5	1.5
								Depth to bottom				
								Date sampled	25/08/20	25/08/20	25/08/20	25/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete				
Benzo(a)pyrene	mg/kg			2.31	<0.04	26	22	4	0.09		1.34	0.73
Benzo(b)fluoranthene	mg/kg			2.65	<0.05	26	22	4	0.14		1.73	0.82
Benzo(ghi)perylene	mg/kg			1.28	<0.05	26	21	5	<0.05		0.68	0.47
Benzo(k)fluoranthene	mg/kg			0.92	<0.07	26	15	11	<0.07		0.58	0.31
Chrysene	mg/kg			2.5	<0.06	26	22	4	0.19		1.64	0.77
Dibenzo(ah)anthracene	mg/kg			0.27	<0.04	26	12	14	<0.04		0.15	0.16
Fluoranthene	mg/kg			8.67	<0.08	26	22	4	0.47		2.57	0.86
Fluorene	mg/kg			0.31	<0.01	26	12	14	0.04		0.02	0.02
Indeno(123-cd)pyrene	mg/kg			1.67	<0.03	26	22	4	0.06		0.88	0.69
Naphthalene	mg/kg				<0.03	26	0	26	<0.03		<0.03	<0.03
Phenanthrene	mg/kg			4.4	<0.03	26	21	5	0.26		0.53	0.17
Pyrene	mg/kg			7.48	<0.07	26	22	4	0.35		2.32	0.8
Total PAH-16MS	mg/kg			34	<0.08	26	22	4	1.96		14.4	6.63
Volatile Organic Compounds (VOC)												
1,1,1,2-Tetrachloroethane	mg/kg				<0.001	2	0	2	<0.001			
1,1,1-Trichloroethane	mg/kg				<0.001	2	0	2	<0.001			
1,1,2,2-Tetrachloroethane	mg/kg				<0.001	2	0	2	<0.001			
1,1,2-Trichloroethane	mg/kg				<0.001	2	0	2	<0.001			
1,1-Dichloroethane	mg/kg				<0.001	2	0	2	<0.001			
1,1-Dichloroethene	mg/kg				<0.001	2	0	2	<0.001			
1,1-Dichloropropene	mg/kg				<0.001	2	0	2	<0.001			
1,2,3-Trichlorobenzene	mg/kg				<0.003	2	0	2	<0.003			
1,2,3-Trichloropropane	mg/kg				<0.001	2	0	2	<0.001			
1,2,4-Trichlorobenzene	mg/kg				<0.003	2	0	2	<0.003			
1,2,4-Trimethylbenzene	mg/kg				<0.001	2	0	2	<0.001			
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	2	0	2	<0.002			
1,2-Dibromoethane	mg/kg				<0.001	2	0	2	<0.001			
1,2-Dichlorobenzene	mg/kg				<0.001	2	0	2	<0.001			
1,2-Dichloroethane	mg/kg				<0.002	2	0	2	<0.002			
1,2-Dichloropropane	mg/kg				<0.001	2	0	2	<0.001			
1,3,5-Trimethylbenzene	mg/kg				<0.001	2	0	2	<0.001			
1,3-Dichlorobenzene	mg/kg				<0.001	2	0	2	<0.001			
1,3-Dichloropropane	mg/kg				<0.001	2	0	2	<0.001			
1,4-Dichlorobenzene	mg/kg				<0.001	2	0	2	<0.001			
2,2-Dichloropropane	mg/kg				<0.001	2	0	2	<0.001			
2-Chlorotoluene	mg/kg				<0.001	2	0	2	<0.001			
4-Chlorotoluene	mg/kg				<0.001	2	0	2	<0.001			
4-Isopropyltoluene	mg/kg				<0.001	2	0	2	<0.001			
Benzene	mg/kg				<0.001	2	0	2	<0.001			
Bromobenzene	mg/kg				<0.001	2	0	2	<0.001			
Bromochloromethane	mg/kg				<0.005	2	0	2	<0.005			
Bromodichloromethane	mg/kg				<0.01	2	0	2	<0.01			
Bromoform	mg/kg				<0.001	2	0	2	<0.001			
Bromomethane	mg/kg				<0.001	2	0	2	<0.001			
Carbon Disulphide	mg/kg				<0.001	2	0	2	<0.001			
Carbon Tetrachloride	mg/kg				<0.001	2	0	2	<0.001			
Chlorobenzene	mg/kg				<0.001	2	0	2	<0.001			
Chloroethane	mg/kg				<0.001	2	0	2	<0.001			
Chloroform	mg/kg				<0.001	2	0	2	<0.001			
Chloromethane	mg/kg				<0.01	2	0	2	<0.01			
cis 1,2-Dichloroethene	mg/kg				<0.001	2	0	2	<0.001			
cis 1,3-Dichloropropene	mg/kg				<0.001	2	0	2	<0.001			
Dibromochloromethane	mg/kg				<0.003	2	0	2	<0.003			
Dibromomethane	mg/kg				<0.001	2	0	2	<0.001			

									Lab sample ID	20/07394/55	20/08313/1	20/07494/1	20/07394/21	20/07494/2	20/07494/3	20/07394/1	20/07394/2	20/07394/3	20/07394/4
									Client sample ID	BH1	BH3	BH4	BH5	BH6	BH7	TP1	TP2	TP2	TP3
									Depth to top	1.75	0.4	0.75	0.2	0.5	1.5	0.5	0.1	0.7	0.5
									Depth to bottom										
									Date sampled	19/08/20	13/08/20	02/09/20	25/08/20	21/08/20	02/09/20	24/08/20	24/08/20	24/08/20	24/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects											
Dichlorodifluoromethane	mg/kg				<0.001	2	0	2											
Dichloromethane	mg/kg				<0.005	2	0	2											
Ethylbenzene	mg/kg				<0.001	2	0	2											
Hexachlorobutadiene	mg/kg				<0.001	2	0	2											
Isopropylbenzene	mg/kg				<0.001	2	0	2											
m & p Xylene	mg/kg				<0.001	2	0	2											
n-Butylbenzene	mg/kg				<0.001	2	0	2											
n-Propylbenzene	mg/kg				<0.001	2	0	2											
o-Xylene	mg/kg				<0.001	2	0	2											
sec-Butylbenzene	mg/kg				<0.001	2	0	2											
Styrene	mg/kg				<0.001	2	0	2											
tert-Butylbenzene	mg/kg				<0.002	2	0	2											
Tetrachloroethene	mg/kg				<0.001	2	0	2											
Toluene	mg/kg				<0.001	2	0	2											
trans 1,2-Dichloroethene	mg/kg				<0.001	2	0	2											
trans 1,3-Dichloropropene	mg/kg				<0.001	2	0	2											
Trichloroethene	mg/kg				<0.001	2	0	2											
Trichlorofluoromethane	mg/kg				<0.001	2	0	2											
Vinyl Chloride	mg/kg				<0.001	2	0	2											
Other analytes																			
% Stones >10mm	% w/w			46	<0.1	30	23	7		9.3	18.1	8.6	17.9	7.9	19	4	11.2	22.3	25.7
pH	pH			10.84	6.73	30	30	0		7.96	7.92	8.38	7.95	6.73	10.12	8.12	6.91	8.01	8.14
Sulphate (acid soluble)	mg/kg			3500	<200	26	25	1		650	360	610	1400	430	3500	300	450	<200	300
Sulphate (water sol 2:1)	g/l			0.45	<0.01	26	19	7		0.13	0.02	0.05	0.02	0.02	0.45	0.12	<0.01	0.05	<0.01
Total Organic Carbon	% w/w			1.81	0.17	10	10	0		1.61	0.75								
Converted to SOM (x / 0.58)	% w/w			3.12069	0.293103	10	10	0		2.77586207	1.29310345								

									Lab sample ID	20/07394/25	20/07394/61	20/07394/5	20/07394/6	20/07394/7	20/07394/8	20/07394/9	20/07394/30	20/07394/62	20/07394/10
									Client sample ID	TP3	TP3 + TP4	TP4	TP5	TP6	TP6	TP7	TP7	TP7 + TP8	TP8
									Depth to top	0.75	0.75	0.8	0.6	0.1	0.4	0.1	0.5	0.5	0.5
									Depth to bottom		0.8								
									Date sampled	24/08/20	24/08/20	24/08/20	24/08/20	26/08/20	26/08/20	26/08/20	24/08/20	26/08/20	26/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete											
Dichlorodifluoromethane	mg/kg				<0.001	2	0	2				<0.001							
Dichloromethane	mg/kg				<0.005	2	0	2				<0.005							
Ethylbenzene	mg/kg				<0.001	2	0	2				<0.001							
Hexachlorobutadiene	mg/kg				<0.001	2	0	2				<0.001							
Isopropylbenzene	mg/kg				<0.001	2	0	2				<0.001							
m & p Xylene	mg/kg				<0.001	2	0	2				<0.001							
n-Butylbenzene	mg/kg				<0.001	2	0	2				<0.001							
n-Propylbenzene	mg/kg				<0.001	2	0	2				<0.001							
o-Xylene	mg/kg				<0.001	2	0	2				<0.001							
sec-Butylbenzene	mg/kg				<0.001	2	0	2				<0.001							
Styrene	mg/kg				<0.001	2	0	2				<0.001							
tert-Butylbenzene	mg/kg				<0.002	2	0	2				<0.002							
Tetrachloroethene	mg/kg				<0.001	2	0	2				<0.001							
Toluene	mg/kg				<0.001	2	0	2				<0.001							
trans 1,2-Dichloroethene	mg/kg				<0.001	2	0	2				<0.001							
trans 1,3-Dichloropropene	mg/kg				<0.001	2	0	2				<0.001							
Trichloroethene	mg/kg				<0.001	2	0	2				<0.001							
Trichlorofluoromethane	mg/kg				<0.001	2	0	2				<0.001							
Vinyl Chloride	mg/kg				<0.001	2	0	2				<0.001							
Other analytes																			
% Stones >10mm	% w/w			46	<0.1	30	23	7		25.7	36.3	14.6	19.2	13.2	20.6		45.8	46	
pH	pH			10.84	6.73	30	30	0		8.16	8.07	7.76	7.77	7.86	7.8		10.84	8.39	
Sulphate (acid soluble)	mg/kg			3500	<200	26	25	1			370	490	670	360	1200			490	
Sulphate (water sol 2:1)	g/l			0.45	<0.01	26	19	7			0.04	0.12	<0.01	<0.01	<0.01			0.04	
Total Organic Carbon	% w/w			1.81	0.17	10	10	0		1.78							0.66	1.08	
Converted to SOM (x / 0.58)	% w/w			3.12069	0.293103	10	10	0		3.06896552							1.13793103	1.86206897	

									Lab sample ID	20/07394/11	20/07394/12	20/07394/13	20/07394/63	20/07394/14	20/07394/15	20/07394/16	20/07394/17	20/07394/40	20/07394/64
									Client sample ID	TP9	TP10	TP11	TP11 + TP13	TP12	TP13	TP14	TP15	TP15	TP15 +TP16
									Depth to top	0.3	1.5	0.5	0.4	1	0.4	0.5	0.15	0.8	0.5
									Depth to bottom				0.5						0.8
									Date sampled	26/08/20	25/08/20	24/08/20	24/08/20	25/08/20	24/08/20	24/08/20	25/08/20	25/08/20	25/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete											
Dichlorodifluoromethane	mg/kg				<0.001	2	0	2											
Dichloromethane	mg/kg				<0.005	2	0	2											
Ethylbenzene	mg/kg				<0.001	2	0	2											
Hexachlorobutadiene	mg/kg				<0.001	2	0	2											
Isopropylbenzene	mg/kg				<0.001	2	0	2											
m & p Xylene	mg/kg				<0.001	2	0	2											
n-Butylbenzene	mg/kg				<0.001	2	0	2											
n-Propylbenzene	mg/kg				<0.001	2	0	2											
o-Xylene	mg/kg				<0.001	2	0	2											
sec-Butylbenzene	mg/kg				<0.001	2	0	2											
Styrene	mg/kg				<0.001	2	0	2											
tert-Butylbenzene	mg/kg				<0.002	2	0	2											
Tetrachloroethene	mg/kg				<0.001	2	0	2											
Toluene	mg/kg				<0.001	2	0	2											
trans 1,2-Dichloroethene	mg/kg				<0.001	2	0	2											
trans 1,3-Dichloropropene	mg/kg				<0.001	2	0	2											
Trichloroethene	mg/kg				<0.001	2	0	2											
Trichlorofluoromethane	mg/kg				<0.001	2	0	2											
Vinyl Chloride	mg/kg				<0.001	2	0	2											
Other analytes																			
% Stones >10mm	% w/w			46	<0.1	30	23	7		33.7	<0.1	27.3	<0.1	6.6	6.1	<0.1	10.7		<0.1
pH	pH			10.84	6.73	30	30	0		7.92	8.11	8.16	7.95	8.12	7.2	7.79	7.65		8.72
Sulphate (acid soluble)	mg/kg			3500	<200	26	25	1		270	790	210		520	290	420	820		
Sulphate (water sol 2:1)	g/l			0.45	<0.01	26	19	7		<0.01	0.25	0.01		0.18	0.02	0.06	<0.01		
Total Organic Carbon	% w/w			1.81	0.17	10	10	0		0.74			0.61			1.29			1.81
Converted to SOM (x / 0.58)	% w/w			3.12069	0.293103	10	10	0		1.27586207			1.05172414			2.22413793			3.12068966

								Lab sample ID	20/07394/18	20/07394/48	20/07394/19	20/07394/20
								Client sample ID	TP16	TP16	TP17	TP18
								Depth to top	1	0.5	0.5	1.5
								Depth to bottom				
								Date sampled	25/08/20	25/08/20	25/08/20	25/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete				
Dichlorodifluoromethane	mg/kg				<0.001	2	0	2	<0.001			
Dichloromethane	mg/kg				<0.005	2	0	2	<0.005			
Ethylbenzene	mg/kg				<0.001	2	0	2	<0.001			
Hexachlorobutadiene	mg/kg				<0.001	2	0	2	<0.001			
Isopropylbenzene	mg/kg				<0.001	2	0	2	<0.001			
m & p Xylene	mg/kg				<0.001	2	0	2	<0.001			
n-Butylbenzene	mg/kg				<0.001	2	0	2	<0.001			
n-Propylbenzene	mg/kg				<0.001	2	0	2	<0.001			
o-Xylene	mg/kg				<0.001	2	0	2	<0.001			
sec-Butylbenzene	mg/kg				<0.001	2	0	2	<0.001			
Styrene	mg/kg				<0.001	2	0	2	<0.001			
tert-Butylbenzene	mg/kg				<0.002	2	0	2	<0.002			
Tetrachloroethene	mg/kg				<0.001	2	0	2	<0.001			
Toluene	mg/kg				<0.001	2	0	2	<0.001			
trans 1,2-Dichloroethene	mg/kg				<0.001	2	0	2	<0.001			
trans 1,3-Dichloropropene	mg/kg				<0.001	2	0	2	<0.001			
Trichloroethene	mg/kg				<0.001	2	0	2	<0.001			
Trichlorofluoromethane	mg/kg				<0.001	2	0	2	<0.001			
Vinyl Chloride	mg/kg				<0.001	2	0	2	<0.001			
Other analytes												
% Stones >10mm	% w/w			46	<0.1	30	23	7	<0.1		<0.1	<0.1
pH	pH			10.84	6.73	30	30	0	8.13		8.34	8.24
Sulphate (acid soluble)	mg/kg			3500	<200	26	25	1	1300		200	210
Sulphate (water sol 2:1)	g/l			0.45	<0.01	26	19	7	0.41		0.05	0.03
Total Organic Carbon	% w/w			1.81	0.17	10	10	0			0.17	
Converted to SOM (x / 0.58)	% w/w			3.12069	0.293103	10	10	0			0.29310345	

APPENDIX O
GENERIC ASSESSMENT CRITERIA FOR POTABLE WATER SUPPLY PIPES

A range of pipe materials is available and careful selection, design and installation is required to ensure that water supply pipes are satisfactorily installed and meet the requirements of the Water Supply (Water Fittings) Regulations 1999 in England and Wales, the Byelaws 2000 in Scotland and the Northern Ireland Water Regulations. The regulations include a requirement to use only suitable materials when laying water pipes and laying water pipes without protection is not permitted at contaminated sites. The water supply company has a statutory duty to enforce the regulations.

Contaminants in the ground can pose a risk to human health by permeating potable water supply pipes. To fulfil their statutory obligation, UK water supply companies require robust evidence from developers to demonstrate either that the ground in which new plastic supply pipes will be laid is free from specific contaminants, or that the proposed remedial strategy will mitigate any existing risk. If these requirements cannot be demonstrated to the satisfaction of the relevant water company, it becomes necessary to specify an alternative pipe material on the whole development or in specific zones.

In 2010, UK Water Industry Research (UKWIR) published *Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites* (Report Ref. No. 10/WM/03/21). This report reviewed previously published industry guidelines and threshold concentrations adopted by individual water supply companies.

The focus of the UKWIR research project was to develop clear and concise procedures, which provide consistency in the pipe selection decision process. It was intended to provide guidance that can be used to ensure compliance with current regulations and to prevent water supply pipe failing prematurely due to the presence of contamination.

The report concluded that in most circumstances only organic contaminants pose a potential risk to plastic pipe materials and Table 3.1 of the report provides threshold concentrations for polyethylene (PE) and polyvinyl chloride (PVC) pipes for the organic contaminants of concern. The report also makes recommendations for the procedures to be adopted in the design of site investigations and sampling strategies, and the assessment of data, to ensure that the ground through which water supply pipes will be laid is adequately characterised.

Risks to water supply pipes have therefore been assessed against the threshold concentrations for PE and PVC pipe specified in Table 3.1 of Report 10/WM/03/21, which have been adopted as the GAC for this linkage and are reproduced in Table A3 below.

Since water supply pipes are typically laid at a minimum depth of 0.75 m below finished ground levels, sample results from depths between 0.5 m and 1.5 m below finished level are generally considered suitable for assessing risks to water supply. Samples outside these depths can be used, providing the stratum is the same as that in which water supply pipes are likely to be located. The report specifies that sampling should characterise the ground conditions to a minimum of 0.5 m below the proposed depth of the pipe.

It should be noted that the assessment provided in this report is a guide and the method of assessment and recommendations should be checked with the relevant water supply company.

Table Q1: Generic assessment criteria for water supply pipes

		Pipe material	
		GAC (mg/kg)	
	Parameter group	**PE**	**PVC**
1	Extended VOC suite by purge and trap or head space and GC-MS with TIC (Not including compounds within group 1a)	0.5	0.125
1a	• BTEX + MTBE	0.1	0.03
2	SVOCs TIC by purge and trap or head space and GC-MS with TIC (aliphatic and aromatic C_5–C_{10}) (Not including compounds within group 2e and 2f)	2	1.4
2e	• Phenols	2	0.4
2f	• Cresols and chlorinated phenols	2	0.04
3	Mineral oil C_{11}–C_{20}	10	Suitable
4	Mineral oil C_{21}–C_{40}	500	Suitable
5	Corrosive (conductivity, redox and pH)	Suitable	Suitable
Specific suite identified as relevant following site investigation			
2a	Ethers	0.5	1
2b	Nitrobenzene	0.5	0.4
2c	Ketones	0.5	0.02
2d	Aldehydes	0.5	0.02
6	Amines	Not suitable	Suitable
Notes: where indicated as 'suitable', the material is considered resistant to permeation or degradation and no threshold concentration has been specified by UKWIR.			

APPENDIX P
GQRA DATA SCREENING TABLES – SOILS

Project name	North London Business Park
Project code	1921321
Client name	Comer Homes Group
Address	Oakleigh Road South Barnet N11 1NP
NGR	528088, 193479
Land use	Residential with home-grown produce
SOM	1%
GAC version	2019_00

Notes

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects	Lab sample ID	20/07394/55	20/08313/1	20/07494/1	20/07494/2	20/07494/3	20/07394/1	20/07394/3	20/07394/4	20/07394/25	20/07394/61
									Client sample ID	BH1	BH3	BH4	BH6	BH7	TP1	TP2	TP3	TP3	TP3 + TP4
									Depth to top	1.75	0.4	0.75	0.5	1.5	0.5	0.7	0.5	0.75	0.75
									Depth to bottom										0.8
									Date sampled	19/08/20	13/08/20	02/09/20	21/08/20	02/09/20	24/08/20	24/08/20	24/08/20	24/08/20	24/08/20
Metals and Inorganics																			
Arsenic	mg/kg	37		13	<1	21	19	2		5	13	5	<1	3	2	2	4		
Cadmium	mg/kg	22		1.9	<0.5	21	19	2		0.5	1.1	0.7	<0.5	0.6	0.7	0.5	0.7		
Chromium	mg/kg	910	21	54	21	21	21	0		36	37	37	34	45	54	43	36		
Copper	mg/kg	2500		3550	23	21	21	0		55	51	159	93	170	75	23	302		
Lead	mg/kg	200		459	17	21	21	0		48	61	139	77	180	18	19	115		
Mercury	mg/kg	39	0.2	0.91	<0.17	21	19	2		0.34	0.68	0.8	0.6	0.82	0.84	0.3	0.6		
Nickel	mg/kg	130		142	18	21	21	0		28	34	34	18	45	47	26	45		
Selenium	mg/kg	258		5	<1	21	12	9		<1	<1	2	2	2	2	<1	1		
Zinc	mg/kg	3900		701	61	21	21	0		98	100	164	85	165	104	61	239		
Asbestos																			
Asbestos in soil						21	0	21		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD		
Petroleum Hydrocarbons																			
Ali >C5-C6	mg/kg	42			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Ali >C6-C8	mg/kg	100			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Ali >C8-C10	mg/kg	27			<1	21	0	21		<1	<1	<1	<1	<1	<1	<1	<1		
Ali >C10-C12	mg/kg	130	48		<1	21	0	21		<1	<1	<1	<1	<1	<1	<1	<1		
Ali >C12-C16	mg/kg	1100	24	3	<1	21	2	19		<1	<1	<1	<1	3	<1	<1	<1		
Ali >C16-C21	mg/kg			7	<1	21	9	12		1	<1	2	<1	7	<1	<1	2		
Ali >C21-C35	mg/kg			50	1	21	21	0		50	5	15	2	15	1	2	8		
Ali >C16-C35 calculated	mg/kg	65000	8	52	1	21	21	0		51	5	17	2	22	1	2	10		
Total Aliphatics	mg/kg			54	1	21	21	0		51	5	18	2	25	1	2	10		
Aro >C5-C7	mg/kg				<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Aro >C7-C8	mg/kg				<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Aro >C8-C10	mg/kg	30		3	<1	21	1	20		<1	<1	<1	<1	3	<1	<1	<1		
Aro >C10-C12	mg/kg	80			<1	21	0	21		<1	<1	<1	<1	<1	<1	<1	<1		
Aro >C12-C16	mg/kg	140		4	<1	21	7	14		3	<1	4	<1	3	<1	<1	2		
Aro >C16-C21	mg/kg	260		41	<1	21	18	3		9	<1	41	<1	7	<1	2	22		
Aro >C21-C35	mg/kg	1100		144	1	21	21	0		73	11	141	7	23	1	12	79		
Total Aromatics	mg/kg			186	1	21	21	0		86	12	186	7	35	1	14	103		
TPH (Ali & Aro)	mg/kg			217	2	21	21	0		136	16	203	9	60	2	15	113		
BTEX - Benzene	mg/kg	0.2			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
BTEX - Toluene	mg/kg	130			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
BTEX - Ethyl Benzene	mg/kg	50			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
BTEX - o Xylene	mg/kg	61		0.02	<0.01	21	1	20		<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01		
BTEX - m & p Xylene	mg/kg	57		0.07	<0.01	21	1	20		<0.01	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	<0.01		
MTBE	mg/kg	60			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Polycyclic aromatic hydrocarbons																			
Acenaphthene	mg/kg	230		0.34	<0.01	21	11	10		0.34	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01		
Acenaphthylene	mg/kg	180		0.11	<0.01	21	14	7		0.03	<0.01	0.02	<0.01	0.02	<0.01	<0.01	0.06		
Anthracene	mg/kg	2400		0.44	<0.02	21	14	7		0.38	<0.02	0.08	<0.02	0.09	<0.02	<0.02	0.06		
Benzo(a)anthracene	mg/kg	7		2.85	<0.04	21	18	3		0.78	0.18	0.51	<0.04	0.26	<0.04	<0.04	0.29		

Project name	North London Business Park
Project code	1921321
Client name	Comer Homes Group
Address	Oakleigh Road South Barnet N11 1NP
NGR	528088, 193479
Land use	Residential with home-grown produce
SOM	1%
GAC version	2019_00

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete	Lab sample ID	20/07394/5	20/07394/6	20/07394/8	20/07394/9	20/07394/30	20/07394/62	20/07394/10	20/07394/11	20/07394/12	20/07394/13
									Client sample ID	TP4	TP5	TP6	TP7	TP7	TP7 + TP8	TP8	TP9	TP10	TP11
									Depth to top	0.8	0.6	0.4	0.1	0.5	0.5	0.5	0.3	1.5	0.5
									Depth to bottom										
									Date sampled	24/08/20	24/08/20	26/08/20	26/08/20	24/08/20	26/08/20	26/08/20	26/08/20	25/08/20	24/08/20
Metals and Inorganics																			
Arsenic	mg/kg	37		13	<1	21	19	2		3	2	6	8			4	11	3	4
Cadmium	mg/kg	22		1.9	<0.5	21	19	2		1.9	0.6	1	0.7			<0.5	0.7	1.8	0.6
Chromium	mg/kg	910	21	54	21	21	21	0		48	42	40	33			21	21	53	31
Copper	mg/kg	2500		3550	23	21	21	0		3550	97	419	35			36	33	528	69
Lead	mg/kg	200		459	17	21	21	0		459	49	172	40			160	52	181	47
Mercury	mg/kg	39	0.2	0.91	<0.17	21	19	2		0.49	0.56	0.71	0.82			0.91	0.34	0.76	0.36
Nickel	mg/kg	130		142	18	21	21	0		142	34	54	33			19	25	79	30
Selenium	mg/kg	258		5	<1	21	12	9		<2	2	2	5			<1	<1	3	<1
Zinc	mg/kg	3900		701	61	21	21	0		701	114	290	98			104	111	362	88
Asbestos																			
Asbestos in soil						21	0	21		NAD	NAD	NAD	NAD			NAD	NAD	NAD	NAD
Petroleum Hydrocarbons																			
Ali >C5-C6	mg/kg	42			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
Ali >C6-C8	mg/kg	100			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
Ali >C8-C10	mg/kg	27			<1	21	0	21		<1	<1	<1	<1			<1	<1	<1	<1
Ali >C10-C12	mg/kg	130	48		<1	21	0	21		<1	<1	<1	<1			<1	<1	<1	<1
Ali >C12-C16	mg/kg	1100	24	3	<1	21	2	19		<1	<1	<1	<1			2	<1	<1	<1
Ali >C16-C21	mg/kg			7	<1	21	9	12		2	2	<1	<1			5	<1	<1	2
Ali >C21-C35	mg/kg			50	1	21	21	0		34	6	5	8			47	1	5	5
Ali >C16-C35 calculated	mg/kg	65000	8	52	1	21	21	0		36	8	5	8			52	1	5	7
Total Aliphatics	mg/kg			54	1	21	21	0		36	8	5	8			54	1	5	7
Aro >C5-C7	mg/kg				<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
Aro >C7-C8	mg/kg				<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
Aro >C8-C10	mg/kg	30		3	<1	21	1	20		<1	<1	<1	<1			<1	<1	<1	<1
Aro >C10-C12	mg/kg	80			<1	21	0	21		<1	<1	<1	<1			<1	<1	<1	<1
Aro >C12-C16	mg/kg	140		4	<1	21	7	14		4	<1	<1	<1			2	<1	<1	<1
Aro >C16-C21	mg/kg	260		41	<1	21	18	3		33	2	3	2			6	1	5	4
Aro >C21-C35	mg/kg	1100		144	1	21	21	0		144	10	28	25			79	8	24	30
Total Aromatics	mg/kg			186	1	21	21	0		180	12	31	27			88	9	30	34
TPH (Ali & Aro)	mg/kg			217	2	21	21	0		217	20	37	36			142	11	35	40
BTEX - Benzene	mg/kg	0.2			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
BTEX - Toluene	mg/kg	130			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	mg/kg	50			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
BTEX - o Xylene	mg/kg	61		0.02	<0.01	21	1	20		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
BTEX - m & p Xylene	mg/kg	57		0.07	<0.01	21	1	20		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
MTBE	mg/kg	60			<0.01	21	0	21		<0.01	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
Polycyclic aromatic hydrocarbons																			
Acenaphthene	mg/kg	230		0.34	<0.01	21	11	10		0.11	<0.01		0.01	<0.01		0.01	<0.01		0.01	0.02
Acenaphthylene	mg/kg	180		0.11	<0.01	21	14	7		0.09	0.02	0.02	<0.01			0.02	0.01	0.01	0.03
Anthracene	mg/kg	2400		0.44	<0.02	21	14	7		0.44	0.03	0.05	<0.02			0.04	<0.02	0.06	0.07
Benzo(a)anthracene	mg/kg	7		2.85	<0.04	21	18	3		2.85	0.17	0.47	0.08			0.18	0.08	0.32	0.43

Project name	North London Business Park
Project code	1921321
Client name	Comer Homes Group
Address	Oakleigh Road South Barnet N11 1NP
NGR	528088, 193479
Land use	Residential with home-grown produce
SOM	1%
GAC version	2019_00

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete	Lab sample ID	Client sample ID	Depth to top	Depth to bottom	Date sampled
									20/07394/63	TP11 + TP13	0.4	0.5	24/08/20
									20/07394/14	TP12	1		25/08/20
									20/07394/16	TP14	0.5		24/08/20
									20/07394/40	TP15	0.8		25/08/20
									20/07394/64	TP15 +TP16	0.5	0.8	25/08/20
									20/07394/18	TP16	1		25/08/20
									20/07394/48	TP16	0.5		25/08/20
									20/07394/19	TP17	0.5		25/08/20
									20/07394/20	TP18	1.5		25/08/20
Metals and Inorganics													
Arsenic	mg/kg	37		13	<1	21	19	2		2	3		<1
Cadmium	mg/kg	22		1.9	<0.5	21	19	2		1.2	0.7		1.4		0.6	0.8
Chromium	mg/kg	910	21	54	21	21	21	0		48	43			46		39	50
Copper	mg/kg	2500		3550	23	21	21	0		129	67			344		32	116
Lead	mg/kg	200		459	17	21	21	0		55	102			73		17	26
Mercury	mg/kg	39	0.2	0.91	<0.17	21	19	2		0.32	0.4			0.38		<0.17	<0.17
Nickel	mg/kg	130		142	18	21	21	0		53	28			60		39	48
Selenium	mg/kg	258		5	<1	21	12	9		2	<1			4		<1	2
Zinc	mg/kg	3900		701	61	21	21	0		131	114			191		80	99
Asbestos													
Asbestos in soil						21	0	21		NAD	NAD			NAD		NAD	NAD
Petroleum Hydrocarbons													
Ali >C5-C6	mg/kg	42			<0.01	21	0	21		<0.01	<0.01			<0.01		<0.01	<0.01
Ali >C6-C8	mg/kg	100			<0.01	21	0	21		<0.01	<0.01			<0.01		<0.01	<0.01
Ali >C8-C10	mg/kg	27			<1	21	0	21		<1	<1			<1		<1	<1
Ali >C10-C12	mg/kg	130	48		<1	21	0	21		<1	<1			<1		<1	<1
Ali >C12-C16	mg/kg	1100	24	3	<1	21	2	19		<1	<1			<1		<1	<1
Ali >C16-C21	mg/kg			7	<1	21	9	12		1	<1			<1		<1	<1
Ali >C21-C35	mg/kg			50	1	21	21	0		3	14			3		7	18
Ali >C16-C35 calculated	mg/kg	65000	8	52	1	21	21	0		4	14			3		7	18
Total Aliphatics	mg/kg			54	1	21	21	0		4	14			3		7	18
Aro >C5-C7	mg/kg				<0.01	21	0	21		<0.01	<0.01			<0.01		<0.01	<0.01
Aro >C7-C8	mg/kg				<0.01	21	0	21		<0.01	<0.01			<0.01		<0.01	<0.01
Aro >C8-C10	mg/kg	30		3	<1	21	1	20		<1	<1			<1		<1	<1
Aro >C10-C12	mg/kg	80			<1	21	0	21		<1	<1			<1		<1	<1
Aro >C12-C16	mg/kg	140		4	<1	21	7	14		<1	<1			1		<1	<1
Aro >C16-C21	mg/kg	260		41	<1	21	18	3		2	1			21		5	8
Aro >C21-C35	mg/kg	1100		144	1	21	21	0		10	21			45		22	63
Total Aromatics	mg/kg			186	1	21	21	0		12	22			68		27	71
TPH (Ali & Aro)	mg/kg			217	2	21	21	0		17	36			71		34	89
BTEX - Benzene	mg/kg	0.2			<0.01	21	0	21		<0.01	<0.01			<0.01		<0.01	<0.01
BTEX - Toluene	mg/kg	130			<0.01	21	0	21		<0.01	<0.01			<0.01		<0.01	<0.01
BTEX - Ethyl Benzene	mg/kg	50			<0.01	21	0	21		<0.01	<0.01			<0.01		<0.01	<0.01
BTEX - o Xylene	mg/kg	61		0.02	<0.01	21	1	20		<0.01	<0.01			<0.01		<0.01	<0.01
BTEX - m & p Xylene	mg/kg	57		0.07	<0.01	21	1	20		<0.01	<0.01			<0.01		<0.01	<0.01
MTBE	mg/kg	60			<0.01	21	0	21		<0.01	<0.01			<0.01		<0.01	<0.01
Polycyclic aromatic hydrocarbons													
Acenaphthene	mg/kg	230		0.34	<0.01	21	11	10		0.01	<0.01			0.13		0.04	0.04
Acenaphthylene	mg/kg	180		0.11	<0.01	21	14	7		0.01	<0.01			<0.01		0.11	0.01
Anthracene	mg/kg	2400		0.44	<0.02	21	14	7		0.03	<0.02			0.08		0.22	0.1
Benzo(a)anthracene	mg/kg	7		2.85	<0.04	21	18	3		0.14	0.07			0.15		1.64	0.68

Lab sample ID								20/07394/55	20/08313/1	20/07494/1	20/07494/2	20/07494/3	20/07394/1	20/07394/3	20/07394/4	20/07394/25	20/07394/61
Client sample ID								BH1	BH3	BH4	BH6	BH7	TP1	TP2	TP3	TP3	TP3 + TP4
Depth to top								1.75	0.4	0.75	0.5	1.5	0.5	0.7	0.5	0.75	0.75
Depth to bottom																	0.8
Date sampled								19/08/20	13/08/20	02/09/20	21/08/20	02/09/20	24/08/20	24/08/20	24/08/20	24/08/20	24/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects									
Benzo(a)pyrene	mg/kg	5		2.31	<0.04	21	18	3	0.74	0.24	0.48	<0.04	0.28	<0.04	<0.04	0.42	
Benzo(b)fluoranthene	mg/kg	2.6		2.65	<0.05	21	18	3	0.75	0.27	0.59	<0.05	0.32	<0.05	<0.05	0.5	
Benzo(ghi)perylene	mg/kg	310		1.28	<0.05	21	17	4	0.53	0.14	0.31	<0.05	0.18	<0.05	<0.05	0.36	
Benzo(k)fluoranthene	mg/kg	77		0.92	<0.07	21	13	8	0.29	0.09	0.22	<0.07	0.12	<0.07	<0.07	0.15	
Chrysene	mg/kg	15		2.5	<0.06	21	18	3	0.86	0.24	0.53	<0.06	0.28	<0.06	<0.06	0.36	
Dibenzo(ah)anthracene	mg/kg	0.24		0.27	<0.04	21	10	11	0.15	<0.04	0.08	<0.04	0.05	<0.04	<0.04	0.06	
Fluoranthene	mg/kg	290		5.27	<0.08	21	18	3	1.55	0.25	0.93	<0.08	0.49	<0.08	<0.08	0.4	
Fluorene	mg/kg	170		0.23	<0.01	21	10	11	0.23	<0.01	0.02	<0.01	0.04	<0.01	<0.01	<0.01	
Indeno(123-cd)pyrene	mg/kg	27		1.67	<0.03	21	18	3	0.65	0.16	0.4	<0.03	0.25	<0.03	<0.03	0.41	
Naphthalene	mg/kg	13			<0.03	21	0	21	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	
Phenanthrene	mg/kg	100		1.43	<0.03	21	17	4	1.43	0.07	0.27	<0.03	0.29	0.04	<0.03	0.07	
Pyrene	mg/kg	620		4.69	<0.07	21	18	3	1.42	0.25	0.8	<0.07	0.45	<0.07	<0.07	0.42	
Total PAH-16MS	mg/kg			26.5	<0.08	21	18	3	10.1	1.89	5.24	<0.08	3.17	<0.08	<0.08	3.56	
Volatile Organic Compounds (VOC)																	
1,1,1,2-Tetrachloroethane	mg/kg	1.2			<0.001	2	0	2									
1,1,1-Trichloroethane	mg/kg	9			<0.001	2	0	2									
1,1,2,2-Tetrachloroethane	mg/kg	1.6			<0.001	2	0	2									
1,1,2-Trichloroethane	mg/kg	0.8			<0.001	2	0	2									
1,1-Dichloroethane	mg/kg				<0.001	2	0	2									
1,1-Dichloroethene	mg/kg	0.32			<0.001	2	0	2									
1,1-Dichloropropene	mg/kg				<0.001	2	0	2									
1,2,3-Trichlorobenzene	mg/kg				<0.003	2	0	2									
1,2,3-Trichloropropane	mg/kg				<0.001	2	0	2									
1,2,4-Trichlorobenzene	mg/kg				<0.003	2	0	2									
1,2,4-Trimethylbenzene	mg/kg	1.8			<0.001	2	0	2									
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	2	0	2									
1,2-Dibromoethane	mg/kg				<0.001	2	0	2									
1,2-Dichlorobenzene	mg/kg				<0.001	2	0	2									
1,2-Dichloroethane	mg/kg	0.007			<0.002	2	0	2									
1,2-Dichloropropane	mg/kg	0.034			<0.001	2	0	2									
1,3,5-Trimethylbenzene	mg/kg	1.8			<0.001	2	0	2									
1,3-Dichlorobenzene	mg/kg				<0.001	2	0	2									
1,3-Dichloropropane	mg/kg				<0.001	2	0	2									
1,4-Dichlorobenzene	mg/kg				<0.001	2	0	2									
2,2-Dichloropropane	mg/kg				<0.001	2	0	2									
2-Chlorotoluene	mg/kg				<0.001	2	0	2									
4-Chlorotoluene	mg/kg				<0.001	2	0	2									
4-Isopropyltoluene	mg/kg				<0.001	2	0	2									
Benzene	mg/kg	0.2			<0.001	2	0	2									
Bromobenzene	mg/kg				<0.001	2	0	2									
Bromochloromethane	mg/kg				<0.005	2	0	2									
Bromodichloromethane	mg/kg				<0.01	2	0	2									
Bromoform	mg/kg				<0.001	2	0	2									
Bromomethane	mg/kg				<0.001	2	0	2									
Carbon Disulphide	mg/kg				<0.001	2	0	2									
Carbon Tetrachloride	mg/kg	0.026			<0.001	2	0	2									
Chlorobenzene	mg/kg				<0.001	2	0	2									
Chloroethane	mg/kg	11.7			<0.001	2	0	2									
Chloroform	mg/kg				<0.001	2	0	2									
Chloromethane	mg/kg	0.012			<0.01	2	0	2									
cis 1,2-Dichloroethene	mg/kg	0.16			<0.001	2	0	2									
cis 1,3-Dichloropropene	mg/kg				<0.001	2	0	2									
Dibromochloromethane	mg/kg				<0.003	2	0	2									
Dibromomethane	mg/kg				<0.001	2	0	2									

								Lab sample ID	20/07394/5	20/07394/6	20/07394/8	20/07394/9	20/07394/30	20/07394/62	20/07394/10	20/07394/11	20/07394/12	20/07394/13
								Client sample ID	TP4	TP5	TP6	TP7	TP7	TP7 + TP8	TP8	TP9	TP10	TP11
								Depth to top	0.8	0.6	0.4	0.1	0.5	0.5	0.5	0.3	1.5	0.5
								Depth to bottom										
								Date sampled	24/08/20	24/08/20	26/08/20	26/08/20	24/08/20	26/08/20	26/08/20	26/08/20	25/08/20	24/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete										
Benzo(a)pyrene	mg/kg	5		2.31	<0.04	21	18	3	2.31	0.25	0.44	0.08			0.19	0.08	0.27	0.67
Benzo(b)fluoranthene	mg/kg	2.6		2.65	<0.05	21	18	3	2.65	0.29	0.61	0.12			0.26	0.1	0.48	0.81
Benzo(ghi)perylene	mg/kg	310		1.28	<0.05	21	17	4	1.28	0.3	0.31	0.06			0.2	0.06	0.18	0.55
Benzo(k)fluoranthene	mg/kg	77		0.92	<0.07	21	13	8	0.92	0.1	0.2	<0.07			0.08	<0.07	0.15	0.25
Chrysene	mg/kg	15		2.5	<0.06	21	18	3	2.5	0.23	0.56	0.1			0.23	0.1	0.41	0.53
Dibenzo(ah)anthracene	mg/kg	0.24		0.27	<0.04	21	10	11	0.27	0.05	0.06	<0.04			<0.04	<0.04	<0.04	0.1
Fluoranthene	mg/kg	290		5.27	<0.08	21	18	3	5.27	0.25	0.84	0.14			0.3	0.1	0.66	0.74
Fluorene	mg/kg	170		0.23	<0.01	21	10	11	0.08	<0.01	0.01	<0.01			<0.01	<0.01	0.01	0.02
Indeno(123-cd)pyrene	mg/kg	27		1.67	<0.03	21	18	3	1.67	0.33	0.38	0.07			0.21	0.07	0.23	0.64
Naphthalene	mg/kg	13			<0.03	21	0	21	<0.03	<0.03	<0.03	<0.03			<0.03	<0.03	<0.03	<0.03
Phenanthrene	mg/kg	100		1.43	<0.03	21	17	4	1.4	0.07	0.27	0.04			0.12	<0.03	0.17	0.26
Pyrene	mg/kg	620		4.69	<0.07	21	18	3	4.69	0.27	0.76	0.13			0.27	0.1	0.58	0.74
Total PAH-16MS	mg/kg			26.5	<0.08	21	18	3	26.5	2.36	4.99	0.82			2.11	0.7	3.54	5.86
Volatile Organic Compounds (VOC)																		
1,1,1,2-Tetrachloroethane	mg/kg	1.2			<0.001	2	0	2	<0.001									
1,1,1-Trichloroethane	mg/kg	9			<0.001	2	0	2	<0.001									
1,1,2,2-Tetrachloroethane	mg/kg	1.6			<0.001	2	0	2	<0.001									
1,1,2-Trichloroethane	mg/kg	0.8			<0.001	2	0	2	<0.001									
1,1-Dichloroethane	mg/kg				<0.001	2	0	2	<0.001									
1,1-Dichloroethene	mg/kg	0.32			<0.001	2	0	2	<0.001									
1,1-Dichloropropene	mg/kg				<0.001	2	0	2	<0.001									
1,2,3-Trichlorobenzene	mg/kg				<0.003	2	0	2	<0.003									
1,2,3-Trichloropropane	mg/kg				<0.001	2	0	2	<0.001									
1,2,4-Trichlorobenzene	mg/kg				<0.003	2	0	2	<0.003									
1,2,4-Trimethylbenzene	mg/kg	1.8			<0.001	2	0	2	<0.001									
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	2	0	2	<0.002									
1,2-Dibromoethane	mg/kg				<0.001	2	0	2	<0.001									
1,2-Dichlorobenzene	mg/kg				<0.001	2	0	2	<0.001									
1,2-Dichloroethane	mg/kg	0.007			<0.002	2	0	2	<0.002									
1,2-Dichloropropane	mg/kg	0.034			<0.001	2	0	2	<0.001									
1,3,5-Trimethylbenzene	mg/kg	1.8			<0.001	2	0	2	<0.001									
1,3-Dichlorobenzene	mg/kg				<0.001	2	0	2	<0.001									
1,3-Dichloropropane	mg/kg				<0.001	2	0	2	<0.001									
1,4-Dichlorobenzene	mg/kg				<0.001	2	0	2	<0.001									
2,2-Dichloropropane	mg/kg				<0.001	2	0	2	<0.001									
2-Chlorotoluene	mg/kg				<0.001	2	0	2	<0.001									
4-Chlorotoluene	mg/kg				<0.001	2	0	2	<0.001									
4-Isopropyltoluene	mg/kg				<0.001	2	0	2	<0.001									
Benzene	mg/kg	0.2			<0.001	2	0	2	<0.001									
Bromobenzene	mg/kg				<0.001	2	0	2	<0.001									
Bromochloromethane	mg/kg				<0.005	2	0	2	<0.005									
Bromodichloromethane	mg/kg				<0.01	2	0	2	<0.01									
Bromoform	mg/kg				<0.001	2	0	2	<0.001									
Bromomethane	mg/kg				<0.001	2	0	2	<0.001									
Carbon Disulphide	mg/kg				<0.001	2	0	2	<0.001									
Carbon Tetrachloride	mg/kg	0.026			<0.001	2	0	2	<0.001									
Chlorobenzene	mg/kg				<0.001	2	0	2	<0.001									
Chloroethane	mg/kg	11.7			<0.001	2	0	2	<0.001									
Chloroform	mg/kg				<0.001	2	0	2	<0.001									
Chloromethane	mg/kg	0.012			<0.01	2	0	2	<0.01									
cis 1,2-Dichloroethene	mg/kg	0.16			<0.001	2	0	2	<0.001									
cis 1,3-Dichloropropene	mg/kg				<0.001	2	0	2	<0.001									
Dibromochloromethane	mg/kg				<0.003	2	0	2	<0.003									
Dibromomethane	mg/kg				<0.001	2	0	2	<0.001									

								Lab sample ID	20/07394/63	20/07394/14	20/07394/16	20/07394/40	20/07394/64	20/07394/18	20/07394/48	20/07394/19	20/07394/20
								Client sample ID	TP11 + TP13	TP12	TP14	TP15	TP15 +TP16	TP16	TP16	TP17	TP18
								Depth to top	0.4	1	0.5	0.8	0.5	1	0.5	0.5	1.5
								Depth to bottom	0.5				0.8				
								Date sampled	24/08/20	25/08/20	24/08/20	25/08/20	25/08/20	25/08/20	25/08/20	25/08/20	25/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete									
Benzo(a)pyrene	mg/kg	5		2.31	<0.04	21	18	3		0.14	0.08			0.09		1.34	0.73
Benzo(b)fluoranthene	mg/kg	2.6		2.65	<0.05	21	18	3		0.19	0.11			0.14		1.73	0.82
Benzo(ghi)perylene	mg/kg	310		1.28	<0.05	21	17	4		0.09	0.07			<0.05		0.68	0.47
Benzo(k)fluoranthene	mg/kg	77		0.92	<0.07	21	13	8		<0.07	<0.07			<0.07		0.58	0.31
Chrysene	mg/kg	15		2.5	<0.06	21	18	3		0.19	0.1			0.19		1.64	0.77
Dibenzo(ah)anthracene	mg/kg	0.24		0.27	<0.04	21	10	11		<0.04	<0.04			<0.04		0.15	0.16
Fluoranthene	mg/kg	290		5.27	<0.08	21	18	3		0.29	0.1			0.47		2.57	0.86
Fluorene	mg/kg	170		0.23	<0.01	21	10	11		<0.01	<0.01			0.04		0.02	0.02
Indeno(123-cd)pyrene	mg/kg	27		1.67	<0.03	21	18	3		0.11	0.07			0.06		0.88	0.69
Naphthalene	mg/kg	13			<0.03	21	0	21		<0.03	<0.03			<0.03		<0.03	<0.03
Phenanthrene	mg/kg	100		1.43	<0.03	21	17	4		0.15	<0.03			0.26		0.53	0.17
Pyrene	mg/kg	620		4.69	<0.07	21	18	3		0.28	0.09			0.35		2.32	0.8
Total PAH-16MS	mg/kg			26.5	<0.08	21	18	3		1.63	0.69			1.96		14.4	6.63
Volatile Organic Compounds (VOC)																	
1,1,1,2-Tetrachloroethane	mg/kg	1.2			<0.001	2	0	2						<0.001			
1,1,1-Trichloroethane	mg/kg	9			<0.001	2	0	2						<0.001			
1,1,2,2-Tetrachloroethane	mg/kg	1.6			<0.001	2	0	2						<0.001			
1,1,2-Trichloroethane	mg/kg	0.8			<0.001	2	0	2						<0.001			
1,1-Dichloroethane	mg/kg				<0.001	2	0	2						<0.001			
1,1-Dichloroethene	mg/kg	0.32			<0.001	2	0	2						<0.001			
1,1-Dichloropropene	mg/kg				<0.001	2	0	2						<0.001			
1,2,3-Trichlorobenzene	mg/kg				<0.003	2	0	2						<0.003			
1,2,3-Trichloropropane	mg/kg				<0.001	2	0	2						<0.001			
1,2,4-Trichlorobenzene	mg/kg				<0.003	2	0	2						<0.003			
1,2,4-Trimethylbenzene	mg/kg	1.8			<0.001	2	0	2						<0.001			
1,2-Dibromo-3-chloropropane	mg/kg				<0.002	2	0	2						<0.002			
1,2-Dibromoethane	mg/kg				<0.001	2	0	2						<0.001			
1,2-Dichlorobenzene	mg/kg				<0.001	2	0	2						<0.001			
1,2-Dichloroethane	mg/kg	0.007			<0.002	2	0	2						<0.002			
1,2-Dichloropropane	mg/kg	0.034			<0.001	2	0	2						<0.001			
1,3,5-Trimethylbenzene	mg/kg	1.8			<0.001	2	0	2						<0.001			
1,3-Dichlorobenzene	mg/kg				<0.001	2	0	2						<0.001			
1,3-Dichloropropane	mg/kg				<0.001	2	0	2						<0.001			
1,4-Dichlorobenzene	mg/kg				<0.001	2	0	2						<0.001			
2,2-Dichloropropane	mg/kg				<0.001	2	0	2						<0.001			
2-Chlorotoluene	mg/kg				<0.001	2	0	2						<0.001			
4-Chlorotoluene	mg/kg				<0.001	2	0	2						<0.001			
4-Isopropyltoluene	mg/kg				<0.001	2	0	2						<0.001			
Benzene	mg/kg	0.2			<0.001	2	0	2						<0.001			
Bromobenzene	mg/kg				<0.001	2	0	2						<0.001			
Bromochloromethane	mg/kg				<0.005	2	0	2						<0.005			
Bromodichloromethane	mg/kg				<0.01	2	0	2						<0.01			
Bromoform	mg/kg				<0.001	2	0	2						<0.001			
Bromomethane	mg/kg				<0.001	2	0	2						<0.001			
Carbon Disulphide	mg/kg				<0.001	2	0	2						<0.001			
Carbon Tetrachloride	mg/kg	0.026			<0.001	2	0	2						<0.001			
Chlorobenzene	mg/kg				<0.001	2	0	2						<0.001			
Chloroethane	mg/kg	11.7			<0.001	2	0	2						<0.001			
Chloroform	mg/kg				<0.001	2	0	2						<0.001			
Chloromethane	mg/kg	0.012			<0.01	2	0	2						<0.01			
cis 1,2-Dichloroethene	mg/kg	0.16			<0.001	2	0	2						<0.001			
cis 1,3-Dichloropropene	mg/kg				<0.001	2	0	2						<0.001			
Dibromochloromethane	mg/kg				<0.003	2	0	2						<0.003			
Dibromomethane	mg/kg				<0.001	2	0	2						<0.001			

									Lab sample ID	20/07394/55	20/08313/1	20/07494/1	20/07494/2	20/07494/3	20/07394/1	20/07394/3	20/07394/4	20/07394/25	20/07394/61
									Client sample ID	BH1	BH3	BH4	BH6	BH7	TP1	TP2	TP3	TP3	TP3 + TP4
									Depth to top	1.75	0.4	0.75	0.5	1.5	0.5	0.7	0.5	0.75	0.75
									Depth to bottom										0.8
									Date sampled	19/08/20	13/08/20	02/09/20	21/08/20	02/09/20	24/08/20	24/08/20	24/08/20	24/08/20	24/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects											
Dichlorodifluoromethane	mg/kg				<0.001	2	0	2											
Dichloromethane	mg/kg	0.62			<0.005	2	0	2											
Ethylbenzene	mg/kg	50			<0.001	2	0	2											
Hexachlorobutadiene	mg/kg				<0.001	2	0	2											
Isopropylbenzene	mg/kg				<0.001	2	0	2											
m & p Xylene	mg/kg	57			<0.001	2	0	2											
n-Butylbenzene	mg/kg				<0.001	2	0	2											
n-Propylbenzene	mg/kg				<0.001	2	0	2											
o-Xylene	mg/kg	61			<0.001	2	0	2											
sec-Butylbenzene	mg/kg				<0.001	2	0	2											
Styrene	mg/kg				<0.001	2	0	2											
tert-Butylbenzene	mg/kg				<0.002	2	0	2											
Tetrachloroethene	mg/kg	0.2			<0.001	2	0	2											
Toluene	mg/kg	130			<0.001	2	0	2											
trans 1,2-Dichloroethene	mg/kg	0.28			<0.001	2	0	2											
trans 1,3-Dichloropropene	mg/kg				<0.001	2	0	2											
Trichloroethene	mg/kg	0.02			<0.001	2	0	2											
Trichlorofluoromethane	mg/kg				<0.001	2	0	2											
Vinyl Chloride	mg/kg	0.0006			<0.001	2	0	2											
Other analytes																			
% Stones >10mm	% w/w			46	<0.1	25	18	7		9.3	18.1	8.6	7.9	19	4	22.3	25.7		25.7
pH	pH			10.84	6.73	25	25	0		7.96	7.92	8.38	6.73	10.12	8.12	8.01	8.14		8.16
Sulphate (acid soluble)	mg/kg			3500	<200	21	20	1		650	360	610	430	3500	300	<200	300		
Sulphate (water sol 2:1)	g/l			0.45	<0.01	21	17	4		0.13	0.02	0.05	0.02	0.45	0.12	0.05	<0.01		
Total Organic Carbon	% w/w			1.81	0.17	10	10	0		1.61	0.75								1.78
Converted to SOM (x / 0.58)	% w/w			3.12069	0.293103	10	10	0		2.77586207	1.29310345								3.06896552

									Lab sample ID	20/07394/5	20/07394/6	20/07394/8	20/07394/9	20/07394/30	20/07394/62	20/07394/10	20/07394/11	20/07394/12	20/07394/13
									Client sample ID	TP4	TP5	TP6	TP7	TP7	TP7 + TP8	TP8	TP9	TP10	TP11
									Depth to top	0.8	0.6	0.4	0.1	0.5	0.5	0.5	0.3	1.5	0.5
									Depth to bottom										
									Date sampled	24/08/20	24/08/20	26/08/20	26/08/20	24/08/20	26/08/20	26/08/20	26/08/20	25/08/20	24/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete											
Dichlorodifluoromethane	mg/kg				<0.001	2	0	2	<0.001										
Dichloromethane	mg/kg	0.62			<0.005	2	0	2	<0.005										
Ethylbenzene	mg/kg	50			<0.001	2	0	2	<0.001										
Hexachlorobutadiene	mg/kg				<0.001	2	0	2	<0.001										
Isopropylbenzene	mg/kg				<0.001	2	0	2	<0.001										
m & p Xylene	mg/kg	57			<0.001	2	0	2	<0.001										
n-Butylbenzene	mg/kg				<0.001	2	0	2	<0.001										
n-Propylbenzene	mg/kg				<0.001	2	0	2	<0.001										
o-Xylene	mg/kg	61			<0.001	2	0	2	<0.001										
sec-Butylbenzene	mg/kg				<0.001	2	0	2	<0.001										
Styrene	mg/kg				<0.001	2	0	2	<0.001										
tert-Butylbenzene	mg/kg				<0.002	2	0	2	<0.002										
Tetrachloroethene	mg/kg	0.2			<0.001	2	0	2	<0.001										
Toluene	mg/kg	130			<0.001	2	0	2	<0.001										
trans 1,2-Dichloroethene	mg/kg	0.28			<0.001	2	0	2	<0.001										
trans 1,3-Dichloropropene	mg/kg				<0.001	2	0	2	<0.001										
Trichloroethene	mg/kg	0.02			<0.001	2	0	2	<0.001										
Trichlorofluoromethane	mg/kg				<0.001	2	0	2	<0.001										
Vinyl Chloride	mg/kg	0.0006			<0.001	2	0	2	<0.001										
Other analytes																			
% Stones >10mm	% w/w			46	<0.1	25	18	7	36.3	14.6	13.2	20.6		45.8	46	33.7	<0.1	27.3	
pH	pH			10.84	6.73	25	25	0	8.07	7.76	7.86	7.8		10.84	8.39	7.92	8.11	8.16	
Sulphate (acid soluble)	mg/kg			3500	<200	21	20	1	370	490	360	1200			490	270	790	210	
Sulphate (water sol 2:1)	g/l			0.45	<0.01	21	17	4	0.04	0.12	<0.01	<0.01			0.04	<0.01	0.25	0.01	
Total Organic Carbon	% w/w			1.81	0.17	10	10	0						0.66	1.08	0.74			
Converted to SOM (x / 0.58)	% w/w			3.12069	0.293103	10	10	0						1.13793103	1.86206897	1.27586207			

									Lab sample ID	20/07394/63	20/07394/14	20/07394/16	20/07394/40	20/07394/64	20/07394/18	20/07394/48	20/07394/19	20/07394/20
									Client sample ID	TP11 + TP13	TP12	TP14	TP15	TP15 +TP16	TP16	TP16	TP17	TP18
									Depth to top	0.4	1	0.5	0.8	0.5	1	0.5	0.5	1.5
									Depth to bottom	0.5				0.8				
									Date sampled	24/08/20	25/08/20	24/08/20	25/08/20	25/08/20	25/08/20	25/08/20	25/08/20	25/08/20
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete										
Dichlorodifluoromethane	mg/kg				<0.001	2	0	2						<0.001				
Dichloromethane	mg/kg	0.62			<0.005	2	0	2						<0.005				
Ethylbenzene	mg/kg	50			<0.001	2	0	2						<0.001				
Hexachlorobutadiene	mg/kg				<0.001	2	0	2						<0.001				
Isopropylbenzene	mg/kg				<0.001	2	0	2						<0.001				
m & p Xylene	mg/kg	57			<0.001	2	0	2						<0.001				
n-Butylbenzene	mg/kg				<0.001	2	0	2						<0.001				
n-Propylbenzene	mg/kg				<0.001	2	0	2						<0.001				
o-Xylene	mg/kg	61			<0.001	2	0	2						<0.001				
sec-Butylbenzene	mg/kg				<0.001	2	0	2						<0.001				
Styrene	mg/kg				<0.001	2	0	2						<0.001				
tert-Butylbenzene	mg/kg				<0.002	2	0	2						<0.002				
Tetrachloroethene	mg/kg	0.2			<0.001	2	0	2						<0.001				
Toluene	mg/kg	130			<0.001	2	0	2						<0.001				
trans 1,2-Dichloroethene	mg/kg	0.28			<0.001	2	0	2						<0.001				
trans 1,3-Dichloropropene	mg/kg				<0.001	2	0	2						<0.001				
Trichloroethene	mg/kg	0.02			<0.001	2	0	2						<0.001				
Trichlorofluoromethane	mg/kg				<0.001	2	0	2						<0.001				
Vinyl Chloride	mg/kg	0.0006			<0.001	2	0	2						<0.001				
Other analytes																		
% Stones >10mm	% w/w			46	<0.1	25	18	7	<0.1	6.6	<0.1		<0.1	<0.1		<0.1	<0.1	
pH	pH			10.84	6.73	25	25	0	7.95	8.12	7.79		8.72	8.13		8.34	8.24	
Sulphate (acid soluble)	mg/kg			3500	<200	21	20	1		520	420			1300		200	210	
Sulphate (water sol 2:1)	g/l			0.45	<0.01	21	17	4		0.18	0.06			0.41		0.05	0.03	
Total Organic Carbon	% w/w			1.81	0.17	10	10	0	0.61		1.29		1.81			0.17		
Converted to SOM (x / 0.58)	% w/w			3.12069	0.293103	10	10	0	1.05172414		2.22413793		3.12068966			0.29310345		

Project name	North London Business Park
Project code	1921321
Client name	Comer Homes Group
Address	Oakleigh Road South Barnet N11 1NP
NGR	528088, 193479
Land use	Residential with home-grown produce
SOM	1%
GAC version	2019_00

Notes

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects	Lab sample ID	20/07394/21	20/07394/2	20/07394/7	20/07394/15	20/07394/17
									Client sample ID	BH5	TP2	TP6	TP13	TP15
									Depth to top	0.2	0.1	0.1	0.4	0.15
									Depth to bottom					
									Date sampled	25/08/20	24/08/20	26/08/20	24/08/20	25/08/20
Metals and Inorganics														
Arsenic	mg/kg	37		18	4	5	5	0		8	18	16	4	4
Cadmium	mg/kg	22		4.1	0.6	5	5	0		0.7	0.8	4.1	0.6	1
Chromium	mg/kg	910	21	48	26	5	5	0		26	28	48	36	29
Copper	mg/kg	2500		173	18	5	5	0		24	87	173	18	86
Lead	mg/kg	200		563	25	5	5	0		112	219	563	25	81
Mercury	mg/kg	39	0.2	2	0.24	5	5	0		1.33	2	1.56	0.24	0.38
Nickel	mg/kg	130		54	23	5	5	0		25	27	54	23	31
Selenium	mg/kg	258		3	<1	5	3	2		2	<1	2	<1	3
Zinc	mg/kg	3900		509	67	5	5	0		87	162	509	67	147
Asbestos														
Asbestos in soil						5	0	5		NAD	NAD	NAD	NAD	NAD
Petroleum Hydrocarbons														
Ali >C5-C6	mg/kg	42			<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C6-C8	mg/kg	100			<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
Ali >C8-C10	mg/kg	27			<1	5	0	5		<1	<1	<1	<1	<1
Ali >C10-C12	mg/kg	130	48		<1	5	0	5		<1	<1	<1	<1	<1
Ali >C12-C16	mg/kg	1100	24		<1	5	0	5		<1	<1	<1	<1	<1
Ali >C16-C21	mg/kg			10	<1	5	1	4		<1	<1	<1	10	<1
Ali >C21-C35	mg/kg			599	4	5	5	0		13	4	10	599	4
Ali >C16-C35 calculated	mg/kg	65000	8	609	4	5	5	0		13	4	10	609	4
Total Aliphatics	mg/kg			609	4	5	5	0		13	4	10	609	4
Aro >C5-C7	mg/kg				<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C7-C8	mg/kg				<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
Aro >C8-C10	mg/kg	30			<1	5	0	5		<1	<1	<1	<1	<1
Aro >C10-C12	mg/kg	80			<1	5	0	5		<1	<1	<1	<1	<1
Aro >C12-C16	mg/kg	140		4	<1	5	1	4		<1	<1	<1	4	<1
Aro >C16-C21	mg/kg	260		234	2	5	5	0		3	5	5	234	2
Aro >C21-C35	mg/kg	1100		428	17	5	5	0		38	25	30	428	17
Total Aromatics	mg/kg			666	19	5	5	0		41	30	34	666	19
TPH (Ali & Aro)	mg/kg			1270	23	5	5	0		54	34	44	1270	23
BTEX - Benzene	mg/kg	0.2			<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Toluene	mg/kg	130			<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - Ethyl Benzene	mg/kg	50			<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - o Xylene	mg/kg	61			<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - m & p Xylene	mg/kg	57			<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
MTBE	mg/kg	60			<0.01	5	0	5		<0.01	<0.01	<0.01	<0.01	<0.01
Polycyclic aromatic hydrocarbons														
Acenaphthene	mg/kg	230		0.1	<0.01	5	2	3		<0.01	0.02	0.1	<0.01	<0.01
Acenaphthylene	mg/kg	180		0.2	<0.01	5	2	3		<0.01	0.02	0.2	<0.01	<0.01
Anthracene	mg/kg	2400		1.29	<0.02	5	2	3		<0.02	0.05	1.29	<0.02	<0.02
Benzo(a)anthracene	mg/kg	7		2.58	<0.04	5	4	1		0.1	0.3	2.58	<0.04	0.15

								Lab sample ID	20/07394/21	20/07394/2	20/07394/7	20/07394/15	20/07394/17					
								Client sample ID	BH5	TP2	TP6	TP13	TP15					
								Depth to top	0.2	0.1	0.1	0.4	0.15					
								Depth to bottom										
								Date sampled	25/08/20	24/08/20	26/08/20	24/08/20	25/08/20					
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects										
Benzo(a)pyrene	mg/kg	5		1.75	<0.04	5	4	1	0.13	0.31	1.75	<0.04	0.16					
Benzo(b)fluoranthene	mg/kg	2.6		2.02	<0.05	5	4	1	0.13	0.44	2.02	<0.05	0.22					
Benzo(ghi)perylene	mg/kg	310		0.89	<0.05	5	4	1	0.11	0.23	0.89	<0.05	0.12					
Benzo(k)fluoranthene	mg/kg	77		0.69	<0.07	5	2	3	<0.07	0.16	0.69	<0.07	<0.07					
Chrysene	mg/kg	15		2.37	<0.06	5	4	1	0.13	0.4	2.37	<0.06	0.19					
Dibenzo(ah)anthracene	mg/kg	0.24		0.15	<0.04	5	2	3	<0.04	0.04	0.15	<0.04	<0.04					
Fluoranthene	mg/kg	290		8.67	<0.08	5	4	1	0.16	0.56	8.67	<0.08	0.21					
Fluorene	mg/kg	170		0.31	<0.01	5	2	3	<0.01	0.01	0.31	<0.01	<0.01					
Indeno(123-cd)pyrene	mg/kg	27		1.11	<0.03	5	4	1	0.13	0.27	1.11	<0.03	0.12					
Naphthalene	mg/kg	13			<0.03	5	0	5	<0.03	<0.03	<0.03	<0.03	<0.03					
Phenanthrene	mg/kg	100		4.4	<0.03	5	4	1	0.05	0.27	4.4	<0.03	0.06					
Pyrene	mg/kg	620		7.48	<0.07	5	4	1	0.15	0.5	7.48	<0.07	0.2					
Total PAH-16MS	mg/kg			34	<0.08	5	4	1	1.09	3.58	34	<0.08	1.43					
Volatile Organic Compounds (VOC)																		
1,1,1,2-Tetrachloroethane	mg/kg	1.2				0	0	0										
1,1,1-Trichloroethane	mg/kg	9				0	0	0										
1,1,2,2-Tetrachloroethane	mg/kg	1.6				0	0	0										
1,1,2-Trichloroethane	mg/kg	0.8				0	0	0										
1,1-Dichloroethane	mg/kg					0	0	0										
1,1-Dichloroethene	mg/kg	0.32				0	0	0										
1,1-Dichloropropene	mg/kg					0	0	0										
1,2,3-Trichlorobenzene	mg/kg					0	0	0										
1,2,3-Trichloropropane	mg/kg					0	0	0										
1,2,4-Trichlorobenzene	mg/kg					0	0	0										
1,2,4-Trimethylbenzene	mg/kg	1.8				0	0	0										
1,2-Dibromo-3-chloropropane	mg/kg					0	0	0										
1,2-Dibromoethane	mg/kg					0	0	0										
1,2-Dichlorobenzene	mg/kg					0	0	0										
1,2-Dichloroethane	mg/kg	0.007				0	0	0										
1,2-Dichloropropane	mg/kg	0.034				0	0	0										
1,3,5-Trimethylbenzene	mg/kg	1.8				0	0	0										
1,3-Dichlorobenzene	mg/kg					0	0	0										
1,3-Dichloropropane	mg/kg					0	0	0										
1,4-Dichlorobenzene	mg/kg					0	0	0										
2,2-Dichloropropane	mg/kg					0	0	0										
2-Chlorotoluene	mg/kg					0	0	0										
4-Chlorotoluene	mg/kg					0	0	0										
4-Isopropyltoluene	mg/kg					0	0	0										
Benzene	mg/kg	0.2				0	0	0										
Bromobenzene	mg/kg					0	0	0										
Bromochloromethane	mg/kg					0	0	0										
Bromodichloromethane	mg/kg					0	0	0										
Bromoform	mg/kg					0	0	0										
Bromomethane	mg/kg					0	0	0										
Carbon Disulphide	mg/kg					0	0	0										
Carbon Tetrachloride	mg/kg	0.026				0	0	0										
Chlorobenzene	mg/kg					0	0	0										
Chloroethane	mg/kg	11.7				0	0	0										
Chloroform	mg/kg					0	0	0										
Chloromethane	mg/kg	0.012				0	0	0										
cis 1,2-Dichloroethene	mg/kg	0.16				0	0	0										
cis 1,3-Dichloropropene	mg/kg					0	0	0										
Dibromochloromethane	mg/kg					0	0	0										
Dibromomethane	mg/kg					0	0	0										

								Lab sample ID	20/07394/21	20/07394/2	20/07394/7	20/07394/15	20/07394/17					
								Client sample ID	BH5	TP2	TP6	TP13	TP15					
								Depth to top	0.2	0.1	0.1	0.4	0.15					
								Depth to bottom										
								Date sampled	25/08/20	24/08/20	26/08/20	24/08/20	25/08/20					
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects											
Dichlorodifluoromethane	mg/kg					0	0	0											
Dichloromethane	mg/kg	0.62				0	0	0											
Ethylbenzene	mg/kg	50				0	0	0											
Hexachlorobutadiene	mg/kg					0	0	0											
Isopropylbenzene	mg/kg					0	0	0											
m & p Xylene	mg/kg	57				0	0	0											
n-Butylbenzene	mg/kg					0	0	0											
n-Propylbenzene	mg/kg					0	0	0											
o-Xylene	mg/kg	61				0	0	0											
sec-Butylbenzene	mg/kg					0	0	0											
Styrene	mg/kg					0	0	0											
tert-Butylbenzene	mg/kg					0	0	0											
Tetrachloroethene	mg/kg	0.2				0	0	0											
Toluene	mg/kg	130				0	0	0											
trans 1,2-Dichloroethene	mg/kg	0.28				0	0	0											
trans 1,3-Dichloropropene	mg/kg					0	0	0											
Trichloroethene	mg/kg	0.02				0	0	0											
Trichlorofluoromethane	mg/kg					0	0	0											
Vinyl Chloride	mg/kg	0.0006				0	0	0											
Other analytes																			
% Stones >10mm	% w/w			19.2	6.1	5	5	0	17.9	11.2	19.2	6.1	10.7						
pH	pH			7.95	6.91	5	5	0	7.95	6.91	7.77	7.2	7.65						
Sulphate (acid soluble)	mg/kg			1400	290	5	5	0	1400	450	670	290	820						
Sulphate (water sol 2:1)	g/l			0.02	<0.01	5	2	3	0.02	<0.01	<0.01	0.02	<0.01						
Total Organic Carbon	% w/w					0	0	0											
Converted to SOM (x / 0.58)	% w/w					0	0	0											

APPENDIX Q
GQRA DATA SCREENING TABLES - WATERS

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/08709
Issue Number: 1 **Date:** 27 October, 2020

Client:
RSK Environment Ltd Hemel
18 Frogmore Road
Hemel Hempstead
Hertfordshire
UK
HP3 9RT

Project Manager: Alex Marcelo
Project Name: North London Business Park (N.L.B.P)
Project Ref: 1921321
Order No: N/A
Date Samples Received: 14/10/20
Date Instructions Received: 14/10/20
Date Analysis Completed: 24/10/20

Prepared by:

Melanie Marshall
Laboratory Coordinator

Approved by:

Danielle Brierley
Client Manager

UKAS TESTING
1247

Envirolab Job Number: 20/08709

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08709/1	20/08709/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SWS1	SWS2								
Depth to Top										
Depth To Bottom										
Date Sampled	09-Oct-20	09-Oct-20								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
pH (w)$_A^{\#}$	7.71	7.65						pH	0.01	A-T-031w
Sulphate (w)$_A^{\#}$	41	41						mg/l	1	A-T-026w
Arsenic (dissolved)$_A^{\#}$	<1	<1						µg/l	1	A-T-025w
Cadmium (dissolved)$_A^{\#}$	<0.2	<0.2						µg/l	0.2	A-T-025w
Copper (dissolved)$_A^{\#}$	2	3						µg/l	1	A-T-025w
Chromium (dissolved)$_A^{\#}$	<1	2						µg/l	1	A-T-025w
Lead (dissolved)$_A^{\#}$	1	<1						µg/l	1	A-T-025w
Mercury (dissolved)$_A^{\#}$	<0.1	<0.1						µg/l	0.1	A-T-025w
Nickel (dissolved)$_A^{\#}$	2	2						µg/l	1	A-T-025w
Selenium (dissolved)$_A^{\#}$	1	1						µg/l	1	A-T-025w
Zinc (dissolved)$_A^{\#}$	2	7						µg/l	1	A-T-025w

Envirolab Job Number: 20/08709

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08709/1	20/08709/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SWS1	SWS2								
Depth to Top										
Depth To Bottom										
Date Sampled	09-Oct-20	09-Oct-20								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
PAH 16MS (w)										
Acenaphthene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Acenaphthylene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Anthracene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(a)anthracene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(a)pyrene (w)$_A^{\#}$	0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w)$_A^{\#}$	0.01	<0.01						µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Chrysene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Fluoranthene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Fluorene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Naphthalene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Phenanthrene (w)$_A^{\#}$	<0.01	<0.01						µg/l	0.01	A-T-019w
Pyrene (w)$_A^{\#}$	0.02	<0.01						µg/l	0.01	A-T-019w
Total PAH 16MS (w)$_A^{\#}$	0.12	<0.01						µg/l	0.01	A-T-019w

Envirolab Job Number: 20/08709

Client Project Name: North London Business Park (N.L.B.P)

Client Project Ref: 1921321

Lab Sample ID	20/08709/1	20/08709/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SWS1	SWS2								
Depth to Top										
Depth To Bottom										
Date Sampled	09-Oct-20	09-Oct-20								
Sample Type	Water - EW	Water - EW								
Sample Matrix Code	N/A	N/A								
TPH CWG (w)										
Ali >C5-C6 $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
Ali >C6-C8 $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
Ali >C8-C10 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Ali >C10-C12 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Ali >C12-C16 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Ali >C16-C21 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Ali >C21-C35 $(w)_A^{\#}$	15	<5						µg/l	5	A-T-055w
Total Aliphatics $(w)_A^{\#}$	15	<5						µg/l	5	A-T-055w
Aro >C5-C7 $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
Aro >C7-C8 $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
Aro >C8-C10 $(w)_A$	<5	<5						µg/l	5	A-T-055w
Aro >C10-C12 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Aro >C12-C16 $(w)_A^{\#}$	<5	<5						µg/l	5	A-T-055w
Aro >C16-C21 $(w)_A^{\#}$	7	<5						µg/l	5	A-T-055w
Aro >C21-C35 $(w)_A^{\#}$	29	<10						µg/l	10	A-T-055w
Total Aromatics $(w)_A$	36	<10						µg/l	10	A-T-055w
TPH (Ali & Aro >C5-C35) $(w)_A$	51	<10						µg/l	10	A-T-055w
BTEX - Benzene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
BTEX - Toluene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
BTEX - Ethyl Benzene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
BTEX - m & p Xylene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
BTEX - o Xylene $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w
MTBE $(w)_A^{\#}$	<1	<1						µg/l	1	A-T-022w

REPORT NOTES

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: RSK Environment Ltd Hemel, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, UK, HP3 9RT

Project: North London Business Park (N.L.B.P)

Clients Project No: 1921321

Project No: 20/08709

Date Received: 14/10/2020 (am)

Cool Box Temperatures (°C): 9.6

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

APPENDIX R
WM3 ASSESSMENT

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		BH3								
Depth (m)		0.40								
Envirolab reference		20/08313/1								
% Moisture	%									
pH (soil)		7.92								
pH (leachate)										
Arsenic	mg/kg	13								
Cadmium	mg/kg	1								
Copper	mg/kg	51								
CrVI or Chromium	mg/kg	37								
Lead	mg/kg	61								
Mercury	mg/kg	1								
Nickel	mg/kg	34								
Selenium	mg/kg	1								
Zinc	mg/kg	100								
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									

PAH (Input Total PAH **OR** individual PAH results)

Acenaphthene	mg/kg	0.01								
Acenaphthylene	mg/kg	0.01								
Anthracene	mg/kg	0.02								
Benzo(a)anthracene	mg/kg	0.18								
Benzo(a)pyrene	mg/kg	0.24								
Benzo(b)fluoranthene	mg/kg	0.27								
Benzo(ghi)perylene	mg/kg	0.14								
Benzo(k)fluoranthene	mg/kg	0.09								
Chrysene	mg/kg	0.24								
Dibenzo(ah)anthracene	mg/kg	0.04								
Fluoranthene	mg/kg	0.25								
Fluorene	mg/kg	0.01								
Indeno(123cd)pyrene	mg/kg	0.16								
Naphthalene	mg/kg	0.03								
Phenanthrene	mg/kg	0.07								
Pyrene	mg/kg	0.25								
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									

TPH

Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil										
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg	16.0								
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									

Phenols Input Total Phenols HPLC **OR** individual Phenol results.

Phenol	mg/kg	0.0								
Cresols	mg/kg	0.0								
Xylenols	mg/kg	0.0								
Resourcinol	mg/kg	0.0								
Phenols Total by HPLC	mg/kg	0.0								

BTEX Input Total BTEX **OR** individual BTEX results.

Benzene	mg/kg									
Toluene	mg/kg									
Ethylbenzene	mg/kg									
Xylenes	mg/kg									
Total BTEX	mg/kg									

PCBs (POPs)

PCBs Total (eg EC7/WHO12)	mg/kg									

PBBs (POPs)

Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH3								
Depth (m)	0.40								
Envirolab reference	20/08313/1								

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH3								
Depth (m)	0.40								
Envirolab reference	20/08313/1								
Asbestos in Soil	Thresholds								
Asbestos detected in Soil (enter Y or N)	Y	N							
		If Asbestos in Soil above is "Y", the soil is Hazardous Waste HP5 and HP7							
Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%							
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
		If Asbestos in Soil above is "Y", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.							
Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y								
		If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05. Therefore, if Asbestos in Soil above is "Y", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.							
		Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.							
		All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.							
Hazardous Property	**Thresholds**	**Cut Off Value**	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**							
Corrosive HP8	≥5%	<1%	0.00882	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥10%	<1%	0.00748	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥20%	<1%	0.01267	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00710	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.00610	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Aspiration Toxicity HP5	≥10%		0.00160	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥0.25%	<0.1%	0.00178	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥5%	<0.1%	0.00725	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥25%	<1%	0.01888	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥0.25%	<0.1%	0.00007	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥2.5%	<0.1%	0.00710	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥55%	<1%	0.00011	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥0.5%	<0.1%	0.00728	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥3.5%	<0.1%	0.00014	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥22.5%	<1%	0.01873	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.00710	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		7.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toxic for Reproduction HP10	≥0.3%		0.00687	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Toxic for Reproduction HP10	≥3%		0.00710	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11	≥0.1%		0.00710	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00687	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00710	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH			BH3								
Depth (m)			0.40								
Envirolab reference			20/08313/1								
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.04056	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% / 1.0%	0.04216	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% / 1.0%	4.07144	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		TP1	TP2	TP2	TP3	TP4	TP5	TP6	TP6	TP7
Depth (m)		0.50	0.10	0.70	0.50	0.80	0.60	0.10	0.40	0.10
Envirolab reference		20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	20/07394/8	20/07394/9
% Moisture	%									
pH (soil)		8.12	6.91	8.01	8.14	8.07	7.76	7.77	7.86	7.80
pH (leachate)										
Arsenic	mg/kg	2	18	2	4	3	2	16	6	8
Cadmium	mg/kg	0.7	0.8	0.5	0.7	1.9	0.6	4.1	1.0	0.7
Copper	mg/kg	75.0	87.0	23.0	302.0	3,550.0	97.0	173.0	419.0	35.0
CrVI or Chromium	mg/kg	54.0	28.0	43.0	36.0	48.0	42.0	48.0	40.0	33.0
Lead	mg/kg	18.0	219.0	19.0	115.0	459.0	49.0	563.0	172.0	40.0
Mercury	mg/kg	0.8	2.0	0.3	0.6	0.5	0.6	1.6	0.7	0.8
Nickel	mg/kg	47.0	27.0	26.0	45.0	142.0	34.0	54.0	54.0	33.0
Selenium	mg/kg	2.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	5.0
Zinc	mg/kg	104	162	61	239	701	114	509	290	98
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									
PAH (Input Total PAH **OR** individual PAH results)										
Acenaphthene	mg/kg	0.01	0.02	0.01	0.01	0.11	0.01	0.10	0.01	0.01
Acenaphthylene	mg/kg	0.01	0.02	0.01	0.06	0.09	0.02	0.20	0.02	0.01
Anthracene	mg/kg	0.02	0.05	0.02	0.06	0.44	0.03	1.29	0.05	0.02
Benzo(a)anthracene	mg/kg	0.04	0.30	0.04	0.29	2.85	0.17	2.58	0.47	0.08
Benzo(a)pyrene	mg/kg	0.04	0.31	0.04	0.42	2.31	0.25	1.75	0.44	0.08
Benzo(b)fluoranthene	mg/kg	0.05	0.44	0.05	0.50	2.65	0.29	2.02	0.61	0.12
Benzo(ghi)perylene	mg/kg	0.05	0.23	0.05	0.36	1.28	0.30	0.89	0.31	0.06
Benzo(k)fluoranthene	mg/kg	0.07	0.16	0.07	0.15	0.92	0.10	0.69	0.20	0.07
Chrysene	mg/kg	0.06	0.40	0.06	0.36	2.50	0.23	2.37	0.56	0.10
Dibenzo(ah)anthracene	mg/kg	0.04	0.04	0.04	0.06	0.27	0.05	0.15	0.06	0.04
Fluoranthene	mg/kg	0.08	0.56	0.08	0.40	5.27	0.25	8.67	0.84	0.14
Fluorene	mg/kg	0.01	0.01	0.01	0.01	0.08	0.01	0.31	0.01	0.01
Indeno(123cd)pyrene	mg/kg	0.03	0.27	0.03	0.41	1.67	0.33	1.11	0.38	0.07
Naphthalene	mg/kg	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Phenanthrene	mg/kg	0.04	0.27	0.03	0.07	1.40	0.07	4.40	0.27	0.04
Pyrene	mg/kg	0.07	0.50	0.07	0.42	4.69	0.27	7.48	0.76	0.13
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									
TPH										
Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil	mg/kg									
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg	2.0	34.0	15.0	113.0	217.0	20.0	44.0	37.0	36.0
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									
Phenols Input Total Phenols HPLC **OR** individual Phenol results.										
Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									
BTEX Input Total BTEX **OR** individual BTEX results.										
Benzene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Toluene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Ethylbenzene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Xylenes	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total BTEX	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PCBs (POPs)										
PCBs Total (eg EC7/WHO12)	mg/kg									
PBBs (POPs)										
Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP1	TP2	TP2	TP3	TP4	TP5	TP6	TP6	TP7
Depth (m)	0.50	0.10	0.70	0.50	0.80	0.60	0.10	0.40	0.10
Envirolab reference	20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	20/07394/8	20/07394/9

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP1	TP2	TP2	TP3	TP4	TP5	TP6	TP6	TP7
Depth (m)	0.50	0.10	0.70	0.50	0.80	0.60	0.10	0.40	0.10
Envirolab reference	20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	20/07394/8	20/07394/9

Asbestos in Soil	Thresholds									
Asbestos detected in Soil (enter Y or N)	Y	N	N	N	N	N	N	N	N	N

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y								

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.
All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.01063	0.00775	0.00852	0.00744	0.00961	0.00833	0.01133	0.00847	0.00739
Irritant HP4	≥10%	<1%	0.00874	0.01221	0.00286	0.03465	0.40155	0.01123	0.02166	0.04814	0.00501
Irritant HP4	≥20%	<1%	0.01799	0.01538	0.00787	0.04328	0.43051	0.01787	0.03181	0.05837	0.01065
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00000	0.00003	0.00000	0.00001	0.00014	0.00001	0.00044	0.00003	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.01037	0.00545	0.00826	0.00909	0.02868	0.00806	0.01091	0.01091	0.00667
Specifc Target Organ Toxicity HP5	≥10%		0.00180	0.02190	0.00190	0.01150	0.04590	0.00490	0.05630	0.01720	0.00400
Aspiration Toxicity HP5	≥10%		0.00021	0.00341	0.00151	0.01131	0.02171	0.00201	0.00441	0.00371	0.00361
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00035	0.00258	0.00029	0.00059	0.00045	0.00032	0.00227	0.00086	0.00114
Acute Toxicity HP6	≥5%	<0.1%	0.01065	0.00552	0.00840	0.00705	0.00950	0.00835	0.00950	0.00796	0.00704
Acute Toxicity HP6	≥25%	<1%	0.01986	0.03735	0.00982	0.05484	0.47660	0.02283	0.08850	0.07567	0.01471
Acute Toxicity HP6	≥0.25%	<0.1%	0.00008	0.00020	0.00003	0.00006	0.00005	0.00006	0.00016	0.00007	0.00008
Acute Toxicity HP6	≥2.5%	<0.1%	0.01037	0.00538	0.00826	0.00691	0.00922	0.00806	0.00922	0.00768	0.00634
Acute Toxicity HP6	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00007	0.00008	0.00005	0.00007	0.00019	0.00006	0.00041	0.00010	0.00007
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.01052	0.00566	0.00834	0.00704	0.00946	0.00818	0.00978	0.00785	0.00649
Acute Toxicity HP6	≥3.5%	<0.1%	0.00028	0.00014	0.00014	0.00014	0.00028	0.00028	0.00028	0.00028	0.00071
Acute Toxicity HP6	≥22.5%	<1%	0.01977	0.03719	0.00975	0.05472	0.47574	0.02273	0.08676	0.07546	0.01462
Carcinogenic HP7	≥0.1%		0.01037	0.02190	0.00826	0.01150	0.04590	0.00806	0.05630	0.01720	0.00667
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00000	0.00003	0.00000	0.00004	0.00017	0.00003	0.00011	0.00004	0.00001
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		8.12	6.91	8.01	8.14	8.07	7.76	7.77	7.86	7.80
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		8.12	6.91	8.01	8.14	8.07	7.76	7.77	7.86	7.80
Toxic for Reproduction HP10	≥0.3%		0.00949	0.02190	0.00525	0.01150	0.04590	0.00687	0.05630	0.01720	0.00667
Toxic for Reproduction HP10	≥3%		0.01037	0.00538	0.00826	0.01130	0.02170	0.00806	0.00922	0.00768	0.00634
Mutagenic HP11	≥0.1%		0.01037	0.00538	0.00826	0.01130	0.02170	0.00806	0.00922	0.00768	0.00634
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00949	0.00545	0.00525	0.00909	0.02868	0.00687	0.01091	0.01091	0.00667
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.01037	0.00545	0.00826	0.00909	0.02868	0.00806	0.01091	0.01091	0.00667

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH			TP1	TP2	TP2	TP3	TP4	TP5	TP6	TP6	TP7
Depth (m)			0.50	0.10	0.70	0.50	0.80	0.60	0.10	0.40	0.10
Envirolab reference			20/07394/1	20/07394/2	20/07394/3	20/07394/4	20/07394/5	20/07394/6	20/07394/7	20/07394/8	20/07394/9
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.04390	0.06594	0.02618	0.09262	0.57597	0.04591	0.16583	0.12109	0.03521
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.04410	0.06934	0.02768	0.10392	0.59768	0.04792	0.17024	0.12480	0.03882
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	4.39180	6.62800	2.63270	9.37460	**57.81420**	4.61110	16.62710	12.14620	3.55730
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.

Haswaste, developed by Dr. Iain Haslock.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
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Site Code and Name										
TP/WS/BH		TP8	TP9	TP10	TP11	TP12	TP13	TP14	TP15	TP16
Depth (m)		0.50	0.30	1.50	0.50	1.00	0.40	0.50	0.15	1.00
Envirolab reference		20/07394/10	20/07394/11	20/07394/12	20/07394/13	20/07394/14	20/07394/15	20/07394/16	20/07394/17	20/07394/18
% Moisture	%									
pH (soil)		8.39	7.92	8.11	8.16	8.12	7.20	7.79	7.65	8.13
pH (leachate)										
Arsenic	mg/kg	4	11	3	4	2	4	3	4	2
Cadmium	mg/kg	0.5	0.7	1.8	0.6	1.2	0.6	0.7	1.0	1.4
Copper	mg/kg	36.0	33.0	528.0	69.0	129.0	18.0	67.0	86.0	344.0
CrVI or Chromium	mg/kg	21.0	21.0	53.0	31.0	48.0	36.0	43.0	29.0	46.0
Lead	mg/kg	160.0	52.0	181.0	47.0	55.0	25.0	102.0	81.0	73.0
Mercury	mg/kg	0.9	0.3	0.8	0.4	0.3	0.2	0.4	0.4	0.4
Nickel	mg/kg	19.0	25.0	79.0	30.0	53.0	23.0	28.0	31.0	60.0
Selenium	mg/kg	1.0	1.0	3.0	1.0	2.0	1.0	1.0	3.0	4.0
Zinc	mg/kg	104	111	362	88	131	67	114	147	191
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									
PAH (Input Total PAH **OR** individual PAH results)										
Acenaphthene	mg/kg	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.13
Acenaphthylene	mg/kg	0.02	0.01	0.01	0.03	0.01	0.01	0.01	0.01	0.01
Anthracene	mg/kg	0.04	0.02	0.06	0.07	0.03	0.02	0.02	0.02	0.08
Benzo(a)anthracene	mg/kg	0.18	0.08	0.32	0.43	0.14	0.04	0.07	0.15	0.15
Benzo(a)pyrene	mg/kg	0.19	0.08	0.27	0.67	0.14	0.04	0.08	0.16	0.09
Benzo(b)fluoranthene	mg/kg	0.26	0.10	0.48	0.81	0.19	0.05	0.11	0.22	0.14
Benzo(ghi)perylene	mg/kg	0.20	0.06	0.18	0.55	0.09	0.05	0.07	0.12	0.05
Benzo(k)fluoranthene	mg/kg	0.08	0.07	0.15	0.25	0.07	0.07	0.07	0.07	0.07
Chrysene	mg/kg	0.23	0.10	0.41	0.53	0.19	0.06	0.10	0.19	0.19
Dibenzo(ah)anthracene	mg/kg	0.04	0.04	0.04	0.10	0.04	0.04	0.04	0.04	0.04
Fluoranthene	mg/kg	0.30	0.10	0.66	0.74	0.29	0.08	0.10	0.21	0.47
Fluorene	mg/kg	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.04
Indeno(123cd)pyrene	mg/kg	0.21	0.07	0.23	0.64	0.11	0.03	0.07	0.12	0.06
Naphthalene	mg/kg	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Phenanthrene	mg/kg	0.12	0.03	0.17	0.26	0.15	0.03	0.03	0.06	0.26
Pyrene	mg/kg	0.27	0.10	0.58	0.74	0.28	0.07	0.09	0.20	0.35
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									
TPH										
Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil	mg/kg									
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg	142.0	11.0	35.0	40.0	17.0	1,270.0	36.0	23.0	71.0
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									
Phenols Input Total Phenols HPLC **OR** individual Phenol results.										
Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									
BTEX Input Total BTEX **OR** individual BTEX results.										
Benzene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Toluene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Ethylbenzene	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Xylenes	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total BTEX	mg/kg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PCBs (POPs)										
PCBs Total (eg EC7/WHO12)	mg/kg									
PBBs (POPs)										
Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP8	TP9	TP10	TP11	TP12	TP13	TP14	TP15	TP16
Depth (m)	0.50	0.30	1.50	0.50	1.00	0.40	0.50	0.15	1.00
Envirolab reference	20/07394/10	20/07394/11	20/07394/12	20/07394/13	20/07394/14	20/07394/15	20/07394/16	20/07394/17	20/07394/18

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP8	TP9	TP10	TP11	TP12	TP13	TP14	TP15	TP16
Depth (m)	0.50	0.30	1.50	0.50	1.00	0.40	0.50	0.15	1.00
Envirolab reference	20/07394/10	20/07394/11	20/07394/12	20/07394/13	20/07394/14	20/07394/15	20/07394/16	20/07394/17	20/07394/18
Asbestos in Soil	Thresholds								
Asbestos detected in Soil (enter Y or N)	Y	N	N	N	N	N	N	N	N	N

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y								

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.
All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.00456	0.00548	0.01057	0.00648	0.00948	0.00744	0.00865	0.00610	0.00910
Irritant HP4	≥10%	<1%	0.00460	0.00518	0.06006	0.00833	0.01484	0.00256	0.00797	0.01025	0.03914
Irritant HP4	≥20%	<1%	0.00796	0.00880	0.07571	0.01397	0.02534	0.00670	0.01325	0.01601	0.05108
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00001	0.00000	0.00002	0.00003	0.00002	0.00000	0.00000	0.00001	0.00003
Specifc Target Organ Toxicity HP5	≥1%		0.00403	0.00505	0.01596	0.00606	0.01071	0.00691	0.00826	0.00626	0.01212
Specifc Target Organ Toxicity HP5	≥10%		0.01600	0.00520	0.01810	0.00470	0.00550	0.12700	0.01020	0.00810	0.00730
Aspiration Toxicity HP5	≥10%		0.01421	0.00111	0.00351	0.00401	0.00171	0.12701	0.00361	0.00231	0.00711
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00062	0.00149	0.00047	0.00056	0.00030	0.00055	0.00044	0.00057	0.00030
Acute Toxicity HP6	≥5%	<0.1%	0.00417	0.00417	0.01060	0.00609	0.00950	0.00705	0.00840	0.00599	0.00940
Acute Toxicity HP6	≥25%	<1%	0.02400	0.01407	0.09399	0.01872	0.03095	0.00926	0.02351	0.02421	0.05851
Acute Toxicity HP6	≥0.25%	<0.1%	0.00009	0.00003	0.00008	0.00004	0.00003	0.00002	0.00004	0.00004	0.00004
Acute Toxicity HP6	≥2.5%	<0.1%	0.00403	0.00403	0.01018	0.00595	0.00922	0.00691	0.00826	0.00557	0.00883
Acute Toxicity HP6	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00005	0.00007	0.00018	0.00006	0.00012	0.00006	0.00007	0.00010	0.00014
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.00417	0.00414	0.01043	0.00605	0.00937	0.00700	0.00837	0.00571	0.00901
Acute Toxicity HP6	≥3.5%	<0.1%	0.00014	0.00014	0.00042	0.00014	0.00028	0.00014	0.00014	0.00042	0.00056
Acute Toxicity HP6	≥22.5%	<1%	0.02391	0.01398	0.09373	0.01856	0.03079	0.00918	0.02343	0.02408	0.05830
Carcinogenic HP7	≥0.1%		0.01600	0.00520	0.01810	0.00606	0.01071	**0.12700**	0.01020	0.00810	0.01212
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00002	0.00001	0.00002	0.00006	0.00001	0.00000	0.00001	0.00001	0.00001
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		8.39	7.92	8.11	8.16	8.12	7.20	7.79	7.65	8.13
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		8.39	7.92	8.11	8.16	8.12	7.20	7.79	7.65	8.13
Toxic for Reproduction HP10	≥0.3%		0.01600	0.00520	0.01810	0.00606	0.01071	0.00465	0.01020	0.00810	0.01212
Toxic for Reproduction HP10	≥3%		0.01420	0.00403	0.01018	0.00595	0.00922	0.12700	0.00826	0.00557	0.00883
Mutagenic HP11	≥0.1%		0.01420	0.00403	0.01018	0.00595	0.00922	**0.12700**	0.00826	0.00557	0.00883
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00384	0.00505	0.01596	0.00606	0.01071	0.00465	0.00566	0.00626	0.01212
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00403	0.00505	0.01596	0.00606	0.01071	0.00691	0.00826	0.00626	0.01212

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH			TP8	TP9	TP10	TP11	TP12	TP13	TP14	TP15	TP16
Depth (m)			0.50	0.30	1.50	0.50	1.00	0.40	0.50	0.15	1.00
Envirolab reference			20/07394/10	20/07394/11	20/07394/12	20/07394/13	20/07394/14	20/07394/15	20/07394/16	20/07394/17	20/07394/18
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.04194	0.03367	0.15056	0.03680	0.05724	0.02528	0.04666	0.04926	0.09221
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.05615	0.03477	0.15406	0.04080	0.05894	0.15228	0.05027	0.05157	0.09932
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	4.33640	3.37760	15.09100	3.71960	5.74080	3.79800	4.70230	4.94910	9.29240
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contac

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
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Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		TP17	TP18	BH5	TP3	TP7	TP15	TP16	BH1	TP3 + TP4
Depth (m)		0.50	1.50	0.20	0.75	0.50	0.80	0.50	1.75	0.75
Envirolab reference		20/07394/19	20/07394/20	20/07394/21	20/07394/25	20/07394/30	20/07394/40	20/07394/48	20/07394/55	20/07394/61
% Moisture	%									
pH (soil)		8.34	8.24	7.95					7.96	8.16
pH (leachate)										
Arsenic	mg/kg	3	1	8					5	
Cadmium	mg/kg	0.6	0.8	0.7					0.5	
Copper	mg/kg	32.0	116.0	24.0					55.0	
CrVI or Chromium	mg/kg	39.0	50.0	26.0					36.0	
Lead	mg/kg	17.0	26.0	112.0					48.0	
Mercury	mg/kg	0.2	0.2	1.3					0.3	
Nickel	mg/kg	39.0	48.0	25.0					28.0	
Selenium	mg/kg	1.0	2.0	2.0					1.0	
Zinc	mg/kg	80	99	87					98	
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									
PAH (Input Total PAH **OR** individual PAH results)										
Acenaphthene	mg/kg	0.04	0.04	0.01					0.34	
Acenaphthylene	mg/kg	0.11	0.01	0.01					0.03	
Anthracene	mg/kg	0.22	0.10	0.02					0.38	
Benzo(a)anthracene	mg/kg	1.64	0.68	0.10					0.78	
Benzo(a)pyrene	mg/kg	1.34	0.73	0.13					0.74	
Benzo(b)fluoranthene	mg/kg	1.73	0.82	0.13					0.75	
Benzo(ghi)perylene	mg/kg	0.68	0.47	0.11					0.53	
Benzo(k)fluoranthene	mg/kg	0.58	0.31	0.07					0.29	
Chrysene	mg/kg	1.64	0.77	0.13					0.86	
Dibenzo(ah)anthracene	mg/kg	0.15	0.16	0.04					0.15	
Fluoranthene	mg/kg	2.57	0.86	0.16					1.55	
Fluorene	mg/kg	0.02	0.02	0.01					0.23	
Indeno(123cd)pyrene	mg/kg	0.88	0.69	0.13					0.65	
Naphthalene	mg/kg	0.03	0.03	0.03					0.03	
Phenanthrene	mg/kg	0.53	0.17	0.05					1.43	
Pyrene	mg/kg	2.32	0.80	0.15					1.42	
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									
TPH										
Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil	mg/kg									
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg	34.0	89.0	54.0					136.0	
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									
Phenols Input Total Phenols HPLC **OR** individual Phenol results.										
Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									
BTEX Input Total BTEX **OR** individual BTEX results.										
Benzene	mg/kg	0.01	0.01	0.01					0.01	
Toluene	mg/kg	0.01	0.01	0.01					0.01	
Ethylbenzene	mg/kg	0.01	0.01	0.01					0.01	
Xylenes	mg/kg	0.01	0.01	0.01					0.01	
Total BTEX	mg/kg	0.01	0.01	0.01					0.01	
PCBs (POPs)										
PCBs Total (eg EC7/WHO12)	mg/kg									
PBBs (POPs)										
Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP17	TP18	BH5	TP3	TP7	TP15	TP16	BH1	TP3 + TP4
Depth (m)	0.50	1.50	0.20	0.75	0.50	0.80	0.50	1.75	0.75
Envirolab reference	20/07394/19	20/07394/20	20/07394/21	20/07394/25	20/07394/30	20/07394/40	20/07394/48	20/07394/55	20/07394/61

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP17	TP18	BH5	TP3	TP7	TP15	TP16	BH1	TP3 + TP4
Depth (m)	0.50	1.50	0.20	0.75	0.50	0.80	0.50	1.75	0.75
Envirolab reference	20/07394/19	20/07394/20	20/07394/21	20/07394/25	20/07394/30	20/07394/40	20/07394/48	20/07394/55	20/07394/61
Asbestos in Soil	Thresholds								
Asbestos detected in Soil (enter Y or N)	Y	N	N	N				N	

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%							
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y								

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.
All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.00788	0.00973	0.00605	0.00000	0.00000	0.00000	0.00000	0.00757	0.00000
Irritant HP4	≥10%	<1%	0.00401	0.01324	0.00377	0.00000	0.00000	0.00000	0.00000	0.00688	0.00000
Irritant HP4	≥20%	<1%	0.01182	0.02292	0.00779	0.00000	0.00000	0.00000	0.00000	0.01224	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00014	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00788	0.00970	0.00505	0.00000	0.00000	0.00000	0.00000	0.00691	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.00340	0.00890	0.01120	0.00000	0.00000	0.00000	0.00000	0.01360	0.00000
Aspiration Toxicity HP5	≥10%		0.00341	0.00891	0.00541	0.00000	0.00000	0.00000	0.00000	0.01361	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00041	0.00015	0.00119	0.00000	0.00000	0.00000	0.00000	0.00069	0.00000
Acute Toxicity HP6	≥5%	<0.1%	0.00763	0.00988	0.00527	0.00000	0.00000	0.00000	0.00000	0.00705	0.00000
Acute Toxicity HP6	≥25%	<1%	0.01358	0.02559	0.01906	0.00000	0.00000	0.00000	0.00000	0.01703	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00002	0.00002	0.00013	0.00000	0.00000	0.00000	0.00000	0.00003	0.00000
Acute Toxicity HP6	≥2.5%	<0.1%	0.00749	0.00960	0.00499	0.00000	0.00000	0.00000	0.00000	0.00691	0.00000
Acute Toxicity HP6	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00006	0.00008	0.00007	0.00000	0.00000	0.00000	0.00000	0.00005	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.00757	0.00970	0.00520	0.00000	0.00000	0.00000	0.00000	0.00700	0.00000
Acute Toxicity HP6	≥3.5%	<0.1%	0.00014	0.00028	0.00028	0.00000	0.00000	0.00000	0.00000	0.00014	0.00000
Acute Toxicity HP6	≥22.5%	<1%	0.01320	0.02541	0.01897	0.00000	0.00000	0.00000	0.00000	0.01667	0.00000
Carcinogenic HP7	≥0.1%		0.00788	0.00970	0.01120	0.00000	0.00000	0.00000	0.00000	0.01360	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00009	0.00007	0.00001	0.00000	0.00000	0.00000	0.00000	0.00007	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		8.34	8.24	7.95	0.00	0.00	0.00	0.00	7.96	8.16
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		8.34	8.24	7.95	0.00	0.00	0.00	0.00	7.96	8.16
Toxic for Reproduction HP10	≥0.3%		0.00788	0.00970	0.01120	0.00000	0.00000	0.00000	0.00000	0.00566	0.00000
Toxic for Reproduction HP10	≥3%		0.00749	0.00960	0.00540	0.00000	0.00000	0.00000	0.00000	0.01360	0.00000
Mutagenic HP11	≥0.1%		0.00749	0.00960	0.00540	0.00000	0.00000	0.00000	0.00000	0.01360	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00788	0.00970	0.00505	0.00000	0.00000	0.00000	0.00000	0.00566	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00788	0.00970	0.00505	0.00000	0.00000	0.00000	0.00000	0.00691	0.00000

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH			TP17	TP18	BH5	TP3	TP7	TP15	TP16	BH1	TP3 + TP4
Depth (m)			0.50	1.50	0.20	0.75	0.50	0.80	0.50	1.75	0.75
Envirolab reference			20/07394/19	20/07394/20	20/07394/21	20/07394/25	20/07394/30	20/07394/40	20/07394/48	20/07394/55	20/07394/61
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.03265	0.04849	0.03648	0.00000	0.00000	0.00000	0.00000	0.03767	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.03605	0.05739	0.04189	0.00000	0.00000	0.00000	0.00000	0.05127	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	3.29850	4.93760	3.70240	0.00000	0.00000	0.00000	0.00000	3.90260	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contac

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		TP7 + TP8	TP11 + TP13	TP15 +TP16						
Depth (m)		0.50	0.40	0.50						
Envirolab reference		20/07394/62	20/07394/63	20/07394/64						
% Moisture	%									
pH (soil)		10.84	7.95	8.72						
pH (leachate)										
Arsenic	mg/kg									
Cadmium	mg/kg									
Copper	mg/kg									
CrVI or Chromium	mg/kg									
Lead	mg/kg									
Mercury	mg/kg									
Nickel	mg/kg									
Selenium	mg/kg									
Zinc	mg/kg									
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									

PAH (Input Total PAH **OR** individual PAH results)

Acenaphthene	mg/kg									
Acenaphthylene	mg/kg									
Anthracene	mg/kg									
Benzo(a)anthracene	mg/kg									
Benzo(a)pyrene	mg/kg									
Benzo(b)fluoranthene	mg/kg									
Benzo(ghi)perylene	mg/kg									
Benzo(k)fluoranthene	mg/kg									
Chrysene	mg/kg									
Dibenzo(ah)anthracene	mg/kg									
Fluoranthene	mg/kg									
Fluorene	mg/kg									
Indeno(123cd)pyrene	mg/kg									
Naphthalene	mg/kg									
Phenanthrene	mg/kg									
Pyrene	mg/kg									
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									

TPH

Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil	mg/kg									
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg									
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									

Phenols Input Total Phenols HPLC **OR** individual Phenol results.

Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									

BTEX Input Total BTEX **OR** individual BTEX results.

Benzene	mg/kg									
Toluene	mg/kg									
Ethylbenzene	mg/kg									
Xylenes	mg/kg									
Total BTEX	mg/kg									

PCBs (POPs)

PCBs Total (eg EC7/WHO12)	mg/kg									

PBBs (POPs)

Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP7 + TP8	TP11 + TP13	TP15 +TP16						
Depth (m)	0.50	0.40	0.50						
Envirolab reference	20/07394/62	20/07394/63	20/07394/64						

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP7 + TP8	TP11 + TP13	TP15 +TP16						
Depth (m)	0.50	0.40	0.50						
Envirolab reference	20/07394/62	20/07394/63	20/07394/64						

Asbestos in Soil	Thresholds									
Asbestos detected in Soil (enter Y or N)	Y									

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y									

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.
All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥10%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥20%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Aspiration Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥25%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥2.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥3.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥22.5%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		10.84	7.95	8.72	0.00	0.00	0.00	0.00	0.00	0.00
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		10.84	7.95	8.72	0.00	0.00	0.00	0.00	0.00	0.00
Toxic for Reproduction HP10	≥0.3%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Toxic for Reproduction HP10	≥3%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

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If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH			TP7 + TP8	TP11 + TP13	TP15 +TP16					
Depth (m)			0.50	0.40	0.50					
Envirolab reference			20/07394/62	20/07394/63	20/07394/64					
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contac

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
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Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		TP3 + TP4	TP7 + TP8	TP11 + TP13	TP15 +TP16					
Depth (m)		0.75	0.50	0.40	0.50					
Envirolab reference		20/07394/61	20/07394/62	20/07394/63	20/07394/64					
% Moisture	%									
pH (soil)		8.16	10.84	7.95	8.72					
pH (leachate)										
Arsenic	mg/kg	0	0	0	0					
Cadmium	mg/kg	0	0	0	0.0					
Copper	mg/kg	3	0	0	0.0					
CrVI or Chromium	mg/kg	0	0	0	0.0					
Lead	mg/kg	1	0	0	0.0					
Mercury	mg/kg	0	0	0	0.0					
Nickel	mg/kg	0	0	0	0.0					
Selenium	mg/kg	0	0	0	0.1					
Zinc	mg/kg	1	0	0	0					
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									

PAH (Input Total PAH **OR** individual PAH results)

Acenaphthene	mg/kg									
Acenaphthylene	mg/kg									
Anthracene	mg/kg									
Benzo(a)anthracene	mg/kg									
Benzo(a)pyrene	mg/kg									
Benzo(b)fluoranthene	mg/kg									
Benzo(ghi)perylene	mg/kg									
Benzo(k)fluoranthene	mg/kg									
Chrysene	mg/kg									
Dibenzo(ah)anthracene	mg/kg									
Fluoranthene	mg/kg									
Fluorene	mg/kg									
Indeno(123cd)pyrene	mg/kg									
Naphthalene	mg/kg									
Phenanthrene	mg/kg									
Pyrene	mg/kg									
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									

TPH

Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil										
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg									
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									

Phenols Input Total Phenols HPLC **OR** individual Phenol results.

Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									

BTEX Input Total BTEX **OR** individual BTEX results.

Benzene	mg/kg									
Toluene	mg/kg									
Ethylbenzene	mg/kg									
Xylenes	mg/kg									
Total BTEX	mg/kg									

PCBs (POPs)

PCBs Total (eg EC7/WHO12)	mg/kg									

PBBs (POPs)

Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP3 + TP4	TP7 + TP8	TP11 + TP13	TP15 +TP16					
Depth (m)	0.75	0.50	0.40	0.50					
Envirolab reference	20/07394/61	20/07394/62	20/07394/63	20/07394/64					

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	TP3 + TP4	TP7 + TP8	TP11 + TP13	TP15 +TP16					
Depth (m)	0.75	0.50	0.40	0.50					
Envirolab reference	20/07394/61	20/07394/62	20/07394/63	20/07394/64					
Asbestos in Soil	Thresholds								
Asbestos detected in Soil (enter Y or N)	Y								

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y								

If visual identifiable pieces of asbestos are present, <u>you cannot use Asbestos % results</u> and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.

All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.00001	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥10%	<1%	0.00036	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥20%	<1%	0.00037	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.00008	0.00004	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Aspiration Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥0.25%	<0.1%	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥5%	<0.1%	0.00001	0.00001	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥25%	<1%	0.00046	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥2.5%	<0.1%	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥55%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥0.5%	<0.1%	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥3.5%	<0.1%	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥22.5%	<1%	0.00046	0.00005	0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.00008	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		8.16	10.84	7.95	8.72	0.00	0.00	0.00	0.00	0.00
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		8.16	10.84	7.95	8.72	0.00	0.00	0.00	0.00	0.00
Toxic for Reproduction HP10	≥0.3%		0.00008	0.00004	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Toxic for Reproduction HP10	≥3%		0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11	≥0.1%		0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00002	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH		TP3 + TP4	TP7 + TP8	TP11 + TP13	TP15 +TP16				
Depth (m)		0.75	0.50	0.40	0.50				
Envirolab reference		20/07394/61	20/07394/62	20/07394/63	20/07394/64				
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.00060	0.00009	0.00003	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% / 1.0%	0.00060	0.00009	0.00003	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% / 1.0%	0.06034	0.00926	0.00322	0.00232	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		BH4	BH6	BH7						
Depth (m)		0.75	0.50	1.50						
Envirolab reference		20/07494/1	20/07494/2	20/07494/3						
% Moisture	%									
pH (soil)		8.38	6.73	10.12						
pH (leachate)										
Arsenic	mg/kg	5	1	3						
Cadmium	mg/kg	0.7	0.5	0.6						
Copper	mg/kg	159.0	93.0	170.0						
CrVI or Chromium	mg/kg	37.0	34.0	45.0						
Lead	mg/kg	139.0	77.0	180.0						
Mercury	mg/kg	0.8	0.6	0.8						
Nickel	mg/kg	34.0	18.0	45.0						
Selenium	mg/kg	2.0	2.0	2.0						
Zinc	mg/kg	164	85	165						
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									
PAH (Input Total PAH **OR** individual PAH results)										
Acenaphthene	mg/kg	0.01	0.01	0.05						
Acenaphthylene	mg/kg	0.02	0.01	0.02						
Anthracene	mg/kg	0.08	0.02	0.09						
Benzo(a)anthracene	mg/kg	0.51	0.04	0.26						
Benzo(a)pyrene	mg/kg	0.48	0.04	0.28						
Benzo(b)fluoranthene	mg/kg	0.59	0.05	0.32						
Benzo(ghi)perylene	mg/kg	0.31	0.05	0.18						
Benzo(k)fluoranthene	mg/kg	0.22	0.07	0.12						
Chrysene	mg/kg	0.53	0.06	0.28						
Dibenzo(ah)anthracene	mg/kg	0.08	0.04	0.05						
Fluoranthene	mg/kg	0.93	0.08	0.49						
Fluorene	mg/kg	0.02	0.01	0.04						
Indeno(123cd)pyrene	mg/kg	0.40	0.03	0.25						
Naphthalene	mg/kg	0.03	0.03	0.03						
Phenanthrene	mg/kg	0.27	0.03	0.29						
Pyrene	mg/kg	0.80	0.07	0.45						
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									
TPH										
Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil										
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg	203.0	9.0	60.0						
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									
Phenols Input Total Phenols HPLC **OR** individual Phenol results.										
Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									
BTEX Input Total BTEX **OR** individual BTEX results.										
Benzene	mg/kg	0.01	0.01	0.01						
Toluene	mg/kg	0.01	0.01	0.01						
Ethylbenzene	mg/kg	0.01	0.01	0.01						
Xylenes	mg/kg	0.01	0.01	0.07						
Total BTEX	mg/kg	0.01	0.01	0.01						
PCBs (POPs)										
PCBs Total (eg EC7/WHO12)	mg/kg									
PBBs (POPs)										
Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH4	BH6	BH7						
Depth (m)	0.75	0.50	1.50						
Envirolab reference	20/07494/1	20/07494/2	20/07494/3						

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH4	BH6	BH7						
Depth (m)	0.75	0.50	1.50						
Envirolab reference	20/07494/1	20/07494/2	20/07494/3						
Asbestos in Soil	Thresholds								
Asbestos detected in Soil (enter Y or N)	Y	N	N	N					

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y								

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.

All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.00776	0.00666	0.00904	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥10%	<1%	0.01863	0.01064	0.01961	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥20%	<1%	0.02496	0.01416	0.02840	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00003	0.00000	0.00003	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00710	0.00653	0.00909	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.02030	0.00770	0.01800	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Aspiration Toxicity HP5	≥10%		0.02031	0.00091	0.00601	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥0.25%	<0.1%	0.00074	0.00019	0.00048	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥5%	<0.1%	0.00739	0.00681	0.00892	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Oral)	≥25%	<1%	0.03893	0.02191	0.04644	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥0.25%	<0.1%	0.00008	0.00006	0.00008	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥2.5%	<0.1%	0.00710	0.00653	0.00864	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Dermal)	≥55%	<1%	0.00007	0.00005	0.00007	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥0.5%	<0.1%	0.00725	0.00664	0.00878	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥3.5%	<0.1%	0.00028	0.00028	0.00028	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6 (Inhal)	≥22.5%	<1%	0.03874	0.02185	0.04631	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.02030	0.00770	0.01800	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00004	0.00000	0.00003	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		8.38	6.73	10.12	0.00	0.00	0.00	0.00	0.00	0.00
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		8.38	6.73	10.12	0.00	0.00	0.00	0.00	0.00	0.00
Toxic for Reproduction HP10	≥0.3%		0.01390	0.00770	0.01800	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Toxic for Reproduction HP10	≥3%		0.02030	0.00653	0.00864	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11	≥0.1%		0.02030	0.00653	0.00864	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00687	0.00364	0.00909	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00710	0.00653	0.00909	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH			BH4	BH6	BH7					
Depth (m)			0.75	0.50	1.50					
Envirolab reference			20/07494/1	20/07494/2	20/07494/3					
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.06792	0.03958	0.07668	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% / 1.0%	0.08822	0.04049	0.08269	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% / 1.0%	6.99470	3.96720	7.72781	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		BH1	BH2	BH3	BH3	BH4	BH4	BH4	BH5	BH5
Depth (m)		10.50	11.00	4.50	15.00	1.60	9.00	15.00	10.50	21.00
Envirolab reference		20/08234/1	20/08234/2	20/08234/3	20/08234/4	20/08234/5	20/08234/6	20/08234/7	20/08234/8	20/08234/9
% Moisture	%									
pH (soil)		8.10	8.42	7.86	8.00	8.46	8.64	7.94	7.79	8.23
pH (leachate)										
Arsenic	mg/kg									
Cadmium	mg/kg									
Copper	mg/kg									
CrVI or Chromium	mg/kg									
Lead	mg/kg									
Mercury	mg/kg									
Nickel	mg/kg									
Selenium	mg/kg									
Zinc	mg/kg									
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									
PAH (Input Total PAH **OR** individual PAH results)										
Acenaphthene	mg/kg									
Acenaphthylene	mg/kg									
Anthracene	mg/kg									
Benzo(a)anthracene	mg/kg									
Benzo(a)pyrene	mg/kg									
Benzo(b)fluoranthene	mg/kg									
Benzo(ghi)perylene	mg/kg									
Benzo(k)fluoranthene	mg/kg									
Chrysene	mg/kg									
Dibenzo(ah)anthracene	mg/kg									
Fluoranthene	mg/kg									
Fluorene	mg/kg									
Indeno(123cd)pyrene	mg/kg									
Naphthalene	mg/kg									
Phenanthrene	mg/kg									
Pyrene	mg/kg									
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									
TPH										
Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil	mg/kg									
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg									
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									
Phenols Input Total Phenols HPLC **OR** individual Phenol results.										
Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									
BTEX Input Total BTEX **OR** individual BTEX results.										
Benzene	mg/kg									
Toluene	mg/kg									
Ethylbenzene	mg/kg									
Xylenes	mg/kg									
Total BTEX	mg/kg									
PCBs (POPs)										
PCBs Total (eg EC7/WHO12)	mg/kg									
PBBs (POPs)										
Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH1	BH2	BH3	BH3	BH4	BH4	BH4	BH5	BH5
Depth (m)	10.50	11.00	4.50	15.00	1.60	9.00	15.00	10.50	21.00
Envirolab reference	20/08234/1	20/08234/2	20/08234/3	20/08234/4	20/08234/5	20/08234/6	20/08234/7	20/08234/8	20/08234/9

POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.

2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								

Some Pesticides (POPs unless otherwise stated)

Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								

Tin

Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								

Organotin

Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								

Tin excluding Organotin

Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH1	BH2	BH3	BH3	BH4	BH4	BH4	BH5	BH5
Depth (m)	10.50	11.00	4.50	15.00	1.60	9.00	15.00	10.50	21.00
Envirolab reference	20/08234/1	20/08234/2	20/08234/3	20/08234/4	20/08234/5	20/08234/6	20/08234/7	20/08234/8	20/08234/9

Asbestos in Soil	Thresholds									
Asbestos detected in Soil (enter Y or N)	Y									

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y									

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.
All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥10%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥20%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Aspiration Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥25%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥2.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥3.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥22.5%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		8.10	8.42	7.86	8.00	8.46	8.64	7.94	7.79	8.23
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		8.10	8.42	7.86	8.00	8.46	8.64	7.94	7.79	8.23
Toxic for Reproduction HP10	≥0.3%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Toxic for Reproduction HP10	≥3%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH			BH1	BH2	BH3	BH3	BH4	BH4	BH4	BH5	BH5
Depth (m)			10.50	11.00	4.50	15.00	1.60	9.00	15.00	10.50	21.00
Envirolab reference			20/08234/1	20/08234/2	20/08234/3	20/08234/4	20/08234/5	20/08234/6	20/08234/7	20/08234/8	20/08234/9
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contact Envirolab.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		BH6	BH6	BH6	BH7	BH7	BH7	BH8	BH8	BH1
Depth (m)		2.50	6.00	13.50	3.50	6.00	19.50	6.00	16.50	2.50
Envirolab reference		20/08234/10	20/08234/11	20/08234/12	20/08234/13	20/08234/14	20/08234/15	20/08234/16	20/08234/17	20/08234/18
% Moisture	%									
pH (soil)		8.14	8.05	8.39	8.06	7.74	8.02	8.32	7.81	7.85
pH (leachate)										
Arsenic	mg/kg									
Cadmium	mg/kg									
Copper	mg/kg									
CrVI or Chromium	mg/kg									
Lead	mg/kg									
Mercury	mg/kg									
Nickel	mg/kg									
Selenium	mg/kg									
Zinc	mg/kg									
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									
PAH (Input Total PAH **OR** individual PAH results)										
Acenaphthene	mg/kg									
Acenaphthylene	mg/kg									
Anthracene	mg/kg									
Benzo(a)anthracene	mg/kg									
Benzo(a)pyrene	mg/kg									
Benzo(b)fluoranthene	mg/kg									
Benzo(ghi)perylene	mg/kg									
Benzo(k)fluoranthene	mg/kg									
Chrysene	mg/kg									
Dibenzo(ah)anthracene	mg/kg									
Fluoranthene	mg/kg									
Fluorene	mg/kg									
Indeno(123cd)pyrene	mg/kg									
Naphthalene	mg/kg									
Phenanthrene	mg/kg									
Pyrene	mg/kg									
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									
TPH										
Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil	mg/kg									
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg									
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									
Phenols Input Total Phenols HPLC **OR** individual Phenol results.										
Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									
BTEX Input Total BTEX **OR** individual BTEX results.										
Benzene	mg/kg									
Toluene	mg/kg									
Ethylbenzene	mg/kg									
Xylenes	mg/kg									
Total BTEX	mg/kg									
PCBs (POPs)										
PCBs Total (eg EC7/WHO12)	mg/kg									
PBBs (POPs)										
Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH6	BH6	BH6	BH7	BH7	BH7	BH8	BH8	BH1
Depth (m)	2.50	6.00	13.50	3.50	6.00	19.50	6.00	16.50	2.50
Envirolab reference	20/08234/10	20/08234/11	20/08234/12	20/08234/13	20/08234/14	20/08234/15	20/08234/16	20/08234/17	20/08234/18
POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.									
2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								
Some Pesticides (POPs unless otherwise stated)									
Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								
Tin									
Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								
Organotin									
Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								
Tin excluding Organotin									
Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH		BH6	BH6	BH6	BH7	BH7	BH7	BH8	BH8	BH1
Depth (m)		2.50	6.00	13.50	3.50	6.00	19.50	6.00	16.50	2.50
Envirolab reference		20/08234/10	20/08234/11	20/08234/12	20/08234/13	20/08234/14	20/08234/15	20/08234/16	20/08234/17	20/08234/18
Asbestos in Soil	Thresholds									
Asbestos detected in Soil (enter Y or N)	Y									

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y								

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.
All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥10%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥20%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Aspiration Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥25%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥2.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥3.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥22.5%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		8.14	8.05	8.39	8.06	7.74	8.02	8.32	7.81	7.85
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		8.14	8.05	8.39	8.06	7.74	8.02	8.32	7.81	7.85
Toxic for Reproduction HP10	≥0.3%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Toxic for Reproduction HP10	≥3%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH			BH6	BH6	BH6	BH7	BH7	BH7	BH8	BH8	BH1
Depth (m)			2.50	6.00	13.50	3.50	6.00	19.50	6.00	16.50	2.50
Envirolab reference			20/08234/10	20/08234/11	20/08234/12	20/08234/13	20/08234/14	20/08234/15	20/08234/16	20/08234/17	20/08234/18
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contac

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH		BH1	BH1	BH2	BH2	BH5	BH8			
Depth (m)		2.70	6.00	1.50	3.50	2.50	3.50			
Envirolab reference		20/08234/19	20/08234/20	20/08234/21	20/08234/22	20/08234/23	20/08234/24			
% Moisture	%									
pH (soil)		8.43	8.27	8.38	8.67	8.56	8.15			
pH (leachate)										
Arsenic	mg/kg									
Cadmium	mg/kg									
Copper	mg/kg									
CrVI or Chromium	mg/kg									
Lead	mg/kg									
Mercury	mg/kg									
Nickel	mg/kg									
Selenium	mg/kg									
Zinc	mg/kg									
Barium	mg/kg									
Beryllium	mg/kg									
Vanadium	mg/kg									
Cobalt	mg/kg									
Manganese	mg/kg									
Molybdenum	mg/kg									
Antimony	mg/kg									
Aluminium	mg/kg									
Bismuth	mg/kg									
CrIII	mg/kg									
Iron	mg/kg									
Strontium	mg/kg									
Tellurium	mg/kg									
Thallium	mg/kg									
Titanium	mg/kg									
Tungsten	mg/kg									
Ammoniacal N	mg/kg									
ws Boron	mg/kg									
PAH (Input Total PAH **OR** individual PAH results)										
Acenaphthene	mg/kg									
Acenaphthylene	mg/kg									
Anthracene	mg/kg									
Benzo(a)anthracene	mg/kg									
Benzo(a)pyrene	mg/kg									
Benzo(b)fluoranthene	mg/kg									
Benzo(ghi)perylene	mg/kg									
Benzo(k)fluoranthene	mg/kg									
Chrysene	mg/kg									
Dibenzo(ah)anthracene	mg/kg									
Fluoranthene	mg/kg									
Fluorene	mg/kg									
Indeno(123cd)pyrene	mg/kg									
Naphthalene	mg/kg									
Phenanthrene	mg/kg									
Pyrene	mg/kg									
Coronene	mg/kg									
Total PAHs (16 or 17)	mg/kg									
TPH										
Petrol	mg/kg									
Diesel	mg/kg									
Lube Oil	mg/kg									
Crude Oil	mg/kg									
White Spirit / Kerosene	mg/kg									
Creosote	mg/kg									
Unknown TPH with ID	mg/kg									
Unknown TPHCWG	mg/kg									
Total Sulphide	mg/kg									
Complex Cyanide	mg/kg									
Free (or Total) Cyanide	mg/kg									
Thiocyanate	mg/kg									
Elemental/Free Sulphur	mg/kg									
Phenols Input Total Phenols HPLC **OR** individual Phenol results.										
Phenol	mg/kg									
Cresols	mg/kg									
Xylenols	mg/kg									
Resourcinol	mg/kg									
Phenols Total by HPLC	mg/kg									
BTEX Input Total BTEX **OR** individual BTEX results.										
Benzene	mg/kg									
Toluene	mg/kg									
Ethylbenzene	mg/kg									
Xylenes	mg/kg									
Total BTEX	mg/kg									
PCBs (POPs)										
PCBs Total (eg EC7/WHO12)	mg/kg									
PBBs (POPs)										
Hexabromobiphenyl (Total or PBB153; 2,2',4,4',5,5'- if only available)	mg/kg									

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH1	BH1	BH2	BH2	BH5	BH8			
Depth (m)	2.70	6.00	1.50	3.50	2.50	3.50			
Envirolab reference	20/08234/19	20/08234/20	20/08234/21	20/08234/22	20/08234/23	20/08234/24			
POPs Dioxins and Furans Input Total Dioxins and Furans **OR** individual Dioxin and Furan results.									
2,3,7,8-TeCDD	mg/kg								
1,2,3,7,8-PeCDD	mg/kg								
1,2,3,4,7,8-HxCDD	mg/kg								
1,2,3,6,7,8-HxCDD	mg/kg								
1,2,3,7,8,9-HxCDD	mg/kg								
1,2,3,4,6,7,8-HpCDD	mg/kg								
OCDD	mg/kg								
2,3,7,8-TeCDF	mg/kg								
1,2,3,7,8-PeCDF	mg/kg								
2,3,4,7,8-PeCDF	mg/kg								
1,2,3,4,7,8-HxCDF	mg/kg								
1,2,3,6,7,8-HxCDF	mg/kg								
2,3,4,6,7,8-HxCDF	mg/kg								
1,2,3,7,8,9-HxCDF	mg/kg								
1,2,3,4,6,7,8-HpCDF	mg/kg								
1,2,3,4,7,8,9-HpCDF	mg/kg								
OCDF	mg/kg								
Total Dioxins and Furans	mg/kg								
Some Pesticides (POPs unless otherwise stated)									
Aldrin	mg/kg								
α Hexachlorocyclohexane (alpha-HCH) *(leave empty if total HCH results used)*	mg/kg								
β Hexachlorocyclohexane (beta-HCH) *(leave empty if total HCH results used)*	mg/kg								
α Cis-Chlordane (alpha) ***OR*** *Total Chlordane*	mg/kg								
δ Hexachlorocyclohexane (delta-HCH) *(leave empty if total HCH results used)*	mg/kg								
Dieldrin	mg/kg								
Endrin	mg/kg								
χ Hexachlorocyclohexane (gamma-HCH) (lindane) ***OR*** *Total HCH*	mg/kg								
Heptachlor	mg/kg								
Hexachlorobenzene	mg/kg								
o,p'-DDT *(leave empty if total DDT results used)*	mg/kg								
p,p'-DDT ***OR*** *Total DDT*	mg/kg								
χ Trans-Chlordane (gamma) *(leave empty if total Chlordane results used)*	mg/kg								
Chlordecone (kepone)	mg/kg								
Pentachlorobenzene	mg/kg								
Mirex	mg/kg								
Toxaphene (camphechlor)	mg/kg								
Tin									
Tin *(leave empty if Organotin and Tin excl Organotin results used)*	mg/kg								
Organotin									
Dibutyltin; DiBT	mg/kg								
Tributyltin; TriBT	mg/kg								
Triphenyltin; TriPT	mg/kg								
Tetrabutyltin; TeBT	mg/kg								
Tin excluding Organotin									
Tin excl Organotin	mg/kg								

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name									
TP/WS/BH	BH1	BH1	BH2	BH2	BH5	BH8			
Depth (m)	2.70	6.00	1.50	3.50	2.50	3.50			
Envirolab reference	20/08234/19	20/08234/20	20/08234/21	20/08234/22	20/08234/23	20/08234/24			

Asbestos in Soil	Thresholds									
Asbestos detected in Soil (enter Y or N)	Y									

If Asbestos in Soil above is "**Y**", the soil is Hazardous Waste HP5 and HP7

Asbestos % Composition in Soil (Matrix Loose Fibres or Microscopic Identifiable Pieces only)	see "Carc HP7 % Asbestos in Soil (Fibres)" below	%								
Carcinogenic HP7 % Asbestos in Soil (fibres or micro pieces) *Please be advised, if the calculation cell is "0.00000" DOES NOT MEAN asbestos testing has been undertaken and the result is zero.*	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

If Asbestos in Soil above is "**Y**", but Asbestos % above is "<0.1%", the soil is Non Hazardous Waste. You can only use Asbestos % results where loose fibres or micro pieces are only present. You cannot use Asbestos % results when visual identifiable pieces are present.

Asbestos Identifiable Pieces visible with the naked eye detected in the Soil (enter Y or N)	Y									

If visual identifiable pieces of asbestos are present, you cannot use Asbestos % results and the whole soil sample is Hazardous Waste HP5 and HP7 Construction material containing Asbestos 17 06 05.
Therefore, if Asbestos in Soil above is "**Y**", the Asbestos % above is "<0.1%", but the Asbestos Identifiable Pieces visible with the naked eye is "Y", the soil is Hazardous Waste.

Identifiable Pieces are Cement, Fragments, Board, Rope etc. ie anything ACM that is not Loose Fibres.
All visual asbestos pieces need to be removed leaving only fibres (or micro pieces) with an Asbestos % Composition in Soil result of <0.1% for the soil to become non-hazardous waste.

Hazardous Property	Thresholds	Cut Off Value	**If cells below turn yellow and the text turns red, the samples should be classified as Hazardous Waste.**								
Corrosive HP8	≥5%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥10%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Irritant HP4	≥20%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥20%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Specifc Target Organ Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Aspiration Toxicity HP5	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥25%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥2.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥15%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥55%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.1%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥0.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥3.5%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Acute Toxicity HP6	≥22.5%	<1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7	≥0.1%		0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
Carcinogenic HP7	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Carcinogenic HP7 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carcinogenic HP7 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
pH Corrosive HP8 pH (soil or leachate)	H8 ≥11.5		8.43	8.27	8.38	8.67	8.56	8.15	0.00	0.00	0.00
pH Corrosive HP8 pH (soil or leachate)	H8 ≤2		8.43	8.27	8.38	8.67	8.56	8.15	0.00	0.00	0.00
Toxic for Reproduction HP10	≥0.3%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Toxic for Reproduction HP10	≥3%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11	≥0.1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Mutagenic HP11 Unknown TPH with ID	≥1,000mg/kg		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mutagenic HP11 b(a)p marker test (Unknown TPH with ID only) Cell only applicable if TPH >1,000mg/kg	≥0.01%		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mutagenic HP11	≥1%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Produces Toxic Gases HP12 Sulphide	≥1,400mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Cyanide	≥1,200mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Produces Toxic Gases HP12 Thiocyanate	≥2,600mg/kg		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HP13 Sensitising	≥10%		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

Please enter available data in the rows associated with the test (grey) cells. Calculation cells initially display either "0.0000" or "#DIV/0!".
If any calculation cells below state "0.00000", testing has NOT been undertaken that contributes to that Hazardous Property.

Haswaste, developed by Dr. Iain Haslock.

Site Code and Name										
TP/WS/BH			BH1	BH1	BH2	BH2	BH5	BH8			
Depth (m)			2.70	6.00	1.50	3.50	2.50	3.50			
Envirolab reference			20/08234/19	20/08234/20	20/08234/21	20/08234/22	20/08234/23	20/08234/24			
Ecotoxic HP14 amended v6	≥25%	<0.1%	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Ecotoxic HP14 amended v6	≥25%	<0.1% (except Be, V, Te, Tl, Petrol, Diesel, Crude Oil, Kerosene, White Spirit, Crosote, TPH, TPHCWG, Phenol, Cresols, Xylenols, T-Phenols, CompCN, Thiocyanate, Toluene, Ethylbenzene, Xylene + BTEX 1%).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Persistent Organic Pollutant (PCB, PBB or POP Pesticides)	>0.005%		0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Persistent Organic Pollutant (Total Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000
Persistent Organic Pollutant (Individual Dioxins+Furans)	>0.0000015%		0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000	0.0000000000

If other contaminants need adding to Haswaste, please contac

Table 3 of the CLP, CL Inventory, ATPs, IARC, Concawe, MSDSs, REACH + Pesticide Properties databases. Worst case REACH + MSDS's used for "*" STOT + Acute Toxicity.

APPENDIX S
GMA

Oasys

RSK ENVIRONMENT LIMITED

North London Business Park

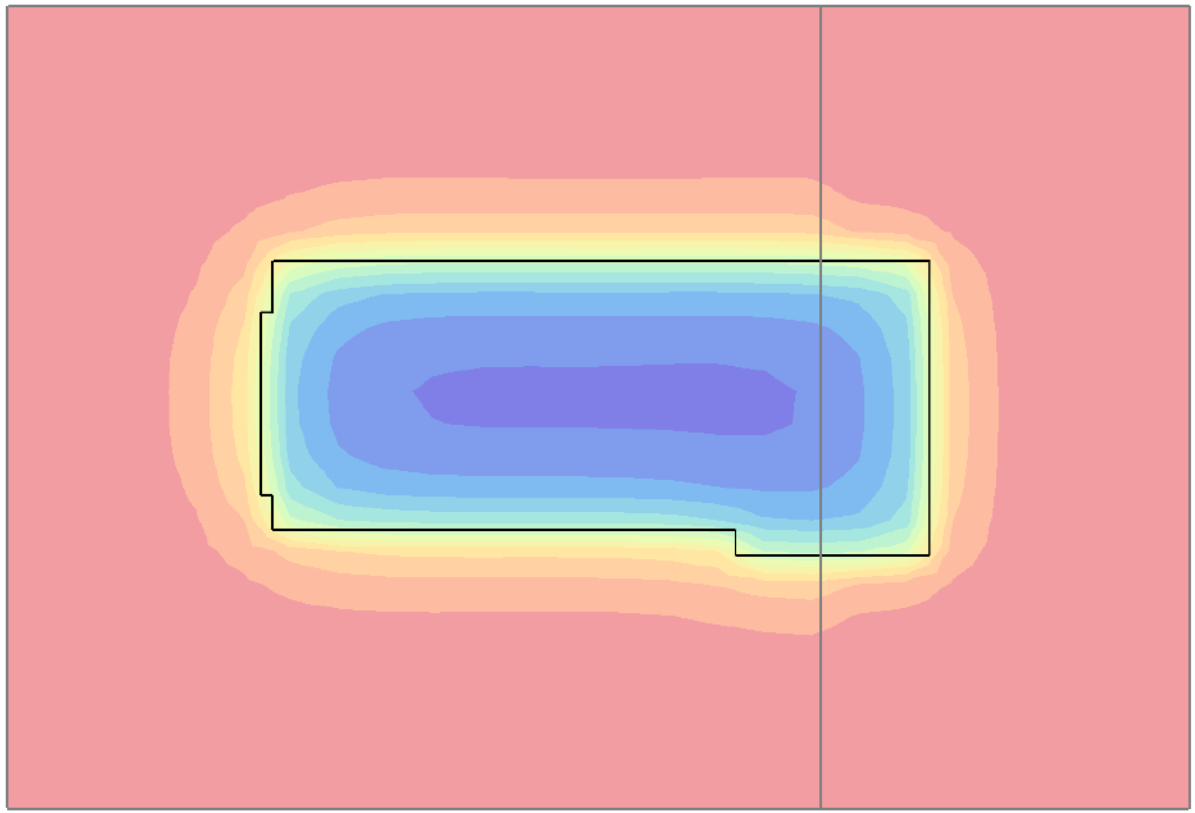
Heave Assessment Block 1A Main School Building

Basement Excavation_short term

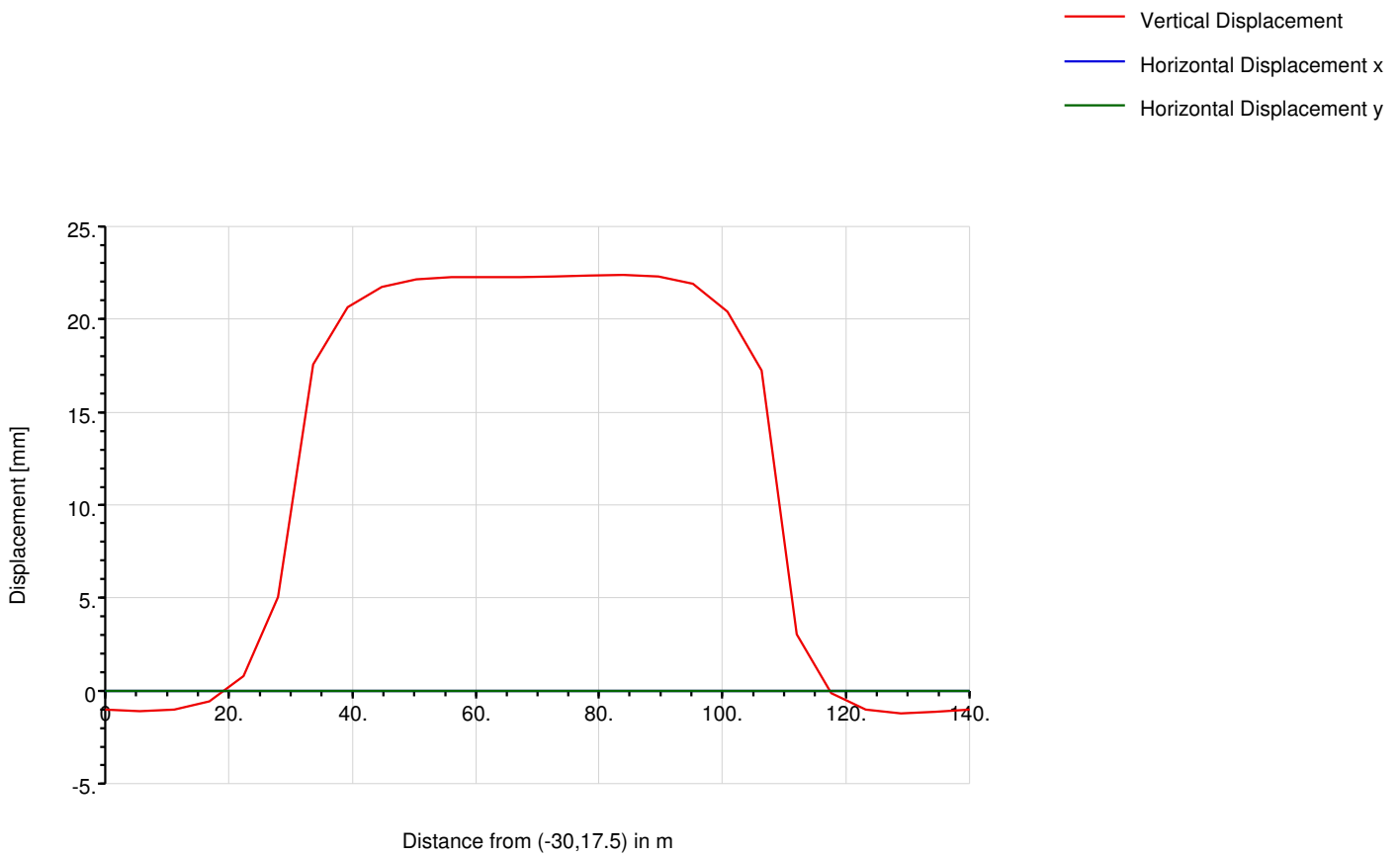
Job No.	Sheet No.	Rev.
1921321		

Drg. Ref.

Made by	Date	Checked
ST		



Displacement for Displacement Line 1



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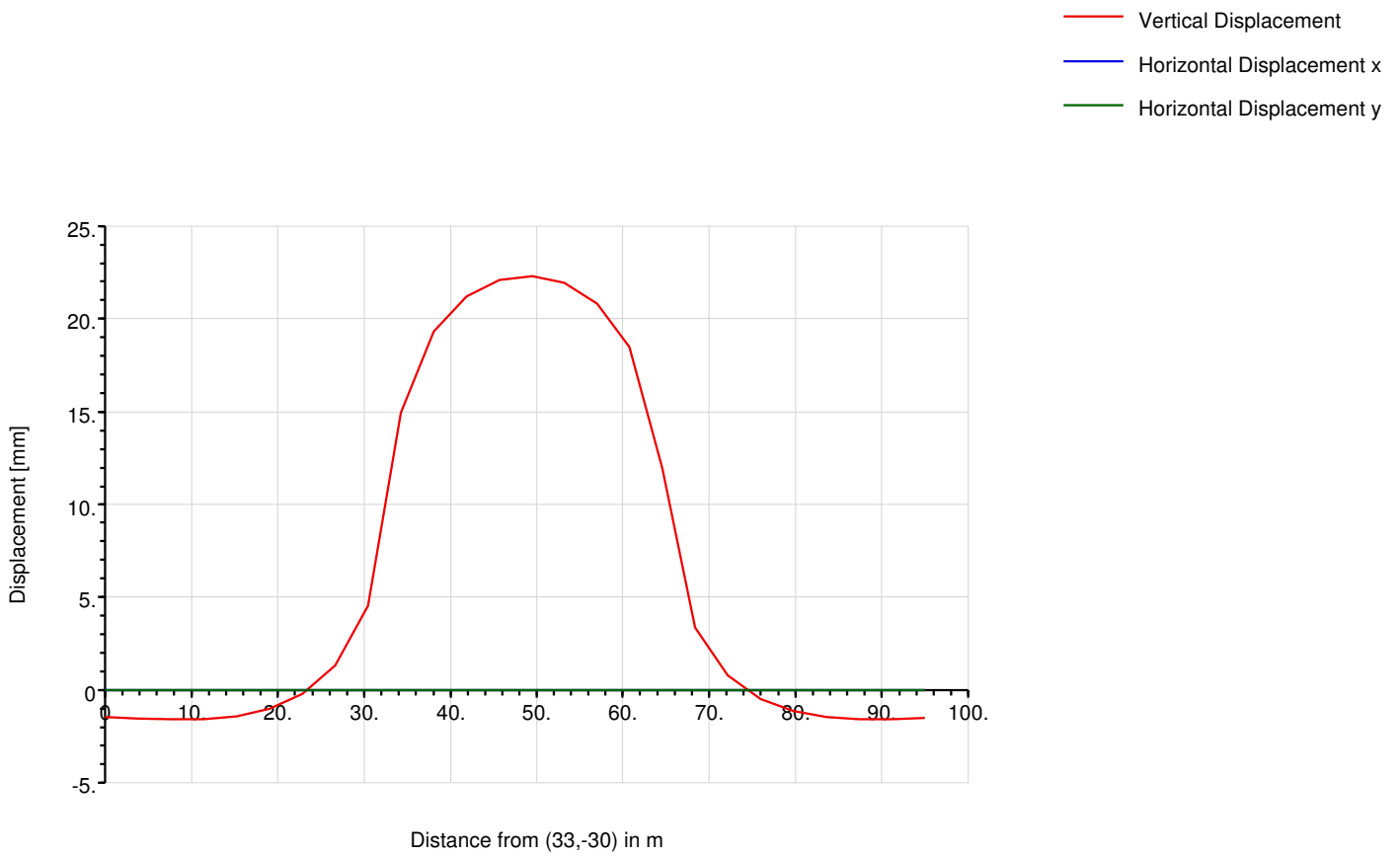

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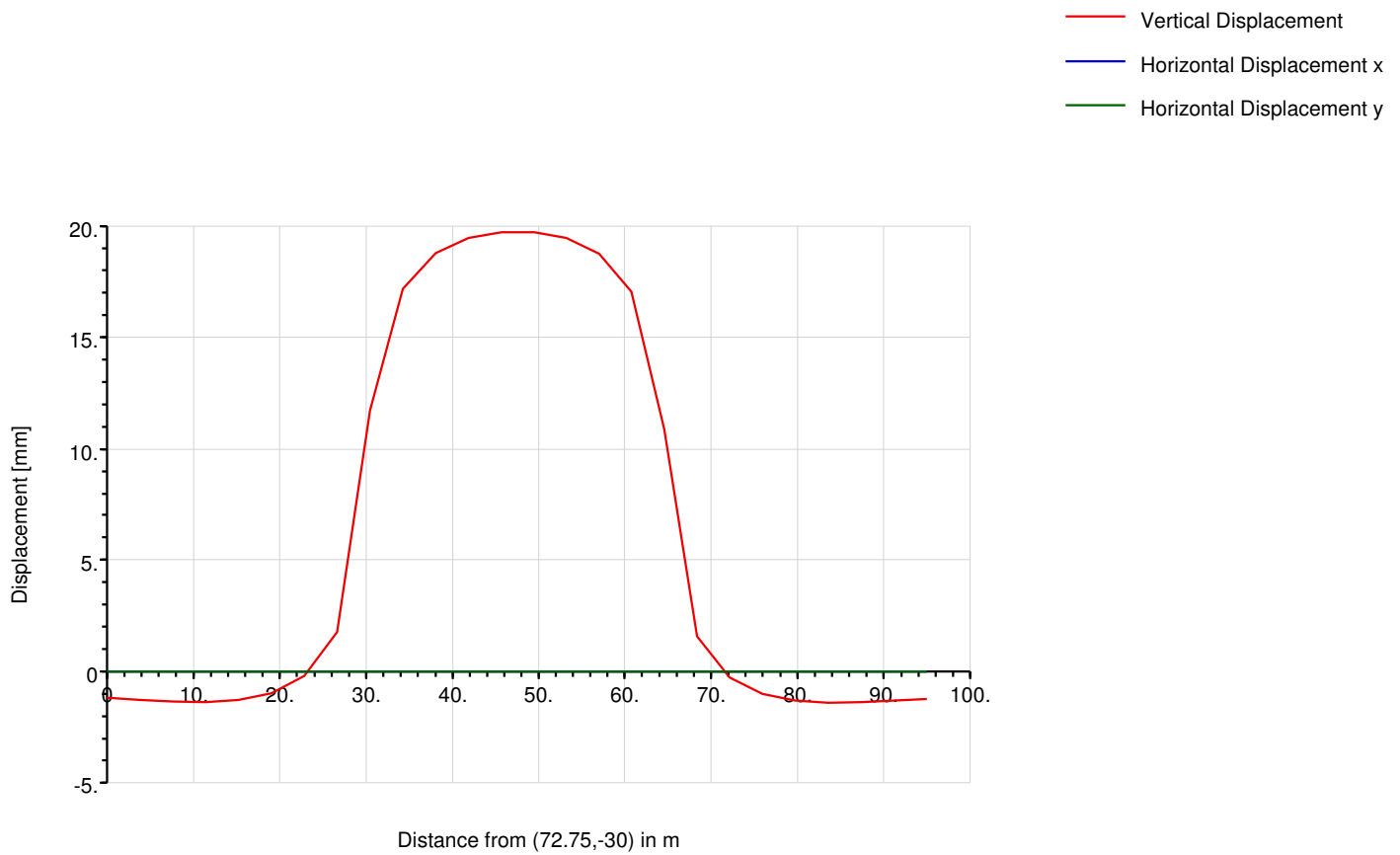


Oasys

RSK ENVIRONMENT LIMITED

North London Business Park

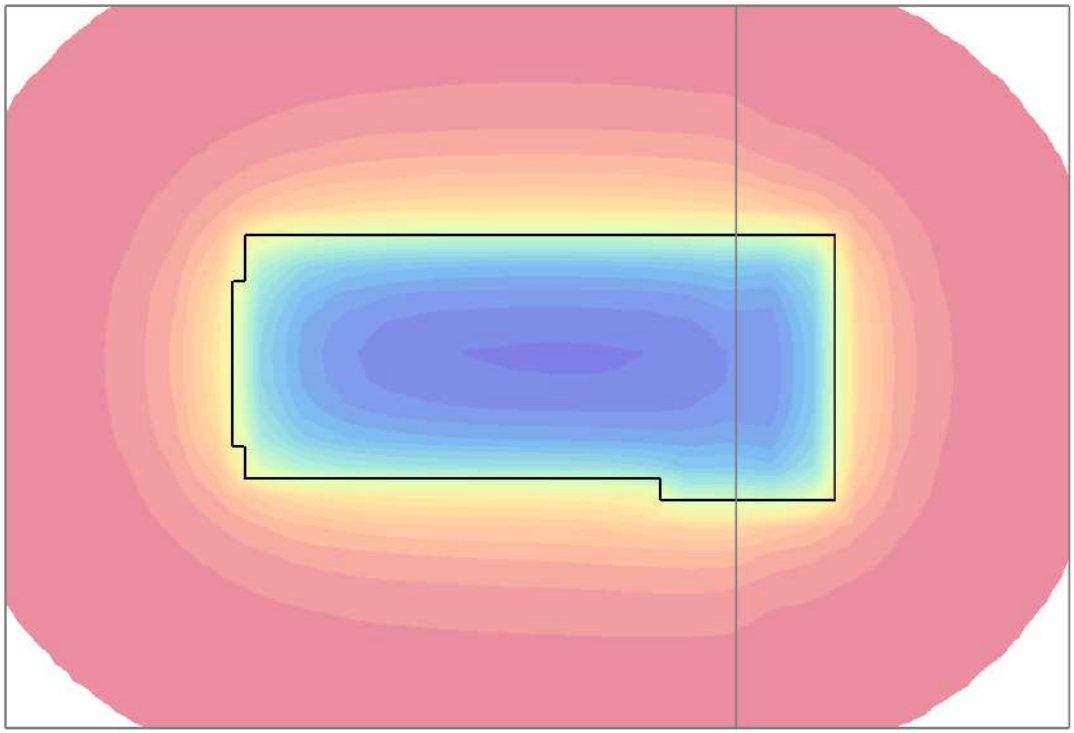
Heave Assessment Block 1A Main School Building

Basement Excavation_long term

Job No.	Sheet No.	Rev.
1921321		

Drg. Ref.

Made by	Date	Checked
ST		



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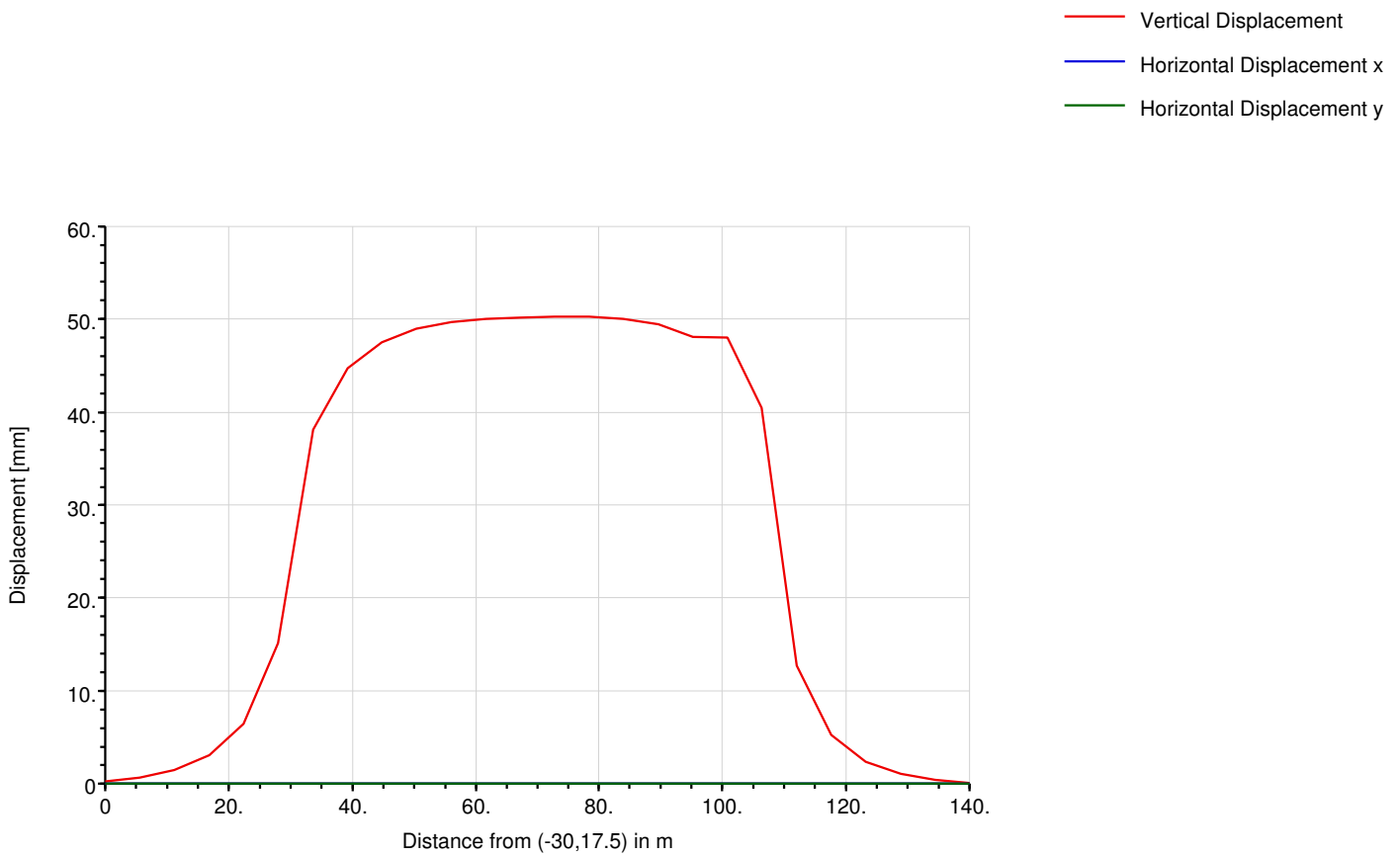

Titles

Job No.: 1921321
Job Title: North London Business Park
Sub-title: Heave Assessment Block 1A Main School Building
Calculation Heading: Basement Excavation_long term
Initials: ST
Checker:
Date Saved:
Date Checked:
Notes:
File Name: 02 Block 1A Main School Building_long term.pdd
File Path: G:\1920000 onwards\1921321 North London Business Park\9. GMA\03 analyses

History

Date	Time	By	Notes
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05-Mar-2021	14:35	trajkovski_s	
05-Mar-2021	14:38	trajkovski_s	
05-Mar-2021	15:02	trajkovski_s	
05-Mar-2021	15:02	trajkovski_s	
05-Mar-2021	15:06	trajkovski_s	

Analysis Options

General
Global Poisson's ratio: 0.20
Maximum allowable ratio between values of E: 1.5
Horizontal rigid boundary level: 8.00 [m OD]
Displacements at load centroids: Yes
GSA piled raft data : No

Elastic
Elastic : Yes
Analysis: Boussinesq
Stiffness for horizontal displacement calculations: Weighted average
Using legacy heave correction factor: Yes

Consolidation
Consolidation : No

Soil ProfilesSoil Profile 1

Layer ref.	Name	Level at top [mOD]	Number of intermediate displacement levels	Youngs Modulus : Top [kN/m²]	Youngs Modulus : Btm. [kN/m²]	Poissons ratio	Non-linear curve
1	Made Ground	50.080	2	7780.0	7780.0	0.20000	None
2	Weathered London Clay	49.080	5	8160.0	23120.	0.20000	None
3	London Clay Formation	44.080	10	25840.	46240.	0.20000	None
4	Lambeth Group - cohesive	20.580	10	52290.	70180.	0.20000	None

Soil ProfilesSoil Profile 2

Layer ref.	Name	Level at top [mOD]	Number of intermediate displacement levels	Youngs Modulus : Top [kN/m²]	Youngs Modulus : Btm. [kN/m²]	Poissons ratio	Non-linear curve
1	Made Ground	48.830	2	7780.0	7780.0	0.20000	None
2	London Clay Formation	46.330	20	14960.	59840.	0.20000	None
3	Lambeth Group - cohesive	18.630	10	57920.	68800.	0.20000	None
4	Lambeth Group - granular	12.230	5	200000.	200000.	0.20000	None

Soil Zones

Zone	Name	X min [m]	X max [m]	Y min [m]	Y max [m]	Profile
1	Soil Zone 1	-30.000	66.280	-30.000	65.000	Soil Profile 1
2	Soil Zone 2	66.280	110.00	-30.000	65.000	Soil Profile 2

Polygonal Load Data

Load ref.	Name	Position : Level [m]	Position : Polygon : Coords. [m]	Position : Polygon : Rect. tolerance [%]	No. of Rectangles	Value : Normal (local z) [kN/m²]
1	Block 1A - Main School Building	46.80900	(1.48,2.96) (56.2,2.96) (56.2,0) (79.2,0) (79.2,34.8) (1.48,34.8) (1.48,28.8) (0,28.8) (0,7.1) (1.48,7.1) (1.48,2.96)	10.000	3	-70.000

Polygonal Loads' Rectangles

No.	Centre : x [m]	Centre : y [m]	Angle of local x from global X [Degrees]	Width x [m]	Depth y [m]
Load 1 : Block 1A - Main School Building					
(Edge 1 optimal)					
1	28.85500	18.87500	0.0	54.750	31.830
2	67.71500	17.39500	0.0	22.970	34.790
3	0.74000	17.95000	0.0	1.4800	21.700

Displacement Lines

Name	X1 [m]	Y1 [m]	Z1 [m]	X2 [m]	Y2 [m]	Z2 [m]	Intervals [No.]	Calculate	Detailed Results
Displacement Line 1	-30.00000	17.50000	46.80900	110.00000	17.50000	46.80900	25	Yes	Yes
Displacement Line 2	33.00000	-30.00000	46.80900	33.00000	65.00000	46.80900	25	Yes	Yes
Displacement Line 3	72.75000	-30.00000	46.80900	72.75000	65.00000	46.80900	25	Yes	Yes

Displacement Grids

Name	Extrusion: Direction	X1 [m]	Y1 [m]	Z1 [m]	X2 [m]	Y2 [m]	Z2 [m]	Intervals Along Line [No.]	Extrusion: Distance [m]	Extrusion: Intervals Along [No.]	Calculate	Detailed Results
Displacement Grid 1	Global X	-30.00000	-30.00000	46.80900	-	65.00000	46.80900	25	140.00000	25	Yes	Yes

Results : Immediate : Load Centres : Polygonal

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain

		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[μ]
1	Block 1A - Main School Building	40.56901	18.40396	46.80900	-50.31724	46.421	-70.000	-165.21	-0.0031674

Results : Consolidation : Load Centres : Polygonal

None

Results : Total : Load Centres : Polygonal

None

Results : Immediate : Displacement Data : Lines

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[μ]
1	Displacement Line 1	-30.00000	17.50000	46.80900	-0.29258	46.421	-15.908E-6	-0.15479	1.9231E-6
1	Displacement Line 1	-24.40000	17.50000	46.80900	-0.69365	46.421	-34.270E-6	-0.23136	2.8736E-6
1	Displacement Line 1	-18.80000	17.50000	46.80900	-1.47931	46.421	-87.938E-6	-0.37598	4.6675E-6
1	Displacement Line 1	-13.20000	17.50000	46.80900	-3.06269	46.421	-300.11E-6	-0.69709	8.6436E-6
1	Displacement Line 1	-7.60000	17.50000	46.80900	-6.45381	46.421	-0.0018241	-1.6554	20.443E-6
1	Displacement Line 1	-2.00000	17.50000	46.80900	-15.14676	46.421	-0.10354	-8.9318	103.31E-6
1	Displacement Line 1	3.60000	17.50000	46.80900	-38.18438	46.421	-69.981	-160.71	-0.0032221
1	Displacement Line 1	9.20000	17.50000	46.80900	-44.72601	46.421	-69.998	-164.01	-0.0031823
1	Displacement Line 1	14.80000	17.50000	46.80900	-47.57248	46.421	-69.999	-164.71	-0.0031736
1	Displacement Line 1	20.40000	17.50000	46.80900	-48.95774	46.421	-69.999	-164.97	-0.0031704
1	Displacement Line 1	26.00000	17.50000	46.80900	-49.66045	46.421	-70.000	-165.09	-0.0031689
1	Displacement Line 1	31.60000	17.50000	46.80900	-50.02184	46.421	-70.000	-165.16	-0.0031681
1	Displacement Line 1	37.20000	17.50000	46.80900	-50.20139	46.421	-70.000	-165.19	-0.0031677
1	Displacement Line 1	42.80000	17.50000	46.80900	-50.26921	46.421	-70.000	-165.20	-0.0031676
1	Displacement Line 1	48.40000	17.50000	46.80900	-50.23479	46.421	-70.000	-165.19	-0.0031676
1	Displacement Line 1	54.00000	17.50000	46.80900	-50.03098	46.421	-70.000	-165.16	-0.0031680
1	Displacement Line 1	59.60000	17.50000	46.80900	-49.45522	46.421	-70.000	-165.07	-0.0031692
1	Displacement Line 1	65.20000	17.50000	46.80900	-48.07729	46.421	-69.999	-164.80	-0.0031724
1	Displacement Line 1	70.80000	17.50000	46.80900	-47.98267	46.569	-70.000	-165.53	-0.0065417
1	Displacement Line 1	76.40000	17.50000	46.80900	-40.49808	46.569	-69.991	-162.61	-0.0066153
1	Displacement Line 1	82.00000	17.50000	46.80900	-12.74513	46.569	-0.0091827	-3.8593	97.795E-6
1	Displacement Line 1	87.60000	17.50000	46.80900	-5.22145	46.569	-323.65E-6	-0.93510	23.989E-6
1	Displacement Line 1	93.20000	17.50000	46.80900	-2.36818	46.569	-62.027E-6	-0.42010	10.790E-6
1	Displacement Line 1	98.80000	17.50000	46.80900	-1.07506	46.569	-19.511E-6	-0.23292	5.9846E-6
1	Displacement Line 1	104.40000	17.50000	46.80900	-0.45362	46.569	-7.8972E-6	-0.14521	3.7318E-6
1	Displacement Line 1	110.00000	17.50000	46.80900	-0.14848	46.569	-3.7459E-6	-0.097780	2.5131E-6
2	Displacement Line 2	33.00000	-30.00000	46.80900	-0.37166	46.421	-18.634E-6	-0.20928	2.6003E-6
2	Displacement Line 2	33.00000	-26.20000	46.80900	-0.64843	46.421	-28.415E-6	-0.26396	3.2793E-6
2	Displacement Line 2	33.00000	-22.40000	46.80900	-1.06244	46.421	-45.430E-6	-0.34006	4.2241E-6
2	Displacement Line 2	33.00000	-18.60000	46.80900	-1.68290	46.421	-77.344E-6	-0.45005	5.5891E-6
2	Displacement Line 2	33.00000	-14.80000	46.80900	-2.61823	46.421	-143.80E-6	-0.61732	7.6636E-6
2	Displacement Line 2	33.00000	-11.00000	46.80900	-4.04453	46.421	-305.35E-6	-0.89124	11.057E-6
2	Displacement Line 2	33.00000	-7.20000	46.80900	-6.26547	46.421	-809.64E-6	-1.3960	17.294E-6
2	Displacement Line 2	33.00000	-3.40000	46.80900	-9.88026	46.421	-0.0033384	-2.5542	31.503E-6
2	Displacement Line 2	33.00000	0.40000	46.80900	-16.45234	46.421	-0.050327	-7.2702	86.626E-6
2	Displacement Line 2	33.00000	4.20000	46.80900	-35.36599	46.421	-69.593	-150.92	-0.0033147
2	Displacement Line 2	33.00000	8.00000	46.80900	-43.91863	46.421	-69.993	-162.92	-0.0031954
2	Displacement Line 2	33.00000	11.80000	46.80900	-47.84385	46.421	-69.999	-164.55	-0.0031755
2	Displacement Line 2	33.00000	15.60000	46.80900	-49.69878	46.421	-69.999	-165.07	-0.0031691
2	Displacement Line 2	33.00000	19.40000	46.80900	-50.14282	46.421	-70.000	-165.18	-0.0031678
2	Displacement Line 2	33.00000	23.20000	46.80900	-49.31213	46.421	-69.999	-164.98	-0.0031703
2	Displacement Line 2	33.00000	27.00000	46.80900	-46.96027	46.421	-69.998	-164.27	-0.0031790
2	Displacement Line 2	33.00000	30.80000	46.80900	-42.17533	46.421	-69.986	-161.87	-0.0032080
2	Displacement Line 2	33.00000	34.60000	46.80900	-29.78328	46.421	-53.944	-107.50	-0.0026873
2	Displacement Line 2	33.00000	38.40000	46.80900	-14.05040	46.421	-0.018171	-4.9564	60.261E-6
2	Displacement Line 2	33.00000	42.20000	46.80900	-8.59665	46.421	-0.0021030	-2.0949	25.886E-6
2	Displacement Line 2	33.00000	46.00000	46.80900	-5.46616	46.421	-596.39E-6	-1.2051	14.937E-6
2	Displacement Line 2	33.00000	49.80000	46.80900	-3.51772	46.421	-241.14E-6	-0.78712	9.7671E-6
2	Displacement Line 2	33.00000	53.60000	46.80900	-2.26284	46.421	-117.84E-6	-0.55212	6.8549E-6
2	Displacement Line 2	33.00000	57.40000	46.80900	-1.44044	46.421	-64.784E-6	-0.40581	5.0400E-6
2	Displacement Line 2	33.00000	61.20000	46.80900	-0.89636	46.421	-38.599E-6	-0.30846	3.8318E-6
2	Displacement Line 2	33.00000	65.00000	46.80900	-0.53475	46.421	-24.389E-6	-0.24058	2.9889E-6
3	Displacement Line 3	72.75000	-30.00000	46.80900	-0.12691	46.569	-3.8543E-6	-0.10750	2.7629E-6
3	Displacement Line 3	72.75000	-26.20000	46.80900	-0.30390	46.569	-6.1501E-6	-0.13626	3.5020E-6
3	Displacement Line 3	72.75000	-22.40000	46.80900	-0.58557	46.569	-10.524E-6	-0.17788	4.5712E-6
3	Displacement Line 3	72.75000	-18.60000	46.80900	-1.03681	46.569	-19.829E-6	-0.24171	6.2104E-6
3	Displacement Line 3	72.75000	-14.80000	46.80900	-1.77202	46.569	-42.964E-6	-0.34799	8.9391E-6
3	Displacement Line 3	72.75000	-11.00000	46.80900	-3.00947	46.569	-116.05E-6	-0.54864	14.086E-6
3	Displacement Line 3	72.75000	-7.20000	46.80900	-5.22703	46.569	-466.96E-6	-1.0183	26.105E-6
3	Displacement Line 3	72.75000	-3.40000	46.80900	-9.78799	46.569	-0.0049718	-2.7814	70.734E-6
3	Displacement Line 3	72.75000	0.40000	46.80900	-28.83910	46.569	-67.799	-137.87	-0.0069132
3	Displacement Line 3	72.75000	4.20000	46.80900	-39.91533	46.569	-69.997	-163.38	-0.0065963
3	Displacement Line 3	72.75000	8.00000	46.80900	-43.66922	46.569	-69.999	-164.62	-0.0065650
3	Displacement Line 3	72.75000	11.80000	46.80900	-45.41996	46.569	-69.999	-164.97	-0.0065559
3	Displacement Line 3	72.75000	15.60000	46.80900	-46.15563	46.569	-69.999	-165.09	-0.0065528
3	Displacement Line 3	72.75000	19.40000	46.80900	-46.16507	46.569	-69.999	-165.09	-0.0065527
3	Displacement Line 3	72.75000	23.20000	46.80900	-45.43900	46.569	-69.999	-164.97	-0.0065559
3	Displacement Line 3	72.75000	27.00000	46.80900	-43.66125	46.569	-69.999	-164.60	-0.0065654
3	Displacement Line 3	72.75000	30.80000	46.80900	-39.76483	46.569	-69.996	-163.26	-0.0065994
3	Displacement Line 3	72.75000	34.60000	46.80900	-27.27463	46.569	-60.792	-118.63	-0.0063271
3	Displacement Line 3	72.75000	38.40000	46.80900	-9.58916	46.569	-0.0041382	-2.6017	66.243E-6
3	Displacement Line 3	72.75000	42.20000	46.80900	-5.21308	46.569	-428.21E-6	-0.99874	25.608E-6
3	Displacement Line 3	72.75000	46.00000	46.80900	-3.04372	46.569	-110.95E-6	-0.55101	14.148E-6
3	Displacement Line 3	72.75000	49.80000	46.80900	-1.81535	46.569	-42.300E-6	-0.35489	9.1165E-6
3	Displacement Line 3	72.75000	53.60000	46.80900	-1.07604	46.569	-19.972E-6	-0.24904	6.3991E-6
3	Displacement Line 3	72.75000	57.40000	46.80900	-0.61691	46.569	-10.788E-6	-0.18456	4.7427E-6
3	Displacement Line 3	72.75000	61.20000	46.80900	-0.32717	46.569	-6.3886E-6	-0.14203	3.6502E-6
3	Displacement Line 3	72.75000	65.00000	46.80900	-0.14321	46.569	-4.0433E-6	-0.11239	2.8885E-6

Results : Consolidation : Displacement Data : Lines

None

Results : Total : Displacement Data : Lines

None

Results : Immediate : Displacement Data : Grids

Ref.	Name	x	y	z	δz	Stress: Calc. Level	Stress: Vertical	Stress: Sum Princ.	Vert. Strain
		[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m²]	[kN/m²]	[μ]
1	Displacement Grid 1	-30.00000	-30.00000	46.80900	0.09737	46.421	-2.2416E-6	-0.055837	693.98E-9
1	Displacement Grid 1	-24.40000	-30.00000	46.80900	0.08044	46.421	-3.0514E-6	-0.066455	825.91E-9
1	Displacement Grid 1	-18.80000	-30.00000	46.80900	0.05350	46.421	-4.1428E-6	-0.079045	982.35E-9
1	Displacement Grid 1	-13.20000	-30.00000	46.80900	0.01529	46.421	-5.5659E-6	-0.093644	1.1637E-6
1	Displacement Grid 1	-7.60000	-30.00000	46.80900	-0.03383	46.421	-7.3265E-6	-0.11002	1.3671E-6
1	Displacement Grid 1	-2.00000	-30.00000	46.80900	-0.09125	46.421	-9.3497E-6	-0.12756	1.5851E-6
1	Displacement Grid 1	3.60000	-30.00000	46.80900	-0.15225	46.421	-11.471E-6	-0.14535	1.8060E-6
1	Displacement Grid 1	9.20000	-30.00000	46.80900	-0.21125	46.421	-13.483E-6	-0.16229	2.0165E-6
1	Displacement Grid 1	14.80000	-30.00000	46.80900	-0.26358	46.421	-15.222E-6	-0.17745	2.2049E-6
1	Displacement Grid 1	20.40000	-30.00000	46.80900	-0.30675	46.421	-16.614E-6	-0.19022	2.3635E-6
1	Displacement Grid 1	26.00000	-30.00000	46.80900	-0.34056	46.421	-17.675E-6	-0.20034	2.4893E-6
1	Displacement Grid 1	31.60000	-30.00000	46.80900	-0.36628	46.421	-18.468E-6	-0.20781	2.5821E-6
1	Displacement Grid 1	37.20000	-30.00000	46.80900	-0.38562	46.421	-19.073E-6	-0.21274	2.6433E-6
1	Displacement Grid 1	42.80000	-30.00000	46.80900	-0.39960	46.421	-19.552E-6	-0.21519	2.6736E-6
1	Displacement Grid 1	48.40000	-30.00000	46.80900	-0.40762	46.421	-19.913E-6	-0.21505	2.6720E-6
1	Displacement Grid 1	54.00000	-30.00000	46.80900	-0.40690	46.421	-20.063E-6	-0.21199	2.6338E-6
1	Displacement Grid 1	59.60000	-30.00000	46.80900	-0.39286	46.421	-19.799E-6	-0.20541	2.5522E-6
1	Displacement Grid 1	65.20000	-30.00000	46.80900	-0.36100	46.421	-18.879E-6	-0.19482	2.4205E-6
1	Displacement Grid 1	70.80000	-30.00000	46.80900	-0.14150	46.569	-4.0358E-6	-0.11118	2.8575E-6
1	Displacement Grid 1	76.40000	-30.00000	46.80900	-0.09628	46.569	-3.4692E-6	-0.10003	2.5710E-6

Ref.	Name	x [m]	y [m]	z [mOD]	δz [mm]	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [μ]
1	Displacement Grid 1	82.00000	-30.00000	46.80900	-0.04470	46.569	-2.8138E-6	-0.087666	2.2532E-6
1	Displacement Grid 1	87.60000	-30.00000	46.80900	0.00568	46.569	-2.1681E-6	-0.075157	1.9317E-6
1	Displacement Grid 1	93.20000	-30.00000	46.80900	0.04852	46.569	-1.6086E-6	-0.063428	1.6303E-6
1	Displacement Grid 1	98.80000	-30.00000	46.80900	0.08051	46.569	-1.1672E-6	-0.053042	1.3634E-6
1	Displacement Grid 1	104.40000	-30.00000	46.80900	0.10133	46.569	-839.32E-9	-0.044195	1.1360E-6
1	Displacement Grid 1	110.00000	-30.00000	46.80900	0.11255	46.569	-603.82E-9	-0.036838	946.90E-9
1	Displacement Grid 1	-30.00000	-26.20000	46.80900	0.08468	46.421	-2.7600E-6	-0.062260	773.78E-9
1	Displacement Grid 1	-24.40000	-26.20000	46.80900	0.05735	46.421	-3.8758E-6	-0.075228	934.92E-9
1	Displacement Grid 1	-18.80000	-26.20000	46.80900	0.01474	46.421	-5.4505E-6	-0.091014	1.1310E-6
1	Displacement Grid 1	-13.20000	-26.20000	46.80900	-0.04561	46.421	-7.6059E-6	-0.10982	1.3647E-6
1	Displacement Grid 1	-7.60000	-26.20000	46.80900	-0.12365	46.421	-10.397E-6	-0.13145	1.6334E-6
1	Displacement Grid 1	-2.00000	-26.20000	46.80900	-0.21538	46.421	-13.717E-6	-0.15508	1.9269E-6
1	Displacement Grid 1	3.60000	-26.20000	46.80900	-0.31280	46.421	-17.246E-6	-0.17926	2.2272E-6
1	Displacement Grid 1	9.20000	-26.20000	46.80900	-0.40614	46.421	-20.561E-6	-0.20223	2.5125E-6
1	Displacement Grid 1	14.80000	-26.20000	46.80900	-0.48749	46.421	-23.336E-6	-0.22253	2.7647E-6
1	Displacement Grid 1	20.40000	-26.20000	46.80900	-0.55306	46.421	-25.466E-6	-0.23933	2.9734E-6
1	Displacement Grid 1	26.00000	-26.20000	46.80900	-0.60318	46.421	-27.026E-6	-0.25244	3.1362E-6
1	Displacement Grid 1	31.60000	-26.20000	46.80900	-0.64064	46.421	-28.172E-6	-0.26206	3.2557E-6
1	Displacement Grid 1	37.20000	-26.20000	46.80900	-0.66883	46.421	-29.081E-6	-0.26852	3.3359E-6
1	Displacement Grid 1	42.80000	-26.20000	46.80900	-0.69006	46.421	-29.908E-6	-0.27208	3.3802E-6
1	Displacement Grid 1	48.40000	-26.20000	46.80900	-0.70393	46.421	-30.722E-6	-0.27271	3.3879E-6
1	Displacement Grid 1	54.00000	-26.20000	46.80900	-0.70598	46.421	-31.375E-6	-0.26982	3.3519E-6
1	Displacement Grid 1	59.60000	-26.20000	46.80900	-0.68788	46.421	-31.416E-6	-0.26226	3.2580E-6
1	Displacement Grid 1	65.20000	-26.20000	46.80900	-0.64074	46.421	-30.246E-6	-0.24882	3.0910E-6
1	Displacement Grid 1	70.80000	-26.20000	46.80900	-0.32859	46.569	-6.4619E-6	-0.14136	3.6329E-6
1	Displacement Grid 1	76.40000	-26.20000	46.80900	-0.25165	46.569	-5.4724E-6	-0.12581	3.2335E-6
1	Displacement Grid 1	82.00000	-26.20000	46.80900	-0.16324	46.569	-4.3051E-6	-0.10841	2.7863E-6
1	Displacement Grid 1	87.60000	-26.20000	46.80900	-0.07727	46.569	-3.1785E-6	-0.091007	2.3390E-6
1	Displacement Grid 1	93.20000	-26.20000	46.80900	-0.00489	46.569	-2.2482E-6	-0.075100	1.9302E-6
1	Displacement Grid 1	98.80000	-26.20000	46.80900	0.04882	46.569	-1.5574E-6	-0.061467	1.5799E-6
1	Displacement Grid 1	104.40000	-26.20000	46.80900	0.08421	46.569	-1.0747E-6	-0.050237	1.2913E-6
1	Displacement Grid 1	110.00000	-26.20000	46.80900	0.10453	46.569	-746.56E-9	-0.041181	1.0585E-6
1	Displacement Grid 1	-30.00000	-22.40000	46.80900	0.06705	46.421	-3.4076E-6	-0.069464	863.29E-9
1	Displacement Grid 1	-24.40000	-22.40000	46.80900	0.02544	46.421	-4.9583E-6	-0.085374	1.0610E-6
1	Displacement Grid 1	-18.80000	-22.40000	46.80900	-0.03938	46.421	-7.2706E-6	-0.10535	1.3091E-6
1	Displacement Grid 1	-13.20000	-22.40000	46.80900	-0.13226	46.421	-10.635E-6	-0.12995	1.6147E-6
1	Displacement Grid 1	-7.60000	-22.40000	46.80900	-0.27432	46.421	-15.264E-6	-0.15918	1.9778E-6
1	Displacement Grid 1	-2.00000	-22.40000	46.80900	-0.39965	46.421	-21.041E-6	-0.19196	2.3848E-6
1	Displacement Grid 1	3.60000	-22.40000	46.80900	-0.55448	46.421	-27.309E-6	-0.22589	2.8062E-6
1	Displacement Grid 1	9.20000	-22.40000	46.80900	-0.70141	46.421	-33.104E-6	-0.25796	3.2044E-6
1	Displacement Grid 1	14.80000	-22.40000	46.80900	-0.82676	46.421	-37.739E-6	-0.28574	3.5493E-6
1	Displacement Grid 1	20.40000	-22.40000	46.80900	-0.92501	46.421	-41.091E-6	-0.30814	3.8276E-6
1	Displacement Grid 1	26.00000	-22.40000	46.80900	-0.99797	46.421	-43.413E-6	-0.32522	4.0397E-6
1	Displacement Grid 1	31.60000	-22.40000	46.80900	-1.05137	46.421	-45.074E-6	-0.33760	4.1936E-6
1	Displacement Grid 1	37.20000	-22.40000	46.80900	-1.09168	46.421	-46.451E-6	-0.34610	4.2991E-6
1	Displacement Grid 1	42.80000	-22.40000	46.80900	-1.12369	46.421	-47.921E-6	-0.35137	4.3646E-6
1	Displacement Grid 1	48.40000	-22.40000	46.80900	-1.14793	46.421	-49.768E-6	-0.35362	4.3923E-6
1	Displacement Grid 1	54.00000	-22.40000	46.80900	-1.15758	46.421	-51.830E-6	-0.35197	4.3716E-6
1	Displacement Grid 1	59.60000	-22.40000	46.80900	-1.13754	46.421	-53.061E-6	-0.34414	4.2743E-6
1	Displacement Grid 1	65.20000	-22.40000	46.80900	-1.07003	46.421	-51.875E-6	-0.32732	4.0652E-6
1	Displacement Grid 1	70.80000	-22.40000	46.80900	-0.62681	46.569	-11.100E-6	-0.18518	4.7587E-6
1	Displacement Grid 1	76.40000	-22.40000	46.80900	-0.49732	46.569	-9.2305E-6	-0.16266	4.1802E-6
1	Displacement Grid 1	82.00000	-22.40000	46.80900	-0.34721	46.569	-6.9687E-6	-0.13711	3.5237E-6
1	Displacement Grid 1	87.60000	-22.40000	46.80900	-0.20266	46.569	-4.8531E-6	-0.11196	2.8775E-6
1	Displacement Grid 1	93.20000	-22.40000	46.80900	-0.08348	46.569	-3.2221E-6	-0.089794	2.3078E-6
1	Displacement Grid 1	98.80000	-22.40000	46.80900	0.00307	46.569	-2.1060E-6	-0.071598	1.8402E-6
1	Displacement Grid 1	104.40000	-22.40000	46.80900	0.05951	46.569	-1.3839E-6	-0.057221	1.4708E-6
1	Displacement Grid 1	110.00000	-22.40000	46.80900	0.09248	46.569	-923.98E-9	-0.046039	1.1834E-6
1	Displacement Grid 1	-30.00000	-18.60000	46.80900	0.04376	46.421	-4.2109E-6	-0.077485	962.95E-9
1	Displacement Grid 1	-24.40000	-18.60000	46.80900	-0.01699	46.421	-6.3791E-6	-0.097063	1.2062E-6
1	Displacement Grid 1	-18.80000	-18.60000	46.80900	-0.11280	46.421	-9.8301E-6	-0.12255	1.5227E-6
1	Displacement Grid 1	-13.20000	-18.60000	46.80900	-0.25317	46.421	-15.254E-6	-0.15528	1.9292E-6
1	Displacement Grid 1	-7.60000	-18.60000	46.80900	-0.44238	46.421	-23.358E-6	-0.19589	2.4335E-6
1	Displacement Grid 1	-2.00000	-18.60000	46.80900	-0.67238	46.421	-34.202E-6	-0.24310	3.0196E-6
1	Displacement Grid 1	3.60000	-18.60000	46.80900	-0.91920	46.421	-46.342E-6	-0.29279	3.6364E-6
1	Displacement Grid 1	9.20000	-18.60000	46.80900	-1.15078	46.421	-57.300E-6	-0.33927	4.2134E-6
1	Displacement Grid 1	14.80000	-18.60000	46.80900	-1.34309	46.421	-65.488E-6	-0.37830	4.6980E-6
1	Displacement Grid 1	20.40000	-18.60000	46.80900	-1.48865	46.421	-70.930E-6	-0.40860	5.0743E-6
1	Displacement Grid 1	26.00000	-18.60000	46.80900	-1.59305	46.421	-74.423E-6	-0.43095	5.3518E-6
1	Displacement Grid 1	31.60000	-18.60000	46.80900	-1.66753	46.421	-76.823E-6	-0.44688	5.5497E-6
1	Displacement Grid 1	37.20000	-18.60000	46.80900	-1.72391	46.421	-78.917E-6	-0.45804	5.6883E-6
1	Displacement Grid 1	42.80000	-18.60000	46.80900	-1.77134	46.421	-81.598E-6	-0.46593	5.7862E-6
1	Displacement Grid 1	48.40000	-18.60000	46.80900	-1.81400	46.421	-85.911E-6	-0.47152	5.8553E-6
1	Displacement Grid 1	54.00000	-18.60000	46.80900	-1.84164	46.421	-92.096E-6	-0.47380	5.8832E-6
1	Displacement Grid 1	59.60000	-18.60000	46.80900	-1.82709	46.421	-97.568E-6	-0.46818	5.8130E-6
1	Displacement Grid 1	65.20000	-18.60000	46.80900	-1.73444	46.421	-97.651E-6	-0.44803	5.5625E-6
1	Displacement Grid 1	70.80000	-18.60000	46.80900	-1.10558	46.569	-20.999E-6	-0.25265	6.4917E-6
1	Displacement Grid 1	76.40000	-18.60000	46.80900	-0.88741	46.569	-17.076E-6	-0.21831	5.6094E-6
1	Displacement Grid 1	82.00000	-18.60000	46.80900	-0.63153	46.569	-12.164E-6	-0.17856	4.5883E-6
1	Displacement Grid 1	87.60000	-18.60000	46.80900	-0.38910	46.569	-7.7888E-6	-0.14039	3.6078E-6
1	Displacement Grid 1	93.20000	-18.60000	46.80900	-0.19579	46.569	-4.7438E-6	-0.10848	2.7879E-6
1	Displacement Grid 1	98.80000	-18.60000	46.80900	-0.06026	46.569	-2.8812E-6	-0.083770	2.1530E-6
1	Displacement Grid 1	104.40000	-18.60000	46.80900	0.02587	46.569	-1.7874E-6	-0.065236	1.6767E-6
1	Displacement Grid 1	110.00000	-18.60000	46.80900	0.07591	46.569	-1.1418E-6	-0.051416	1.3216E-6
1	Displacement Grid 1	-30.00000	-14.80000	46.80900	0.01437	46.421	-5.1949E-6	-0.086318	1.0727E-6
1	Displacement Grid 1	-24.40000	-14.80000	46.80900	-0.07142	46.421	-8.2318E-6	-0.11043	1.3722E-6
1	Displacement Grid 1	-18.80000	-14.80000	46.80900	-0.20961	46.421	-13.448E-6	-0.14317	1.7789E-6
1	Displacement Grid 1	-13.20000	-14.80000	46.80900	-0.41849	46.421	-22.480E-6	-0.18747	2.3289E-6
1	Displacement Grid 1	-7.60000	-14.80000	46.80900	-0.71031	46.421	-37.603E-6	-0.24577	3.0525E-6
1	Displacement Grid 1	-2.00000	-14.80000	46.80900	-1.07626	46.421	-60.119E-6	-0.31726	3.9396E-6
1	Displacement Grid 1	3.60000	-14.80000	46.80900	-1.47390	46.421	-86.656E-6	-0.39445	4.8972E-6
1	Displacement Grid 1	9.20000	-14.80000	46.80900	-1.84157	46.421	-109.71E-6	-0.46536	5.7769E-6
1	Displacement Grid 1	14.80000	-14.80000	46.80900	-2.13603	46.421	-125.20E-6	-0.52202	6.4802E-6
1	Displacement Grid 1	20.40000	-14.80000	46.80900	-2.34930	46.421	-134.32E-6	-0.56361	6.9966E-6
1	Displacement Grid 1	26.00000	-14.80000	46.80900	-2.49599	46.421	-139.62E-6	-0.59290	7.3603E-6
1	Displacement Grid 1	31.60000	-14.80000	46.80900	-2.59746	46.421	-143.05E-6	-0.61326	7.6131E-6
1	Displacement Grid 1	37.20000	-14.80000	46.80900	-2.67429	46.421	-146.21E-6	-0.62781	7.7938E-6
1	Displacement Grid 1	42.80000	-14.80000	46.80900	-2.74403	46.421	-151.19E-6	-0.63970	7.9412E-6
1	Displacement Grid 1	48.40000	-14.80000	46.80900	-2.81754	46.421	-161.73E-6	-0.65211	8.0947E-6
1	Displacement Grid 1	54.00000	-14.80000	46.80900	-2.88511	46.421	-181.33E-6	-0.66535	8.2578E-6
1	Displacement Grid 1	59.60000	-14.80000	46.80900	-2.89684	46.421	-203.04E-6	-0.66986	8.3123E-6
1	Displacement Grid 1	65.20000	-14.80000	46.80900	-2.77806	46.421	-210.18E-6	-0.64882	8.0502E-6
1	Displacement Grid 1	70.80000	-14.80000	46.80900	-1.88752	46.569	-45.657E-6	-0.36547	9.3880E-6
1	Displacement Grid 1	76.40000	-14.80000	46.80900	-1.51557	46.569	-36.177E-6	-0.30920	7.9430E-6
1	Displacement Grid 1	82.00000	-14.80000	46.80900	-1.07185	46.569	-23.612E-6	-0.24199	6.2171E-6
1	Displacement Grid 1	87.60000	-14.80000	46.80900	-0.66220	46.569	-13.290E-6	-0.18009	4.6276E-6
1	Displacement Grid 1	93.20000	-14.80000	46.80900	-0.35155	46.569	-7.1721E-6	-0.13238	3.4020E-6
1	Displacement Grid 1	98.80000	-14.80000	46.80900	-0.14445	46.569	-3.9724E-6	-0.098303	2.5265E-6
1	Displacement Grid 1	104.40000	-14.80000	46.80900	-0.01769	46.569	-2.3061E-6	-0.074322	1.9102E-6
1	Displacement Grid 1	110.00000	-14.80000	46.80900	0.05456	46.569	-1.4041E-6	-0.057278	1.4722E-6
1	Displacement Grid 1	-30.00000	-11.00000	46.80900	-0.02119	46.421	-6.3762E-6	-0.095885	1.1915E-6
1	Displacement Grid 1	-24.40000	-11.00000	46.80900	-0.13866	46.421	-10.611E-6	-0.12551	1.5595E-6
1	Displacement Grid 1	-18.80000	-11.00000	46.80900	-0.33324	46.421	-18.541E-6	-0.16774	2.0839E-6
1	Displacement Grid 1	-13.20000	-11.00000	46.80900	-0.63918	46.421	-34.020E-6	-0.22864	2.8399E-6
1	Displacement Grid 1	-7.60000	-11.00000	46.80900	-1.08767	46.421	-64.385E-6	-0.31557	3.9183E-6
1	Displacement Grid 1	-2.00000	-11.00000	46.80900	-1.67664	46.421	-118.04E-6	-0.43154	5.3560E-6
1	Displacement Grid 1	3.60000	-11.00000	46.80900	-2.33047	46.421	-187.46E-6	-0.56243	6.9780E-6
1	Displacement Grid 1	9.20000	-11.00000	46.80900	-2.92227	46.421	-243.86E-6	-0.67875	8.4197E-6
1	Displacement Grid 1	14.80000	-11.00000	46.80900	-3.37258	46.421	-275.70E-6	-0.76428	9.4807E-6
1	Displacement Grid 1	20.40000	-11.00000	46.80900	-3.68086	46.421	-291.45E-6	-0.82210	10.198E-6
1	Displacement Grid 1	26.00000	-11.00000	46.80900	-3.88273	46.421	-299.47E-6	-0.86041	10.674E-6
1	Displacement Grid 1	31.60000	-11.00000	46.80900	-4.01731	46.421	-304.29E-6	-0.88612	10.993E-6
1	Displacement Grid 1	37.20000	-11.00000	46.80900	-4.11863	46.421	-308.95E-6	-0.90480	11.225E-6
1	Displacement Grid 1	42.80000	-11.00000	46.80900	-4.21747	46.421	-318.19E-6	-0.92253	11.445E-6
1	Displacement Grid 1	48.40000	-11.00000	46.80900	-4.34241	46.421	-345.38E-6	-0.94880	11.769E-6
1	Displacement Grid 1	54.00000	-11.00000	46.80900	-4.49686	46.421	-417.54E-6	-0.99306	12.314E-6
1	Displacement Grid 1	59.60000	-11.00000	46.80900	-4.59063	46.421	-516.11E-6	-1.0352	12.830E-6
1	Displacement Grid 1	65.20000	-11.00000	46.80900	-4.45813	46.421	-557.66E-6	-1.0244	12.693E-6
1	Displacement Grid 1	70.80000	-11.00000	46.80900	-3.20628	46.569	-123.28E-6	-0.57893	14.864E-6
1	Displacement Grid 1	76.40000	-11.00000	46.80900	-2.55729	46.569	-95.386E-6	-0.47687	12.244E-6
1	Displacement Grid 1	82.00000	-11.00000	46.80900	-1.75996	46.569	-53.834E-6	-0.34755	8.9262E-6
1	Displacement Grid 1	87.60000	-11.00000	46.80900	-1.05496	46.569	-24.390E-6	-0.23724	6.0949E-6
1	Displacement Grid 1	93.20000	-11.00000	46.80900	-0.55997	46.569	-11.075E-6	-0.16290	4.1861E-6
1	Displacement Grid 1	98.80000	-11.00000	46.80900	-0.25147	46.569	-5.4785E-6	-0.11539	2.9654E-6
1	Displacement Grid 1	104.40000	-11.00000	46.80900	-0.07130	46.569	-2.9549E-6	-0.084418	2.1697E-6
1	Displacement Grid 1	110.00000	-11.00000	46.80900	0.02864	46.569	-1.7111E-6	-0.063537	1.6331E-6
1	Displacement Grid 1	-30.00000	-7.20000	46.80900	-0.06227	46.421	-7.7531E-6	-0.10601	1.3173E-6
1	Displacement Grid 1	-24.40000	-7.20000	46.80900	-0.21828	46.421	-13.583E-6	-0.14217	1.7664E-6
1	Displacement Grid 1	-18.80000	-7.20000	46.80900	-0.48510	46.421	-25.575E-6	-0.19652	2.4411E-6
1	Displacement Grid 1	-13.20000	-7.20000	46.80900	-0.92458	46.421	-52.558E-6	-0.28118	3.4916E-6
1	Displacement Grid 1	-7.60000	-7.20000	46.80900	-1.61016	46.421	-118.37E-6	-0.41623	5.1655E-6

Ref.	Name	x [m]	y [m]	z [mOD]	δz [mm]	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [μ]
1	Displacement Grid 1	-2.00000	-7.20000	46.80900	-2.57592	46.421	-273.84E-6	-0.62367	7.7328E-6
1	Displacement Grid 1	3.60000	-7.20000	46.80900	-3.69071	46.421	-517.12E-6	-0.87968	10.897E-6
1	Displacement Grid 1	9.20000	-7.20000	46.80900	-4.66484	46.421	-690.30E-6	-1.0923	13.528E-6
1	Displacement Grid 1	14.80000	-7.20000	46.80900	-5.35092	46.421	-762.04E-6	-1.2272	15.199E-6
1	Displacement Grid 1	20.40000	-7.20000	46.80900	-5.78817	46.421	-789.66E-6	-1.3081	16.203E-6
1	Displacement Grid 1	26.00000	-7.20000	46.80900	-6.05897	46.421	-801.64E-6	-1.3578	16.820E-6
1	Displacement Grid 1	31.60000	-7.20000	46.80900	-6.23207	46.421	-808.22E-6	-1.3897	17.216E-6
1	Displacement Grid 1	37.20000	-7.20000	46.80900	-6.36031	46.421	-814.77E-6	-1.4130	17.505E-6
1	Displacement Grid 1	42.80000	-7.20000	46.80900	-6.49342	46.421	-831.15E-6	-1.4385	17.821E-6
1	Displacement Grid 1	48.40000	-7.20000	46.80900	-6.69696	46.421	-904.11E-6	-1.4919	18.479E-6
1	Displacement Grid 1	54.00000	-7.20000	46.80900	-7.04262	46.421	-0.0012588	-1.6353	20.235E-6
1	Displacement Grid 1	59.60000	-7.20000	46.80900	-7.37966	46.421	-0.0019279	-1.8376	22.700E-6
1	Displacement Grid 1	65.20000	-7.20000	46.80900	-7.28249	46.421	-0.0021576	-1.8809	23.221E-6
1	Displacement Grid 1	70.80000	-7.20000	46.80900	-5.56794	46.569	-490.01E-6	-1.0763	27.592E-6
1	Displacement Grid 1	76.40000	-7.20000	46.80900	-4.39370	46.569	-380.30E-6	-0.86160	22.090E-6
1	Displacement Grid 1	82.00000	-7.20000	46.80900	-2.85545	46.569	-160.60E-6	-0.54762	14.053E-6
1	Displacement Grid 1	87.60000	-7.20000	46.80900	-1.60321	46.569	-48.219E-6	-0.32126	8.2511E-6
1	Displacement Grid 1	93.20000	-7.20000	46.80900	-0.82554	46.569	-17.190E-6	-0.20112	5.1675E-6
1	Displacement Grid 1	98.80000	-7.20000	46.80900	-0.38041	46.569	-7.4690E-6	-0.13490	3.4667E-6
1	Displacement Grid 1	104.40000	-7.20000	46.80900	-0.13375	46.569	-3.7322E-6	-0.095308	2.4495E-6
1	Displacement Grid 1	110.00000	-7.20000	46.80900	-0.00105	46.569	-2.0566E-6	-0.070031	1.8000E-6
1	Displacement Grid 1	-30.00000	-3.40000	46.80900	-0.10741	46.421	-9.2929E-6	-0.11640	1.4463E-6
1	Displacement Grid 1	-24.40000	-3.40000	46.80900	-0.30795	46.421	-17.136E-6	-0.15998	1.9876E-6
1	Displacement Grid 1	-18.80000	-3.40000	46.80900	-0.66266	46.421	-34.887E-6	-0.22924	2.8472E-6
1	Displacement Grid 1	-13.20000	-3.40000	46.80900	-1.27725	46.421	-81.602E-6	-0.34687	4.3060E-6
1	Displacement Grid 1	-7.60000	-3.40000	46.80900	-2.31215	46.421	-232.74E-6	-0.56405	6.9967E-6
1	Displacement Grid 1	-2.00000	-3.40000	46.80900	-3.93811	46.421	-831.79E-6	-0.99147	12.263E-6
1	Displacement Grid 1	3.60000	-3.40000	46.80900	-5.97672	46.421	-0.0023165	-1.6487	20.323E-6
1	Displacement Grid 1	9.20000	-3.40000	46.80900	-7.63720	46.421	-0.0030887	-2.1118	26.023E-6
1	Displacement Grid 1	14.80000	-3.40000	46.80900	-8.66896	46.421	-0.0032630	-2.3324	28.753E-6
1	Displacement Grid 1	20.40000	-3.40000	46.80900	-9.27155	46.421	-0.0033106	-2.4448	30.146E-6
1	Displacement Grid 1	26.00000	-3.40000	46.80900	-9.62355	46.421	-0.0033280	-2.5080	30.931E-6
1	Displacement Grid 1	31.60000	-3.40000	46.80900	-9.83857	46.421	-0.0033366	-2.5467	31.410E-6
1	Displacement Grid 1	37.20000	-3.40000	46.80900	-9.99299	46.421	-0.0033451	-2.5745	31.755E-6
1	Displacement Grid 1	42.80000	-3.40000	46.80900	-10.15842	46.421	-0.0033708	-2.6083	32.173E-6
1	Displacement Grid 1	48.40000	-3.40000	46.80900	-10.46016	46.421	-0.0035539	-2.7065	33.381E-6
1	Displacement Grid 1	54.00000	-3.40000	46.80900	-11.23764	46.421	-0.0065814	-3.2537	39.958E-6
1	Displacement Grid 1	59.60000	-3.40000	46.80900	-12.43212	46.421	-0.019915	-4.6465	56.278E-6
1	Displacement Grid 1	65.20000	-3.40000	46.80900	-12.49420	46.421	-0.021476	-4.9129	59.473E-6
1	Displacement Grid 1	70.80000	-3.40000	46.80900	-10.37728	46.569	-0.0050526	-2.9009	73.793E-6
1	Displacement Grid 1	76.40000	-3.40000	46.80900	-8.15357	46.569	-0.0043706	-2.3413	59.514E-6
1	Displacement Grid 1	82.00000	-3.40000	46.80900	-4.64644	46.569	-784.23E-6	-1.0169	26.021E-6
1	Displacement Grid 1	87.60000	-3.40000	46.80900	-2.32374	46.569	-98.229E-6	-0.44216	11.352E-6
1	Displacement Grid 1	93.20000	-3.40000	46.80900	-1.14107	46.569	-25.986E-6	-0.24658	6.3348E-6
1	Displacement Grid 1	98.80000	-3.40000	46.80900	-0.52584	46.569	-9.9085E-6	-0.15614	4.0124E-6
1	Displacement Grid 1	104.40000	-3.40000	46.80900	-0.20212	46.569	-4.6079E-6	-0.10657	2.7389E-6
1	Displacement Grid 1	110.00000	-3.40000	46.80900	-0.03304	46.569	-2.4259E-6	-0.076519	1.9667E-6
1	Displacement Grid 1	-30.00000	0.40000	46.80900	-0.15417	46.421	-10.922E-6	-0.12660	1.5730E-6
1	Displacement Grid 1	-24.40000	0.40000	46.80900	-0.40302	46.421	-21.127E-6	-0.17818	2.2135E-6
1	Displacement Grid 1	-18.80000	0.40000	46.80900	-0.85749	46.421	-46.354E-6	-0.26463	3.2864E-6
1	Displacement Grid 1	-13.20000	0.40000	46.80900	-1.68529	46.421	-123.75E-6	-0.42498	5.2740E-6
1	Displacement Grid 1	-7.60000	0.40000	46.80900	-3.20177	46.421	-467.41E-6	-0.77599	9.6119E-6
1	Displacement Grid 1	-2.00000	0.40000	46.80900	-6.01079	46.421	-0.0038238	-1.8328	22.500E-6
1	Displacement Grid 1	3.60000	0.40000	46.80900	-10.44526	46.421	-0.042911	-5.2670	62.276E-6
1	Displacement Grid 1	9.20000	0.40000	46.80900	-13.41526	46.421	-0.049801	-6.6284	78.686E-6
1	Displacement Grid 1	14.80000	0.40000	46.80900	-14.91047	46.421	-0.050213	-6.9869	83.113E-6
1	Displacement Grid 1	20.40000	0.40000	46.80900	-15.70641	46.421	-0.050290	-7.1380	84.986E-6
1	Displacement Grid 1	26.00000	0.40000	46.80900	-16.14682	46.421	-0.050314	-7.2162	85.957E-6
1	Displacement Grid 1	31.60000	0.40000	46.80900	-16.40402	46.421	-0.050324	-7.2616	86.520E-6
1	Displacement Grid 1	37.20000	0.40000	46.80900	-16.57981	46.421	-0.050334	-7.2930	86.909E-6
1	Displacement Grid 1	42.80000	0.40000	46.80900	-16.76320	46.421	-0.050367	-7.3318	87.389E-6
1	Displacement Grid 1	48.40000	0.40000	46.80900	-17.12970	46.421	-0.050684	-7.4699	89.082E-6
1	Displacement Grid 1	54.00000	0.40000	46.80900	-18.66136	46.421	-0.088251	-9.6628	113.54E-6
1	Displacement Grid 1	59.60000	0.40000	46.80900	-28.70106	46.421	-63.964	-124.64	-0.0032216
1	Displacement Grid 1	65.20000	0.40000	46.80900	-28.99247	46.421	-63.972	-125.47	-0.0032119
1	Displacement Grid 1	70.80000	0.40000	46.80900	-29.78536	46.569	-67.799	-138.10	-0.0069074
1	Displacement Grid 1	76.40000	0.40000	46.80900	-25.65576	46.569	-67.794	-136.47	-0.0069484
1	Displacement Grid 1	82.00000	0.40000	46.80900	-7.40190	46.569	-0.0053342	-2.2356	56.648E-6
1	Displacement Grid 1	87.60000	0.40000	46.80900	-3.16142	46.569	-178.93E-6	-0.59396	15.241E-6
1	Displacement Grid 1	93.20000	0.40000	46.80900	-1.48125	46.569	-36.685E-6	-0.29577	7.5978E-6
1	Displacement Grid 1	98.80000	0.40000	46.80900	-0.67714	46.569	-12.588E-6	-0.17773	4.5670E-6
1	Displacement Grid 1	104.40000	0.40000	46.80900	-0.27175	46.569	-5.5185E-6	-0.11759	3.0220E-6
1	Displacement Grid 1	110.00000	0.40000	46.80900	-0.06521	46.569	-2.7958E-6	-0.082691	2.1253E-6
1	Displacement Grid 1	-30.00000	4.20000	46.80900	-0.19930	46.421	-12.527E-6	-0.13606	1.6905E-6
1	Displacement Grid 1	-24.40000	4.20000	46.80900	-0.49655	46.421	-25.244E-6	-0.19562	2.4300E-6
1	Displacement Grid 1	-18.80000	4.20000	46.80900	-1.05451	46.421	-59.042E-6	-0.30018	3.7273E-6
1	Displacement Grid 1	-13.20000	4.20000	46.80900	-2.11549	46.421	-176.69E-6	-0.50972	6.3234E-6
1	Displacement Grid 1	-7.60000	4.20000	46.80900	-4.21388	46.421	-866.32E-6	-1.0472	12.953E-6
1	Displacement Grid 1	-2.00000	4.20000	46.80900	-8.89423	46.421	-0.017441	-3.6831	44.486E-6
1	Displacement Grid 1	3.60000	4.20000	46.80900	-26.42672	46.421	-69.528	-145.79	-0.0033736
1	Displacement Grid 1	9.20000	4.20000	46.80900	-31.49342	46.421	-69.592	-150.05	-0.0033254
1	Displacement Grid 1	14.80000	4.20000	46.80900	-33.49509	46.421	-69.593	-150.57	-0.0033190
1	Displacement Grid 1	20.40000	4.20000	46.80900	-34.48900	46.421	-69.593	-150.77	-0.0033166
1	Displacement Grid 1	26.00000	4.20000	46.80900	-35.01658	46.421	-69.593	-150.86	-0.0033155
1	Displacement Grid 1	31.60000	4.20000	46.80900	-35.31242	46.421	-69.593	-150.91	-0.0033149
1	Displacement Grid 1	37.20000	4.20000	46.80900	-35.50161	46.421	-69.593	-150.94	-0.0033144
1	Displacement Grid 1	42.80000	4.20000	46.80900	-35.67897	46.421	-69.593	-150.98	-0.0033140
1	Displacement Grid 1	48.40000	4.20000	46.80900	-36.00324	46.421	-69.593	-151.10	-0.0033125
1	Displacement Grid 1	54.00000	4.20000	46.80900	-37.14854	46.421	-69.608	-152.39	-0.0032975
1	Displacement Grid 1	59.60000	4.20000	46.80900	-40.00773	46.421	-69.983	-161.08	-0.0032175
1	Displacement Grid 1	65.20000	4.20000	46.80900	-39.91978	46.421	-69.988	-161.59	-0.0032115
1	Displacement Grid 1	70.80000	4.20000	46.80900	-41.20831	46.569	-69.997	-163.71	-0.0065879
1	Displacement Grid 1	76.40000	4.20000	46.80900	-35.32869	46.569	-69.989	-161.19	-0.0066513
1	Displacement Grid 1	82.00000	4.20000	46.80900	-9.95121	46.569	-0.0086778	-3.2718	82.770E-6
1	Displacement Grid 1	87.60000	4.20000	46.80900	-3.96412	46.569	-254.53E-6	-0.73827	18.939E-6
1	Displacement Grid 1	93.20000	4.20000	46.80900	-1.80510	46.569	-46.989E-6	-0.34231	8.7926E-6
1	Displacement Grid 1	98.80000	4.20000	46.80900	-0.82003	46.569	-15.154E-6	-0.19777	5.0817E-6
1	Displacement Grid 1	104.40000	4.20000	46.80900	-0.33686	46.569	-6.3768E-6	-0.12760	3.2793E-6
1	Displacement Grid 1	110.00000	4.20000	46.80900	-0.09508	46.569	-3.1380E-6	-0.088199	2.2668E-6
1	Displacement Grid 1	-30.00000	8.00000	46.80900	-0.23906	46.421	-13.961E-6	-0.14416	1.7911E-6
1	Displacement Grid 1	-24.40000	8.00000	46.80900	-0.58010	46.421	-29.041E-6	-0.21092	2.6199E-6
1	Displacement Grid 1	-18.80000	8.00000	46.80900	-1.23374	46.421	-71.211E-6	-0.33236	4.1264E-6
1	Displacement Grid 1	-13.20000	8.00000	46.80900	-2.51583	46.421	-230.52E-6	-0.58971	7.3139E-6
1	Displacement Grid 1	-7.60000	8.00000	46.80900	-5.18715	46.421	-0.0013453	-1.3245	16.366E-6
1	Displacement Grid 1	-2.00000	8.00000	46.80900	-12.02707	46.421	-0.081327	-6.9851	80.770E-6
1	Displacement Grid 1	3.60000	8.00000	46.80900	-33.37986	46.421	-69.959	-157.99	-0.0032541
1	Displacement Grid 1	9.20000	8.00000	46.80900	-39.35450	46.421	-69.992	-161.90	-0.0032080
1	Displacement Grid 1	14.80000	8.00000	46.80900	-41.76396	46.421	-69.993	-162.53	-0.0032003
1	Displacement Grid 1	20.40000	8.00000	46.80900	-42.93036	46.421	-69.993	-162.75	-0.0031975
1	Displacement Grid 1	26.00000	8.00000	46.80900	-43.53417	46.421	-69.993	-162.86	-0.0031962
1	Displacement Grid 1	31.60000	8.00000	46.80900	-43.86159	46.421	-69.993	-162.91	-0.0031955
1	Displacement Grid 1	37.20000	8.00000	46.80900	-44.05553	46.421	-69.993	-162.95	-0.0031951
1	Displacement Grid 1	42.80000	8.00000	46.80900	-44.20597	46.421	-69.993	-162.98	-0.0031947
1	Displacement Grid 1	48.40000	8.00000	46.80900	-44.40919	46.421	-69.993	-163.05	-0.0031938
1	Displacement Grid 1	54.00000	8.00000	46.80900	-44.81625	46.421	-69.994	-163.32	-0.0031905
1	Displacement Grid 1	59.60000	8.00000	46.80900	-45.18286	46.421	-69.997	-163.82	-0.0031846
1	Displacement Grid 1	65.20000	8.00000	46.80900	-44.46768	46.421	-69.998	-163.81	-0.0031847
1	Displacement Grid 1	70.80000	8.00000	46.80900	-45.19771	46.569	-69.999	-165.00	-0.0065552
1	Displacement Grid 1	76.40000	8.00000	46.80900	-38.39655	46.569	-69.991	-162.21	-0.0066255
1	Displacement Grid 1	82.00000	8.00000	46.80900	-11.48380	46.569	-0.0090840	-3.6435	92.263E-6
1	Displacement Grid 1	87.60000	8.00000	46.80900	-4.59196	46.569	-297.11E-6	-0.84200	21.600E-6
1	Displacement Grid 1	93.20000	8.00000	46.80900	-2.07452	46.569	-54.805E-6	-0.38005	9.7615E-6
1	Displacement Grid 1	98.80000	8.00000	46.80900	-0.93999	46.569	-17.262E-6	-0.21436	5.5080E-6
1	Displacement Grid 1	104.40000	8.00000	46.80900	-0.39155	46.569	-7.0944E-6	-0.13586	3.4915E-6
1	Displacement Grid 1	110.00000	8.00000	46.80900	-0.12011	46.569	-3.4232E-6	-0.092696	2.3824E-6
1	Displacement Grid 1	-30.00000	11.80000	46.80900	-0.26978	46.421	-15.080E-6	-0.15029	1.8673E-6
1	Displacement Grid 1	-24.40000	11.80000	46.80900	-0.64520	46.421	-32.046E-6	-0.22269	2.7660E-6
1	Displacement Grid 1	-18.80000	11.80000	46.80900	-1.37456	46.421	-80.906E-6	-0.35748	4.4380E-6
1	Displacement Grid 1	-13.20000	11.80000	46.80900	-2.83115	46.421	-272.38E-6	-0.65231	8.0890E-6
1	Displacement Grid 1	-7.60000	11.80000	46.80900	-5.93574	46.421	-0.0016746	-1.5296	18.890E-6
1	Displacement Grid 1	-2.00000	11.80000	46.80900	-14.06086	46.421	-0.10250	-8.8554	98.712E-6
1	Displacement Grid 1	3.60000	11.80000	46.80900	-36.55405	46.421	-69.980	-160.15	-0.0032289
1	Displacement Grid 1	9.20000	11.80000	46.80900	-42.81200	46.421	-69.998	-163.45	-0.0031892
1	Displacement Grid 1	14.80000	11.80000	46.80900	-45.48150	46.421	-69.998	-164.12	-0.0031809
1	Displacement Grid 1	20.40000	11.80000	46.80900	-46.77456	46.421	-69.999	-164.37	-0.0031778
1	Displacement Grid 1	26.00000	11.80000	46.80900	-47.43578	46.421	-69.999	-164.48	-0.0031764
1	Displacement Grid 1	31.60000	11.80000	46.80900	-47.78515	46.421	-69.999	-164.54	-0.0031757
1	Displacement Grid 1	37.20000	11.80000	46.80900	-47.97677	46.421	-69.999	-164.57	-0.0031752
1	Displacement Grid 1	42.80000	11.80000	46.80900	-48.09184	46.421	-69.999	-164.60	-0.0031750
1	Displacement Grid 1	48.40000	11.80000	46.80900	-48.17524	46.421	-69.999	-164.62	-0.0031747
1	Displacement Grid 1	54.00000	11.80000	46.80900	-48.21173	46.421	-69.999	-164.68	-0.0031740

Ref.	Name	x [m]	y [m]	z [mOD]	δz [mm]	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [μ]
1	Displacement Grid 1	59.60000	11.80000	46.80900	-47.95755	46.421	-69.999	-164.70	-0.0031737
1	Displacement Grid 1	65.20000	11.80000	46.80900	-46.84576	46.421	-69.999	-164.51	-0.0031760
1	Displacement Grid 1	70.80000	11.80000	46.80900	-47.08295	46.569	-70.000	-165.38	-0.0065455
1	Displacement Grid 1	76.40000	11.80000	46.80900	-39.82619	46.569	-69.991	-162.50	-0.0066181
1	Displacement Grid 1	82.00000	11.80000	46.80900	-12.32582	46.569	-0.0091612	-3.7944	96.129E-6
1	Displacement Grid 1	87.60000	11.80000	46.80900	-5.00057	46.569	-315.98E-6	-0.90365	23.181E-6
1	Displacement Grid 1	93.20000	11.80000	46.80900	-2.26192	46.569	-59.600E-6	-0.40572	10.421E-6
1	Displacement Grid 1	98.80000	11.80000	46.80900	-1.02559	46.569	-18.708E-6	-0.22609	5.8093E-6
1	Displacement Grid 1	104.40000	11.80000	46.80900	-0.43081	46.569	-7.6039E-6	-0.14174	3.6426E-6
1	Displacement Grid 1	110.00000	11.80000	46.80900	-0.13807	46.569	-3.6271E-6	-0.095886	2.4644E-6
1	Displacement Grid 1	-30.00000	15.60000	46.80900	-0.28843	46.421	-15.759E-6	-0.15397	1.9129E-6
1	Displacement Grid 1	-24.40000	15.60000	46.80900	-0.68485	46.421	-33.874E-6	-0.22979	2.8541E-6
1	Displacement Grid 1	-18.80000	15.60000	46.80900	-1.46037	46.421	-86.715E-6	-0.37266	4.6264E-6
1	Displacement Grid 1	-13.20000	15.60000	46.80900	-3.02533	46.421	-295.60E-6	-0.68927	8.5467E-6
1	Displacement Grid 1	-7.60000	15.60000	46.80900	-6.36418	46.421	-0.0018044	-1.6351	20.193E-6
1	Displacement Grid 1	-2.00000	15.60000	46.80900	-14.97137	46.421	-0.10347	-8.8835	102.72E-6
1	Displacement Grid 1	3.60000	15.60000	46.80900	-37.92057	46.421	-69.981	-160.63	-0.0032230
1	Displacement Grid 1	9.20000	15.60000	46.80900	-44.40492	46.421	-69.998	-163.92	-0.0031833
1	Displacement Grid 1	14.80000	15.60000	46.80900	-47.21708	46.421	-69.999	-164.62	-0.0031747
1	Displacement Grid 1	20.40000	15.60000	46.80900	-48.58466	46.421	-69.999	-164.88	-0.0031715
1	Displacement Grid 1	26.00000	15.60000	46.80900	-49.27986	46.421	-69.999	-165.00	-0.0031700
1	Displacement Grid 1	31.60000	15.60000	46.80900	-49.64013	46.421	-69.999	-165.06	-0.0031693
1	Displacement Grid 1	37.20000	15.60000	46.80900	-49.82456	46.421	-69.999	-165.09	-0.0031689
1	Displacement Grid 1	42.80000	15.60000	46.80900	-49.90648	46.421	-69.999	-165.11	-0.0031687
1	Displacement Grid 1	48.40000	15.60000	46.80900	-49.90296	46.421	-69.999	-165.11	-0.0031686
1	Displacement Grid 1	54.00000	15.60000	46.80900	-49.75390	46.421	-69.999	-165.10	-0.0031688
1	Displacement Grid 1	59.60000	15.60000	46.80900	-49.24561	46.421	-69.999	-165.02	-0.0031697
1	Displacement Grid 1	65.20000	15.60000	46.80900	-47.92312	46.421	-69.999	-164.77	-0.0031729
1	Displacement Grid 1	70.80000	15.60000	46.80900	-47.88200	46.569	-70.000	-165.51	-0.0065421
1	Displacement Grid 1	76.40000	15.60000	46.80900	-40.42671	46.569	-69.991	-162.60	-0.0066156
1	Displacement Grid 1	82.00000	15.60000	46.80900	-12.70093	46.569	-0.0091809	-3.8527	97.626E-6
1	Displacement Grid 1	87.60000	15.60000	46.80900	-5.19784	46.569	-322.92E-6	-0.93177	23.903E-6
1	Displacement Grid 1	93.20000	15.60000	46.80900	-2.35669	46.569	-61.780E-6	-0.41851	10.749E-6
1	Displacement Grid 1	98.80000	15.60000	46.80900	-1.06969	46.569	-19.426E-6	-0.23214	5.9647E-6
1	Displacement Grid 1	104.40000	15.60000	46.80900	-0.45115	46.569	-7.8654E-6	-0.14481	3.7214E-6
1	Displacement Grid 1	110.00000	15.60000	46.80900	-0.14737	46.569	-3.7328E-6	-0.097555	2.5073E-6
1	Displacement Grid 1	-30.00000	19.40000	46.80900	-0.29311	46.421	-15.923E-6	-0.15489	1.9244E-6
1	Displacement Grid 1	-24.40000	19.40000	46.80900	-0.69472	46.421	-34.304E-6	-0.23155	2.8759E-6
1	Displacement Grid 1	-18.80000	19.40000	46.80900	-1.48145	46.421	-87.999E-6	-0.37632	4.6717E-6
1	Displacement Grid 1	-13.20000	19.40000	46.80900	-3.06683	46.421	-300.09E-6	-0.69767	8.6507E-6
1	Displacement Grid 1	-7.60000	19.40000	46.80900	-6.46122	46.421	-0.0018225	-1.6560	20.450E-6
1	Displacement Grid 1	-2.00000	19.40000	46.80900	-15.16014	46.421	-0.10354	-8.9319	103.32E-6
1	Displacement Grid 1	3.60000	19.40000	46.80900	-38.21354	46.421	-69.981	-160.71	-0.0032220
1	Displacement Grid 1	9.20000	19.40000	46.80900	-44.77459	46.421	-69.999	-164.02	-0.0031822
1	Displacement Grid 1	14.80000	19.40000	46.80900	-47.63237	46.421	-69.999	-164.72	-0.0031735
1	Displacement Grid 1	20.40000	19.40000	46.80900	-49.02238	46.421	-69.999	-164.99	-0.0031702
1	Displacement Grid 1	26.00000	19.40000	46.80900	-49.72613	46.421	-70.000	-165.11	-0.0031687
1	Displacement Grid 1	31.60000	19.40000	46.80900	-50.08572	46.421	-70.000	-165.17	-0.0031679
1	Displacement Grid 1	37.20000	19.40000	46.80900	-50.25973	46.421	-70.000	-165.20	-0.0031675
1	Displacement Grid 1	42.80000	19.40000	46.80900	-50.31532	46.421	-70.000	-165.21	-0.0031674
1	Displacement Grid 1	48.40000	19.40000	46.80900	-50.25715	46.421	-70.000	-165.20	-0.0031675
1	Displacement Grid 1	54.00000	19.40000	46.80900	-50.01546	46.421	-70.000	-165.16	-0.0031680
1	Displacement Grid 1	59.60000	19.40000	46.80900	-49.39726	46.421	-70.000	-165.06	-0.0031693
1	Displacement Grid 1	65.20000	19.40000	46.80900	-47.99064	46.421	-69.999	-164.78	-0.0031727
1	Displacement Grid 1	70.80000	19.40000	46.80900	-47.89899	46.569	-70.000	-165.51	-0.0065420
1	Displacement Grid 1	76.40000	19.40000	46.80900	-40.42795	46.569	-69.991	-162.60	-0.0066156
1	Displacement Grid 1	82.00000	19.40000	46.80900	-12.69855	46.569	-0.0091805	-3.8523	97.616E-6
1	Displacement Grid 1	87.60000	19.40000	46.80900	-5.19589	46.569	-322.78E-6	-0.93160	23.899E-6
1	Displacement Grid 1	93.20000	19.40000	46.80900	-2.35560	46.569	-61.738E-6	-0.41849	10.749E-6
1	Displacement Grid 1	98.80000	19.40000	46.80900	-1.06912	46.569	-19.414E-6	-0.23218	5.9656E-6
1	Displacement Grid 1	104.40000	19.40000	46.80900	-0.45083	46.569	-7.8621E-6	-0.14485	3.7225E-6
1	Displacement Grid 1	110.00000	19.40000	46.80900	-0.14717	46.569	-3.7320E-6	-0.097593	2.5082E-6
1	Displacement Grid 1	-30.00000	23.20000	46.80900	-0.28338	46.421	-15.557E-6	-0.15298	1.9006E-6
1	Displacement Grid 1	-24.40000	23.20000	46.80900	-0.67383	46.421	-33.292E-6	-0.22780	2.8294E-6
1	Displacement Grid 1	-18.80000	23.20000	46.80900	-1.43570	46.421	-84.676E-6	-0.36814	4.5702E-6
1	Displacement Grid 1	-13.20000	23.20000	46.80900	-2.96420	46.421	-286.31E-6	-0.67721	8.3975E-6
1	Displacement Grid 1	-7.60000	23.20000	46.80900	-6.22854	46.421	-0.0017452	-1.5964	19.716E-6
1	Displacement Grid 1	-2.00000	23.20000	46.80900	-14.67894	46.421	-0.10306	-8.7575	101.18E-6
1	Displacement Grid 1	3.60000	23.20000	46.80900	-37.54546	46.421	-69.981	-160.48	-0.0032248
1	Displacement Grid 1	9.20000	23.20000	46.80900	-44.05111	46.421	-69.998	-163.82	-0.0031846
1	Displacement Grid 1	14.80000	23.20000	46.80900	-46.86386	46.421	-69.999	-164.53	-0.0031759
1	Displacement Grid 1	20.40000	23.20000	46.80900	-48.22421	46.421	-69.999	-164.79	-0.0031727
1	Displacement Grid 1	26.00000	23.20000	46.80900	-48.91054	46.421	-69.999	-164.91	-0.0031712
1	Displacement Grid 1	31.60000	23.20000	46.80900	-49.25797	46.421	-69.999	-164.97	-0.0031704
1	Displacement Grid 1	37.20000	23.20000	46.80900	-49.41912	46.421	-69.999	-164.99	-0.0031701
1	Displacement Grid 1	42.80000	23.20000	46.80900	-49.45565	46.421	-69.999	-165.00	-0.0031700
1	Displacement Grid 1	48.40000	23.20000	46.80900	-49.36742	46.421	-69.999	-164.98	-0.0031702
1	Displacement Grid 1	54.00000	23.20000	46.80900	-49.08636	46.421	-69.999	-164.94	-0.0031708
1	Displacement Grid 1	59.60000	23.20000	46.80900	-48.43759	46.421	-69.999	-164.82	-0.0031722
1	Displacement Grid 1	65.20000	23.20000	46.80900	-47.04237	46.421	-69.999	-164.55	-0.0031756
1	Displacement Grid 1	70.80000	23.20000	46.80900	-47.12412	46.569	-70.000	-165.38	-0.0065454
1	Displacement Grid 1	76.40000	23.20000	46.80900	-39.82270	46.569	-69.991	-162.50	-0.0066182
1	Displacement Grid 1	82.00000	23.20000	46.80900	-12.31552	46.569	-0.0091594	-3.7923	96.076E-6
1	Displacement Grid 1	87.60000	23.20000	46.80900	-4.99397	46.569	-315.44E-6	-0.90294	23.163E-6
1	Displacement Grid 1	93.20000	23.20000	46.80900	-2.25857	46.569	-59.458E-6	-0.40563	10.418E-6
1	Displacement Grid 1	98.80000	23.20000	46.80900	-1.02388	46.569	-18.671E-6	-0.22619	5.8117E-6
1	Displacement Grid 1	104.40000	23.20000	46.80900	-0.42987	46.569	-7.5942E-6	-0.14187	3.6458E-6
1	Displacement Grid 1	110.00000	23.20000	46.80900	-0.13748	46.569	-3.6249E-6	-0.095998	2.4673E-6
1	Displacement Grid 1	-30.00000	27.00000	46.80900	-0.26027	46.421	-14.703E-6	-0.14840	1.8437E-6
1	Displacement Grid 1	-24.40000	27.00000	46.80900	-0.62455	46.421	-30.971E-6	-0.21892	2.7193E-6
1	Displacement Grid 1	-18.80000	27.00000	46.80900	-1.32857	46.421	-77.127E-6	-0.34901	4.3331E-6
1	Displacement Grid 1	-13.20000	27.00000	46.80900	-2.72414	46.421	-253.96E-6	-0.62942	7.8058E-6
1	Displacement Grid 1	-7.60000	27.00000	46.80900	-5.66682	46.421	-0.0015031	-1.4437	17.835E-6
1	Displacement Grid 1	-2.00000	27.00000	46.80900	-13.26898	46.421	-0.093917	-7.8295	90.328E-6
1	Displacement Grid 1	3.60000	27.00000	46.80900	-35.55379	46.421	-69.972	-159.37	-0.0032380
1	Displacement Grid 1	9.20000	27.00000	46.80900	-41.99846	46.421	-69.997	-163.15	-0.0031928
1	Displacement Grid 1	14.80000	27.00000	46.80900	-44.66589	46.421	-69.998	-163.84	-0.0031843
1	Displacement Grid 1	20.40000	27.00000	46.80900	-45.94232	46.421	-69.998	-164.09	-0.0031812
1	Displacement Grid 1	26.00000	27.00000	46.80900	-46.58582	46.421	-69.998	-164.20	-0.0031798
1	Displacement Grid 1	31.60000	27.00000	46.80900	-46.91029	46.421	-69.998	-164.26	-0.0031791
1	Displacement Grid 1	37.20000	27.00000	46.80900	-47.05649	46.421	-69.998	-164.28	-0.0031788
1	Displacement Grid 1	42.80000	27.00000	46.80900	-47.07999	46.421	-69.998	-164.29	-0.0031788
1	Displacement Grid 1	48.40000	27.00000	46.80900	-46.97921	46.421	-69.998	-164.27	-0.0031790
1	Displacement Grid 1	54.00000	27.00000	46.80900	-46.69249	46.421	-69.998	-164.22	-0.0031796
1	Displacement Grid 1	59.60000	27.00000	46.80900	-46.06546	46.421	-69.998	-164.11	-0.0031810
1	Displacement Grid 1	65.20000	27.00000	46.80900	-44.76077	46.421	-69.998	-163.86	-0.0031841
1	Displacement Grid 1	70.80000	27.00000	46.80900	-45.22388	46.569	-69.999	-164.99	-0.0065555
1	Displacement Grid 1	76.40000	27.00000	46.80900	-38.36011	46.569	-69.990	-162.19	-0.0066259
1	Displacement Grid 1	82.00000	27.00000	46.80900	-11.45504	46.569	-0.0090761	-3.6360	92.069E-6
1	Displacement Grid 1	87.60000	27.00000	46.80900	-4.57886	46.569	-295.70E-6	-0.84019	21.553E-6
1	Displacement Grid 1	93.20000	27.00000	46.80900	-2.06880	46.569	-54.532E-6	-0.37984	9.7561E-6
1	Displacement Grid 1	98.80000	27.00000	46.80900	-0.93725	46.569	-17.199E-6	-0.21452	5.5120E-6
1	Displacement Grid 1	104.40000	27.00000	46.80900	-0.39004	46.569	-7.0791E-6	-0.13607	3.4970E-6
1	Displacement Grid 1	110.00000	27.00000	46.80900	-0.11915	46.569	-3.4199E-6	-0.092882	2.3872E-6
1	Displacement Grid 1	-30.00000	30.80000	46.80900	-0.22614	46.421	-13.458E-6	-0.14153	1.7585E-6
1	Displacement Grid 1	-24.40000	30.80000	46.80900	-0.55235	46.421	-27.635E-6	-0.20581	2.5565E-6
1	Displacement Grid 1	-18.80000	30.80000	46.80900	-1.17272	46.421	-66.359E-6	-0.32111	3.9870E-6
1	Displacement Grid 1	-13.20000	30.80000	46.80900	-2.37508	46.421	-206.63E-6	-0.55969	6.9425E-6
1	Displacement Grid 1	-7.60000	30.80000	46.80900	-4.82686	46.421	-0.0010884	-1.2057	14.907E-6
1	Displacement Grid 1	-2.00000	30.80000	46.80900	-10.63863	46.421	-0.026152	-4.7734	57.390E-6
1	Displacement Grid 1	3.60000	30.80000	46.80900	-31.44547	46.421	-69.909	-155.46	-0.0032819
1	Displacement Grid 1	9.20000	30.80000	46.80900	-37.74715	46.421	-69.985	-160.85	-0.0032206
1	Displacement Grid 1	14.80000	30.80000	46.80900	-40.12376	46.421	-69.986	-161.49	-0.0032127
1	Displacement Grid 1	20.40000	30.80000	46.80900	-41.26058	46.421	-69.986	-161.71	-0.0032100
1	Displacement Grid 1	26.00000	30.80000	46.80900	-41.83827	46.421	-69.986	-161.81	-0.0032087
1	Displacement Grid 1	31.60000	30.80000	46.80900	-42.13055	46.421	-69.986	-161.86	-0.0032081
1	Displacement Grid 1	37.20000	30.80000	46.80900	-42.26003	46.421	-69.986	-161.88	-0.0032078
1	Displacement Grid 1	42.80000	30.80000	46.80900	-42.27494	46.421	-69.986	-161.89	-0.0032078
1	Displacement Grid 1	48.40000	30.80000	46.80900	-42.17365	46.421	-69.986	-161.87	-0.0032080
1	Displacement Grid 1	54.00000	30.80000	46.80900	-41.90341	46.421	-69.986	-161.82	-0.0032086
1	Displacement Grid 1	59.60000	30.80000	46.80900	-41.33433	46.421	-69.986	-161.72	-0.0032098
1	Displacement Grid 1	65.20000	30.80000	46.80900	-40.18507	46.421	-69.986	-161.50	-0.0032126
1	Displacement Grid 1	70.80000	30.80000	46.80900	-41.09759	46.569	-69.997	-163.59	-0.0065909
1	Displacement Grid 1	76.40000	30.80000	46.80900	-35.16557	46.569	-69.988	-161.08	-0.0066541
1	Displacement Grid 1	82.00000	30.80000	46.80900	-9.88288	46.569	-0.0086230	-3.2448	82.083E-6
1	Displacement Grid 1	87.60000	30.80000	46.80900	-3.94349	46.569	-251.41E-6	-0.73476	18.850E-6
1	Displacement Grid 1	93.20000	30.80000	46.80900	-1.79794	46.569	-46.572E-6	-0.34198	8.7841E-6
1	Displacement Grid 1	98.80000	30.80000	46.80900	-0.81647	46.569	-15.070E-6	-0.19800	5.0876E-6
1	Displacement Grid 1	104.40000	30.80000	46.80900	-0.33490	46.569	-6.3575E-6	-0.12790	3.2869E-6
1	Displacement Grid 1	110.00000	30.80000	46.80900	-0.09382	46.569	-3.1342E-6	-0.088458	2.2735E-6
1	Displacement Grid 1	-30.00000	34.60000	46.80900	-0.18429	46.421	-11.955E-6	-0.13292	1.6515E-6

Ref.	Name	x [m]	y [m]	z [mOD]	δz [mm]	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [μ]
1	Displacement Grid 1	-24.40000	34.60000	46.80900	-0.46485	46.421	-23.707E-6	-0.18968	2.3563E-6
1	Displacement Grid 1	-18.80000	34.60000	46.80900	-0.98636	46.421	-54.010E-6	-0.28763	3.5716E-6
1	Displacement Grid 1	-13.20000	34.60000	46.80900	-1.96310	46.421	-153.95E-6	-0.47813	5.9324E-6
1	Displacement Grid 1	-7.60000	34.60000	46.80900	-3.84440	46.421	-676.22E-6	-0.93757	11.605E-6
1	Displacement Grid 1	-2.00000	34.60000	46.80900	-7.82073	46.421	-0.011207	-2.9026	35.248E-6
1	Displacement Grid 1	3.60000	34.60000	46.80900	-21.50539	46.421	-53.897	-103.11	-0.0027383
1	Displacement Grid 1	9.20000	34.60000	46.80900	-26.13383	46.421	-53.943	-106.67	-0.0026975
1	Displacement Grid 1	14.80000	34.60000	46.80900	-28.04539	46.421	-53.944	-107.17	-0.0026913
1	Displacement Grid 1	20.40000	34.60000	46.80900	-28.99627	46.421	-53.944	-107.36	-0.0026891
1	Displacement Grid 1	26.00000	34.60000	46.80900	-29.49101	46.421	-53.944	-107.45	-0.0026880
1	Displacement Grid 1	31.60000	34.60000	46.80900	-29.74444	46.421	-53.944	-107.49	-0.0026874
1	Displacement Grid 1	37.20000	34.60000	46.80900	-29.85600	46.421	-53.944	-107.51	-0.0026872
1	Displacement Grid 1	42.80000	34.60000	46.80900	-29.86539	46.421	-53.944	-107.51	-0.0026871
1	Displacement Grid 1	48.40000	34.60000	46.80900	-29.77138	46.421	-53.944	-107.50	-0.0026873
1	Displacement Grid 1	54.00000	34.60000	46.80900	-29.53137	46.421	-53.944	-107.45	-0.0026879
1	Displacement Grid 1	59.60000	34.60000	46.80900	-29.04282	46.421	-53.944	-107.37	-0.0026889
1	Displacement Grid 1	65.20000	34.60000	46.80900	-28.09201	46.421	-53.944	-107.18	-0.0026912
1	Displacement Grid 1	70.80000	34.60000	46.80900	-28.25972	46.569	-60.792	-118.86	-0.0063212
1	Displacement Grid 1	76.40000	34.60000	46.80900	-24.11635	46.569	-60.787	-117.29	-0.0063608
1	Displacement Grid 1	82.00000	34.60000	46.80900	-7.28414	46.569	-0.0049547	-2.1595	54.750E-6
1	Displacement Grid 1	87.60000	34.60000	46.80900	-3.13666	46.569	-174.39E-6	-0.58942	15.125E-6
1	Displacement Grid 1	93.20000	34.60000	46.80900	-1.47255	46.569	-36.192E-6	-0.29548	7.5902E-6
1	Displacement Grid 1	98.80000	34.60000	46.80900	-0.67316	46.569	-12.495E-6	-0.17807	4.5756E-6
1	Displacement Grid 1	104.40000	34.60000	46.80900	-0.26949	46.569	-5.4983E-6	-0.11797	3.0319E-6
1	Displacement Grid 1	110.00000	34.60000	46.80900	-0.06371	46.569	-2.7924E-6	-0.083022	2.1338E-6
1	Displacement Grid 1	-30.00000	38.40000	46.80900	-0.13844	46.421	-10.339E-6	-0.12316	1.5303E-6
1	Displacement Grid 1	-24.40000	38.40000	46.80900	-0.37051	46.421	-19.642E-6	-0.17194	2.1360E-6
1	Displacement Grid 1	-18.80000	38.40000	46.80900	-0.78979	46.421	-41.881E-6	-0.25214	3.1314E-6
1	Displacement Grid 1	-13.20000	38.40000	46.80900	-1.54118	46.421	-106.38E-6	-0.39635	4.9193E-6
1	Displacement Grid 1	-7.60000	38.40000	46.80900	-2.88261	46.421	-365.27E-6	-0.69456	8.6073E-6
1	Displacement Grid 1	-2.00000	38.40000	46.80900	-5.25284	46.421	-0.0023130	-1.4816	18.246E-6
1	Displacement Grid 1	3.60000	38.40000	46.80900	-8.71920	46.421	-0.014246	-3.3820	40.981E-6
1	Displacement Grid 1	9.20000	38.40000	46.80900	-11.27564	46.421	-0.017723	-4.3744	53.059E-6
1	Displacement Grid 1	14.80000	38.40000	46.80900	-12.65692	46.421	-0.018069	-4.6985	57.062E-6
1	Displacement Grid 1	20.40000	38.40000	46.80900	-13.40251	46.421	-0.018139	-4.8401	58.817E-6
1	Displacement Grid 1	26.00000	38.40000	46.80900	-13.80641	46.421	-0.018161	-4.9124	59.714E-6
1	Displacement Grid 1	31.60000	38.40000	46.80900	-14.01781	46.421	-0.018170	-4.9504	60.186E-6
1	Displacement Grid 1	37.20000	38.40000	46.80900	-14.11109	46.421	-0.018173	-4.9676	60.400E-6
1	Displacement Grid 1	42.80000	38.40000	46.80900	-14.11700	46.421	-0.018173	-4.9688	60.415E-6
1	Displacement Grid 1	48.40000	38.40000	46.80900	-14.03474	46.421	-0.018170	-4.9538	60.228E-6
1	Displacement Grid 1	54.00000	38.40000	46.80900	-13.83189	46.421	-0.018162	-4.9176	59.779E-6
1	Displacement Grid 1	59.60000	38.40000	46.80900	-13.43316	46.421	-0.018141	-4.8468	58.900E-6
1	Displacement Grid 1	65.20000	38.40000	46.80900	-12.69264	46.421	-0.018075	-4.7080	57.179E-6
1	Displacement Grid 1	70.80000	38.40000	46.80900	-10.21552	46.569	-0.0042159	-2.7243	69.384E-6
1	Displacement Grid 1	76.40000	38.40000	46.80900	-7.94932	46.569	-0.0036045	-2.1801	55.487E-6
1	Displacement Grid 1	82.00000	38.40000	46.80900	-4.57078	46.569	-706.25E-6	-0.98450	25.200E-6
1	Displacement Grid 1	87.60000	38.40000	46.80900	-2.30252	46.569	-94.807E-6	-0.43886	11.267E-6
1	Displacement Grid 1	93.20000	38.40000	46.80900	-1.13300	46.569	-25.554E-6	-0.24657	6.3347E-6
1	Displacement Grid 1	98.80000	38.40000	46.80900	-0.52189	46.569	-9.8248E-6	-0.15662	4.0248E-6
1	Displacement Grid 1	104.40000	38.40000	46.80900	-0.19974	46.569	-4.5903E-6	-0.10705	2.7513E-6
1	Displacement Grid 1	110.00000	38.40000	46.80900	-0.03137	46.569	-2.4236E-6	-0.076917	1.9769E-6
1	Displacement Grid 1	-30.00000	42.20000	46.80900	-0.09216	46.421	-8.7420E-6	-0.11287	1.4025E-6
1	Displacement Grid 1	-24.40000	42.20000	46.80900	-0.27721	46.421	-15.825E-6	-0.15385	1.9114E-6
1	Displacement Grid 1	-18.80000	42.20000	46.80900	-0.60101	46.421	-31.323E-6	-0.21774	2.7046E-6
1	Displacement Grid 1	-13.20000	42.20000	46.80900	-1.15344	46.421	-70.036E-6	-0.32318	4.0124E-6
1	Displacement Grid 1	-7.60000	42.20000	46.80900	-2.06349	46.421	-185.02E-6	-0.50904	6.3144E-6
1	Displacement Grid 1	-2.00000	42.20000	46.80900	-3.45114	46.421	-574.52E-6	-0.84763	10.495E-6
1	Displacement Grid 1	3.60000	42.20000	46.80900	-5.15753	46.421	-0.0014030	-1.3334	16.472E-6
1	Displacement Grid 1	9.20000	42.20000	46.80900	-6.59732	46.421	-0.0018975	-1.7030	21.030E-6
1	Displacement Grid 1	14.80000	42.20000	46.80900	-7.53178	46.421	-0.0020378	-1.8982	23.446E-6
1	Displacement Grid 1	20.40000	42.20000	46.80900	-8.08489	46.421	-0.0020802	-2.0013	24.724E-6
1	Displacement Grid 1	26.00000	42.20000	46.80900	-8.40035	46.421	-0.0020957	-2.0585	25.435E-6
1	Displacement Grid 1	31.60000	42.20000	46.80900	-8.57021	46.421	-0.0021021	-2.0899	25.824E-6
1	Displacement Grid 1	37.20000	42.20000	46.80900	-8.64584	46.421	-0.0021046	-2.1043	26.003E-6
1	Displacement Grid 1	42.80000	42.20000	46.80900	-8.64957	46.421	-0.0021047	-2.1052	26.013E-6
1	Displacement Grid 1	48.40000	42.20000	46.80900	-8.58092	46.421	-0.0021024	-2.0923	25.854E-6
1	Displacement Grid 1	54.00000	42.20000	46.80900	-8.41668	46.421	-0.0020963	-2.0622	25.481E-6
1	Displacement Grid 1	59.60000	42.20000	46.80900	-8.10542	46.421	-0.0020812	-2.0062	24.786E-6
1	Displacement Grid 1	65.20000	42.20000	46.80900	-7.55708	46.421	-0.0020413	-1.9052	23.533E-6
1	Displacement Grid 1	70.80000	42.20000	46.80900	-5.58690	46.569	-451.19E-6	-1.0605	27.193E-6
1	Displacement Grid 1	76.40000	42.20000	46.80900	-4.35229	46.569	-347.62E-6	-0.84208	21.594E-6
1	Displacement Grid 1	82.00000	42.20000	46.80900	-2.82519	46.569	-150.21E-6	-0.53979	13.853E-6
1	Displacement Grid 1	87.60000	42.20000	46.80900	-1.58983	46.569	-46.606E-6	-0.32018	8.2237E-6
1	Displacement Grid 1	93.20000	42.20000	46.80900	-0.81925	46.569	-16.900E-6	-0.20157	5.1790E-6
1	Displacement Grid 1	98.80000	42.20000	46.80900	-0.37687	46.569	-7.4072E-6	-0.13555	3.4834E-6
1	Displacement Grid 1	104.40000	42.20000	46.80900	-0.13140	46.569	-3.7199E-6	-0.095885	2.4643E-6
1	Displacement Grid 1	110.00000	42.20000	46.80900	0.00072	46.569	-2.0562E-6	-0.070492	1.8118E-6
1	Displacement Grid 1	-30.00000	46.00000	46.80900	-0.04839	46.421	-7.2625E-6	-0.10255	1.2744E-6
1	Displacement Grid 1	-24.40000	46.00000	46.80900	-0.19102	46.421	-12.497E-6	-0.13642	1.6950E-6
1	Displacement Grid 1	-18.80000	46.00000	46.80900	-0.43256	46.421	-22.933E-6	-0.18646	2.3162E-6
1	Displacement Grid 1	-13.20000	46.00000	46.80900	-0.82507	46.421	-45.380E-6	-0.26249	3.2598E-6
1	Displacement Grid 1	-7.60000	46.00000	46.80900	-1.42709	46.421	-96.695E-6	-0.37971	4.7131E-6
1	Displacement Grid 1	-2.00000	46.00000	46.80900	-2.26028	46.421	-208.03E-6	-0.55235	6.8511E-6
1	Displacement Grid 1	3.60000	46.00000	46.80900	-3.21625	46.421	-373.36E-6	-0.76060	9.4276E-6
1	Displacement Grid 1	9.20000	46.00000	46.80900	-4.06689	46.421	-498.45E-6	-0.93921	11.639E-6
1	Displacement Grid 1	14.80000	46.00000	46.80900	-4.68128	46.421	-556.54E-6	-1.0584	13.116E-6
1	Displacement Grid 1	20.40000	46.00000	46.80900	-5.07627	46.421	-580.58E-6	-1.1316	14.024E-6
1	Displacement Grid 1	26.00000	46.00000	46.80900	-5.31350	46.421	-591.01E-6	-1.1757	14.572E-6
1	Displacement Grid 1	31.60000	46.00000	46.80900	-5.44538	46.421	-595.71E-6	-1.2010	14.886E-6
1	Displacement Grid 1	37.20000	46.00000	46.80900	-5.50487	46.421	-597.61E-6	-1.2128	15.033E-6
1	Displacement Grid 1	42.80000	46.00000	46.80900	-5.50723	46.421	-597.68E-6	-1.2134	15.040E-6
1	Displacement Grid 1	48.40000	46.00000	46.80900	-5.45218	46.421	-595.92E-6	-1.2027	14.907E-6
1	Displacement Grid 1	54.00000	46.00000	46.80900	-5.32404	46.421	-591.38E-6	-1.1784	14.606E-6
1	Displacement Grid 1	59.60000	46.00000	46.80900	-5.08995	46.421	-581.28E-6	-1.1353	14.070E-6
1	Displacement Grid 1	65.20000	46.00000	46.80900	-4.69869	46.421	-558.34E-6	-1.0633	13.177E-6
1	Displacement Grid 1	70.80000	46.00000	46.80900	-3.26649	46.569	-118.58E-6	-0.58453	15.008E-6
1	Displacement Grid 1	76.40000	46.00000	46.80900	-2.56252	46.569	-90.752E-6	-0.47629	12.230E-6
1	Displacement Grid 1	82.00000	46.00000	46.80900	-1.75248	46.569	-51.608E-6	-0.34709	8.9145E-6
1	Displacement Grid 1	87.60000	46.00000	46.80900	-1.04860	46.569	-23.754E-6	-0.23782	6.1101E-6
1	Displacement Grid 1	93.20000	46.00000	46.80900	-0.55573	46.569	-10.918E-6	-0.16379	4.2090E-6
1	Displacement Grid 1	98.80000	46.00000	46.80900	-0.24851	46.569	-5.4422E-6	-0.11621	2.9865E-6
1	Displacement Grid 1	104.40000	46.00000	46.80900	-0.06904	46.569	-2.9491E-6	-0.085082	2.1867E-6
1	Displacement Grid 1	110.00000	46.00000	46.80900	0.03046	46.569	-1.7128E-6	-0.064053	1.6463E-6
1	Displacement Grid 1	-30.00000	49.80000	46.80900	-0.00922	46.421	-5.9575E-6	-0.092604	1.1508E-6
1	Displacement Grid 1	-24.40000	49.80000	46.80900	-0.11573	46.421	-9.7510E-6	-0.12030	1.4948E-6
1	Displacement Grid 1	-18.80000	49.80000	46.80900	-0.29069	46.421	-16.661E-6	-0.15918	1.9776E-6
1	Displacement Grid 1	-13.20000	49.80000	46.80900	-0.56278	46.421	-29.661E-6	-0.21415	2.6600E-6
1	Displacement Grid 1	-7.60000	49.80000	46.80900	-0.95670	46.421	-54.015E-6	-0.29072	3.6100E-6
1	Displacement Grid 1	-2.00000	49.80000	46.80900	-1.46858	46.421	-95.044E-6	-0.39045	4.8469E-6
1	Displacement Grid 1	3.60000	49.80000	46.80900	-2.03573	46.421	-147.03E-6	-0.50195	6.2290E-6
1	Displacement Grid 1	9.20000	49.80000	46.80900	-2.55454	46.421	-190.67E-6	-0.60256	7.4766E-6
1	Displacement Grid 1	14.80000	49.80000	46.80900	-2.95499	46.421	-216.90E-6	-0.67845	8.4181E-6
1	Displacement Grid 1	20.40000	49.80000	46.80900	-3.22952	46.421	-230.48E-6	-0.73032	9.0619E-6
1	Displacement Grid 1	26.00000	49.80000	46.80900	-3.40256	46.421	-237.29E-6	-0.76382	9.4778E-6
1	Displacement Grid 1	31.60000	49.80000	46.80900	-3.50186	46.421	-240.64E-6	-0.78383	9.7263E-6
1	Displacement Grid 1	37.20000	49.80000	46.80900	-3.54734	46.421	-242.05E-6	-0.79336	9.8447E-6
1	Displacement Grid 1	42.80000	49.80000	46.80900	-3.54883	46.421	-242.09E-6	-0.79379	9.8500E-6
1	Displacement Grid 1	48.40000	49.80000	46.80900	-3.50618	46.421	-240.78E-6	-0.78508	9.7418E-6
1	Displacement Grid 1	54.00000	49.80000	46.80900	-3.40934	46.421	-237.54E-6	-0.76581	9.5026E-6
1	Displacement Grid 1	59.60000	49.80000	46.80900	-3.23847	46.421	-230.92E-6	-0.73301	9.0953E-6
1	Displacement Grid 1	65.20000	49.80000	46.80900	-2.96629	46.421	-217.81E-6	-0.68194	8.4614E-6
1	Displacement Grid 1	70.80000	49.80000	46.80900	-1.94976	46.569	-45.303E-6	-0.37475	9.6268E-6
1	Displacement Grid 1	76.40000	49.80000	46.80900	-1.53492	46.569	-35.335E-6	-0.31318	8.0453E-6
1	Displacement Grid 1	82.00000	49.80000	46.80900	-1.07456	46.569	-23.055E-6	-0.24408	6.2711E-6
1	Displacement Grid 1	87.60000	49.80000	46.80900	-0.66036	46.569	-13.067E-6	-0.18162	4.6668E-6
1	Displacement Grid 1	93.20000	49.80000	46.80900	-0.34898	46.569	-7.1052E-6	-0.13360	3.4333E-6
1	Displacement Grid 1	98.80000	49.80000	46.80900	-0.14203	46.569	-3.9576E-6	-0.099257	2.5510E-6
1	Displacement Grid 1	104.40000	49.80000	46.80900	-0.01555	46.569	-2.3064E-6	-0.075055	1.9291E-6
1	Displacement Grid 1	110.00000	49.80000	46.80900	0.05641	46.569	-1.4079E-6	-0.057838	1.4866E-6
1	Displacement Grid 1	-30.00000	53.60000	46.80900	0.02419	46.421	-4.8480E-6	-0.083275	1.0349E-6
1	Displacement Grid 1	-24.40000	53.60000	46.80900	-0.05298	46.421	-7.5688E-6	-0.10581	1.3148E-6
1	Displacement Grid 1	-18.80000	53.60000	46.80900	-0.17651	46.421	-12.132E-6	-0.13600	1.6898E-6
1	Displacement Grid 1	-13.20000	53.60000	46.80900	-0.36168	46.421	-19.809E-6	-0.17621	2.1890E-6
1	Displacement Grid 1	-7.60000	53.60000	46.80900	-0.61811	46.421	-32.254E-6	-0.22821	2.8346E-6
1	Displacement Grid 1	-2.00000	53.60000	46.80900	-0.93757	46.421	-50.268E-6	-0.29105	3.6145E-6
1	Displacement Grid 1	3.60000	53.60000	46.80900	-1.28450	46.421	-71.304E-6	-0.35854	4.4519E-6
1	Displacement Grid 1	9.20000	53.60000	46.80900	-1.60730	46.421	-89.930E-6	-0.42099	5.2269E-6
1	Displacement Grid 1	14.80000	53.60000	46.80900	-1.86762	46.421	-102.90E-6	-0.47148	5.8536E-6
1	Displacement Grid 1	20.40000	53.60000	46.80900	-2.05508	46.421	-110.73E-6	-0.50856	6.3139E-6
1	Displacement Grid 1	26.00000	53.60000	46.80900	-2.17825	46.421	-115.14E-6	-0.53385	6.6281E-6
1	Displacement Grid 1	31.60000	53.60000	46.80900	-2.25106	46.421	-117.48E-6	-0.54951	6.8225E-6

Ref.	Name	x [m]	y [m]	z [mOD]	δz [mm]	Stress: Calc. Level [mOD]	Stress: Vertical [kN/m²]	Stress: Sum Princ. [kN/m²]	Vert. Strain [μ]
1	Displacement Grid 1	37.20000	53.60000	46.80900	-2.28493	46.421	-118.51E-6	-0.55710	6.9169E-6
1	Displacement Grid 1	42.80000	53.60000	46.80900	-2.28586	46.421	-118.54E-6	-0.55742	6.9208E-6
1	Displacement Grid 1	48.40000	53.60000	46.80900	-2.25378	46.421	-117.57E-6	-0.55044	6.8340E-6
1	Displacement Grid 1	54.00000	53.60000	46.80900	-2.18256	46.421	-115.31E-6	-0.53534	6.6465E-6
1	Displacement Grid 1	59.60000	53.60000	46.80900	-2.06080	46.421	-111.00E-6	-0.51055	6.3387E-6
1	Displacement Grid 1	65.20000	53.60000	46.80900	-1.87470	46.421	-103.37E-6	-0.47397	5.8845E-6
1	Displacement Grid 1	70.80000	53.60000	46.80900	-1.15798	46.569	-21.334E-6	-0.26169	6.7239E-6
1	Displacement Grid 1	76.40000	53.60000	46.80900	-0.90867	46.569	-17.023E-6	-0.22331	5.7380E-6
1	Displacement Grid 1	82.00000	53.60000	46.80900	-0.63791	46.569	-12.060E-6	-0.18152	4.6644E-6
1	Displacement Grid 1	87.60000	53.60000	46.80900	-0.38957	46.569	-7.7336E-6	-0.14236	3.6583E-6
1	Displacement Grid 1	93.20000	53.60000	46.80900	-0.19427	46.569	-4.7276E-6	-0.10988	2.8241E-6
1	Displacement Grid 1	98.80000	53.60000	46.80900	-0.05823	46.569	-2.8816E-6	-0.084813	2.1798E-6
1	Displacement Grid 1	104.40000	53.60000	46.80900	0.02790	46.569	-1.7926E-6	-0.066018	1.6968E-6
1	Displacement Grid 1	110.00000	53.60000	46.80900	0.07778	46.569	-1.1473E-6	-0.052007	1.3368E-6
1	Displacement Grid 1	-30.00000	57.40000	46.80900	0.05145	46.421	-3.9291E-6	-0.074707	928.43E-9
1	Displacement Grid 1	-24.40000	57.40000	46.80900	-0.00274	46.421	-5.8750E-6	-0.093006	1.1558E-6
1	Displacement Grid 1	-18.80000	57.40000	46.80900	-0.08790	46.421	-8.9113E-6	-0.11656	1.4484E-6
1	Displacement Grid 1	-13.20000	57.40000	46.80900	-0.21195	46.421	-13.577E-6	-0.14643	1.8194E-6
1	Displacement Grid 1	-7.60000	57.40000	46.80900	-0.37817	46.421	-20.391E-6	-0.18303	2.2738E-6
1	Displacement Grid 1	-2.00000	57.40000	46.80900	-0.57939	46.421	-29.350E-6	-0.22515	2.7968E-6
1	Displacement Grid 1	3.60000	57.40000	46.80900	-0.79526	46.421	-39.332E-6	-0.26930	3.3449E-6
1	Displacement Grid 1	9.20000	57.40000	46.80900	-0.99847	46.421	-48.445E-6	-0.31069	3.8588E-6
1	Displacement Grid 1	14.80000	57.40000	46.80900	-1.16747	46.421	-55.388E-6	-0.34557	4.2919E-6
1	Displacement Grid 1	20.40000	57.40000	46.80900	-1.29382	46.421	-60.041E-6	-0.37246	4.6258E-6
1	Displacement Grid 1	26.00000	57.40000	46.80900	-1.37976	46.421	-62.907E-6	-0.39157	4.8632E-6
1	Displacement Grid 1	31.60000	57.40000	46.80900	-1.43190	46.421	-64.527E-6	-0.40375	5.0144E-6
1	Displacement Grid 1	37.20000	57.40000	46.80900	-1.45651	46.421	-65.262E-6	-0.40975	5.0890E-6
1	Displacement Grid 1	42.80000	57.40000	46.80900	-1.45708	46.421	-65.283E-6	-0.40999	5.0919E-6
1	Displacement Grid 1	48.40000	57.40000	46.80900	-1.43358	46.421	-64.590E-6	-0.40445	5.0231E-6
1	Displacement Grid 1	54.00000	57.40000	46.80900	-1.38242	46.421	-63.017E-6	-0.39269	4.8771E-6
1	Displacement Grid 1	59.60000	57.40000	46.80900	-1.29735	46.421	-60.210E-6	-0.37395	4.6443E-6
1	Displacement Grid 1	65.20000	57.40000	46.80900	-1.17175	46.421	-55.646E-6	-0.34739	4.3145E-6
1	Displacement Grid 1	70.80000	57.40000	46.80900	-0.66709	46.569	-11.477E-6	-0.19305	4.9609E-6
1	Displacement Grid 1	76.40000	57.40000	46.80900	-0.51585	46.569	-9.3541E-6	-0.16757	4.3062E-6
1	Displacement Grid 1	82.00000	57.40000	46.80900	-0.35398	46.569	-7.0002E-6	-0.14025	3.6043E-6
1	Displacement Grid 1	87.60000	57.40000	46.80900	-0.20390	46.569	-4.8641E-6	-0.11407	2.9317E-6
1	Displacement Grid 1	93.20000	57.40000	46.80900	-0.08246	46.569	-3.2317E-6	-0.091282	2.3461E-6
1	Displacement Grid 1	98.80000	57.40000	46.80900	0.00489	46.569	-2.1156E-6	-0.072684	1.8682E-6
1	Displacement Grid 1	104.40000	57.40000	46.80900	0.06149	46.569	-1.3923E-6	-0.058030	1.4915E-6
1	Displacement Grid 1	110.00000	57.40000	46.80900	0.09438	46.569	-930.74E-9	-0.046649	1.1991E-6
1	Displacement Grid 1	-30.00000	61.20000	46.80900	0.07276	46.421	-3.1813E-6	-0.066953	832.09E-9
1	Displacement Grid 1	-24.40000	61.20000	46.80900	0.03601	46.421	-4.5768E-6	-0.081835	1.0170E-6
1	Displacement Grid 1	-18.80000	61.20000	46.80900	-0.02122	46.421	-6.6239E-6	-0.10034	1.2469E-6
1	Displacement Grid 1	-13.20000	61.20000	46.80900	-0.10299	46.421	-9.5504E-6	-0.12290	1.5272E-6
1	Displacement Grid 1	-7.60000	61.20000	46.80900	-0.21006	46.421	-13.512E-6	-0.14946	1.8570E-6
1	Displacement Grid 1	-2.00000	61.20000	46.80900	-0.33722	46.421	-18.396E-6	-0.17900	2.2239E-6
1	Displacement Grid 1	3.60000	61.20000	46.80900	-0.47264	46.421	-23.679E-6	-0.20947	2.6023E-6
1	Displacement Grid 1	9.20000	61.20000	46.80900	-0.60126	46.421	-28.593E-6	-0.23823	2.9594E-6
1	Displacement Grid 1	14.80000	61.20000	46.80900	-0.71067	46.421	-32.558E-6	-0.26308	3.2681E-6
1	Displacement Grid 1	20.40000	61.20000	46.80900	-0.79487	46.421	-35.416E-6	-0.28288	3.5140E-6
1	Displacement Grid 1	26.00000	61.20000	46.80900	-0.85377	46.421	-37.298E-6	-0.29739	3.6943E-6
1	Displacement Grid 1	31.60000	61.20000	46.80900	-0.89032	46.421	-38.417E-6	-0.30685	3.8117E-6
1	Displacement Grid 1	37.20000	61.20000	46.80900	-0.90778	46.421	-38.940E-6	-0.31157	3.8704E-6
1	Displacement Grid 1	42.80000	61.20000	46.80900	-0.90812	46.421	-38.954E-6	-0.31175	3.8726E-6
1	Displacement Grid 1	48.40000	61.20000	46.80900	-0.89131	46.421	-38.460E-6	-0.30738	3.8183E-6
1	Displacement Grid 1	54.00000	61.20000	46.80900	-0.85535	46.421	-37.371E-6	-0.29825	3.7049E-6
1	Displacement Grid 1	59.60000	61.20000	46.80900	-0.79695	46.421	-35.523E-6	-0.28402	3.5281E-6
1	Displacement Grid 1	65.20000	61.20000	46.80900	-0.71313	46.421	-32.708E-6	-0.26444	3.2850E-6
1	Displacement Grid 1	70.80000	61.20000	46.80900	-0.35783	46.569	-6.7676E-6	-0.14797	3.8029E-6
1	Displacement Grid 1	76.40000	61.20000	46.80900	-0.26604	46.569	-5.6185E-6	-0.13026	3.3478E-6
1	Displacement Grid 1	82.00000	61.20000	46.80900	-0.16892	46.569	-4.3730E-6	-0.11142	2.8637E-6
1	Displacement Grid 1	87.60000	61.20000	46.80900	-0.07841	46.569	-3.2133E-6	-0.093094	2.3927E-6
1	Displacement Grid 1	93.20000	61.20000	46.80900	-0.00395	46.569	-2.2692E-6	-0.076590	1.9685E-6
1	Displacement Grid 1	98.80000	61.20000	46.80900	0.05059	46.569	-1.5718E-6	-0.062559	1.6080E-6
1	Displacement Grid 1	104.40000	61.20000	46.80900	0.08619	46.569	-1.0850E-6	-0.051052	1.3122E-6
1	Displacement Grid 1	110.00000	61.20000	46.80900	0.10646	46.569	-754.07E-9	-0.041799	1.0744E-6
1	Displacement Grid 1	-30.00000	65.00000	46.80900	0.08866	46.421	-2.5794E-6	-0.060004	745.76E-9
1	Displacement Grid 1	-24.40000	65.00000	46.80900	0.06485	46.421	-3.5867E-6	-0.072147	896.64E-9
1	Displacement Grid 1	-18.80000	65.00000	46.80900	0.02755	46.421	-4.9892E-6	-0.086808	1.0788E-6
1	Displacement Grid 1	-13.20000	65.00000	46.80900	-0.02528	46.421	-6.8825E-6	-0.10413	1.2940E-6
1	Displacement Grid 1	-7.60000	65.00000	46.80900	-0.09351	46.421	-9.3042E-6	-0.12389	1.5395E-6
1	Displacement Grid 1	-2.00000	65.00000	46.80900	-0.17361	46.421	-12.159E-6	-0.14535	1.8060E-6
1	Displacement Grid 1	3.60000	65.00000	46.80900	-0.25863	46.421	-15.186E-6	-0.16720	2.0774E-6
1	Displacement Grid 1	9.20000	65.00000	46.80900	-0.33999	46.421	-18.034E-6	-0.18790	2.3345E-6
1	Displacement Grid 1	14.80000	65.00000	46.80900	-0.41040	46.421	-20.422E-6	-0.20607	2.5603E-6
1	Displacement Grid 1	20.40000	65.00000	46.80900	-0.46583	46.421	-22.232E-6	-0.22088	2.7442E-6
1	Displacement Grid 1	26.00000	65.00000	46.80900	-0.50550	46.421	-23.486E-6	-0.23196	2.8819E-6
1	Displacement Grid 1	31.60000	65.00000	46.80900	-0.53057	46.421	-24.260E-6	-0.23931	2.9732E-6
1	Displacement Grid 1	37.20000	65.00000	46.80900	-0.54267	46.421	-24.632E-6	-0.24302	3.0193E-6
1	Displacement Grid 1	42.80000	65.00000	46.80900	-0.54286	46.421	-24.642E-6	-0.24316	3.0210E-6
1	Displacement Grid 1	48.40000	65.00000	46.80900	-0.53112	46.421	-24.290E-6	-0.23972	2.9783E-6
1	Displacement Grid 1	54.00000	65.00000	46.80900	-0.50637	46.421	-23.535E-6	-0.23262	2.8901E-6
1	Displacement Grid 1	59.60000	65.00000	46.80900	-0.46596	46.421	-22.303E-6	-0.22175	2.7550E-6
1	Displacement Grid 1	65.20000	65.00000	46.80900	-0.41169	46.421	-20.514E-6	-0.20711	2.5732E-6
1	Displacement Grid 1	70.80000	65.00000	46.80900	-0.16174	46.569	-4.2657E-6	-0.11668	2.9988E-6
1	Displacement Grid 1	76.40000	65.00000	46.80900	-0.10656	46.569	-3.5983E-6	-0.10394	2.6713E-6
1	Displacement Grid 1	82.00000	65.00000	46.80900	-0.04876	46.569	-2.8849E-6	-0.090430	2.3242E-6
1	Displacement Grid 1	87.60000	65.00000	46.80900	0.00508	46.569	-2.2087E-6	-0.077135	1.9826E-6
1	Displacement Grid 1	93.20000	65.00000	46.80900	0.04962	46.569	-1.6334E-6	-0.064869	1.6673E-6
1	Displacement Grid 1	98.80000	65.00000	46.80900	0.08233	46.569	-1.1834E-6	-0.054110	1.3908E-6
1	Displacement Grid 1	104.40000	65.00000	46.80900	0.10335	46.569	-850.42E-9	-0.045000	1.1567E-6
1	Displacement Grid 1	110.00000	65.00000	46.80900	0.11452	46.569	-611.62E-9	-0.037452	962.67E-9

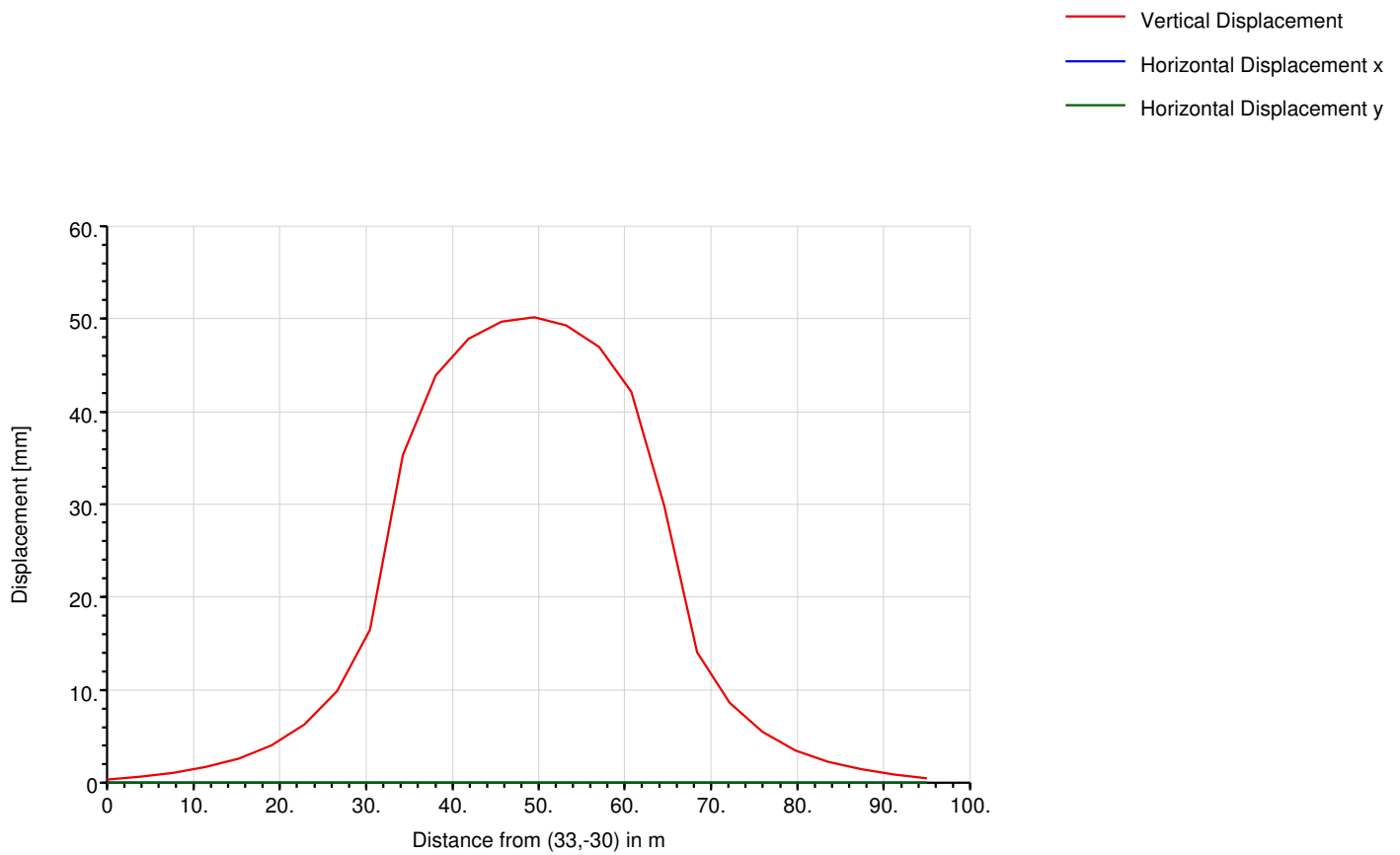
Results : Consolidation : Displacement Data : Grids

None

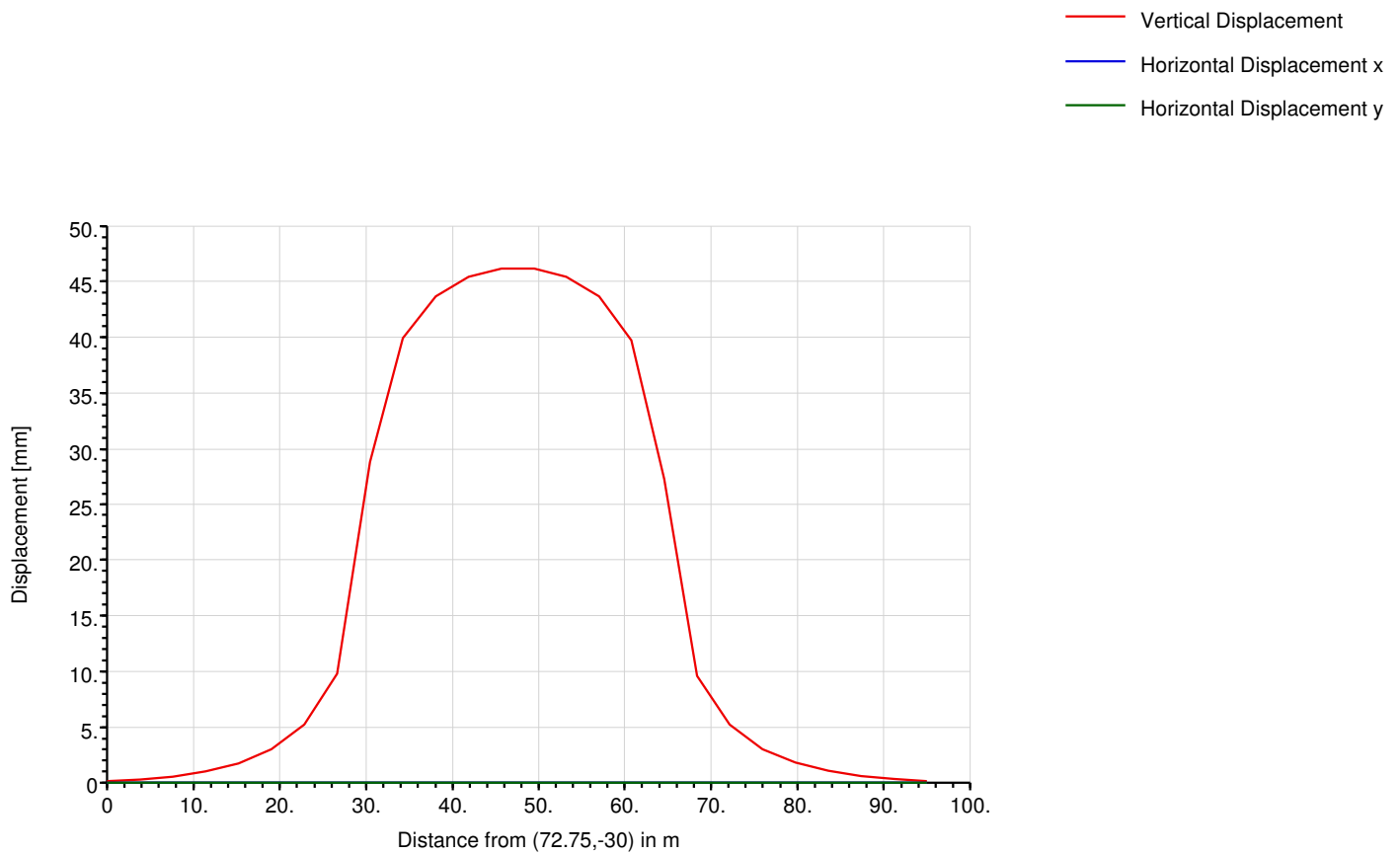
Results : Total : Displacement Data : Grids

None

Displacement for Displacement Line 2



Displacement for Displacement Line 3



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RSK ENVIRONMENT LIMITED

North London Business Park
Heave Assessment Blocks 1C & 1D
Basement Excavation_short term

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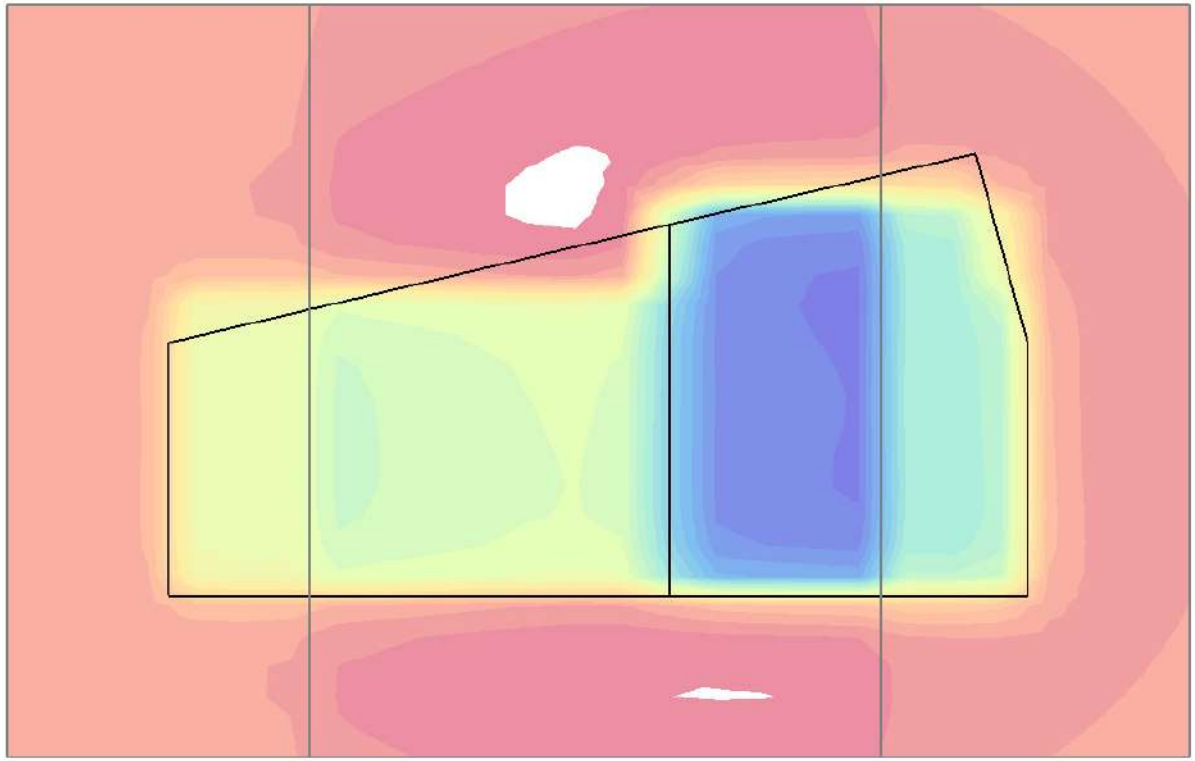
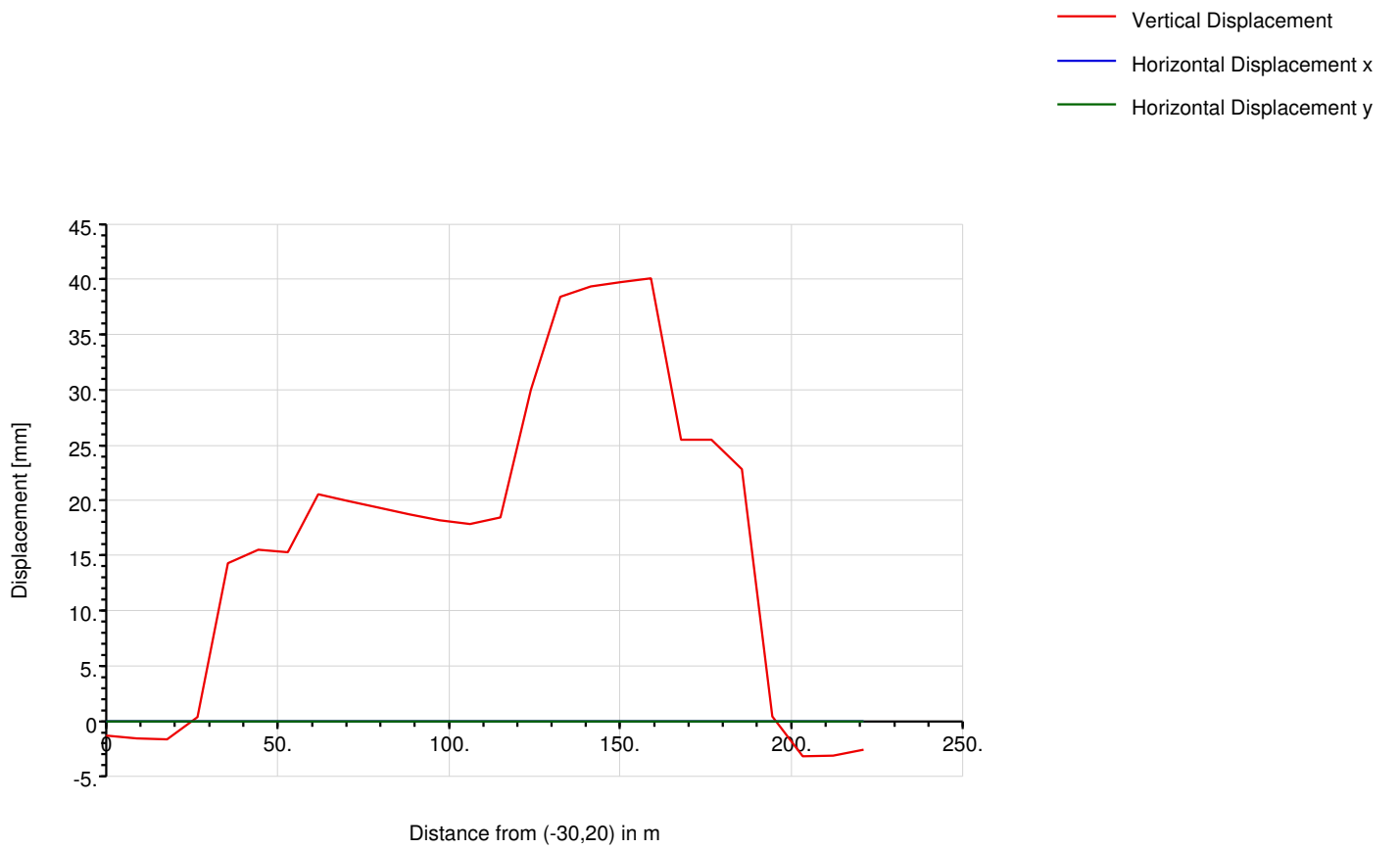


Displacement for Displacement Line 1



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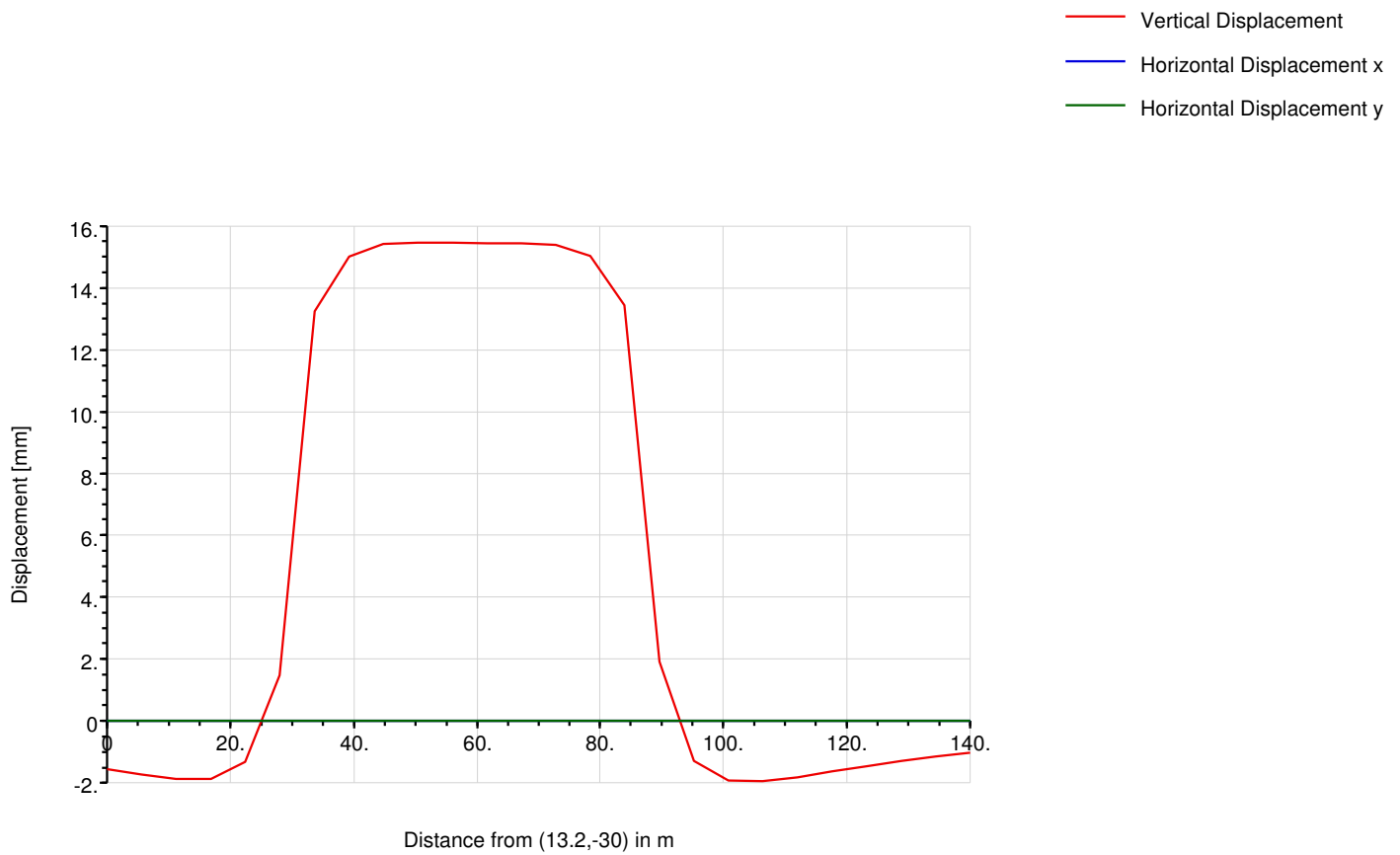
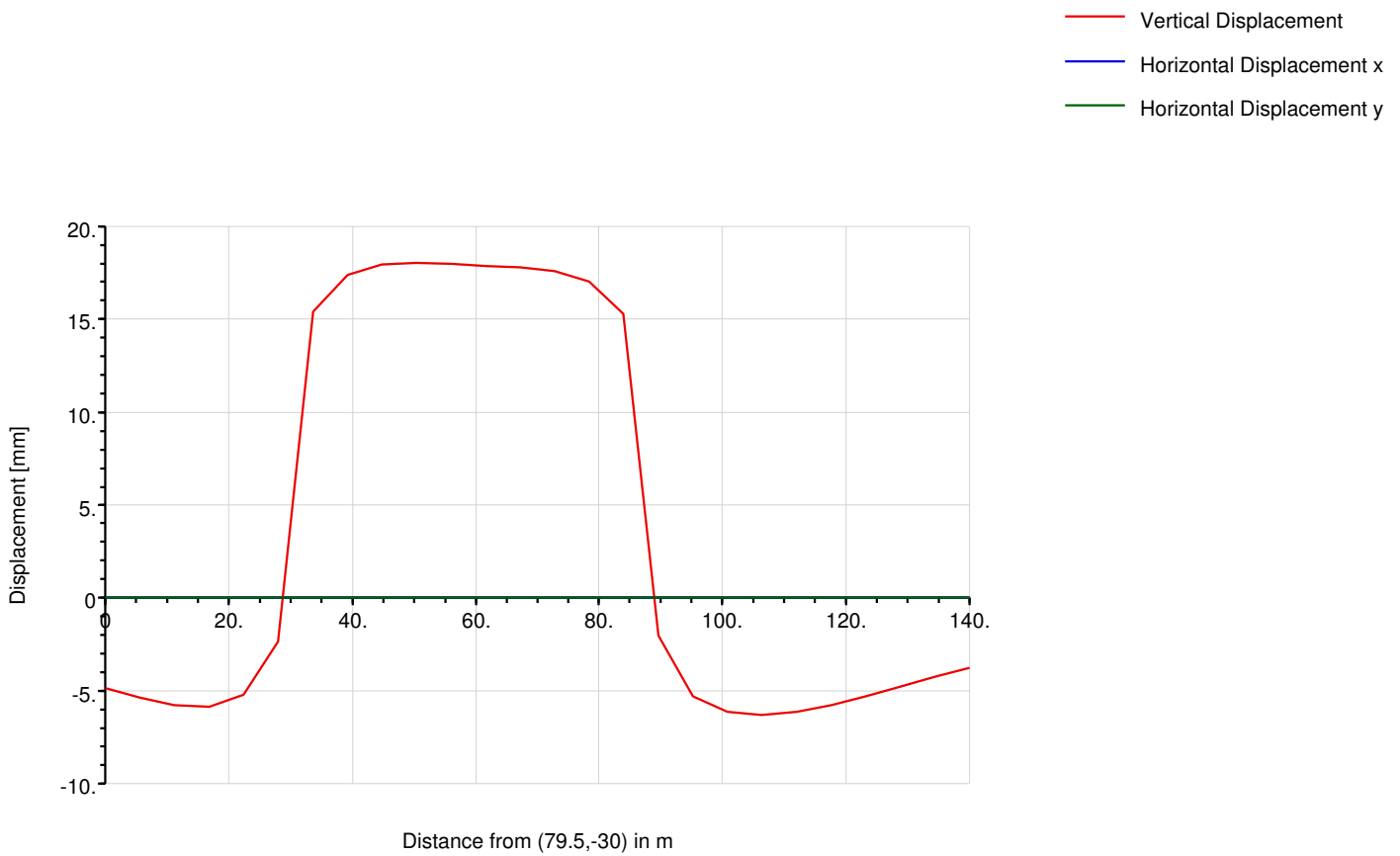
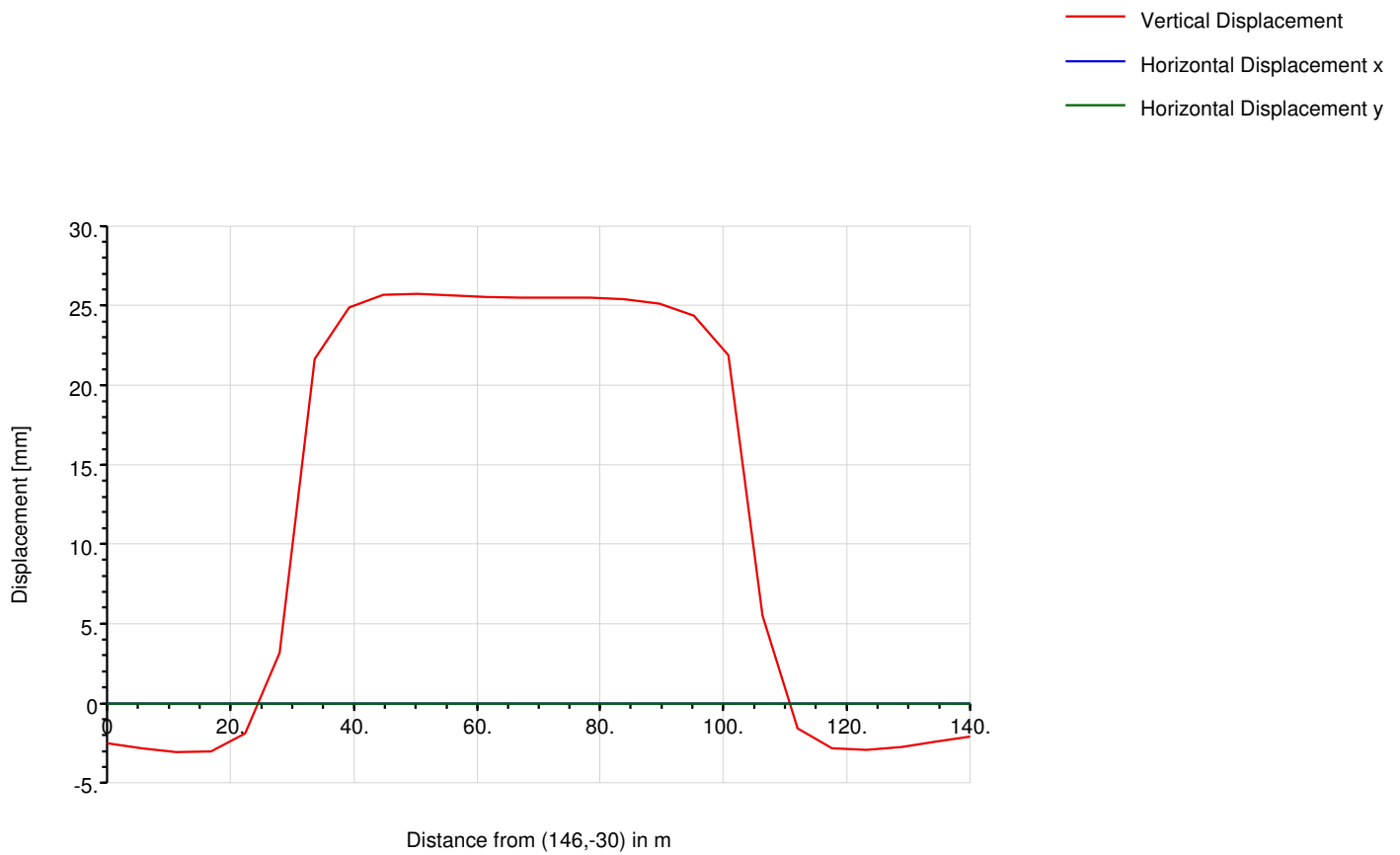


Displacement for Displacement Line 3



Displacement for Displacement Line 4



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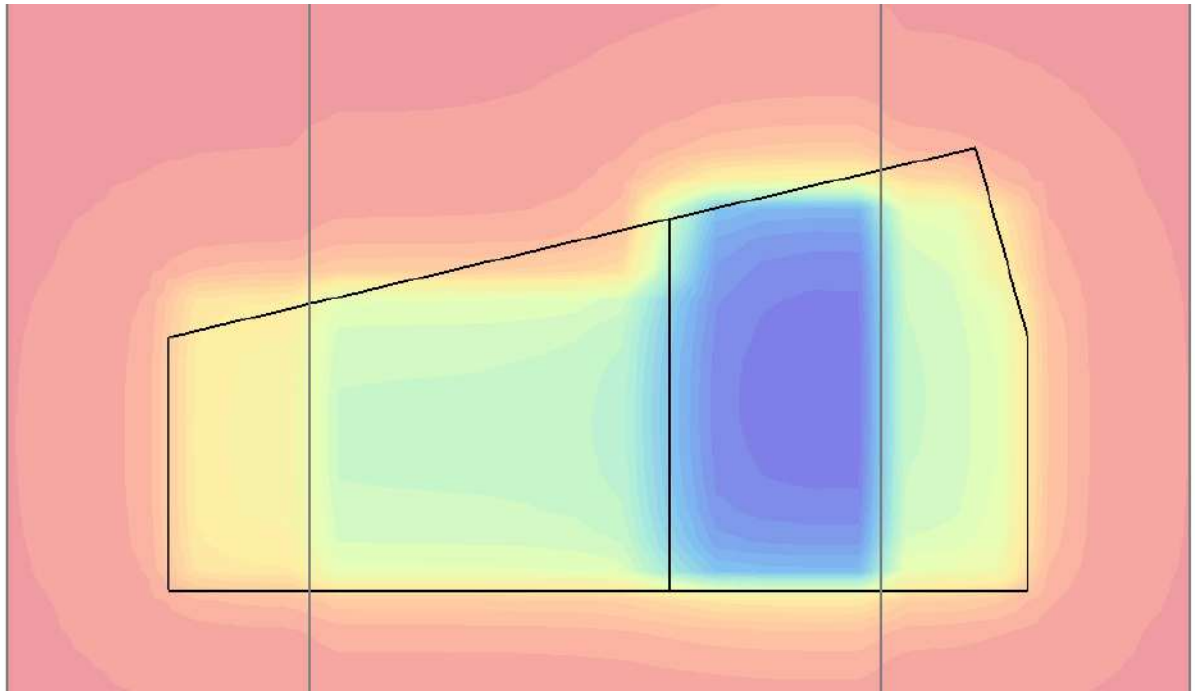
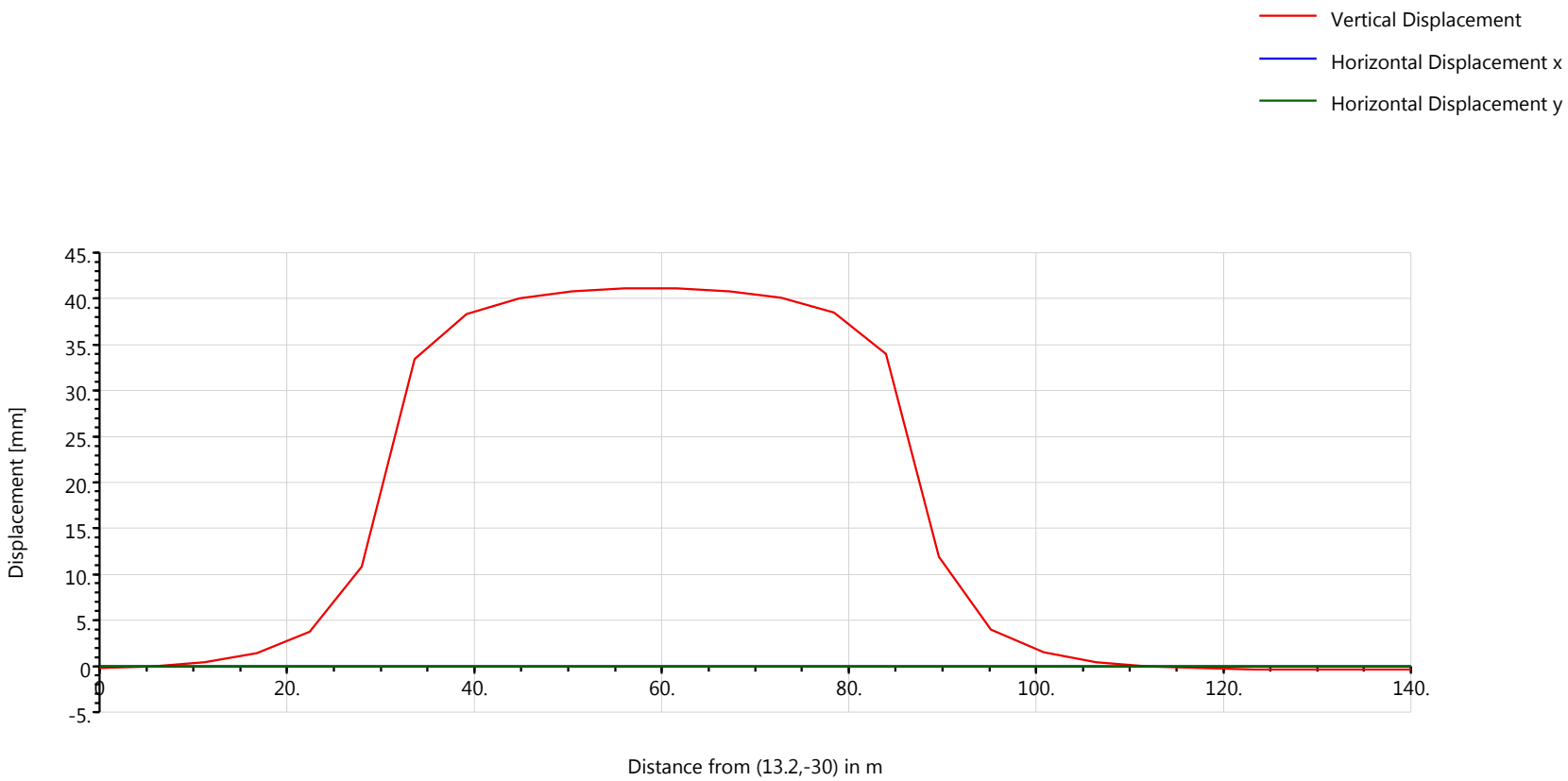
Heave Assessment Blocks 1C & 1D
Basement Excavation_long term



Displacement for Displacement Line 1

Displacement for Displacement Line 2



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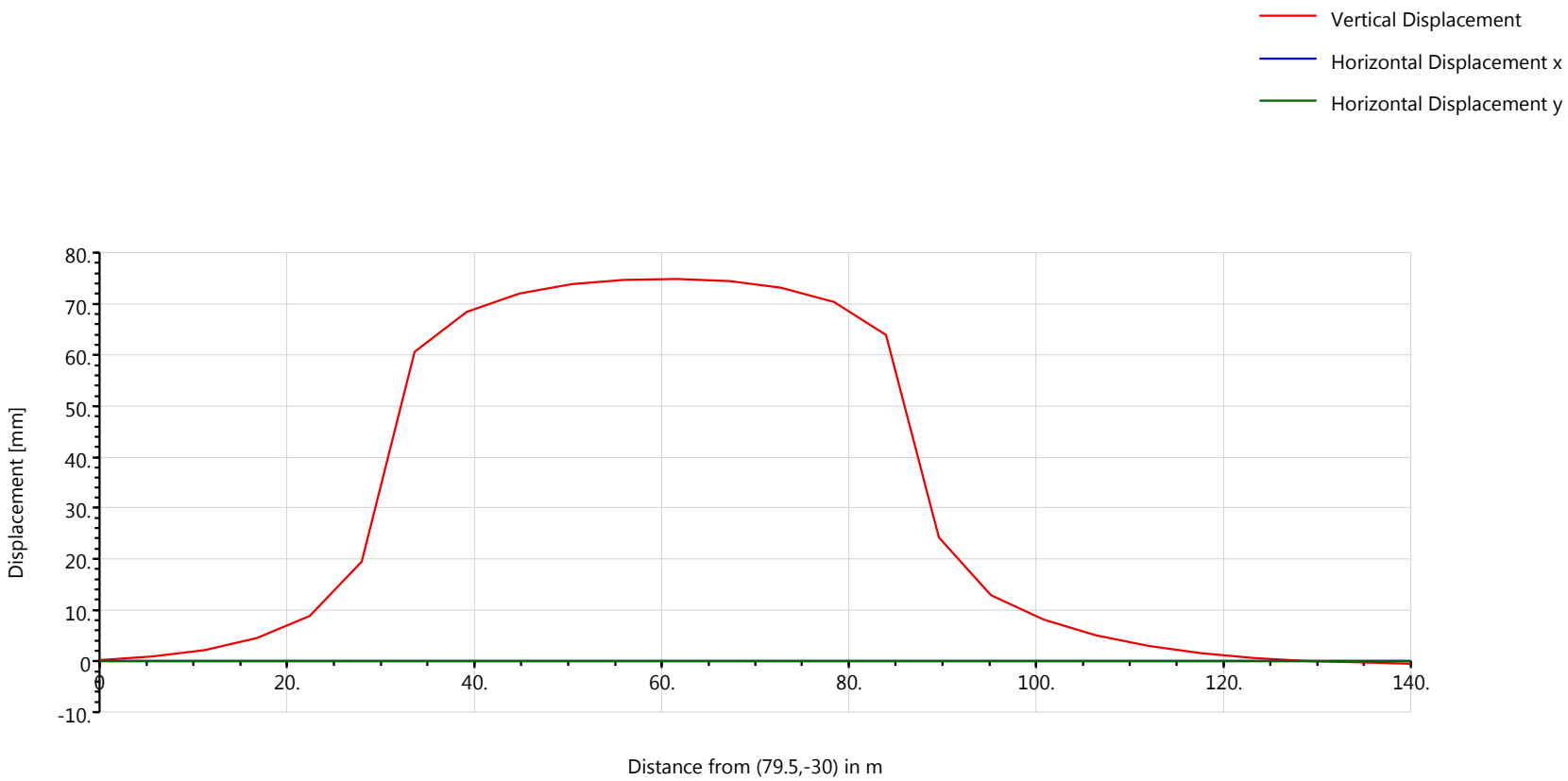

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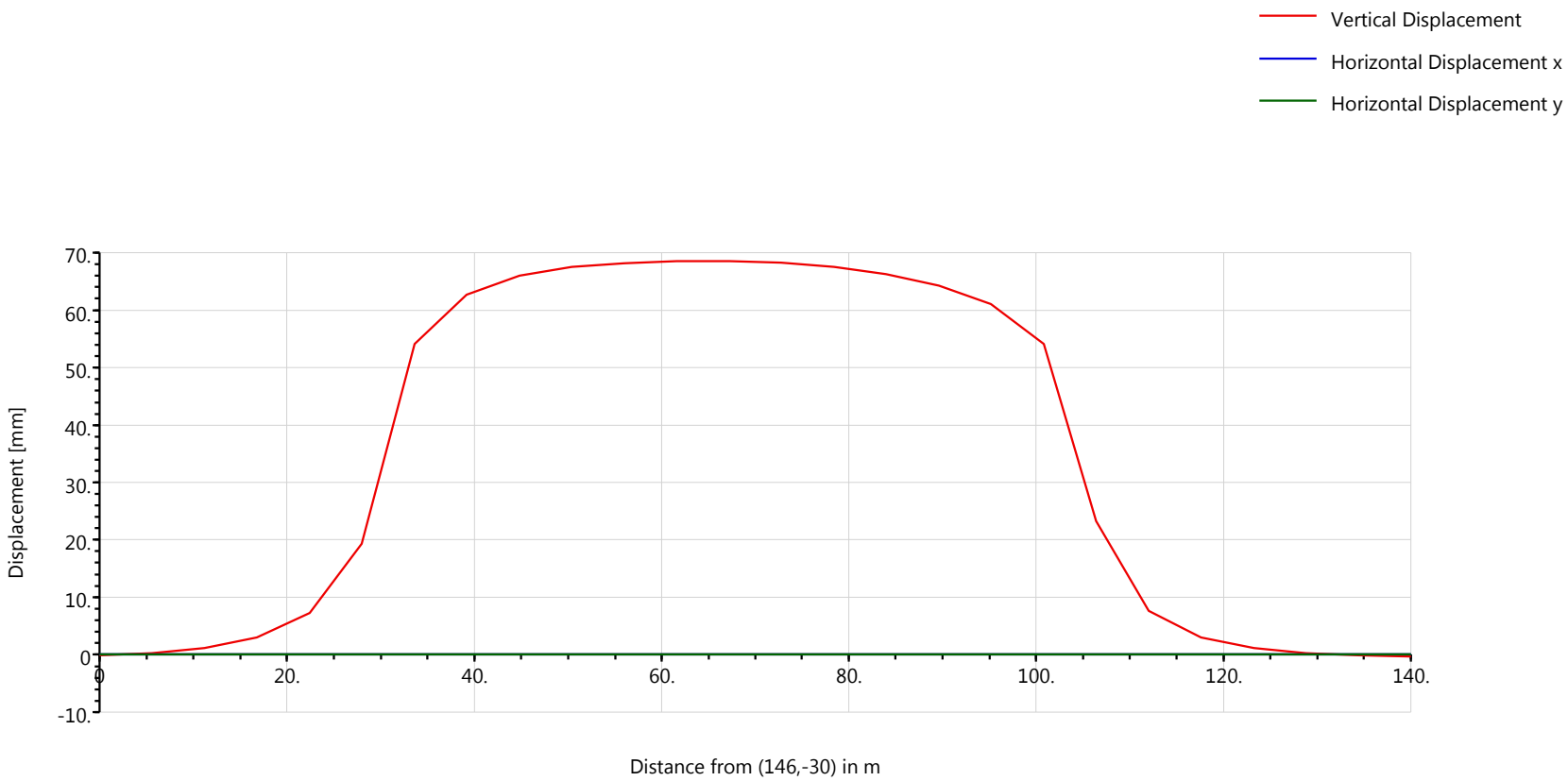

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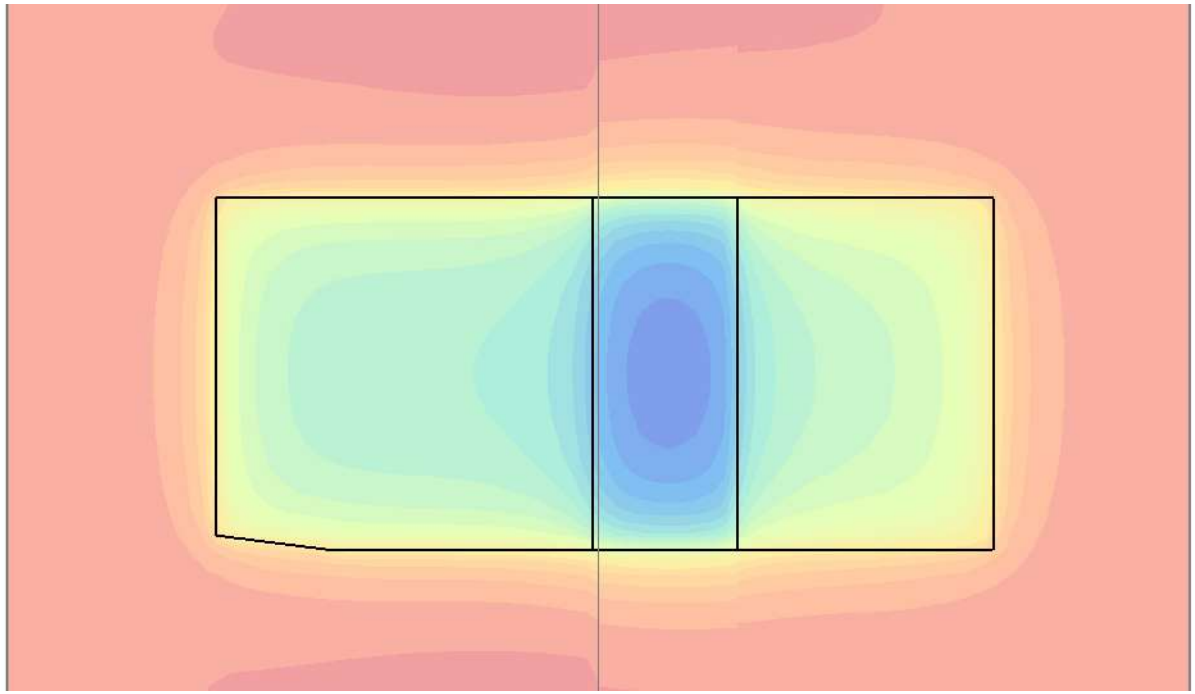
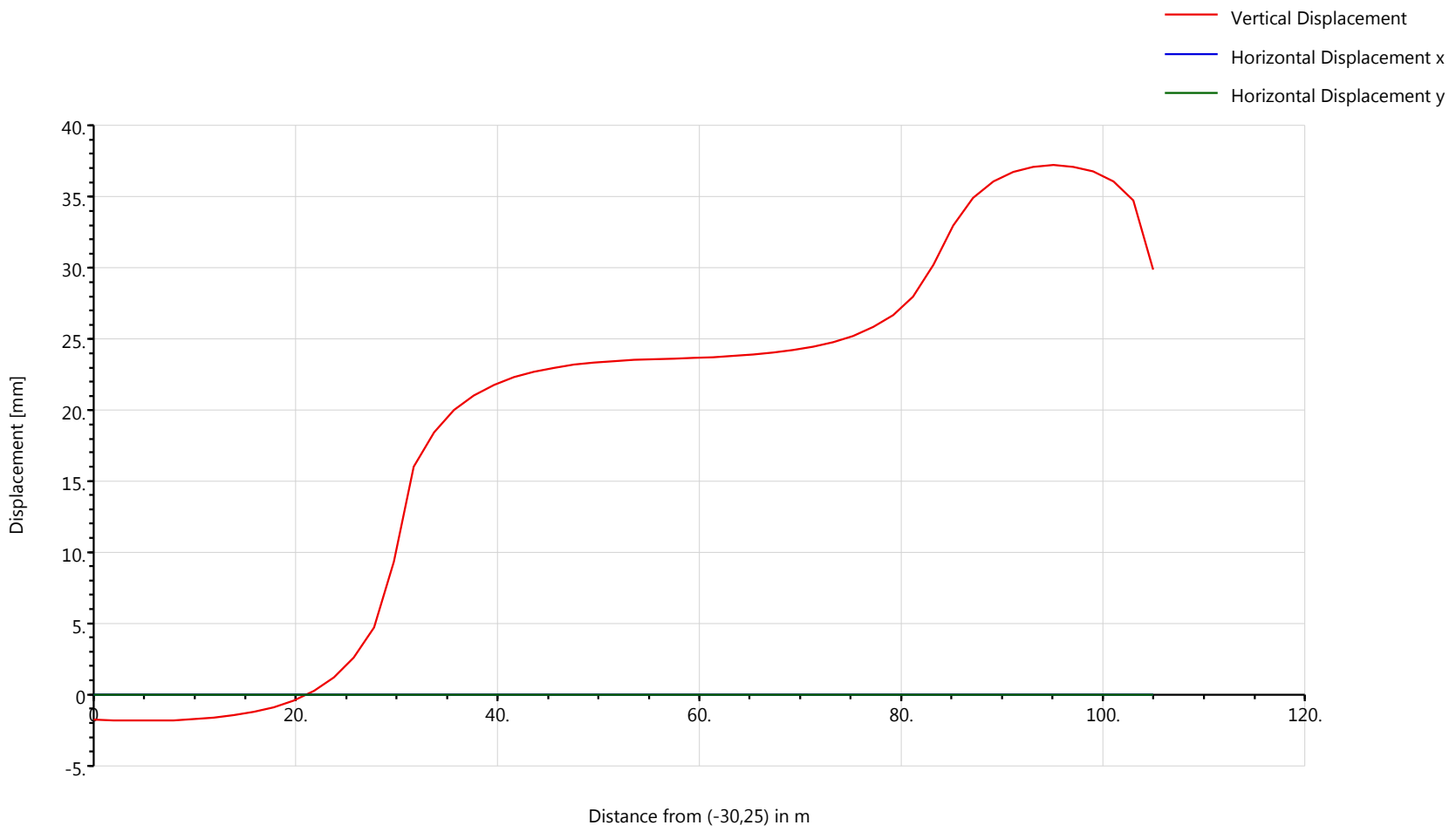
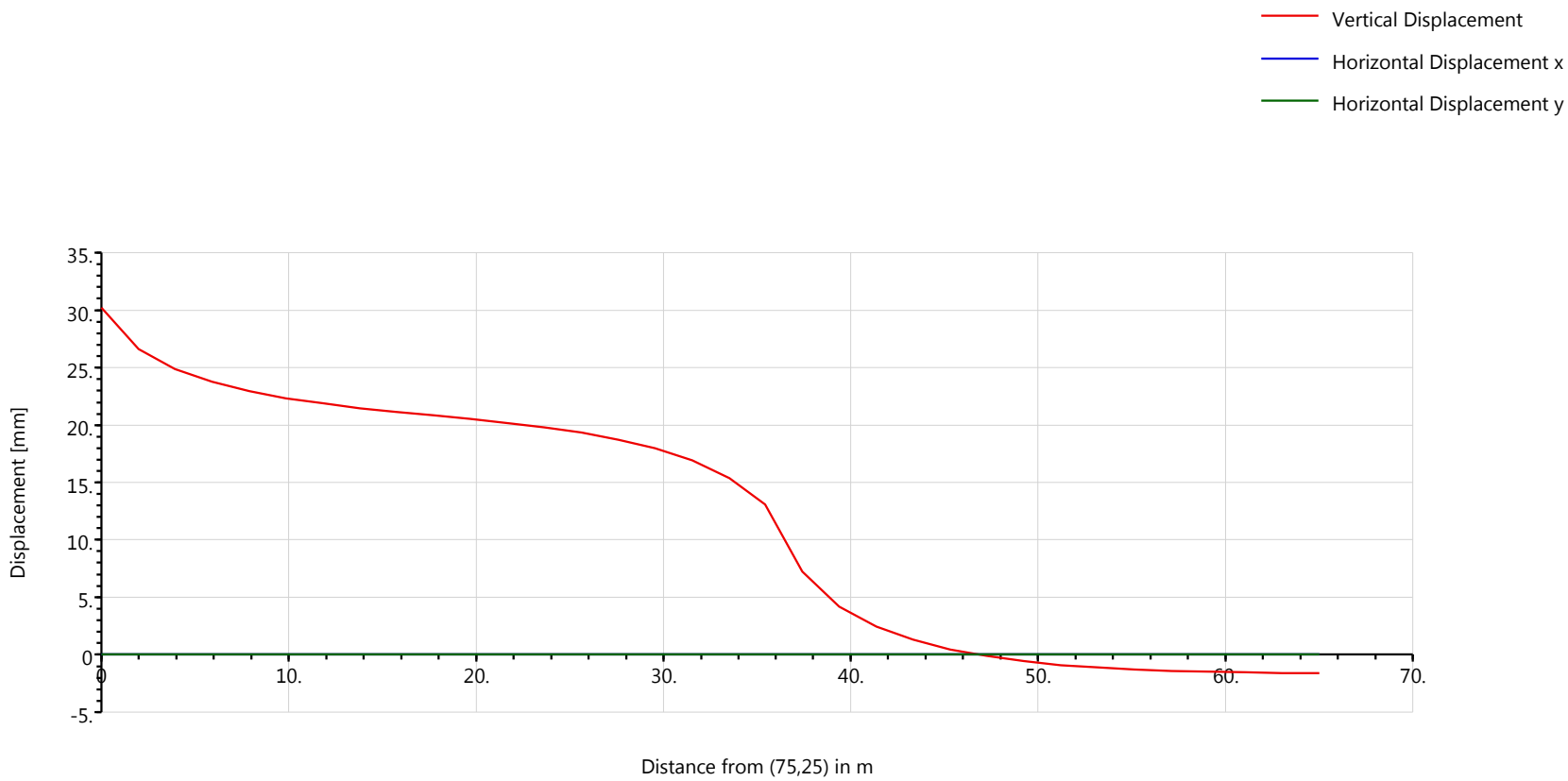
North London Business Park
Heave Assessment Blocks 1E & 1F
Basement Excavation_short term



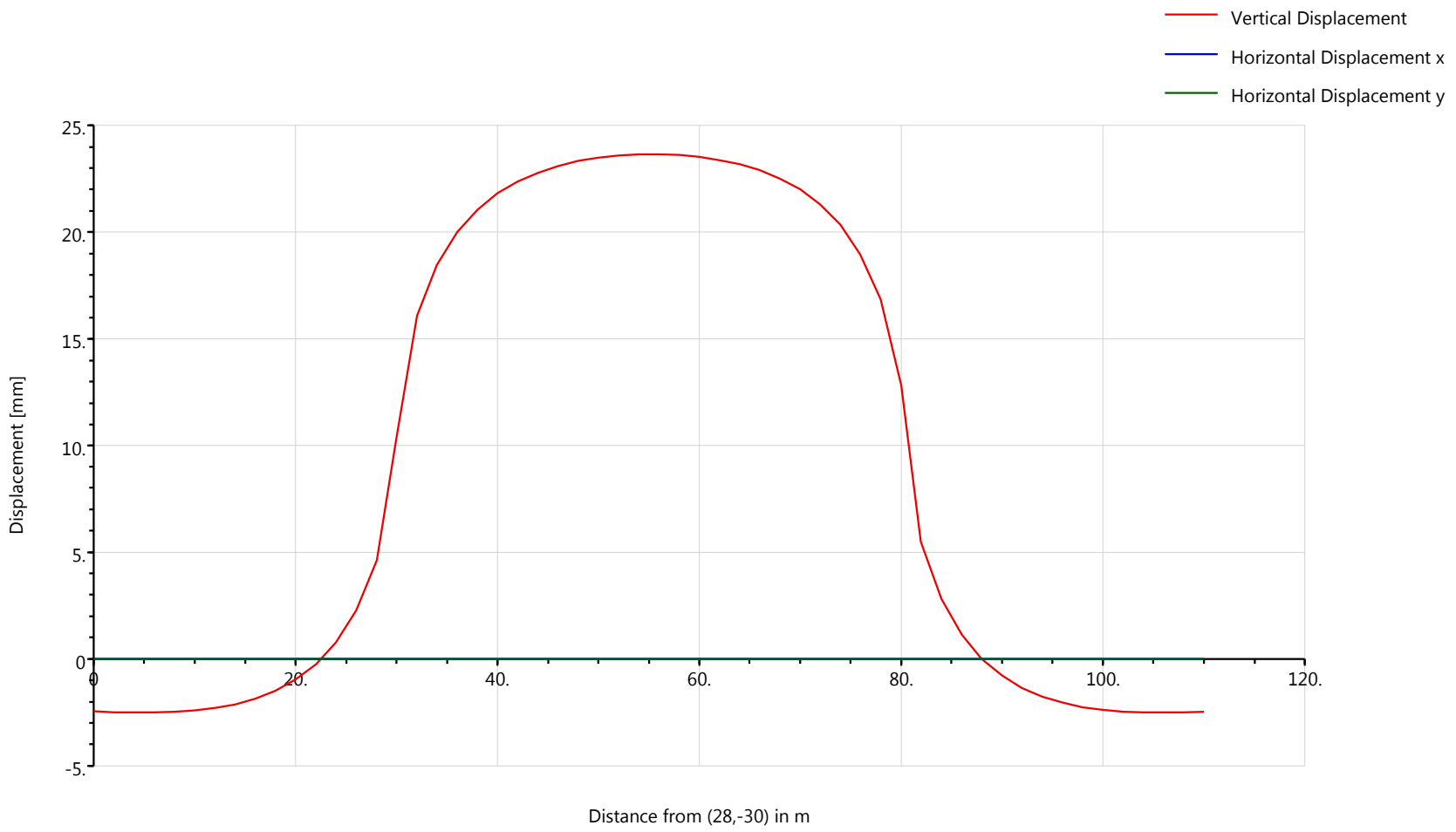
Displacement for Displacement Line 1a



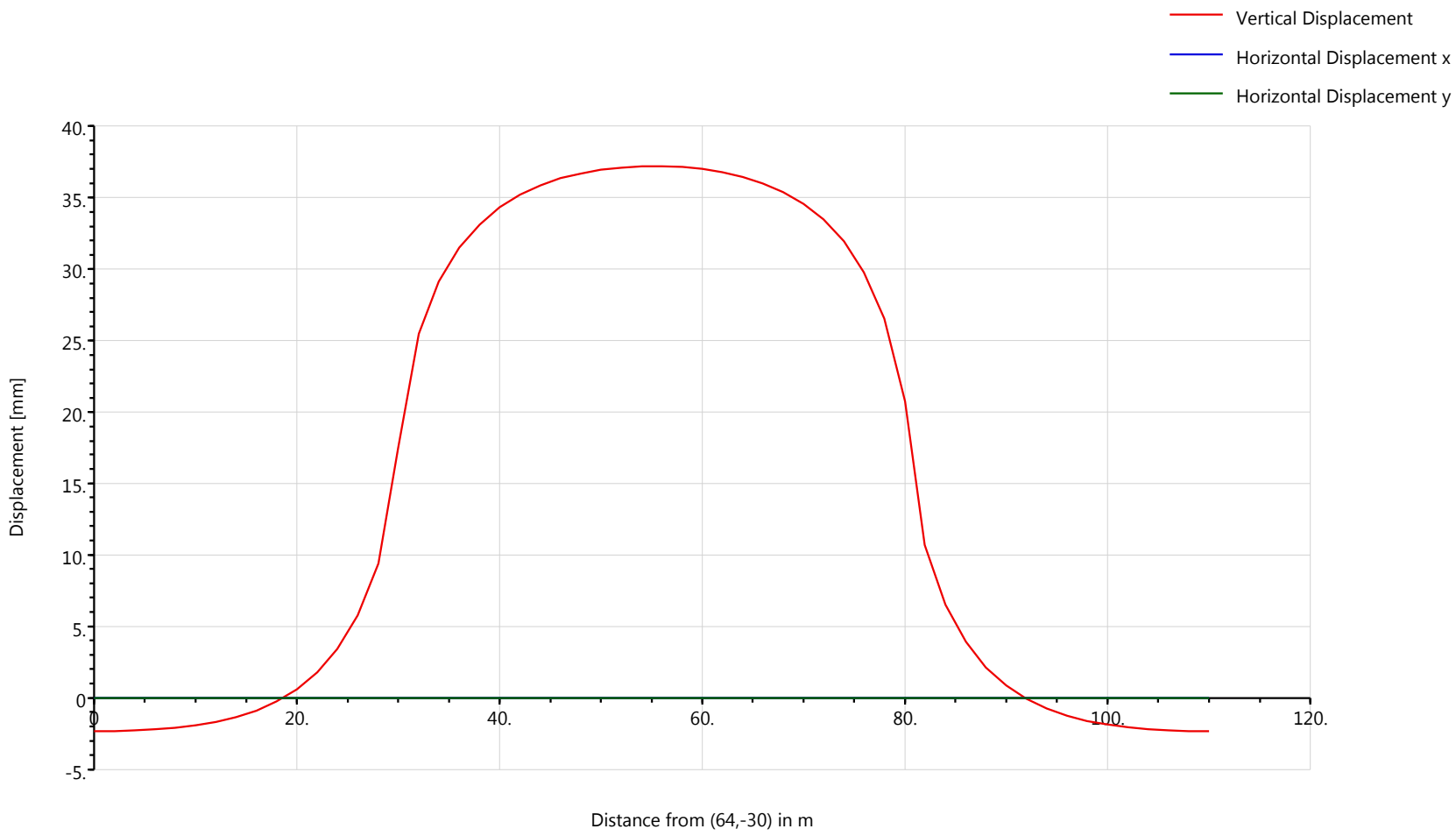
Displacement for Displacement Line 1b



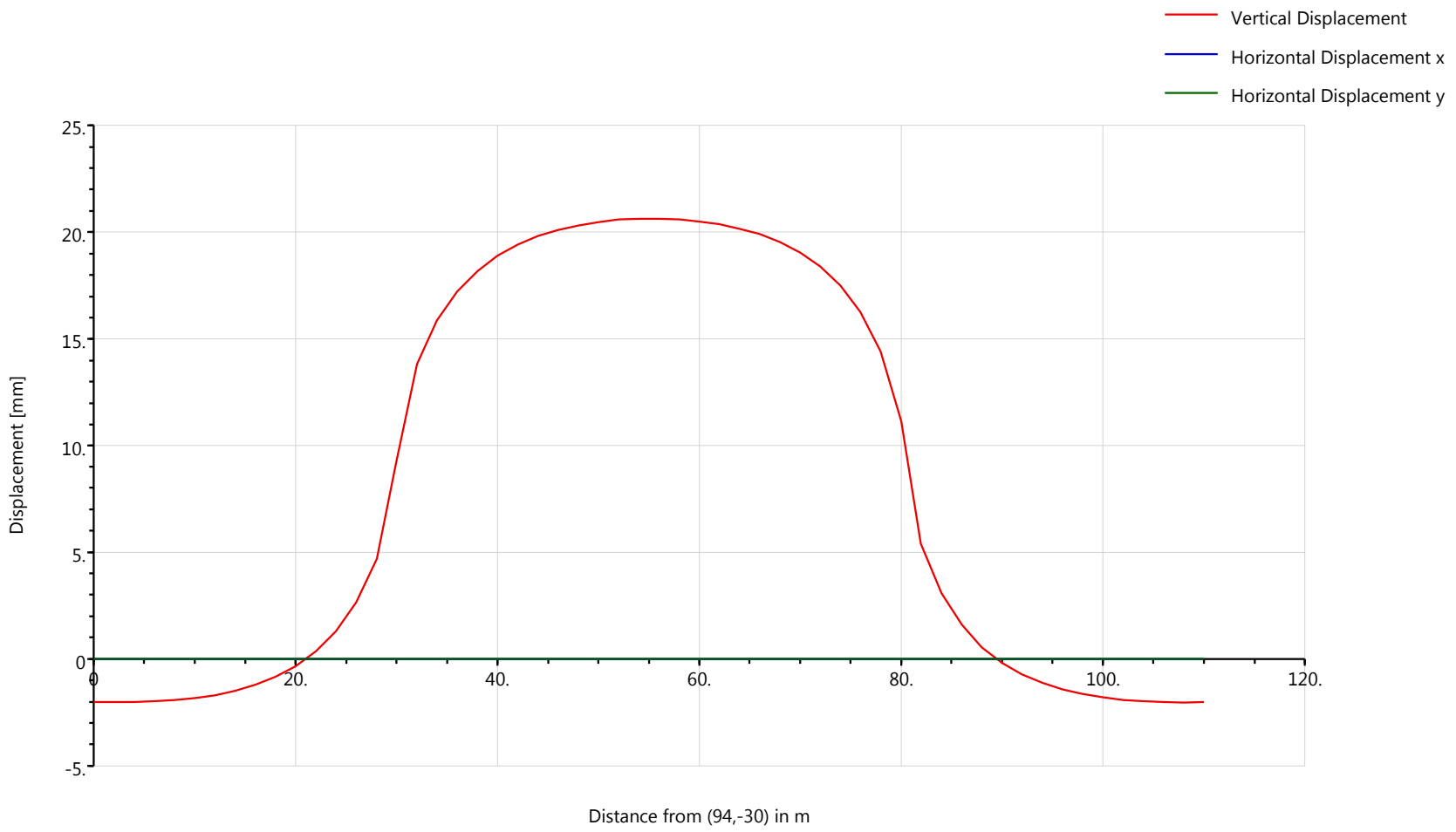
Displacement for Displacement Line 2



Displacement for Displacement Line 3



Displacement for Displacement Line 4



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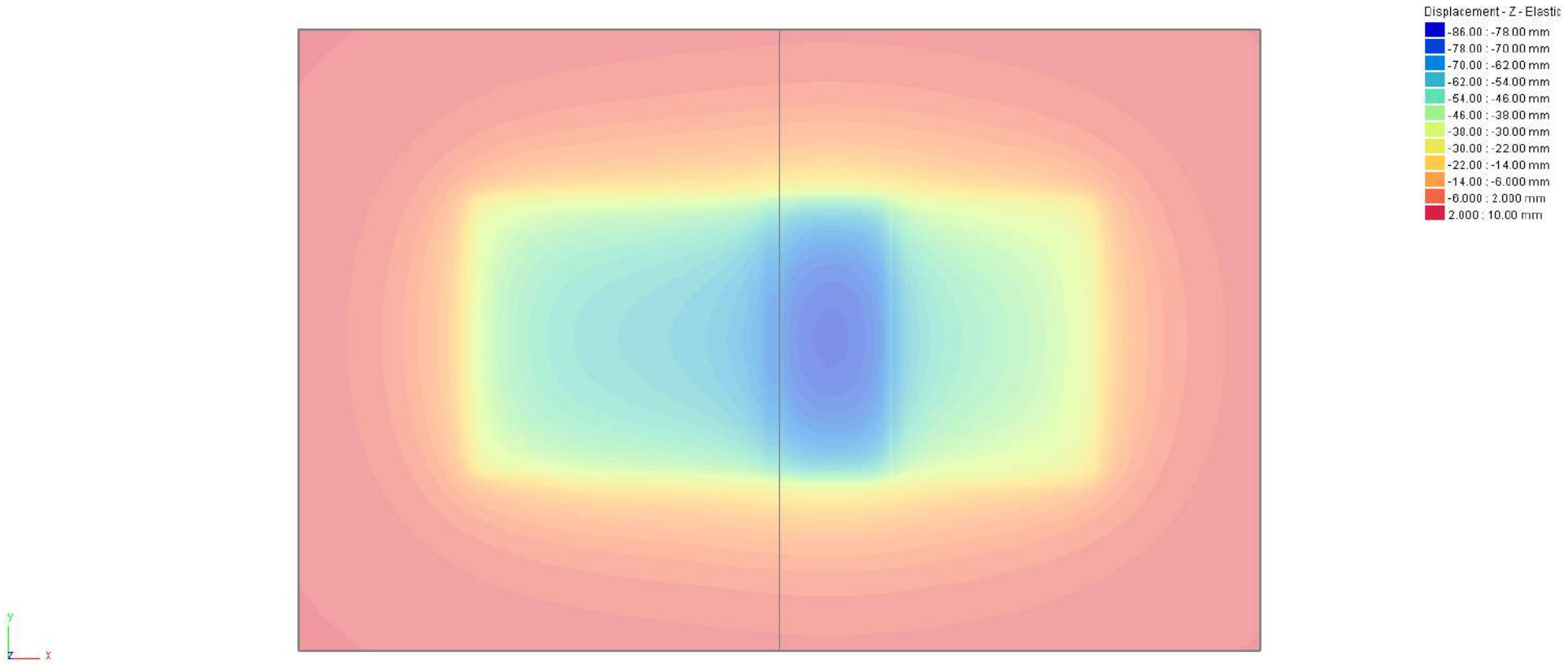
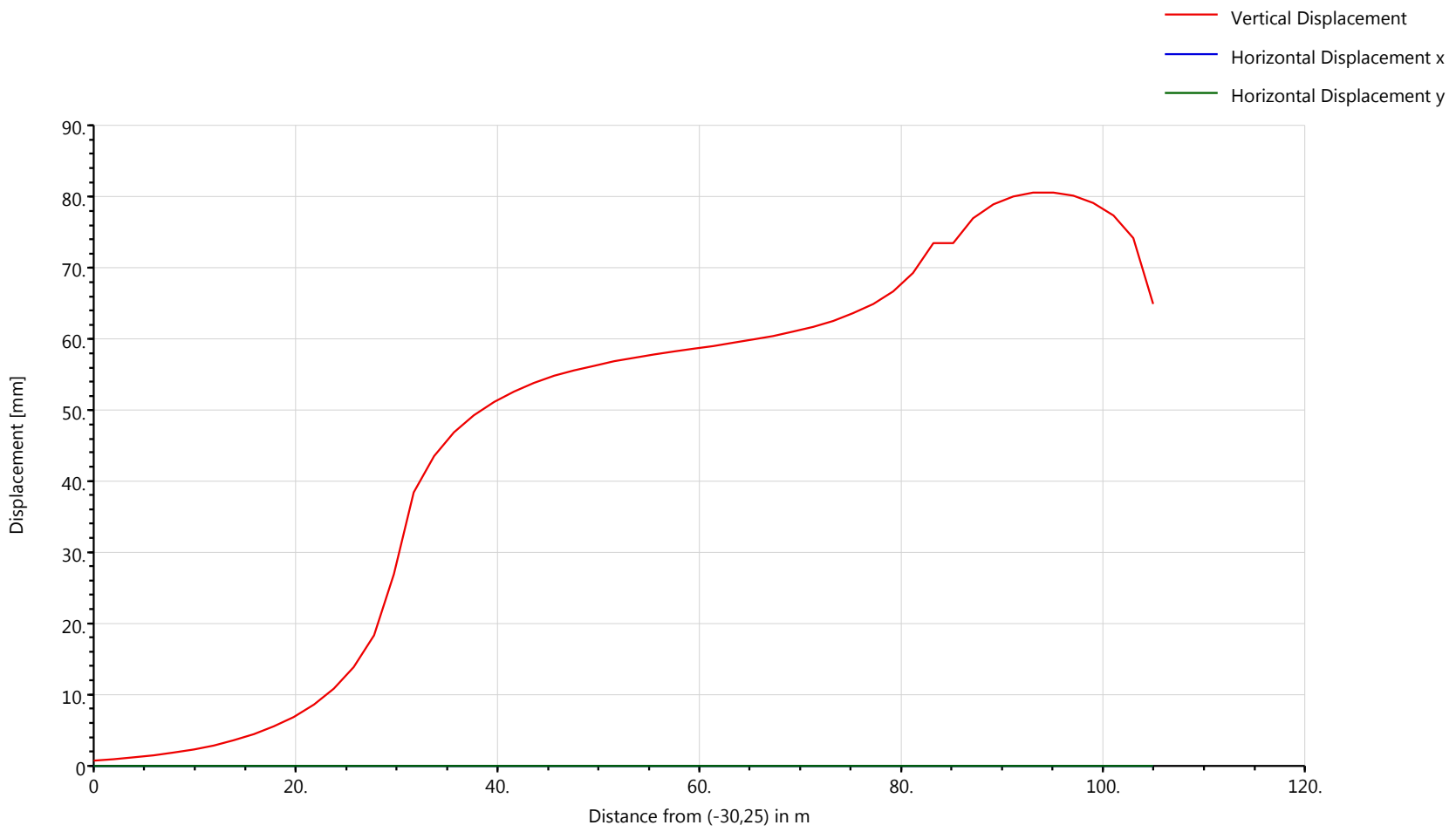
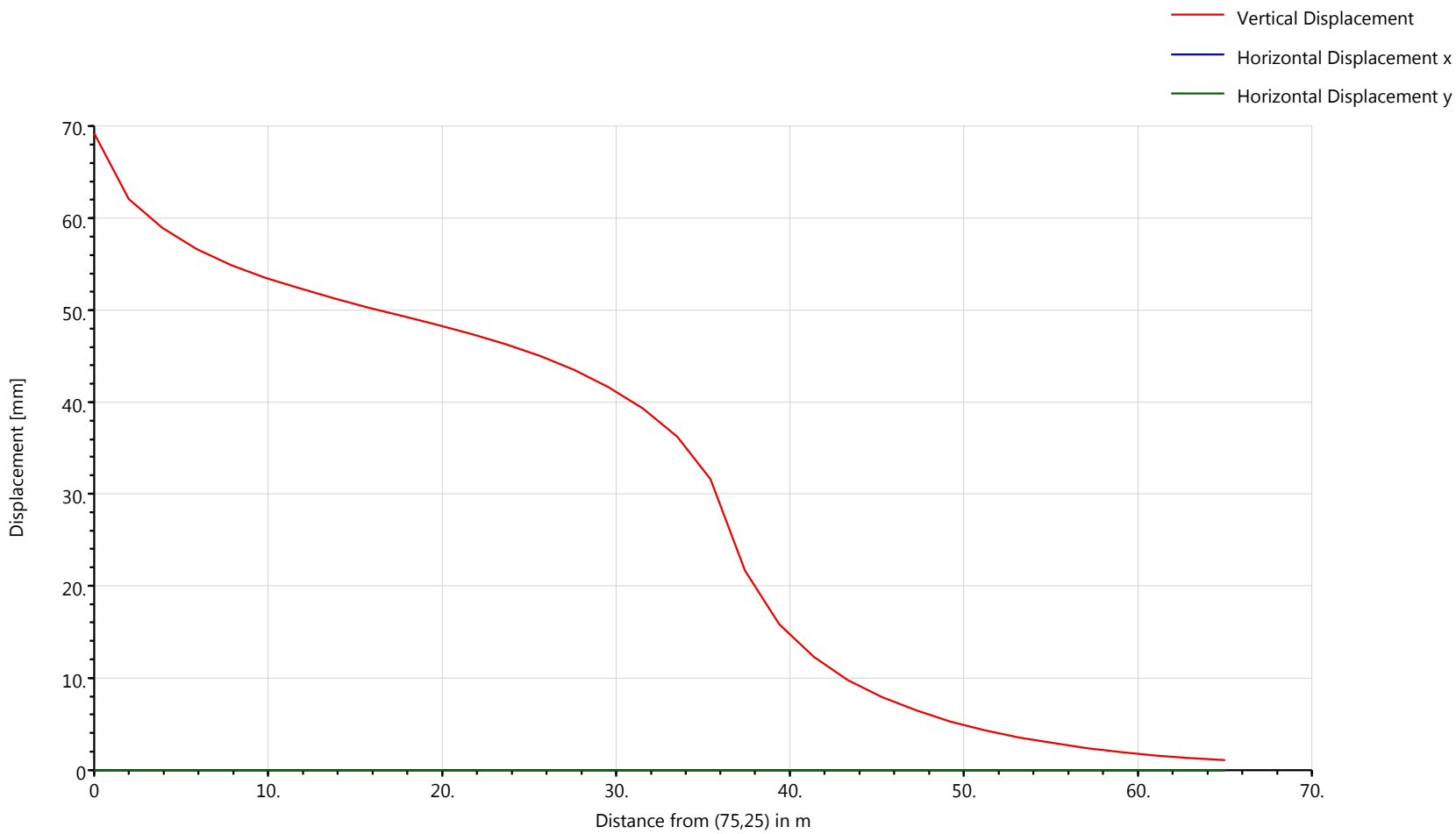
North London Business Park
Heave Assessment Blocks 1E & 1F
Basement Excavation_Long term



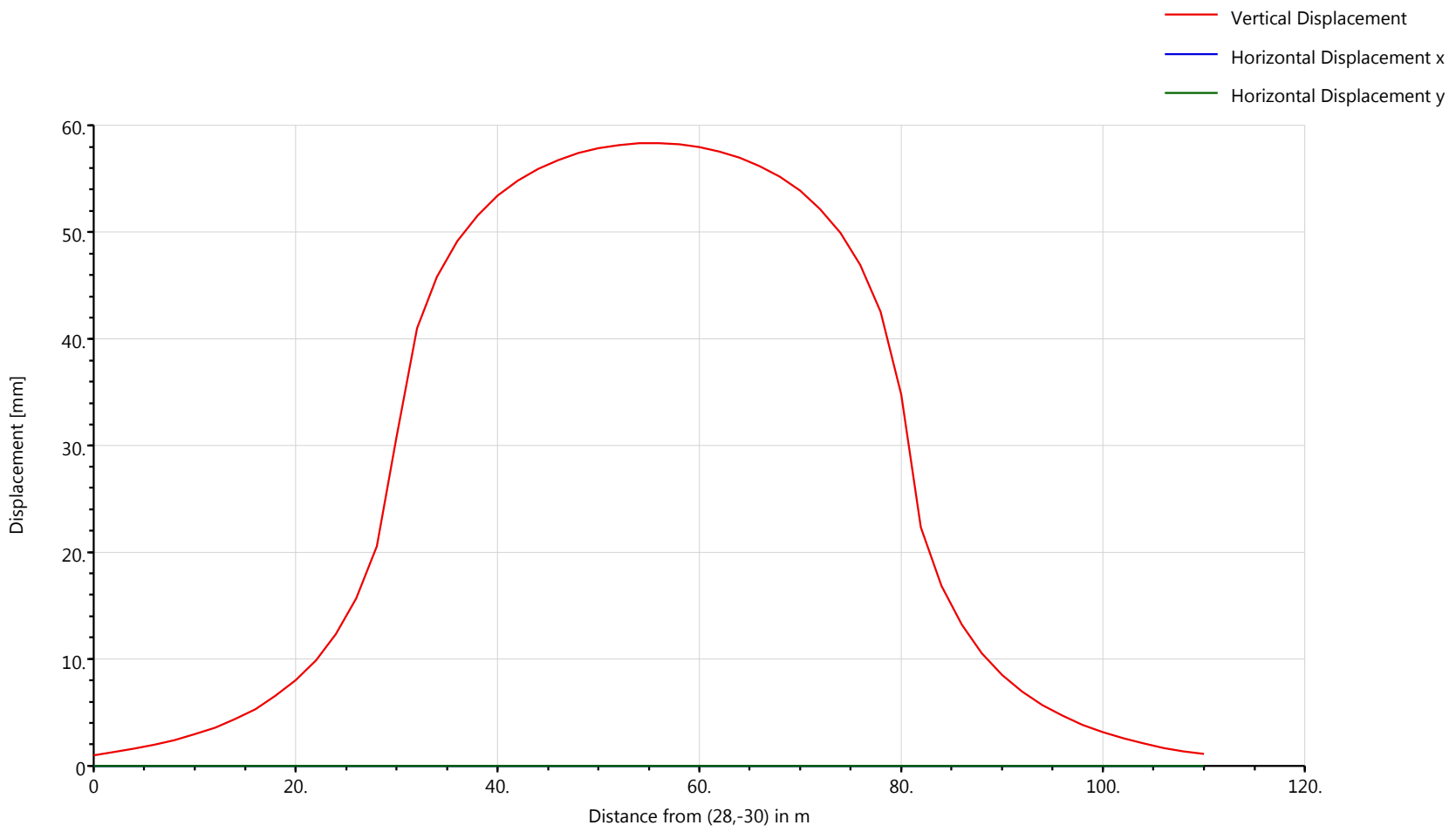
Displacement for Displacement Line 1a



Displacement for Displacement Line 1b



Displacement for Displacement Line 2



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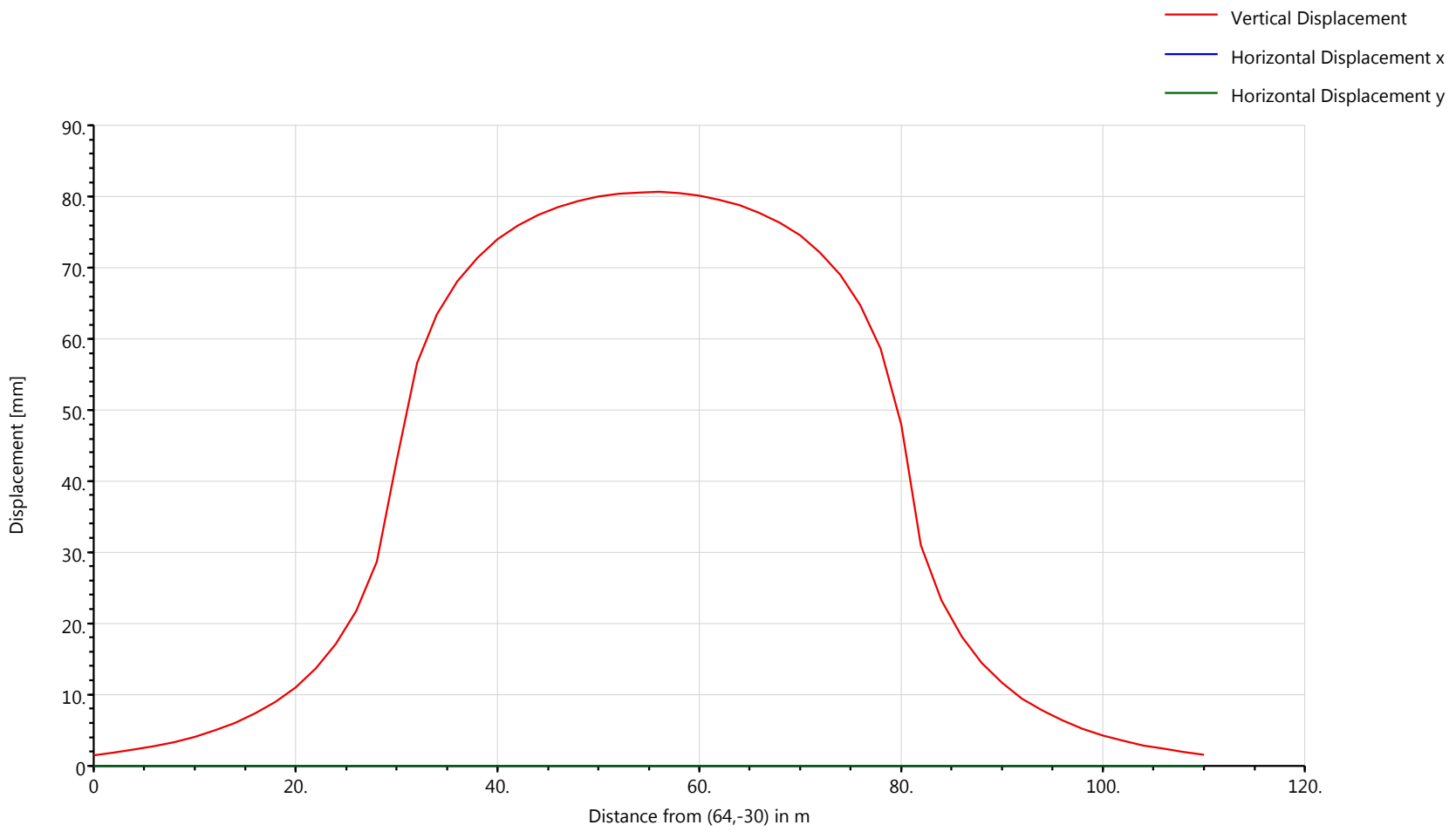

Displacement for Displacement Line 4