

PROPOSED TRAVIS COURT RESIDENTIAL DEVELOPMENT AT
FORMER TAPIOS, 342 HEYWOOD OLD ROAD,
MIDDLETON M24 4QG

PHASE 2 SITE INVESTIGATION REPORT

Client:
TEC Services Ltd.
Unit 6
3a Eagar Street
Manchester
M24 1LR

Consultant:
Build Vision Ltd
Consulting Engineers
Middle Cottage
Ben Kaye Row
Holmfirth
HD9 1EF

REVISION SHEET

Revision	Date	Revision
1 st Issue	December 2023	

EXECUTIVE SUMMARY

Development Proposals	New residential apartment block with associated access road, parking, hard paved, garden and soft landscaped areas.
Site Description	The site is presently unoccupied but was formerly occupied by the recently demolished fire damaged Tapios pub buildings brick and slate built with adjacent landscaping and car parks to the east, southeast and south and several trees adjacent to the site.
Site History	<u>On site:</u> pub, outhouses, pond. <u>Adj. site:</u> fields, a stream, a pond, houses, council depot.
Geology	Devensian sand and gravel drift deposits. Pennine Lower Coal Measures Formation solid deposits.
Mining	Coal mining risk considered low.
Surface Water	Langley Brook 161m northeast. Possible culverted former stream that fed the former pond southeast of the site.
Ground Water	Drift – Secondary A Aquifer Bedrock – Secondary A Aquifer
Radon	Lower probability radon area (< 1% homes estimated above Action level). No radon protection measures are necessary.
Contamination	Elevated levels of Lead, PAHs and TPHs identified in the made ground. Asbestos insulation in BH M4 and chrysotile bundles in TP5 identified.
Landfill Gas	Methane 0.0%, CO ₂ 13.5%, Oxygen 2.8%, Gas flows <0.1 l/hr. The maximum GSV is 0.0135, <0.07 falls into CS1, but CO ₂ >5% and peat and organic material identified in former infilled pond area, increase to CS2 gas protection measures required.
Remediation	Contaminated made ground should be removed or capped with hard cover or 600mm and 450mm capping layers to gardens and soft landscaped areas. Extent of peat and organic material in infilled pond to be determined and removed. CS2 gas protection measures.
Contamination Liability	The site is unlikely to be classified by the Local Authority as 'Contaminated Land' or designated a 'Special Site' under the Contaminated Land Regulations, provided remediation measures are carried out.
Foundations	Medium dense sand and firm to stiff clay at depths of 0.80m to 5.50m suitable to support foundations, 100kN/m ² . As >2.5m in several areas of the site, consider piled foundations.
Flood Risk	The EA flood risk maps indicate the site is in Flood Zone 1. Surface water flood risk very low. Potential for groundwater flooding to occur at the surface.

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1 INTRODUCTION

1.1 Appointment

- 1.1.1 Build Vision Consulting Engineers were appointed by TEC Services Ltd. to carry out a Phase 2 Site Investigation comprising of trial pits, mini boreholes, sampling and testing on the site.
- 1.1.2 The Worms Eye Preliminary Risk Assessment (Phase 1 Desk Study) Report, reference Heywood Old Road/M24 4QG/2017, dated 25th April 2022 should be referred to for further information.

1.2 Development Proposals

- 1.2.1 The proposed development comprises the construction of a new residential apartment block with associated access road, parking, hard paved and soft landscaped areas as shown on the proposed site plan enclosed in Appendix A.

1.3 Site Location

- 1.3.1 The site is located at the site of the former Tapios pub at 342 Heywood Old Road in Middleton as shown on the site plan enclosed in Appendix A.

1.4 Site Description

- 1.4.1 The site is an irregular shaped parcel of land occupying approximately 0.2 hectares. The site is presently unoccupied but was formerly occupied by the recently demolished fire damaged Tapios pub buildings brick and slate built with adjacent landscaping and car parks to the east, southeast and south and several trees adjacent to the site as shown on the topographical survey enclosed in Appendix A.
- 1.4.2 There is no evidence of any significant contamination on the site.
- 1.4.3 There did not appear to be any asbestos containing materials present on the site but properties of this age are often constructed from or lined with asbestos containing materials and an asbestos specialist should have been consulted prior to demolition to determine if there were any present and for their safe removal if required.
- 1.4.4 The site is surrounded by houses to the north and west, a sports centre car park to the northeast and vacant plots to the east and south of the site.

1.5 Potential Sources of Contamination

- 1.5.1 The desk study indicates that the site was originally developed as the pub with a cluster of buildings at the north and west and a pond at the southeast corner. The outbuildings were subsequently demolished and the pond filled prior to construction of the car park. The site may have been regraded and filled and therefore made ground deposits may be present beneath the site as general fill and demolition fill. Circa 2017 the pub suffered from a fire and it has since been left derelict until it was recently demolished.
- 1.5.2 There is no evidence of any significant contamination on the site.
- 1.5.3 There did not appear to be any asbestos containing materials present on the site but properties of this age are often constructed from or lined with asbestos containing materials and an asbestos specialist should have been consulted prior to demolition to determine if there were any present and for their safe removal if required.
- 1.5.4 The site was surrounded by fields, a stream, a pond, houses and a council depot and is now surrounded by houses, a sports centre car park and vacant plots.
- 1.5.5 Potential contaminants associated with general fill and demolition fill associated with the former pub that suffered from a fire, previous outbuildings and infilled pond and regrading of the site that may be present beneath the site are asbestos, heavy metals, polyaromatic hydrocarbons (PAHs) and Total Petroleum Hydrocarbons (TPHs).
- 1.5.6 The drift deposits are recorded as Devensian sand and gravel and solid deposits as Pennine Lower Coal Measures mudstone, siltstone and sandstone. These are designated as Secondary A Aquifers. There are no ground water abstractions within 250m and the site is not in a source protection zone. The nearest watercourse is Langley Brook located 161m northeast of the site flowing northwest. Historical maps show a stream to the southeast of the site that possibly fed the former pond that was on the site that may have been culverted, diverted or infilled.
- 1.5.7 The risk to receptors from contamination at the site is therefore considered low to medium.

1.6 Potential Sources of Landfill Gas

- 1.6.1 The desk study indicates that the site was originally developed as the pub with a cluster of buildings at the north and west and a pond at the southeast corner. The outbuildings were subsequently demolished and the pond filled prior to construction of the car park. The site may have been regraded and filled and therefore made ground deposits may be present beneath the site as general fill and demolition fill. Circa 2017 the pub suffered from a fire and it has since been left derelict until it was recently demolished. The general fill and demolition fill associated with these are unlikely to be significant potential sources of landfill gases. The infilled pond may contain organic materials/silts/sediments that are potential sources of landfill gases that could migrate beneath the site.
- 1.6.2 BS 8485 Code of Practice for the characterisation and remediation from ground gas in affected developments and CIRIA C665 Assessing Risks posed by hazardous ground gases to buildings have been used to assess the risk from landfill gases and any sources of landfill gases within 250m are considered to have the potential to migrate to a site.
- 1.6.3 There are no BGS or Registered Landfill Sites, no Waste Management, Treatment or Disposal Sites, no Mineral Sites and no potentially infilled land (non-water) pit quarry etc. recorded within 250m of the site.
- 1.6.4 There is an historical landfill site 217m south at Bluebell Lane, Bowlee, Bury, deposited waste included inert and industrial waste and potentially infilled land (water) pond, marsh, river etc. recorded on the southeast corner of the site and 197m northeast, within 250m of the site.
- 1.6.5 Historical maps show a stream to the southeast of the site that possibly fed the former pond that was on the site and ponds 15m north and 200m northeast, within 250m of the site.
- 1.6.6 Infilled ponds and watercourses may contain organic materials/silts/sediments that are potential sources of landfill gases that could migrate to the site.
- 1.6.7 The drift deposits are recorded as Devensian sand and gravel and these could be a pathway for landfill gases from on site and off site sources within 250m of the site.

- 1.6.8 The site is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action level). No radon protection measures are necessary in the construction of new dwellings or extensions.
- 1.6.9 The coal authority interactive mapping shows the site is not in a development high risk area and there are no nearby coal seams or mine entries.
- 1.6.10 The risk to receptors from potential landfill gases and mine gases at the site is therefore considered low to medium.

1.7 Site Investigation Objectives

- 1.7.1 The site investigation was carried out in accordance with BS10175 Investigation of potentially contaminated sites and BS5930 Code of practice for site investigations and BS1377 Methods of test for soils for civil engineering purposes.
- 1.7.2 The purpose of the site investigation was to investigate the potential environmental and geotechnical hazards on the site in order to:
 - § Undertake environmental risk assessments.
 - § Assess the ground conditions and provide recommendations for the design of foundations, floor slabs and pavement construction for the proposed development.
- 1.7.3 The site investigation comprised:
 - § Mini boreholes and trial pits and sampling carried out by Sub Surface Ltd. in August 2023.
 - § Cable Percussive boreholes, sampling and testing carried out by Sub Surface Ltd. in October and November 2023.
 - § Laboratory analysis carried out by DETS on behalf of Sub Surface Ltd. in September and November 2023.
 - § Gas monitoring carried out by Sub Surface Ltd. from September to November 2023.
- 1.7.4 The site investigation results are presented and assessed in the following sections and appendices of this report.

2 GROUND INVESTIGATION

2.1 Exploratory Holes

- 2.1.1 Sub Surface carried out 6 no. mini boreholes to depths of 0.2m to 5.45m and 5 no trial pits to depths of 3.00m to 3.50m in August 2023 and 2 no. cable percussive boreholes to depths of 13.45m in October 2023.
- 2.1.2 The boreholes and trial pits were carried out to provide targeted sampling in the areas of the former pub and outbuildings and the former pond and non-targeted sampling density greater than the 20-25m required for a main site investigation on a low to medium risk site in accordance with BS10175 to enable a contamination assessment of the general made ground and an engineering assessment of the site.

2.2 Results

- 2.2.1 Detailed descriptions of the strata encountered in the boreholes and trial pits carried out on the site are given on the logs in Appendix B.
- 2.2.2 The ground investigation generally identified made ground over loose to medium dense gravelly silty sand over soft to firm to stiff to very stiff sandy silty clay.

2.3 Made Ground

- 2.3.1 Made ground was identified to depths of 0.80m to 5.00m and consisted of bitmac, brick and concrete hardcore and wood chippings, plastic bottles and glass over ash, sand, clay, brick, stone and concrete fill in all of the boreholes and trial pits. Occasional plastic, metal rebar, pieces of metal, metal wiring and twigs were identified in the trial pits.
- 2.3.2 BH M4 in the former pond area in the southeast corner of the site identified sandstone and ironstone fill beneath the general made ground from 1.2 to 2.00m over brick and stone fill to 3.00m over peaty sand with brick and stone to 3.55m over black peat with brick, rootlets and partially decomposing plant matter to 4.84m with a strong organic odour.
- 2.3.3 BH2 in the former pond area identified sandy clayey gravel with abundant fragments of wood in the general made ground from 3.00 to 3.45m and sandy gravelly peaty organic silt from 4.00 to 5.00m.

2.3.4 No other visible or olfactory evidence of contamination was identified during the site investigation excavations.

2.4 Drift Deposits

2.4.1 Loose to medium dense slightly silty gravelly sand was identified beneath the made ground at depths of 0.80m to 5.00m.

2.4.2 Soft to firm to stiff to very stiff sandy clay was identified beneath the made ground and the sand at depths of 2.1m to 5.00m to the extent of the intrusive investigation at a depth of 13.45m.

2.4.3 Plasticity Index Results for the clay samples tested were 12 to 20% indicating low shrinkability.

2.5 Solid Deposits

2.5.1 No solid deposits were identified to the extent of the intrusive investigation at 13.45m.

2.6 Groundwater

2.6.1 Groundwater entries were noted in M1 at 3.50m, M2 at 3.0m and TP5 at 3.20m. No groundwater was identified in M3, M4, TP1, TP2, TP3 or TP4. Water was added to assist drilling in BH1 and BH2 possibly masking groundwater inflows.

2.6.2 Water levels were identified at depths of 1.78m to 1.98m in BH M4 in the former pond area during gas and water monitoring visits, however these could be due to surface water run-off into the monitoring standpipe or perched water in the former pond area and are not considered a true record of groundwater levels.

2.6.3 From the above recordings, some shallow groundwater levels have been identified but the levels aren't consistent and could be perched water due to the presence of pockets and layers of clay beneath.

3 ENVIRONMENTAL ASSESSMENT

3.1 Contamination

3.1.1 Made ground was identified to depths of 0.80m to 5.00m and consisted of bitmac, brick and concrete hardcore and wood chippings, plastic bottles and glass over ash, sand, clay, brick, stone and concrete fill in all of the boreholes and trial pits. Occasional plastic, metal rebar,

pieces of metal, metal wiring and twigs were identified in the trial pits. BH M4 in the former pond area in the southeast corner of the site identified sandstone and ironstone fill beneath the general made ground from 1.2 to 2.00m over brick and stone fill to 3.00m over peaty sand with brick and stone to 3.55m over black peat with brick, rootlets and partially decomposing plant matter to 4.84m with a strong organic odour. BH2 in the former pond area identified sandy clayey gravel with abundant fragments of wood in the general made ground from 3.00 to 3.45m and sandy gravely peaty organic silt from 4.00 to 5.00m. No other visible or olfactory evidence of contamination was identified during the site investigation excavations.

- 3.1.2 Soil samples were taken from the boreholes and trial pits and 10 no. samples of the made ground and 2 no. samples of groundwater were tested for a general suite of contaminants, which included an asbestos ID, heavy metals, Poly Aromatic Hydrocarbons (PAHs) and Total Petroleum Hydrocarbons (TPHs), MTBE and BTEX.

3.2 Contamination Analysis

- 3.2.1 The current legislative framework and guidance on the assessment of contaminated land acknowledges the need for a risk based approach comprising Tier 1 and Tier 2 assessment.
- 3.2.2 Tier 1 assessment is comparison of site contaminant concentrations against soil guideline values (SGV's), derived using the Contaminated Land Exposure Assessment (CLEA) model and Generic Assessment Criteria (GAC's) and Suitable 4 Use Levels (S4UL's) published by Land Quality Management (LQM) Ltd and the Chartered Institute of Environmental Health (CIEH), where available. A qualitative risk assessment using the source-pathway-receptor model is then carried out. Should Tier 1 assessment prove inconclusive then Tier 2 assessment is carried out. Tier 2 assessment is derivation of site-specific risk assessment criteria and site specific remediation based on the application of quantitative risk assessment.
- 3.2.3 The contamination test results have been assessed using 1%, 2.5% and 6% soil organic matter (SOM) residential land use with plant uptake human health and inhalation only pathway Tier 1 assessment levels for soil and drinking water standards (DWS) and environmental quality standards (EQS) Tier 1 assessment levels for water, where assessment levels are available and are enclosed in Appendix C.

- 3.2.4 The results of samples of the made ground tested indicate elevated levels of Lead, PAHs and TPHs above the 1%, 2.5% and 6% SOM residential assessment levels and the inhalation only pathway assessment levels.
- 3.2.5 However, as no visible or olfactory evidence of hydrocarbons were identified, the samples were tested for the C5-C10 GRO, C10-C24 DRO and C24-C40 LORO total TPH bands and not the speciated CWG TPH aliphatic and aromatic TPH bands. The C5-C10 total result is below the speciated aliphatic and aromatic TPH assessment levels. The C10-24 total result exceeds the speciated aliphatic and aromatic C10-12 and C12-16 TPH residential assessment levels and the aliphatic C10-C12 inhalation pathway assessment levels, but as the result is a C10-24 total, the speciated results would be very unlikely to exceed the speciated aliphatic and aromatic C10-12 and C12-16 assessment levels. The C24-C40 total result exceeds the speciated aromatic C21-35 and C35-C44 TPH residential assessment levels, but as the result is a C24-C40 total, the speciated results would be very unlikely to exceed the speciated C21-35 and C35-C44 assessment levels.
- 3.2.6 The elevated Lead, PAHs and TPHs are consistent with the ash identified in the made ground.
- 3.2.7 Asbestos Insulation with a quantification of 0.035% was identified in the sample of made ground from M4 0.1-1.2m and chrysotile bundles with a quantification of 0.04% was identified in the sample of made ground from TP5 0.2-0.3m. No asbestos was identified in the other samples tested and there was no other visible evidence of asbestos in the made ground on site during the site investigation.
- 3.2.8 The risk to end user and construction workers from direct contact with the general made ground present beneath the site is therefore considered low to medium.
- 3.2.9 Groundwater samples were obtained for testing from BH M4. No groundwater was identified in the other boreholes during gas and water monitoring visits. The initial results of the sample of the groundwater tested from BH M4 identified no elevated levels of contaminants above the drinking water DWS assessment levels with the exception of the TPH C10-24 total result which exceeds the speciated aliphatic and aromatic TPH DWS assessment levels and the EQS assessment levels. A further sample was taken and tested for

the speciated CWG TPH suite and the results were below the TPH DWS assessment levels and the EQS assessment levels.

- 3.2.10 Slightly elevated levels of chromium, copper and zinc were identified above EQS assessment levels, but these were below drinking water DWS assessment levels.
- 3.2.11 No significant contamination has been identified in the made ground and it is underlain and surrounded Devensian sand and gravel over clay drift deposits over solid deposits as Pennine Lower Coal Measures mudstone, siltstone and sandstone. These are designated as Secondary A Aquifers. There are no ground water abstractions within 250m and the site is not in a source protection zone. The nearest watercourse is Langley Brook located 161m northeast of the site flowing northwest. Historical maps show a stream to the southeast of the site that possibly fed the former pond that was on the site that may have been culverted, diverted or infilled. The risk to groundwater and surface water receptors is therefore considered low.
- 3.2.12 The sulphate and pH results indicate Aggressive Chemical Environment for Concrete (ACEC) Classification DS-1 AC-1 for the samples tested. The risk to structures is therefore considered low.
- 3.2.13 The levels are likely to exceed the assessment levels for Water Supply Pipes and the risk to services is therefore considered low to medium. However, the advice of service providers should be obtained to ensure that appropriate measures are taken to protect services from contamination and aggressive ground conditions.
- 3.2.14 Sampling has been carried out in limited locations for this investigation. Contamination may be present on site in between the sampling locations that has not been identified in this investigation.

3.3 Landfill Gas

- 3.3.1 BS 8485 Code of Practice for the characterisation and remediation from ground gas in affected developments and CIRIA C665 Assessing Risks posed by hazardous ground gases to buildings have been used to assess the risk from landfill gases and any sources of landfill gases within 250m are considered to have the potential to migrate to a site.

- 3.3.2 In accordance with BS 8485 and CIRIA C665 an intrusive ground investigation was recommended to assess ground conditions beneath the site and to identify the level of risk associated with the potential sources of landfill gases and potential pathways for migration and to determine if it is necessary to carry out a landfill gas survey consisting of the installation of gas standpipes and a minimum of 6 no. gas monitoring visits over a 3 month period initially to assess the gas risk.
- 3.3.3 Made ground was identified to depths of 0.80m to 5.00m and consisted of bitmac, brick and concrete hardcore and wood chippings, plastic bottles and glass over ash, sand, clay, brick, stone and concrete fill in all of the boreholes and trial pits. Occasional plastic, metal rebar, pieces of metal, metal wiring and twigs were identified in the trial pits. BH M4 in the former pond area in the southeast corner of the site identified sandstone and ironstone fill beneath the general made ground from 1.2 to 2.00m over brick and stone fill to 3.00m over peaty sand with brick and stone to 3.55m over black peat with brick, rootlets and partially decomposing plant matter to 4.84m with a strong organic odour. BH2 in the former pond area identified sandy clayey gravel with abundant fragments of wood in the general made ground from 3.00 to 3.45m and sandy gravely peaty organic silt from 4.00 to 5.00m. No other visible or olfactory evidence of contamination was identified during the site investigation excavations.
- 3.3.4 The general fill and demolition fill identified on site are unlikely to be significant potential sources of landfill gases and no elevated PAHS or TPHs vapours have been identified above inhalation pathway assessment levels that could migrate beneath the site.
- 3.3.5 The peat and the wood identified in the former infilled pond is a potential source of landfill gases that could migrate beneath the site.
- 3.3.6 There are no BGS or Registered Landfill Sites, no Waste Management, Treatment or Disposal Sites, no Mineral Sites and no potentially infilled land (non-water) pit quarry etc. recorded within 250m of the site.
- 3.3.7 There is an historical landfill site 217m south at Bluebell Lane, Bowlee, Bury, deposited waste included inert and industrial waste and potentially infilled land (water) pond, marsh, river etc. recorded on the southeast corner of the site and 197m northeast, within 250m of the site.

- 3.3.8 Historical maps show a stream to the southeast of the site that possibly fed the former pond that was on the site and ponds 15m north and 200m northeast, within 250m of the site.
- 3.3.9 Infilled ponds and watercourses may contain organic materials/silts/sediments that are potential sources of landfill gases that could migrate to the site.
- 3.3.10 Loose to medium dense gravelly silty sand over soft to firm to stiff to very stiff sandy silty clay drift deposits have been identified beneath the made ground. The sand could be a pathway but the low permeability clay beneath is unlikely to be a pathway for landfill gases from on site and off site sources within 250m of the site.
- 3.3.11 The site is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action level). No radon protection measures are necessary in the construction of new dwellings or extensions.
- 3.3.12 The coal authority interactive mapping shows the site is not in a development high risk area and there are no nearby coal seams or mine entries.
- 3.3.13 The risk to receptors from potential landfill gases and mine gases at the site is therefore considered low to medium.
- 3.3.14 Boreholes were positioned within the site to identify any landfill gases and any volatile hydrocarbon vapours associated with the ash and clinker and to identify any gas migration beneath the site.
- 3.3.15 Sub Surface Ltd. installed three gas monitoring standpipes in the boreholes within the made ground and clay drift deposits to depths of 5.0m. The construction of the standpipes consisted of a bentonite seal from 1.0m to 0.2m and a concrete cap from 0.2m to the surface, therefore the gas standpipes should identify any potential gases migrating beneath the site from on site or off site sources.
- 3.3.16 Sub Surface Ltd. have carried out landfill gas monitoring of the boreholes at the site. The four gas standpipes have been monitored on 6 occasions over 3 months initially to ascertain whether further monitoring is considered necessary. Methane, Carbon Dioxide and Oxygen were measured together with the atmospheric pressure, gas flow rate, temperature and

water depth. The landfill gas survey results are enclosed in Appendix C and have identified the following:

- § Methane levels up to 0.0%.
- § Carbon Dioxide levels up to 13.5%.
- § Oxygen levels down to 2.8%.
- § Gas flows less than 0.1 l/hr.

3.3.17 The maximum GSV is 0.0135 which is less than 0.07 and falls into characteristic situation CS1 from BS 8485 which is considered very low risk. No elevated methane levels above 1% have been identified but carbon dioxide levels above 5% have been identified, therefore an increase in the characteristic situation should be considered and as peat and organic material have been identified an increase in the characteristic situation to CS2 is considered appropriate. The results when assessed using the Ternary Plot in the NHBC Hazardous Ground Gas NF94 guidance for house builders indicate carbon dioxide caused by biological respiration or oxidation of organic material in ground (eg in Made Ground, Coal Measures or other soils) and this is considered a natural process and occurs widely in soils to produce elevated carbon dioxide, it is not considered to pose a risk of hazardous emissions. However, due to the limited data and as peat and organic material have been identified in the former infilled pond area, this should be removed and an increase in characteristic situation to CS2 is considered appropriate, gas protection measures are required and the risk from landfill gases is considered low to medium.

3.4 Site Investigation Conceptual Model

3.4.1 A conceptual model of the site has been produced identifying the sources, pathways and receptors with respect to the proposed development and the effects on the environment and summarised in the following table:

3.4.2 Conceptual Model – Source-Pathway-Receptor

	Pathway	Receptor	Risk
<u>Contamination</u> Elevated levels of Lead, PAHs and TPHs identified in the made ground. Asbestos insulation in BH M4 and chrysotile bundles in TP5 identified.	Direct contact, Ingestion, Inhalation Direct contact, Ingestion, Inhalation Direct contact Direct Contact Migration Migration Migration	Construction Workers End User Structures Services Adjacent Land Users Groundwater Watercourse	Low/Med Low/Med Low Low/Med Low Low Low
<u>Landfill Gases</u> Methane 0.0%, CO2 13.5%, Oxygen 2.8%, Gas flows <0.1 l/hr. The maximum GSV is 0.0135, <0.07 falls into CS1, but CO2>5% and peat and organic material identified in former infilled pond area, increase to CS2 gas protection measures required. <u>Radon <1% of homes</u> No radon measures necessary	Migration-Asphyxiation, Explosion Migration-Asphyxiation, Explosion Migration-Asphyxiation, Explosion Migration-Asphyxiation, Explosion	Construction Workers End User Construction Workers End User	Low/Med Low/Med Low Low

4 SITE REMEDIATION

4.1 General

- 4.1.1 The Site Investigation Conceptual Model indicates that there are Source-Pathway-Receptor pollution linkages present on the site and therefore the following remediation measures will be required to mitigate the risks identified.

4.2 Contamination

- 4.2.1 Made ground was identified to depths of 0.80m to 5.00m and consisted of bitmac, brick and concrete hardcore and wood chippings, plastic bottles and glass over ash, sand, clay, brick, stone and concrete fill in all of the boreholes and trial pits. Occasional plastic, metal rebar, pieces of metal, metal wiring and twigs were identified in the trial pits. BH M4 in the former pond area in the southeast corner of the site identified sandstone and ironstone fill beneath the general made ground from 1.2 to 2.00m over brick and stone fill to 3.00m over peaty sand with brick and stone to 3.55m over black peat with brick, rootlets and partially decomposing plant matter to 4.84m with a strong organic odour. BH2 in the former pond area identified sandy clayey gravel with abundant fragments of wood in the general made ground from 3.00 to 3.45m and sandy gravely peaty organic silt from 4.00 to 5.00m. No other visible or olfactory evidence of contamination was identified during the site investigation excavations.
- 4.2.2 The results of samples of the made ground tested indicate elevated levels of Lead, PAHs and TPHs above the 1%, 2.5% and 6% SOM residential assessment levels and the inhalation only pathway assessment levels.
- 4.2.3 However, as no visible or olfactory evidence of hydrocarbons were identified, the samples were tested for the C5-C10 GRO, C10-C24 DRO and C24-C40 LORO total TPH bands and not the speciated CWG TPH aliphatic and aromatic TPH bands. The C5-C10 total result is below the speciated aliphatic and aromatic TPH assessment levels. The C10-24 total result exceeds the speciated aliphatic and aromatic C10-12 and C12-16 TPH residential assessment levels and the aliphatic C10-C12 inhalation pathway assessment levels, but as the result is a C10-24 total, the speciated results would be very unlikely to exceed the speciated aliphatic and aromatic C10-12 and C12-16 assessment levels. The C24-C40 total result exceeds the speciated aromatic C21-35 and C35-C44 TPH residential assessment levels, but as the result

is a C24-C40 total, the speciated results would be very unlikely to exceed the speciated C21-35 and C35-C44 assessment levels.

- 4.2.4 The elevated Lead, PAHs and TPHs are consistent with the ash identified in the made ground.
- 4.2.5 Asbestos Insulation with a quantification of 0.035% was identified in the sample of made ground from M4 0.1-1.2m and chrysotile bundles with a quantification of 0.04% was identified in the sample of made ground from TP5 0.2-0.3m. No asbestos was identified in the other samples tested and there was no other visible evidence of asbestos in the made ground on site during the site investigation.
- 4.2.6 The risk to end user and construction workers from direct contact with the general made ground present beneath the site is therefore considered low to medium.
- 4.2.7 Groundwater samples were obtained for testing from BH M4. No groundwater was identified in the other boreholes during gas and water monitoring visits. The initial results of the sample of the groundwater tested from BH M4 identified no elevated levels of contaminants above the drinking water DWS assessment levels with the exception of the TPH C10-24 total result which exceeds the speciated aliphatic and aromatic TPH DWS assessment levels and the EQS assessment levels. A further sample was taken and tested for the speciated CWG TPH suite and the results were below the TPH DWS assessment levels and the EQS assessment levels.
- 4.2.8 Slightly elevated levels of chromium, copper and zinc were identified above EQS assessment levels, but these were below drinking water DWS assessment levels.
- 4.2.9 No significant contamination has been identified in the made ground and it is underlain and surrounded Devensian sand and gravel over clay drift deposits over solid deposits as Pennine Lower Coal Measures mudstone, siltstone and sandstone. These are designated as Secondary A Aquifers. There are no ground water abstractions within 250m and the site is not in a source protection zone. The nearest watercourse is Langley Brook located 161m northeast of the site flowing northwest. Historical maps show a stream to the southeast of the site that possibly fed the former pond that was on the site that may have been

culverted, diverted or infilled. The risk to groundwater and surface water receptors is therefore considered low.

- 4.2.10 The proposed development comprises the construction of new residential apartment blocks with associated access road, hard paved, parking, gardens and soft landscaped areas. A site strip and reduced level excavations will be required for the proposed development due to proposed levels. A watching brief should be carried out by the contractor during these and all excavation works carried out during the construction period and should any contamination not identified by the site investigation be encountered during the construction period, in particular any organic or hydrocarbon contamination, the engineer should be notified immediately.
- 4.2.11 Asbestos Insulation with a quantification of 0.035% was identified in the sample of made ground from M4 0.1-1.2m and chrysotile bundles with a quantification of 0.04% was identified in the sample of made ground from TP5 0.2-0.3m. These are not significant quantities and no asbestos was identified in the other samples tested and there was no other visible evidence of asbestos in the made ground on site during the site investigation, however the developer should include details of asbestos management in their construction phase management plan. The plan should detail the treatment and control measures that will be implemented throughout the construction works and transportation of any material off site and excavation, movement and re-use of any soils at the site, such as damping down soils and covering material taken off site if further asbestos is identified. The plan should state how the potential risk posed to construction workers, nearby residents, members of the public etc will be appropriately mitigated and the contractor will be responsible for ensuring the implementation and documentation of these measures throughout the development of the site. All site managers should undertake asbestos awareness training and where and when asbestos is suspected work should stop in that location, and the asbestos should be removed by a licensed contractor. Site staff and groundworkers in particular should be made aware of the likelihood that further asbestos could be present in the ground. If any suspicious material is uncovered they must not touch it but inform the site manager who should take appropriate action.
- 4.2.12 Beneath the properties, hard paved, parking and access roads, the remaining general made ground identified will be capped. The remaining contaminated general made ground present

in proposed garden areas should either be removed or capped by minimum 600mm capping layers and in proposed soft landscaped areas by minimum 450mm capping layers, comprising minimum 150mm granular capillary break layer or geotextile membrane and the remainder as 'inert' subsoil and topsoil.

- 4.2.13 The intrusive investigation identified 0.8m to 5.0m of general made ground beneath the majority of the site and due to the proposed levels, the made ground is unlikely to be removed, but it may be shallower in areas not investigated. If the contaminated made ground is removed, validation of the removal would be required and should comprise of photographic evidence of excavations during and after and provision of waste transfer notes.
- 4.2.14 Delivery tickets and waste transfer notes will be required for all material imported and disposed off site.
- 4.2.15 Validation sampling and testing of any imported material will be required and should comprise 1 sample per 200m³ of greenfield source topsoil or 50m³ of brownfield source topsoil and subsoil with 3 no. samples minimum of any source of material. Samples to be tested for a general soil suite comprising of asbestos, heavy metals, PAHs and TPHs.
- 4.2.16 Where capping layers are provided to garden areas, validation trial pits will be required at a rate of 1 no. per 2 to 3 plots with 3 no. minimum to confirm the depths of the capping layers and to be recorded by an engineer.
- 4.2.17 Construction workers should adopt appropriate health and safety measures on site and undertake soil gas monitoring prior to and during man entry of below ground voids or confined spaces, as detailed in HSE guidance.
- 4.2.18 Dust suppression measures should be adopted during all earthworks.
- 4.2.19 Surface water control measures should be adopted during construction to limit runoff and infiltration through exposed made ground and to limit siltation of the surface drainage.
- 4.2.20 The sulphate and pH results indicate Aggressive Chemical Environment for Concrete (ACEC) Classification DS-1 AC-1 for the samples tested. The risk to structures is therefore considered

low. Buried concrete and services should be designed in accordance with the guidance given in BRE Special Digest 1: Concrete in aggressive ground.

- 4.2.21 The levels are likely to exceed the assessment levels for Water Supply Pipes and the risk to services is therefore considered medium. The advice of service providers should be obtained to ensure that appropriate measures are taken to protect services from contamination and aggressive ground conditions.

4.3 Landfill Gas

- 4.3.1 The landfill gas survey results have identified Methane levels up to 0.0%, Carbon Dioxide levels up to 13.5%, Oxygen levels down to 2.8% and Gas flows less than 0.1 l/hr. The maximum GSV is 0.0135 which is less than 0.07 and falls into characteristic situation CS1 from BS 8485 which is considered very low risk. No elevated methane levels above 1% have been identified but carbon dioxide levels above 5% have been identified, therefore an increase in the characteristic situation should be considered and as peat and organic material have been identified an increase in the characteristic situation to CS2 is considered appropriate. The results when assessed using the Ternary Plot in the NHBC Hazardous Ground Gas NF94 guidance for house builders indicate carbon dioxide caused by biological respiration or oxidation of organic material in ground (eg in Made Ground, Coal Measures or other soils) and this is considered a natural process and occurs widely in soils to produce elevated carbon dioxide, it is not considered to pose a risk of hazardous emissions. However, due to the limited data and as peat and organic material have been identified in the former infilled pond area, this should be removed and an increase in characteristic situation to CS2 is considered appropriate, gas protection measures are required and the risk from landfill gases is considered low to medium.
- 4.3.2 The extent of the peat and organic material identified in BH M4 and BH2 in the former infilled pond area in the southwest corner of the site should be determined and removed.
- 4.3.3 Gas protection measures should be provided in accordance with CS2 from BS 8485 and for residential, a score of 3.5 is required, this can be achieved by providing beam and block floor slabs with low permeability gas membranes with taped joints and sealed entries using specialist approved gas prevention tape and underfloor ventilated voids. The gas

membranes should be methane gas membranes with integrated aluminium core and should be installed with reasonable level of workmanship in line with current good practice.

4.3.4 The validation of the installation of the gas protection measures will need to be certified by a specialist who will need to inspect and provide photographic evidence of the ventilated voids and the gas membranes with gas taped sealed joints/entries and certification that it has been installed correctly.

4.3.5 A watching brief should be carried out by the contractor and should any organic or hydrocarbon contamination be identified during excavations, the engineer should be notified immediately.

4.4 Waste Regulations

4.4.1 Consultation should be made with the Environment Agency to confirm whether the transfer of materials should be registered as exempt from Waste Management licensing or require licensing.

4.5 Landfill Tax

4.5.1 The general made ground identified is likely to be classified as contaminated but prior to off site disposal of material it will be necessary to undertake waste characterisation with current landfill regulations.

4.6 Liability Statement

4.6.1 The site is unlikely to be classified by the Local Authority as 'Contaminated Land' or designated a 'Special Site' under the Contaminated Land Regulations, provided remediation measures are carried out.

5 ENGINEERING ASSESSMENT AND RECOMMENDATIONS

5.1 Foundation Design

5.1.1 Made ground was identified to depths of 0.80m to 5.00m and consisted of bitmac, brick and concrete hardcore and wood chippings, plastic bottles and glass over ash, sand, clay, brick, stone and concrete fill in all of the boreholes and trial pits. Occasional plastic, metal rebar, pieces of metal, metal wiring and twigs were identified in the trial pits. BH M4 in the former pond area in the southeast corner of the site identified sandstone and ironstone fill beneath the general made ground from 1.2 to 2.00m over brick and stone fill to 3.00m over peaty

sand with brick and stone to 3.55m over black peat with brick, rootlets and partially decomposing plant matter to 4.84m with a strong organic odour. BH2 in the former pond area identified sandy clayey gravel with abundant fragments of wood in the general made ground from 3.00 to 3.45m and sandy gravely peaty organic silt from 4.00 to 5.00m. These deposits are not considered suitable to support strip foundations and the extent of the peat and organic material identified in the former infilled pond in the southeast corner should be determined and removed.

- 5.1.2 The loose sand and soft clay identified beneath the made ground deposits at depths of 0.80m to 5.00m are not considered suitable to support strip foundations.
- 5.1.3 The medium dense sand and firm to stiff to very stiff clay identified beneath the made ground, loose sand and soft clay at depths of 2.00m to 5.50m are considered suitable to support foundations and a bearing capacity of 100kN/m² should be used for design purposes. As these are greater than 2.5m deep over the majority of the site, piled foundations may be more economical and specialist piling contractors should be consulted for pile type and design and any further intrusive investigation or testing required.
- 5.1.4 There are trees present adjacent to the site and the intrusive investigations have identified clay drift deposits in some areas of the site within influencing depth, therefore it may be necessary to carry out a tree survey and the NHBC Guidance For Building Near Trees should be referred to for foundation requirements.
- 5.1.5 The sulphate and pH results indicate Aggressive Chemical Environment for Concrete (ACEC) Classification DS-1 AC-1 for the samples tested. The risk to structures is therefore considered low. Buried concrete and services should be designed in accordance with the guidance given in BRE Special Digest 1: Concrete in aggressive ground.
- 5.1.6 Gas protection measures should be provided in accordance with CS2 from BS 8485 and for residential, a score of 3.5 is required, this can be achieved by providing beam and block floor slabs with low permeability gas membranes with taped joints and sealed entries using specialist approved gas prevention tape and underfloor ventilated voids. The gas membranes should be methane gas membranes with integrated aluminium core and should be installed with reasonable level of workmanship in line with current good practice. The validation of the installation of the gas protection measures will need to be certified by a

specialist who will need to inspect and provide photographic evidence of the ventilated voids and the gas membranes with gas taped sealed joints/entries and certification that it has been installed correctly. A watching brief should be carried out by the contractor and should any organic or hydrocarbon contamination be identified during excavations, the engineer should be notified immediately.

5.2 Ground Floor Slabs

- 5.2.1 The made ground in its current untreated state is not suitable to support ground bearing floor slabs. Ground floor slabs should be suspended concrete slabs, or pre-cast beam and block.

5.3 Retaining Walls

- 5.3.1 New retaining walls may be required at the site but these should be considered during detailed design.

5.4 Pavement Design

- 5.4.1 Pavement design should be based on CBR values of the formation subgrade, which on this site would be the made ground. An indicative CBR design value of 2% is recommended for the made ground for preliminary costing/design purposes.
- 5.4.2 The design values should be confirmed by undertaking in-situ CBR tests on the formation subgrade prior to construction.

5.5 Temporary Works

- 5.5.1 All excavations at the site will require adequate support, or battering back to a safe angle, to ensure their stability.
- 5.5.2 Allowance should be made for appropriate groundwater control measures.

5.6 Mining

- 5.6.1 The desk study has confirmed that the coal authority interactive mapping shows the site is not in a development high risk area and there are no nearby coal seams or mine entries or development high risk area. The risk from mining at the site is therefore considered low.

5.7 Flood Risk

- 5.7.1 The Environment Agency flood risk maps for planning indicate that the site is in Flood Zone 1. Flood Zone 1 is classified as having a 'Very Low' risk of flooding with a flood risk of less than 1 in 1000 (0.1%).
- 5.7.2 The EA surface water flood risk maps indicate that the site is in and surrounded by a very low risk of surface water flooding area.
- 5.7.3 Groundwater vulnerability maps indicate potential for groundwater flooding to occur below ground level and at the surface of the site.
- 5.7.4 The local authority and/or the Environment Agency should be consulted to determine if a flood risk assessment is required for the site in accordance with flood risk planning policy and guidance.

5.8 Drainage

- 5.8.1 The former Tapios pub had drains and the client has confirmed that the foul drains discharged to a septic tank in the car park and the surface water drains to soakaways and these were removed during the demolition.
- 5.8.2 The use of sustainable drainage systems (SUDS) such as soakaways, permeable pavements, infiltration basins, ponds and swales should be incorporated where possible into the surface water drainage design to reduce surface water runoff from the development. The sand is likely to be suitable for soakaways but the sand is underlain by clay which is unlikely to be suitable for soakaways. Soakaway tests should be carried out in accordance with BRE365 to determine infiltration co-efficients and confirm whether the site is suitable for infiltration methods of SUDS. Should these prove inadequate, permeable pavements and other forms of SUDs should still be considered as attenuation and to slow down flows and flow control and attenuation within the site.
- 5.8.3 The foul drainage should discharge to a public foul sewer and further investigation should be carried out to identify the nearest foul sewer to the site. If there are no foul sewers within 30m per plot vicinity of the site, discharge to a new septic tank or sewage treatment plant may be required.

6 FURTHER WORKS

- 6.1.1 The site investigation should be submitted to the local authority for comment/approval.
- 6.1.2 Validation of the remediation measures should be carried out in accordance with the recommendations and submitted to the local authority for approval.

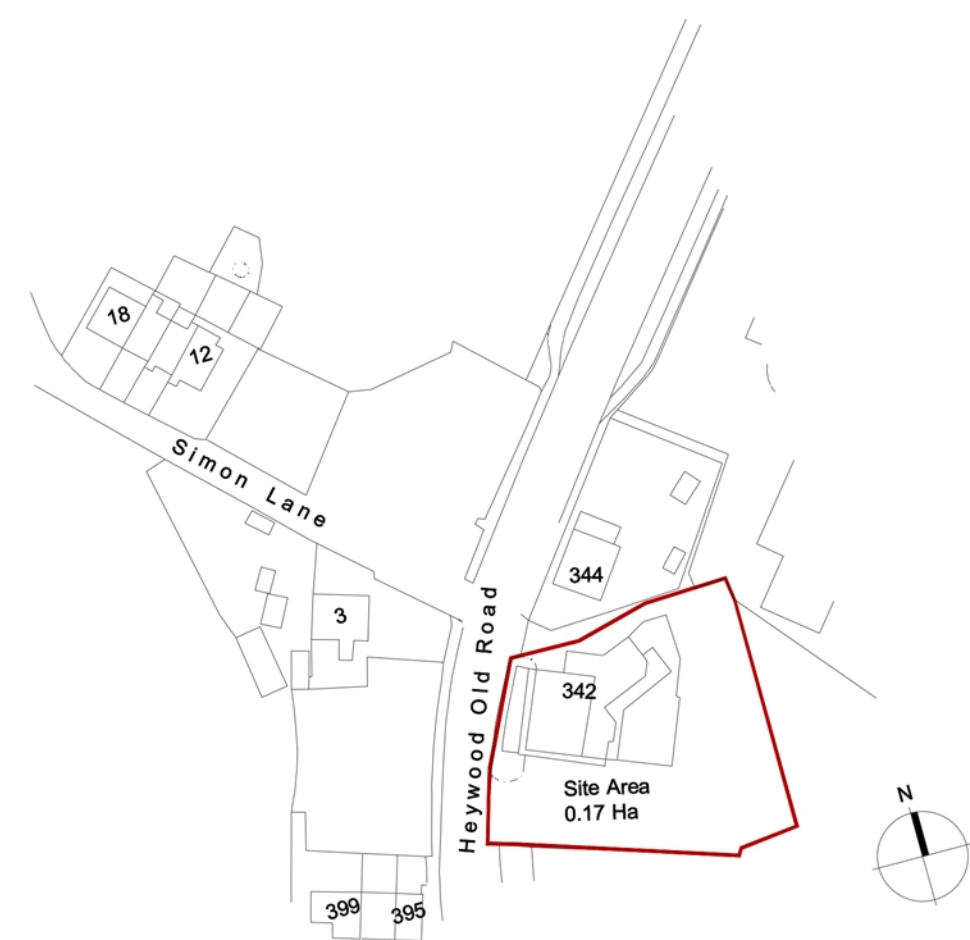
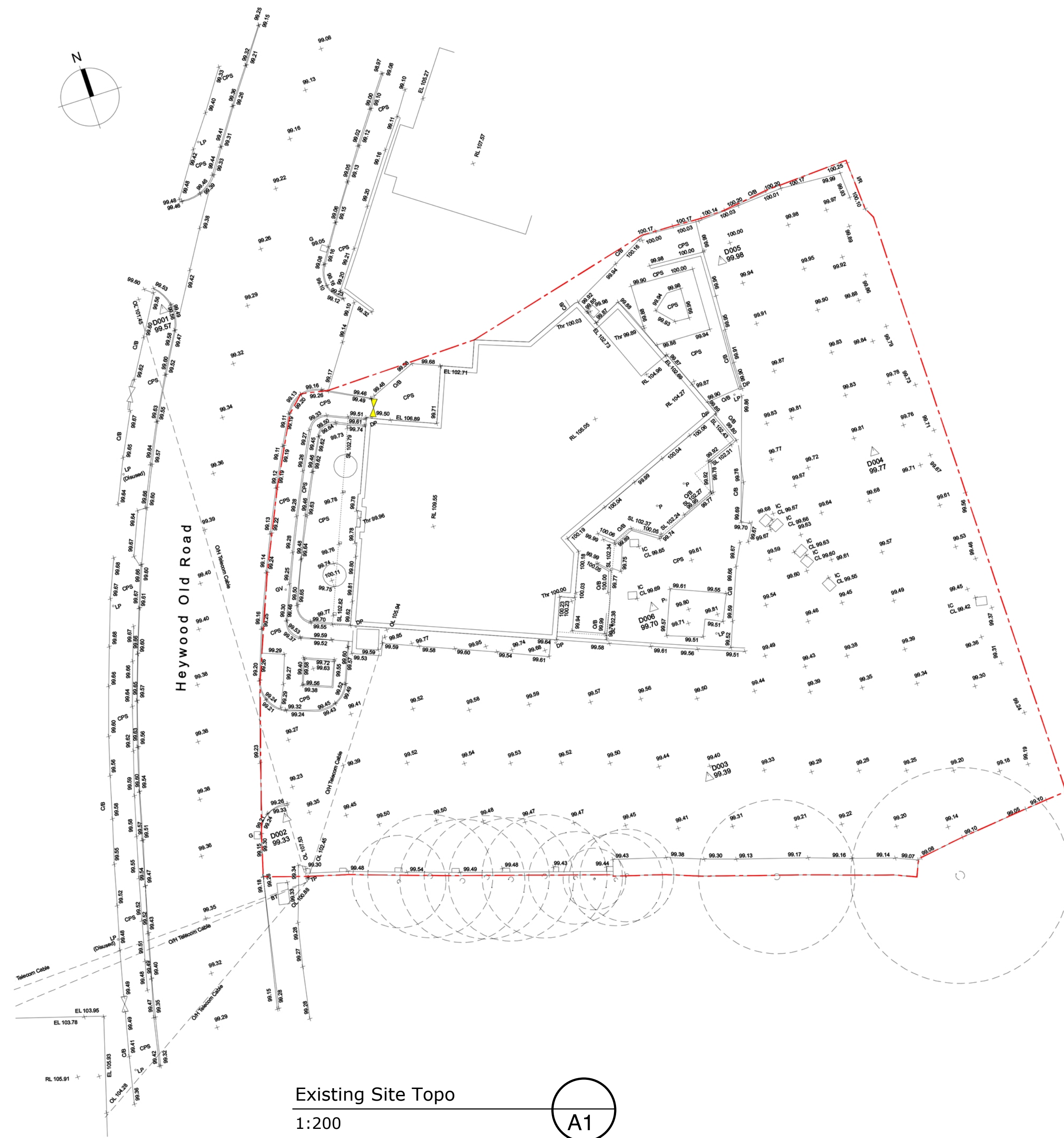
DISCLAIMER

The recommendations made and the opinions expressed in this report are based on the borehole and/or trial pit records, examination of samples and the results of the site and laboratory tests. The report is issued on the condition that Build Vision Consulting Engineers, will in no circumstances be liable for any loss arising directly or indirectly from ground conditions between the boreholes or trial pits which have not been shown by the borehole, trial pits or other tests carried out during the investigation, nor for any loss whatsoever arising directly or indirectly from any opinion given on the possible configuration of strata both between the borehole and/or trial pit positions and/or below the maximum depth of the investigation : such opinions, where given, are for guidance only. This report is confidential, personal to the client, non-assignable and not for the benefit of third parties.

APPENDIX A

SITE PLANS

§ Site Location, Existing and Proposed Site Plan



APPENDIX B

GROUND INVESTIGATION INFORMATION

- § Sub Surface Factual Report No. 7794 October 2023
Mini Boreholes, Trial Pits, Test Results and Location Plan
- § DETS BH M4 Groundwater Test Results 19th October 2023
- § Sub Surface Factual Report No. 7794A November 2023
Cable Percussive Boreholes, Test Results, Ground Gas and
Groundwater Monitoring and Location Plan



INVESTIGATE



REMEDiate



REGENERATE



GROUND INVESTIGATION REPORT

**FOR
TRAVIS COURT,
HEYWOOD OLD ROAD,
MIDDLETON,
M24 4QS,**

**PREPARED FOR
TEC SERVICES LIMITED**

**FACTUAL REPORT NO. 7794
OCTOBER 2023**

SUB SURFACE NORTH WEST LIMITED

3 Peel Street
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Insitu Test results
Laboratory Test results
Contamination Analysis results
Mini Borehole Record sheets
Trial Pit Record sheets
Photographs
Figures

INSITU TEST RESULTS



SUB SURFACE

SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Standard Penetration Test Results

Site : TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS

Client : TEC SERVICES LIMITED

Engineer : BUILD VISION CONSULTING ENGINEERS

Job Number
7794

Sheet
1 / 1

Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
M1	1.20	1.35	1.65	SPT	2	1	1	1	3	3	N=8	
M1	2.00	2.15	2.45	SPT	2	2	2	3	3	4	N=12	
M1	3.00	3.15	3.45	SPT	2	2	2	2	2	3	N=9	
M1	4.00	4.15	4.45	SPT	3	3	3	4	3	3	N=13	
M1	5.00	5.15	5.45	SPT	3	3	4	5	6	8	N=23	
M2	1.20	1.35	1.65	SPT	1	2	2	2	3	3	N=10	
M2	2.00	2.15	2.45	SPT	2	2	2	3	2	3	N=10	
M2	3.00	3.15	3.45	SPT	1	1	2	2	2	3	N=9	
M2	4.00	4.15	4.45	SPT	3	3	4	3	3	2	N=12	
M2	5.00	5.15	5.45	SPT	3	3	4	4	4	5	N=17	
M4	1.20	1.35	1.65	SPT	1	1	1	3	6	15	N=25	
M4	2.00	2.15	2.45	SPT	4	3	4	4	4	4	N=16	
M4	3.00	3.15	3.45	SPT	0	0	0	0	0	0	N=0	
M4	4.00	4.15	4.45	SPT	0	0	0	1	1	1	N=3	
M4	5.00	5.15	5.45	SPT	0	0	0	0	0	0	N=0	

LABORATORY TEST RESULTS



Site : TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS Client : TEC SERVICES LIMITED Engineer: BUILD VISION CONSULTING ENGINEERS	Job Number 7794
	Sheet 1 / 1

Borehole/ Trial Pit	Depth (m)	Sample	Natural Moisture Content %	Sample Passing 425µm Sieve		Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Group Symbol	Laboratory Description
				Percentage %	Moisture Content %						
TP5	2.50	B	17	98	17	27	15	12	0.19	CL	Firm to stiff brown speckled bluish grey sandy silty CLAY. Sand is fine to coarse.

Remarks :

CONTAMINATION ANALYSIS RESULTS



Certificate of Analysis

Certificate Number 23-21687

Issued: 26-Sep-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-21687

Client Reference 7794

Order No (not supplied)

Contract Title TRAVIS COURT, HETWOOD OLD ROAD, MIDDLETON

Description 15 Soil samples.

Date Received 12-Sep-23

Date Started 12-Sep-23

Date Completed 26-Sep-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 23-21687

Client Ref 7794

Contract Title TRAVIS COURT, HETWOOD OLD ROAD,MIDDLETON

Lab No	2232130	2232131	2232132	2232133	2232134	2232135
Sample ID	M1	M1	M2	M2	M3	M4
Depth	0.10-0.30	2.00-2.45	0.10-0.80	2.00-2.45	0.10-1.10	0.10-1.20
Other ID	46	50	57	61	79	68
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	31/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%						0.035
Preparation									
Moisture Content	DETSC 1004	0.1	%	8.3		13		8.9	6.0
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	8.3		8.9		13	5.4
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.6		< 0.2		0.5	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2		< 0.1		0.4	0.4
Chromium	DETSC 2301#	0.15	mg/kg	10		13		12	8.5
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	20		26		31	12
Lead	DETSC 2301#	0.3	mg/kg	370		130		41	14
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		0.07		0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.2		1.9		1.4	0.6
Nickel	DETSC 2301#	1	mg/kg	11		14		14	7.3
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		< 0.5		< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	37		41		55	40
Inorganics									
pH	DETSC 2008#		pH	8.0	7.6	7.5	5.9	8.3	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1		0.2		< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%						
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l		22		31		
Sulphide	DETSC 2024*	10	mg/kg	20		20		20	20
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04		0.02		0.05	0.02
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg						
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg						
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg						
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg						
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg						
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg						
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg						
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg						
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg						
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg						
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg						
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg						
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg						
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg						
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg						
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg						
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg						
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg						
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 23-21687

Client Ref 7794

Contract Title TRAVIS COURT, HETWOOD OLD ROAD,MIDDLETON

Lab No	2232130	2232131	2232132	2232133	2232134	2232135
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Other ID	46	50	57	61	79	68
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	31/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
C5-C10 Gasoline Range Organics (GRO): HS_1D_Total	DETSC 3321*	0.1	mg/kg	< 0.1		< 0.1		< 0.1	< 0.1
C10-C24 Diesel Range Organics (DRO): EH_1D_Total	DETSC 3311#	10	mg/kg	130		< 10		150	110
EPH (C10-C40): EH_1D_Total	DETSC 3311#	10	mg/kg	960		< 10		1100	1300
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311#	10	mg/kg	830		< 10		970	1200
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.2		< 0.1		< 2.0	< 2.0
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1		< 2.0	< 2.0
Acenaphthene	DETSC 3301	0.1	mg/kg	0.7		< 0.1		< 2.0	< 2.0
Fluorene	DETSC 3301	0.1	mg/kg	0.5		< 0.1		< 2.0	< 2.0
Phenanthrene	DETSC 3301	0.1	mg/kg	2.5		< 0.1		< 2.0	< 2.0
Anthracene	DETSC 3301	0.1	mg/kg	0.6		< 0.1		< 2.0	< 2.0
Fluoranthene	DETSC 3301	0.1	mg/kg	1.6		0.1		2.4	< 2.0
Pyrene	DETSC 3301	0.1	mg/kg	1.1		< 0.1		< 2.0	< 2.0
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.3		< 0.1		< 2.0	< 2.0
Chrysene	DETSC 3301	0.1	mg/kg	0.6		< 0.1		< 2.0	< 2.0
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.9		< 0.1		< 2.0	< 2.0
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.8		< 0.1		< 2.0	< 2.0
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	1.2		< 0.1		< 2.0	< 2.0
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.6		< 0.1		< 2.0	< 2.0
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.4		< 0.1		< 2.0	< 2.0
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.4		< 0.1		< 2.0	< 2.0
PAH 16 Total	DETSC 3301	1.6	mg/kg	12		< 1.6		2.4	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3		< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 23-21687

Client Ref 7794

Contract Title TRAVIS COURT, HETWOOD OLD ROAD,MIDDLETON

Lab No	2232136	2232137	2232138	2232139	2232140	2232141
Sample ID	M4	M4	TP1	TP1	TP2	TP3
Depth	4.50-4.80	2.00-2.45	0.50	2.20-2.50	0.10	0.30-0.50
Other ID	78	71	81,82,83	87	12,13,14	39
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	31/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%						
Preparation									
Moisture Content	DETSC 1004	0.1	%	26		16		13	14
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	5.5		14		10	6.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4		0.4		0.5	1.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.1		< 0.1		0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	19		9.3		15	8.3
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	30		36		42	24
Lead	DETSC 2301#	0.3	mg/kg	15		590		76	48
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		0.10		0.13	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.7		2.7		1.6	0.9
Nickel	DETSC 2301#	1	mg/kg	25		12		16	9.8
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		< 0.5		< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	61		69		64	49
Inorganics									
pH	DETSC 2008#		pH	7.4	10.6	8.0	7.9	9.8	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1		0.2		0.1	0.4
Organic matter	DETSC 2002#	0.1	%						4.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l		110		18		
Sulphide	DETSC 2024*	10	mg/kg	24		20		24	230
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.08		0.05		0.56	0.16
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg						< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg						< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg						< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg						< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg						< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg						< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg						< 3.4
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg						< 3.4
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg						< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg						< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg						< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg						< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg						< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg						< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg						13
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg						25
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg						< 1.4
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg						38
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg						38

Summary of Chemical Analysis

Soil Samples

Our Ref 23-21687

Client Ref 7794

Contract Title TRAVIS COURT, HETWOOD OLD ROAD,MIDDLETON

Lab No	2232136	2232137	2232138	2232139	2232140	2232141
Sample ID	M4	M4	TP1	TP1	TP2	TP3
Depth	4.50-4.80	2.00-2.45	0.50	2.20-2.50	0.10	0.30-0.50
Other ID	78	71	81,82,83	87	12,13,14	39
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	31/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
C5-C10 Gasoline Range Organics (GRO): HS_1D_Total	DETSC 3321*	0.1	mg/kg	< 0.1		< 0.1		< 0.1	
C10-C24 Diesel Range Organics (DRO): EH_1D_Total	DETSC 3311#	10	mg/kg	< 10		< 10		61	
EPH (C10-C40): EH_1D_Total	DETSC 3311#	10	mg/kg	< 10		< 10		530	
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311#	10	mg/kg	< 10		< 10		470	
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1		< 0.1	0.3
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1		< 0.1	0.2
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1		< 0.1	1.2
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1		< 0.1	1.9
Phenanthrene	DETSC 3301	0.1	mg/kg	0.2		0.2		0.5	7.7
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1		< 0.1		0.1	2.2
Fluoranthene	DETSC 3301	0.1	mg/kg	0.4		0.2		1.0	9.1
Pyrene	DETSC 3301	0.1	mg/kg	0.4		0.2		0.9	9.0
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.2		< 0.1		0.6	3.4
Chrysene	DETSC 3301	0.1	mg/kg	0.2		< 0.1		0.7	3.7
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.2		< 0.1		0.8	2.9
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.7		< 0.1		0.8	2.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.3		< 0.1		0.8	3.9
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.2		< 0.1		0.4	2.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.2		< 0.1		0.1	0.3
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.2		< 0.1		0.4	1.8
PAH 16 Total	DETSC 3301	1.6	mg/kg	3.2		< 1.6		7.1	52
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3		< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 23-21687

Client Ref 7794

Contract Title TRAVIS COURT, HETWOOD OLD ROAD,MIDDLETON

Lab No	2232142	2232143	2232144
Sample ID	TP3	TP4	TP5
Depth	2.00-2.30	0.50-0.70	0.20-0.30
Other ID	44	30	4
Sample Type	SOIL	SOIL	SOIL
Sampling Date	31/08/2023	31/08/2023	31/08/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Asbestos Quantification	DETSC 1102	0.001	%			0.004
Preparation						
Moisture Content	DETSC 1004	0.1	%		13	21
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg		28	11
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg		0.4	0.5
Cadmium	DETSC 2301#	0.1	mg/kg		0.1	0.3
Chromium	DETSC 2301#	0.15	mg/kg		14	12
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg		60	34
Lead	DETSC 2301#	0.3	mg/kg		210	61
Mercury	DETSC 2325#	0.05	mg/kg		0.28	0.15
Molybdenum	DETSC 2301#	0.4	mg/kg		4.8	8.3
Nickel	DETSC 2301#	1	mg/kg		23	13
Selenium	DETSC 2301#	0.5	mg/kg		< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg		77	74
Inorganics						
pH	DETSC 2008#		pH	7.6	7.8	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.1	0.4
Organic matter	DETSC 2002#	0.1	%			
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	69		
Sulphide	DETSC 2024*	10	mg/kg		28	55
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.07	0.06
Petroleum Hydrocarbons						
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg			
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg			
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg			
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg			
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg			
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg			
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg			
Aliphatic C35-C44: EH_CU_1D_AL	DETSC 3072*	3.4	mg/kg			
Aliphatic C10-C44: EH_CU_1D_AL	DETSC 3072*	10	mg/kg			
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg			
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg			
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg			
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg			
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg			
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg			
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg			
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1.4	mg/kg			
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	10	mg/kg			
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	10	mg/kg			

Summary of Chemical Analysis

Soil Samples

Our Ref 23-21687

Client Ref 7794

Contract Title TRAVIS COURT, HETWOOD OLD ROAD,MIDDLETON

Lab No	2232142	2232143	2232144
Sample ID	TP3	TP4	TP5
Depth	2.00-2.30	0.50-0.70	0.20-0.30
Other ID	44	30	4
Sample Type	SOIL	SOIL	SOIL
Sampling Date	31/08/2023	31/08/2023	31/08/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
C5-C10 Gasoline Range Organics (GRO): HS_1D_Total	DETSC 3321*	0.1	mg/kg		< 0.1	< 0.1
C10-C24 Diesel Range Organics (DRO): EH_1D_Total	DETSC 3311#	10	mg/kg		19	28
EPH (C10-C40): EH_1D_Total	DETSC 3311#	10	mg/kg		69	86
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg		< 0.01	< 0.01
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311#	10	mg/kg		50	58
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg		0.5	0.5
Anthracene	DETSC 3301	0.1	mg/kg		0.1	0.2
Fluoranthene	DETSC 3301	0.1	mg/kg		1.1	1.4
Pyrene	DETSC 3301	0.1	mg/kg		1.0	1.4
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg		0.5	0.9
Chrysene	DETSC 3301	0.1	mg/kg		0.4	0.7
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg		0.5	0.8
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg		0.7	1.0
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg		0.6	1.2
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg		0.3	0.7
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg		< 0.1	0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg		0.5	0.6
PAH 16 Total	DETSC 3301	1.6	mg/kg		6.2	9.5
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3	< 0.3

Summary of Asbestos Analysis Soil Samples

Our Ref 23-21687

Client Ref 7794

Contract Title TRAVIS COURT, HETWOOD OLD ROAD, MIDDLETON

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2232130	M1 46 0.10-0.30	SOIL	NAD	none	Vicky Convery
2232132	M2 57 0.10-0.80	SOIL	NAD	none	Vicky Convery
2232134	M3 79 0.10-1.10	SOIL	NAD	none	Vicky Convery
2232135	M4 68 0.10-1.20	SOIL	Chrysotile	Chrysotile present in microscopic insulation debris	Vicky Convery
2232136	M4 78 4.50-4.80	SOIL	NAD	none	Vicky Convery
2232138	TP1 81,82,83 0.50	SOIL	NAD	none	Vicky Convery
2232140	TP2 12,13,14 0.10	SOIL	NAD	none	Vicky Convery
2232141	TP3 39 0.30-0.50	SOIL	NAD	none	Vicky Convery
2232143	TP4 30 0.50-0.70	SOIL	NAD	none	Vicky Convery
2232144	TP5 4 0.20-0.30	SOIL	Chrysotile	Chrysotile present as fibre bundles	Vicky Convery

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 23-21687

Client Ref 7794

Contract Title TRAVIS COURT, HETWOOD OLD ROAD,MIDDLETON

Lab No	2232135	2232144
Sample ID	M4	TP5
Depth	0.10-1.20	0.20-0.30
Other ID	68	4
Sample Type		
Sampling Date	31/08/2023	31/08/2023
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETS 1102	Mass %	0.035	0.004
Gravimetric Quantification (a)	DETS 1102	Mass %	0.035	na
Detailed Gravimetric Quantification (b)	DETS 1102	Mass %	na	0.004
Quantification by PCOM (c)	DETS 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETS 1102	Fibres/g	na	na

Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	962.71	935.80
ACMs present*		type	Insulation	
Mass of ACM in sample		g	0.40	
% ACM by mass		%	0.04	
% asbestos in ACM		%	85	
% asbestos in sample		%	0.035	

Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na
% Chrysotile bundles in sample		Mass %	na	0.004

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na

Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

Information in Support of the Analytical Results

Our Ref 23-21687
 Client Ref 7794
 Contract TRAVIS COURT, HETWOOD OLD ROAD, MIDDLETON

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2232130	M1 0.10-0.30 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232131	M1 2.00-2.45 SOIL	31/08/23	PT 500ml	pH + Conductivity (7 days)	
2232132	M2 0.10-0.80 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232133	M2 2.00-2.45 SOIL	31/08/23	PT 500ml	pH + Conductivity (7 days)	
2232134	M3 0.10-1.10 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232135	M4 0.10-1.20 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232136	M4 4.50-4.80 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232137	M4 2.00-2.45 SOIL	31/08/23	PT 500ml	pH + Conductivity (7 days)	
2232138	TP1 0.50 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232139	TP1 2.20-2.50 SOIL	31/08/23	PT 1L	pH + Conductivity (7 days)	
2232140	TP2 0.10 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232141	TP3 0.30-0.50 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232142	TP3 2.00-2.30 SOIL	31/08/23	PT 1L	pH + Conductivity (7 days)	
2232143	TP4 0.50-0.70 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2232144	TP5 0.20-0.30 SOIL	31/08/23	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

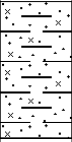
Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total
C5-C10 Gasoline Range Organics (GRO)	HS_1D_Total
C10-C24 Diesel Range Organics (DRO)	EH_1D_Total
EPH (C10-C40)	EH_1D_Total
C24-C40 Lube Oil Range Organics (LO)	EH_1D_Total

End of Report

MINI BOREHOLE RECORD SHEETS

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Number M1	
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.10-0.30	B				0.10	MADE GROUND: Grey and dark grey bituminous macadam hardstanding.			
0.30-1.20	B				0.20	MADE GROUND: Dark grey and black very gravelly sandy fine to coarse ash. Gravel sized fragments are subangular to subrounded fine to coarse of brick and stone.			
					0.30				
					(0.90)	MADE GROUND: Soft to firm light brown, brown speckled orange gravelly very sandy silty clay with low cobble sized fragments of brick. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of brick and stone.			
1.20-1.65	D		1.20m to 2.00m - 100% Recovery		1.20	MADE GROUND: Loose brown and orangish brown speckled yellowish brown gravelly silty fine to coarse sand with rare pockets of sandy gravel and gravelly sandy silty clay. Gravel sized fragments are angular to subrounded fine to coarse brick and sandstone.			
1.20-2.00	C		2,1/1,1,3,3		(0.09)				
1.20-1.65	SPT N=8		HV@ 1.35m c=14kPa		(0.07)				
					1.36				
					(0.14)				
					1.50				
					(0.50)	MADE GROUND: Soft very low strength brown grey and reddish brown gravelly sandy silty clay.			
					2.00	MADE GROUND: Loose dark brown speckled orange and greyish brown slightly gravelly silty fine to coarse sand.			
2.00-2.45	D		2.00m to 3.00m - 80% Recovery			Loose brown, pinkish brown speckled black and grey silty fine to medium SAND.			
2.00-3.00	C		2,2/2,3,3,4						
2.00-2.45	SPT N=12								
					(1.00)	Medium dense brown, speckled orangish brown, black and greyish brown silty fine to coarse SAND.			
3.00-3.45	D		3.00m to 4.00m - 76% Recovery		3.00	Loose brown and orangish brown speckled grey and black slightly gravelly silty fine to coarse SAND. Gravel sized fragments are subangular to subrounded fine to medium of sandstone and siltstone.			
3.00-4.00	C		2,2/2,2,2,3						
3.00-3.45	SPT N=9								
			Water inflow (1) at 3.50m.		(1.00)				
4.00-4.45	D		4.00m to 5.00m - 100% Recovery		4.00	Medium dense orangish brown and brown speckled black slightly silty gravelly fine to coarse SAND. Gravel sized fragments are subangular to rounded fine to medium of mixed lithologies including sandstone and siltstone.			
4.00-5.00	C		3,3/3,4,3,3						
4.00-4.45	SPT N=13				(0.95)				
5.00-5.45	SPT N=23		3,3/4,5,6,8		4.95				
Remarks Inspection pit hand dug to 1.20m to check for potentially buried services. Groundwater encountered at 3.50m. On completion, the borehole was installed with a 50mm dia HDPE gas and groundwater monitoring standpipe with a gas valve and a gravel surround to 4.00m, a bentonite seal from 0.20m to 1.0m and secured with a metal flush cover concreted to ground level. Core diameter: 86mm to 2.0m, 76mm to 3.0m, 66mm to 4.0m and 55mm to 5.0m. HV = Hand Shear Vane Test							Scale (approx) 1:25	Logged By DB/DI	Figure No. 7794.M1

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Number M1	
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 2/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
			31/08/2023:		(0.50) 5.45	Firm to stiff orangish brown and brown high strength sandy silty CLAY. Sand is fine to coarse Complete at 5.45m			
Remarks							Scale (approx) 1:25	Logged By DB/DI	Figure No. 7794.M1



SUB SURFACE

SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Site

TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON,
M24 4QS

Number
M2

Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/2	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10-0.80	B				(0.10) 0.10	MADE GROUND: Grey and dark grey bituminous macadam hardstanding.		
					(0.70)	MADE GROUND: Brown and grey speckled orange gravelly sandy silty CLAY. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of brick and stone.		
0.80-1.20	B				0.80	POSSIBLE MADE GROUND: Soft dark brown speckled brown very sandy silty CLAY. Sand is fine to coarse.		
					(0.40)			
1.20-1.65	D		1.20m to 2.00m - 100% Recovery		1.20	POSSIBLE MADE GROUND: Loose to medium dense dark brown speckled brown very silty fine to medium SAND with a slight organic odour. Frequent rootles up to 6mm in length are present.		
1.20-2.00	C		1,2/2,2,3,3		(0.15)			
1.20-1.65	SPT N=10				1.35	Loose to medium dense orangish brown and brown speckled black slightly gravelly slightly silty fine to coarse SAND. Gravel sized fragments are subangular to rounded fine to coarse of mixed lithologies including sandstone and quartzite.		
2.00-2.45	D		2.00m to 3.00m - 100% Recovery		(1.65)			
2.00-3.00	C		2,2/2,3,2,3					
2.00-2.45	SPT N=10							
3.00-3.45	D		Water inflow (1) at 3.00m.		3.00	Loose orangish brown and black gravelly slightly silty fine to coarse SAND. Gravel sized fragments are subangular to subrounded fine to medium of mixed lithologies including sandstone, quartzite and coal.		
3.00-4.00	C		3.00m to 4.00m - 100% Recovery		(1.00)			
3.00-3.45	SPT N=9		1,1/2,2,2,3					
4.00-4.45	D		4.00m to 5.00m - 100% Recovery		4.00	Medium dense orangish brown and brown occasionally speckled black slightly gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium of quartzite and sandstone.		
4.00-5.00	C		3,3/4,3,3,2		(1.00)			
4.00-4.45	SPT N=12							
5.00-5.45	SPT N=17		3,3/4,4,4,5					

Remarks

Inspection pit hand dug to 1.20m to check potentially buried services.
Groundwater encountered at 3.00m.
On completion, the borehole was backfilled with gravel and arisings.
Core diameter: 86mm to 2.0m, 76mm to 3.0m, 66mm to 4.0m and 55mm to 5.0m.

Scale (approx)

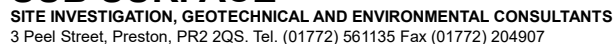
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Logged By

DB/DI

Figure No.

7794.M2



TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON,
M24 4QS

Number
M2

Job Number
7794

Sheet
2/2

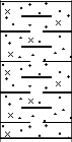
Remarks	Scale (approx)	Logged By
	1:25	DB/DI
	Figure No. 7794.M2	

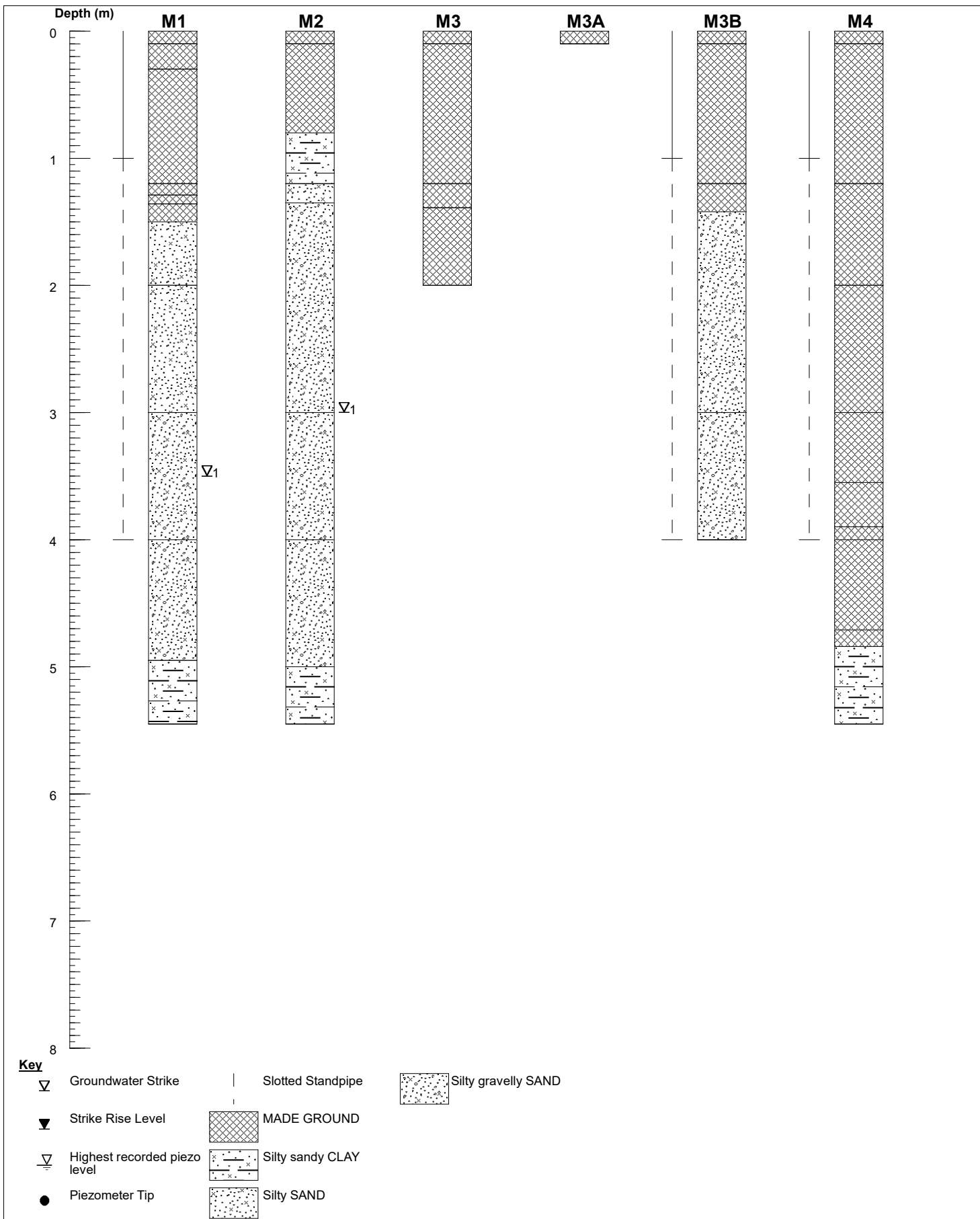
S S SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907					Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Number M3		
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.00-0.10	B				(0.10)	MADE GROUND: Light grey and dark grey bituminous macadam hardstanding.			
0.10-1.20	B					MADE GROUND: Dark grey and orange very ashy sandy angular to subrounded fine to coarse gravel with high content of cobble sized fragments of brick. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of brick, concrete and stone.			
					(1.10)				

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907					Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Number M3A		
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
			31/08/2023:DRY		(0.10) 0.10	MADE GROUND: brick and concrete (drillers description) Complete at 0.10m			
Remarks Inspection pit hand dug to 0.10m to identify potentially buried services. On completion the borehole was backfilled with arisings. Aborted at 0.10m due to difficult digging conditions.								Scale (approx) 1:25	Logged By DB/DI
								Figure No. 7794.M3A	

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Number M3B	
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.10-1.20	B				(0.10)	MADE GROUND: Light and dark grey bituminous macadam hardstanding.			
					(1.10)	MADE GROUND: Brown, orange and yellowish brown very gravelly sandy silty clay with low cobble sized fragments of brick and sandstone. Gravel sized fragments are angular to subrounded fine to coarse of brick, sandstone and stone.			
1.20-2.00	C		1.20m to 2.00m - 100% Recovery		1.20	MADE GROUND: Dark brown, orange and grey gravelly very silty fine to coarse sand with high cobble sized fragments of brick. Gravel sized fragments are subangular to subrounded fine to coarse of brick, stone and sandstone.			
					(0.22)				
2.00-3.00	C		2.00m to 3.00m - 90% Recovery		1.42	Brown, light brown and reddish brown speckled pinkish brown and black slightly gravelly slightly silty fine to coarse SAND. Gravel sized fragments are subangular to rounded fine to coarse of sandstone and quartzite.			
					(1.58)				
3.00-4.00	C		3.00m to 4.00m - 100% Recovery		3.00	Brown, reddish brown and black gravelly silty fine to coarse SAND. Gravel sized fragments are subrounded and rounded fine to coarse of sandstone, quartzite and occasionally coal.			
					(1.00)				
			31/08/2023: DRY		4.00	Complete at 4.00m			
Remarks Inspection pit hand dug to 1.20m to check for potentially buried services. Borehole remained dry during drilling. On completion, the borehole was installed with a 50mm dia HDPE gas and groundwater monitoring standpipe with a gas valve and a gravel surround to 4.0m, a bentonite seal from 0.20m to 1.0m and secured with a metal flush cover concreted to ground level. Core diameter: 86mm to 2.0m, 76mm to 3.0m and 66mm to 4.0m.							Scale (approx) 1:25	Logged By DB/DI	Figure No. 7794.M3B

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Number M4	
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.10-1.20	B				(0.10) 0.10	MADE GROUND: Light grey and dark grey bituminous macadam hardstanding			
					(1.10)	MADE GROUND: Dark brown and orange clayey very sandy angular to subrounded fine to coarse gravel sized fragments of brick and stone. Sand is fine to coarse.			
1.20-1.65 1.20-2.00 1.20-1.65	D C SPT N=25		1.20m to 2.00m - Poor Recovery 1,1/1,3,6,15		1.20	MADE GROUND: Sandstone/ironstone fill (drillers description)			
					(0.80)				
2.00-2.45 2.00-3.00 2.00-2.45	D C SPT N=16		2.00m to 3.00m - 41% recovery 4,3/4,4,4,4		2.00	MADE GROUND: Medium dense dark brown and orange sandy clayey angular to subrounded fine to coarse gravel of brick and stone. Sand is fine to coarse.			
					(1.00)				
3.00-3.45 3.00-4.00 3.00-3.45	D C SPT N=0		3.00m to 4.00m - 80% Recovery 0,0/0,0,0,0		3.00	MADE GROUND: Very loose brown, orange and black peaty very gravelly fine to coarse sand. Gravel sized fragments are angular to subrounded fine to coarse of mixed lithologies including brick, sandstone and quartzite.			
					(0.55)				
					3.55	POSSIBLE MADE GROUND: Black locally orange gravelly pseudofibrous peat. Gravel sized fragments are angular to subrounded fine to coarse brick fragments. Strong organic odour present.			
					(0.35)				
4.00-5.00 4.00-4.45	C SPT N=3		4.00m to 5.00m - 40% Recovery 0,0/0,1,1,1		3.90 (0.10) 4.00	POSSIBLE MADE GROUND: Dark brown and black pseudofibrous peat with occasional to frequent rootlets and partially decomposing plant matter present.			
					(0.71)	POSSIBLE MADE GROUND: Dark brown and black slightly sandy slightly gravelly amorphous peat. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of brick and quartzite. A strong organic odour present. No visible plant remains present.			
					4.71 (0.13) 4.84	POSSIBLE MADE GROUND: Dark brown and black slightly gravelly pseudofibrous peat. Gravel sized fragments are angular to subrounded fine to medium of brick. Rare plant remains present.			
5.00-5.45	SPT N=0		0,0/0,0,0,0						
Remarks Inspection pit hand dug to 1.20m to check for potentially buried services. Borehole remained dry during drilling. On completion, the borehole was installed with a 50mm dia HDPE gas and groundwater monitoring standpipe with a gas valve and a gravel surround to 4.0m, a bentonite seal from 0.20m to 1.0m and secured with a metal flush cover concreted to ground level. Core diameter: 86mm to 2.0m, 76mm to 3.0m, 66mm to 4.0m and 56mm to 5.0m.							Scale (approx) 1:25	Logged By DB/DI	Figure No. 7794.M4

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Number M4	
Excavation Method MINI PERCUSSIVE		Dimensions		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 2/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
			31/08/2023:DRY		(0.61) 5.45	Very soft extremely low strength greyish brown sandy silty CLAY. Sand is fine to coarse. Local pockets of sand are present within the clay. Complete at 5.45m			
Remarks							Scale (approx) 1:25	Logged By DB/DI	
							Figure No. 7794.M4		



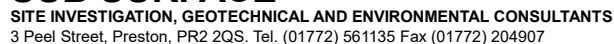
SUB SURFACE

SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Nominal Section

Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS	Date Drawn 09/10/2023	Date Checked	Sheet 1/1	Job Number 7794
Client TEC SERVICES LIMITED	Drawn By	Checked By	Scale 1:40[V]	Figure No. 7794.1

TRIAL PIT RECORD SHEETS



TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON,
M24 4QS

**Trial Pit
Number**
TP1

Dimensions
1.00m x 1.80m x 3.00m

Ground Level (mOD)

Client	TEC SERVICES LIMITED
---------------	----------------------

Job Number
7794

Location

AS PL AN

Dates	31/08/2023
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Engineer
BUILD VISION CONSULTING ENGINEERS

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	ES				(0.10) 0.10	MADE GROUND: grey bituminous macadam hardstanding.		
0.50	ES				(0.87)	MADE GROUND: dark grey and orange gravelly silty fine to coarse sand with frequent bricks and clay piping. Gravel is subangular to subrounded fine to coarse mixed lithologies.		
0.60-0.70	B							
1.00-1.20	B				0.97	Yellowish brown and orangish brown slightly gravelly very silty fine to coarse SAND. Gravel is subrounded fine to medium of mixed lithologies including sandstone. Pockets of silty clay occasionally present.		
1.20	D							
2.20-2.50	B				(2.03)			
3.00	D		31/08/2023: DRY		3.00	...at 3.00m: very clayey, large boulder sized clumps excavated.		
						Complete at 3.00m		

Remarks

Highly unstable long faces of trial pit, aborted at 3.00m.
No groundwater encountered
ES = Environmental sample comprising one 1kg plastic tub, one 250ml amber glass jar and one 60ml amber glass jar.
On completion backfilled with arisings.

Scale (approx)

1:25

Logged By

DB/DI

Figure No.

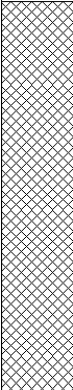
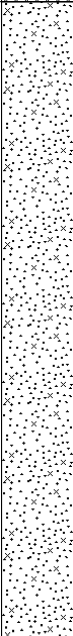
7794.TP1



SUB SURFACE
 SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Site
 TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON,
 M24 4QS

Trial Pit Number
TP2

Excavation Method MECHANICAL EXCAVATOR		Dimensions 2.00m x 1.00m x 3.40m		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.10 0.20-0.50	ES B					MADE GROUND: grey and brown slightly clayey sandy ashy angular to subrounded fine to coarse gravel of brick and concrete. Sand is medium to coarse. Plastic, metal rebar, metal fragments and tiling are present.			
0.70	ES				(1.30)				
1.30	D				1.30	POSSIBLE MADE GROUND: brown and yellowish brown silty fine to coarse sand.			
1.50-2.00	B								
1.70	ES								
2.30	D				(2.10)				
3.00-3.20	B								
			31/08/2023: DRY		3.40	Complete at 3.40m			

Plan

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Remarks

Major collapse on long sides of trial pit, aborted at 3.40m
 No groundwater encountered.
 ES = Environmental sample comprising one 1kg plastic tub, one 250ml amber glass jar and one 60ml amber glass jar.
 On completion backfilled with arisings.

Scale (approx)	Logged By	Figure No.
1:25	DB/DI	7794.TP2

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SUB SURFACE
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 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Site
 TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON,
 M24 4QS

Trial Pit Number
TP3

Excavation Method MECHANICAL EXCAVATOR		Dimensions 1.00m x 2.50m x 3.50m		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794	
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	ES				(0.15) 0.15	MADE GROUND: dark grey bituminous macadam hardstanding		
0.30-0.50	B				(0.60)	MADE GROUND: black gravelly ashy fine to coarse sand. Gravel is angular to rounded fine to coarse of mixed lithologies. Pieces of metal and wiring present.		
0.50	ES					...a 0.50m: becoming brown.		
0.80-0.90	B				0.75 (0.15) 0.90	MADE GROUND: dark brown gravelly very clayey fine to coarse sand with occasional pockets of silty clay. Gravel is subangular to subrounded fine to coarse mixed lithologies. Rare fragments of glass, brick and clinker present.		
2.00-2.30	B				(2.60)	Loose brownish yellow and orangish brown silty slightly gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse sandstone and other lithologies.		
3.50	D		31/08/2023: DRY		3.50	Complete at 3.50m		

Plan

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Remarks

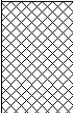
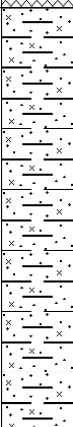
Pit sides remained vertical and stable.
 No groundwater encountered.
 ES = Environmental sample comprising one 1kg plastic tub, one 250ml amber glass jar and one 60ml amber glass jar.
 On completion backfilled with arisings.

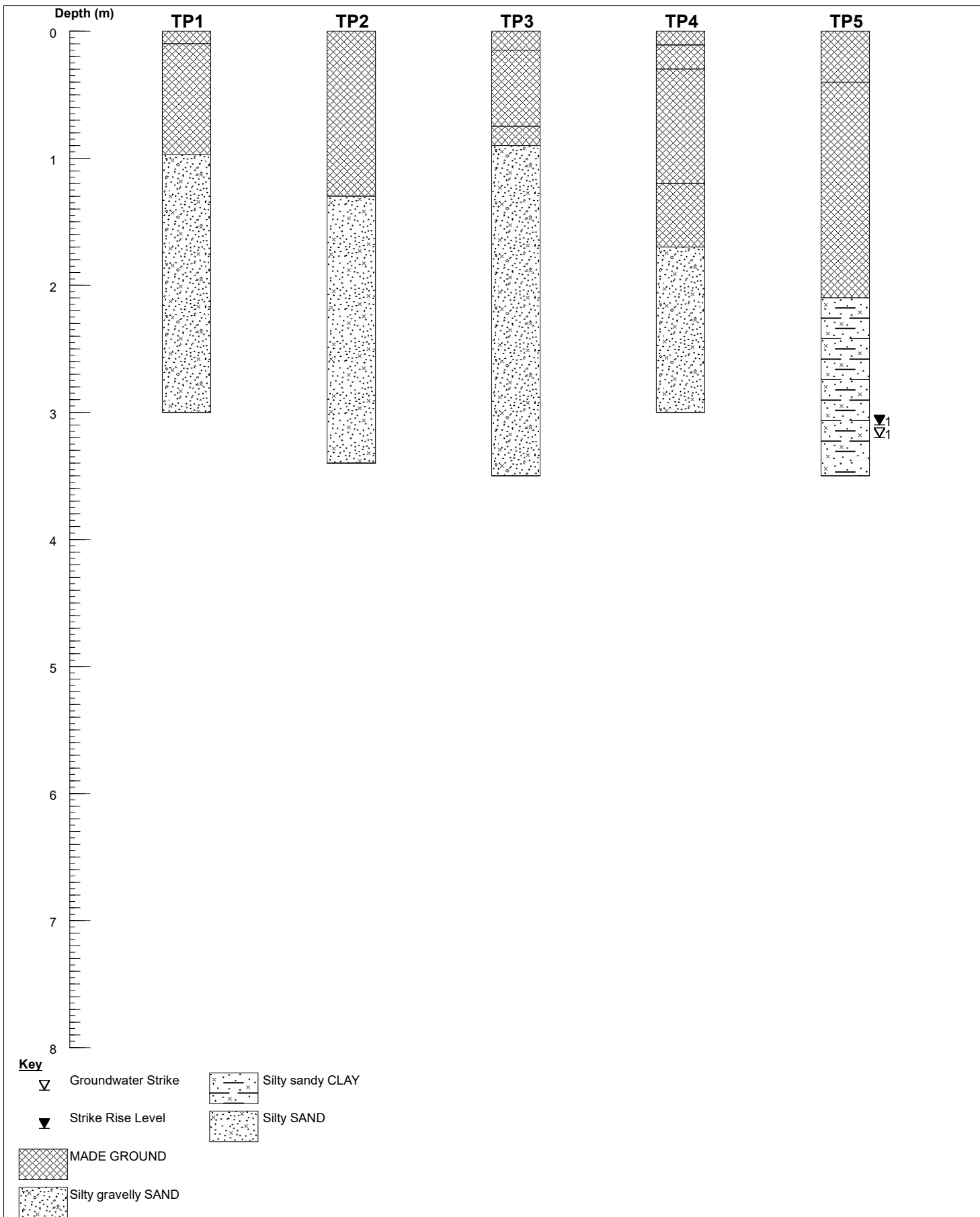
Scale (approx)
 1:25

Logged By
 DB/DI

Figure No.
 7794.TP3

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 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Trial Pit Number TP5		
Excavation Method MECHANICAL EXCAVATOR		Dimensions 1.50m x 1.00m x 3.50m		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794		
		Location AS PLAN		Dates 31/08/2023		Engineer BUILD VISION CONSULTING ENGINEERS		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.00-0.10	ES					MADE GROUND: wood chippings, plastic bottles and glass over dark brown organic gravelly peaty sand with low cobble content of sandstone, sand fine to coarse bricks, metal rebar present. Gravel is subangular fine to coarse sandstone. Frequent rootlets and twigs present.				
0.20-0.30	B				(0.40)					
0.35	D				0.40	Possible MADE GROUND: loose light brown and orangush brown slightly gravelly clayey fine to coarse sand. Gravel is subangular to subrounded fine to coarse sandstone and siltstone with high cobble and boulder content of sandstone and rare paving flags.				
1.40-1.60	B				(1.70)				▼1 ▽1	
1.80	ES				2.10	...at 1.91m: pale grey very silty sand.				
2.50-3.00	B				(1.40)	Firm to stiff brown speckled bluish grey sandy silty CLAY. Sand is fine to coarse.				
3.50	D		Water inflow(1) at 3.20m, rose to 3.10m in 20 mins. HV at 3.30m c=47kPa 31/08/2023:		3.50	...at 3.30m: medium strength Complete at 3.50m				
Plan .						Remarks Relatively stable during excavation Groundwater inflow at 3.20m. ES = Environmental sample comprising one 1kg plastic tub, one 250ml amber glass jar and one 60ml amber glass jar. On completion backfilled with arisings. HV = Hand Shear Vane test.				
						Scale (approx) 1:25		Logged By DB/DI		Figure No. 7794.TP5



S SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907		Nominal Section		
Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS	Date Drawn 09/10/2023	Date Checked	Sheet 1/1	Job Number 7794
Client TEC SERVICES LIMITED	Drawn By	Checked By	Scale 1:40[V]	Figure No. 7794.1

PHOTOGRAPHS

S S SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907		Photographs
Site: TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Job Number: 7794
Client: TEC SERVICES LIMITED		Sheet: 1 / 5
Engineer: BUILD VISION CONSULTING ENGINEERS		Survey Date: 31/08/23

WALKOVER PHOTOGRAPHS

1 M1



2 M3



3 M3B



4 M4



5 TP1



6 TP1



S S SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907	Photographs
Site: TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS Client: TEC SERVICES LIMITED Engineer: BUILD VISION CONSULTING ENGINEERS	Job Number: 7794 Sheet: 2 / 5 Survey Date: 31/08/23

WALKOVER PHOTOGRAPHS

7 TP1



8 TP1



9 TP1



10 TP2



11 TP2



12 TP2



S S SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907	Photographs
Site: TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS Client: TEC SERVICES LIMITED Engineer: BUILD VISION CONSULTING ENGINEERS	Job Number: 7794 Sheet: 3/5 Survey Date: 31/08/23

WALKOVER PHOTOGRAPHS

13 TP2



14 TP2



15 TP2



16 TP2



17 TP2



18 TP3



S S SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907		Photographs	
Site: TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Job Number: 7794	
Client: TEC SERVICES LIMITED		Sheet: 4/5	
Engineer: BUILD VISION CONSULTING ENGINEERS		Survey Date: 31/08/23	

WALKOVER PHOTOGRAPHS

19 TP3



20 TP3



21 TP3



22 TP4



23 TP4



24 TP4



S S SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907		Photographs	
Site: TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Job Number: 7794	
Client: TEC SERVICES LIMITED		Sheet: 5/5	
Engineer: BUILD VISION CONSULTING ENGINEERS		Survey Date: 31/08/23	

WALKOVER PHOTOGRAPHS

25 TP4



26 TP4



27 TP5



28 TP5



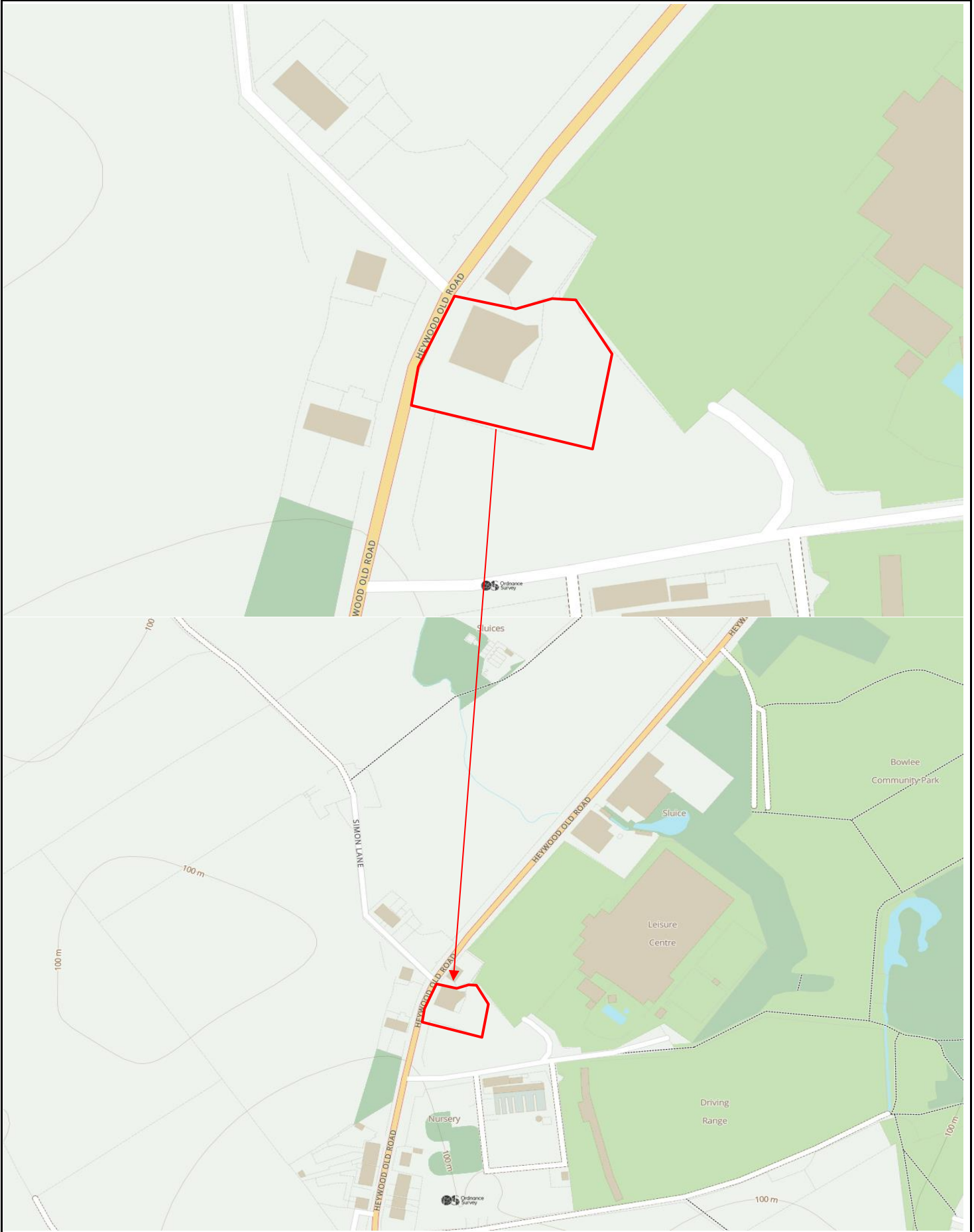
29 TP5



30 TP5

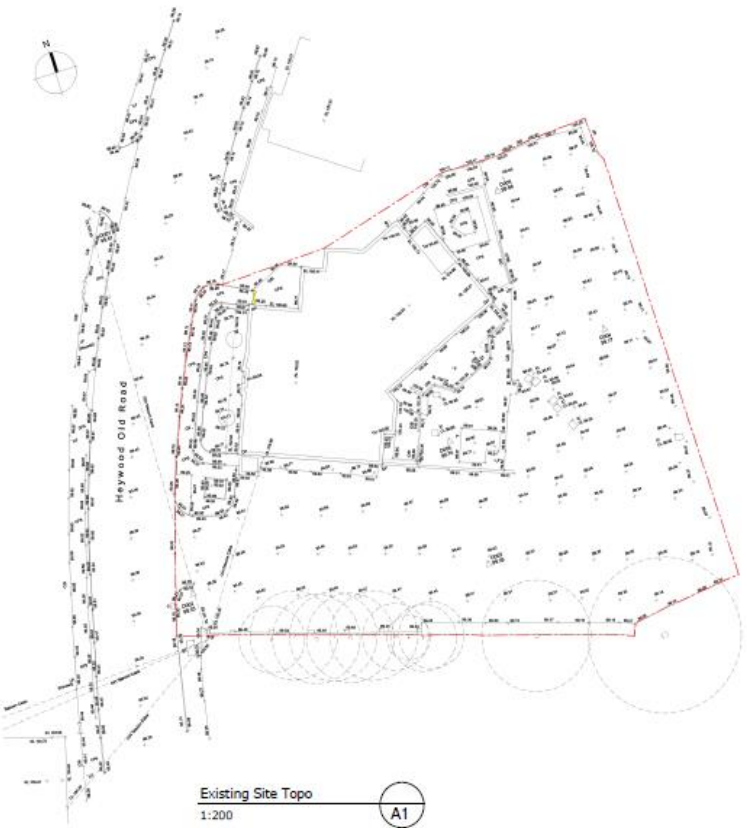


FIGURES



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SS SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907		Site Location Plan			
Site: TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON M24 4QS		Date Drawn: 05-Oct-23	Date Checked:	Orientation: 	Job Number: 7794
Client: TEC SERVICES LIMITED		Drawn By: DB	Checked By:	Scale: —	Figure Number: 1



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S SUB SURFACE

SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Proposed Development

Site:
TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON
M24 4QS
Client:
TEC SERVICES LIMITED

Date Drawn:
05-Oct-23
Drawn By:
DB

Date Checked:
Checked By:

Orientation:
Scale:
—

Job Number:
7794
Figure Number:
3



Certificate of Analysis

Certificate Number 23-23875

Issued: 19-Oct-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-23875

Client Reference 7794

Order No (not supplied)

Contract Title Travis Court, Hetwood Old Road, Middleton

Description One Water sample.

Date Received 09-Oct-23

Date Started 09-Oct-23

Date Completed 19-Oct-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Water Samples

Our Ref 23-23875

Client Ref 7794

Contract Title Travis Court, Hetwood Old Road, Middleton

Lab No	2244820
Sample ID	M4
Depth	1.90
Other ID	184185186
Sample Type	WATER
Sampling Date	05/10/2023
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.7
Boron, Dissolved	DETSC 2306*	12	ug/l	110
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.29
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.1
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.20
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Molybdenum, Dissolved	DETSC 2306	1.1	ug/l	10
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.8
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.82
Zinc, Dissolved	DETSC 2306	1.3	ug/l	54
Inorganics				
pH	DETSC 2008		pH	7.1
Cyanide, Total	DETSC 2130	0.04	mg/l	< 0.04
Sulphate as SO4	DETSC 2055	0.1	mg/l	8.3
Sulphide	DETSC 2208	0.01	mg/l	0.02
Petroleum Hydrocarbons				
C5-C10 Gasoline Range Organics (GRO): HS_1D_Total	DETSC 3322	1	ug/l	< 1.0
C10-C24 Diesel Range Organics (DRO): EH_1D_Total	DETSC 3311	10	ug/l	1100
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311	10	ug/l	3100
EPH (C10-C40): EH_1D_Total	DETSC 3311	10	ug/l	4200
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
m+p Xylene	DETSC 3322	1	ug/l	< 1.0
o Xylene	DETSC 3322	1	ug/l	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.05
Fluorene	DETSC 3304	0.01	ug/l	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.02
Anthracene	DETSC 3304	0.01	ug/l	0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.02
Pyrene	DETSC 3304	0.01	ug/l	0.03
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01

Summary of Chemical Analysis

Water Samples

Our Ref 23-23875

Client Ref 7794

Contract Title Travis Court, Hetwood Old Road, Middleton

Lab No	2244820
Sample ID	M4
Depth	1.90
Other ID	184185186
Sample Type	WATER
Sampling Date	05/10/2023
Sampling Time	n/s

Test	Method	LOD	Units	
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20
Phenols				
Phenol - Monohydric	DETSC 2130	0.1	mg/l	< 0.1

Information in Support of the Analytical Results

Our Ref 23-23875
 Client Ref 7794
 Contract Travis Court, Hetwood Old Road, Middleton

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
2244820	M4 1.90 WATER	05/10/23		GB 1L, GV, PB 1L	pH/Cond (1 days)	
Key: G-Glass P-Plastic B-Bottle V-Vial DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.						

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :- Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
C5-C10 Gasoline Range Organics (GRO)	HS_1D_Total
C10-C24 Diesel Range Organics (DRO)	EH_1D_Total
C24-C40 Lube Oil Range Organics (LO)	EH_1D_Total
EPH (C10-C40)	EH_1D_Total

End of Report



INVESTIGATE



REMEDiate



REGENERATE



GROUND INVESTIGATION REPORT

**FOR
TRAVIS COURT,
HEYWOOD OLD ROAD,
MIDDLETON,
M24 4QS,**

**PREPARED FOR
TEC SERVICES LIMITED**

**FACTUAL REPORT NO. 7794A
NOVEMBER 2023**

SUB SURFACE NORTH WEST LIMITED

3 Peel Street
Preston
Lancashire
PR2 2QS

Tel: (01772) 561135 Fax: (01772) 204907

Email: preston@subsurface.co.uk

Website: www.subsurface.co.uk



CONTENTS

In-situ Test Results
Laboratory Test Results
Contamination Analysis Results
Borehole Record Sheets
Ground Gas and Groundwater Monitoring Results
Figures

INSITU TEST RESULTS

S S SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Standard Penetration Test Results						
Site : TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS Client : TEC SERVICES LIMITED Engineer :												Job Number 7794A	
												Sheet 1 / 1	
Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments	
					1	2	1	2	3	4			
BH1	1.20	1.35	1.65	CPT	2	3	3	3	4	3	N=13		
BH1	2.00	2.15	2.45	CPT	2	3	4	3	3	3	N=13		
BH1	3.00	3.15	3.45	CPT	2	2	2	3	2	2	N=9		
BH1	4.00	4.15	4.45	CPT	2	2	3	2	2	3	N=10		
BH1	5.00	5.15	5.45	SPT	3	3	4	6	10	9	N=29		
BH1	7.50	7.65	7.95	SPT	3	3	4	4	4	5	N=17		
BH1	9.00	9.15	9.45	SPT	3	4	4	5	5	6	N=20		
BH1	12.00	12.15	12.45	SPT	5	8	8	9	10	12	N=39		
BH1	13.00	13.15	13.45	SPT	5	7	9	9	11	13	N=42		
BH2	1.20	1.35	1.65	CPT	3	3	4	3	4	4	N=15		
BH2	2.00	2.15	2.45	CPT	3	4	4	3	4	5	N=16		
BH2	3.00	3.15	3.45	CPT	3	3	3	4	3	3	N=13		
BH2	4.00	4.15	4.45	CPT	3	3	4	4	3	4	N=15		
BH2	6.00	6.15	6.45	SPT	2	2	3	2	3	3	N=11		
BH2	9.00	9.15	9.45	SPT	5	6	8	10	10	12	N=40		
BH2	12.00	12.15	12.45	SPT	5	7	9	11	12	13	N=45		

LABORATORY TEST RESULTS



SUB SURFACE

SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Laboratory Test Results

Site : TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS

Client : TEC SERVICES LIMITED

Engineer :

Job Number
7794A

Sheet
1 / 1

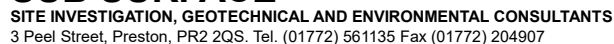
DETERMINATION OF DENSITY, MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole/ Trial Pit	Depth (m)	Sample	Moisture Content %	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kN/m ²)	Deviator Stress (kN/m ²)	Apparent Cohesion (kN/m ²)	Angle of Shearing Resistance (degrees)	Laboratory Description
BH1	6.00	U	25	2.14	1.71	125 175 225	88 91 93	45	0.0	Soft to firm brown, orangish brown and greyish brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel sized fragments are subangular to subrounded fine to coarse of sandstone and siltstone.
BH1	10.50	U	18	2.18	1.85	225 275 325	155 161 161	80	0.0	Predominantly soft to firm medium strength thinly laminated brown occasionally light brown slightly gravelly slightly sandy silty CLAY with occasional pockets of fine to medium sand between laminae. Gravel sized fragments are subangular to subrounded fin
BH2	5.00	U	23	2.15	1.74	100 150 200	79 82 83	41	0.0	MADE GROUND : soft to firm medium strength dark greyish brown, black and light brown sandy gravelly peaty organic silt. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of sandstone and brick. Low cobble sized fragm
BH2	7.50	U	18	2.18	1.85	150 200 250	134 140 142	69	0.0	Soft medium strength becoming stiff very high strength greyish brown thinly laminated slightly gravelly slightly sandy silty CLAY with occasional bands of sand between laminae. Sand is fine to medium. Gravel sized framents are subangular to rounded fine
BH2	10.50	U	19	2.08	1.76	225 275 325	126 128 128	64	0.0	Soft medium strength becoming stiff very high strength greyish brown thinly laminated slightly gravelly slightly sandy silty CLAY with occasional bands of sand between laminae. Sand is fine to medium. Gravel sized framents are subangular to rounded fine

Method of Preparation :

Method of Test :

Remarks :



Site : TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS Client : TEC SERVICES LIMITED Engineer:	Job Number 7794A
	Sheet 1 / 1

Borehole/ Trial Pit	Depth (m)	Sample	Natural Moisture Content %	Sample Passing 425µm Sieve		Liquid Limit %	Plastic Limit %	Plasticity Index %	Modified Plasticity Index %	Liquidity Index	Group Symbol	Laboratory Description
				Percentage %	Moisture Content %							
BH1	7.50	D	16	63	25	30	14	16	10	0.71	CL	Predominantly soft to firm medium strength thinly laminated brown occasionally light brown slightly gravelly slightly sandy silty CLAY with occasional pockets of fine to medium sand between laminae. Gravel sized fragments are subangular to subrounded fin
BH2	7.50	U	18	99	18	37	17	20	20	0.06	CI	

Remarks :



Site : TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS

Job Number	7794A
------------	-------

Client : TEC SERVICES LIMITED

Engineer :

Sheet

1 / 1

DETERMINATION OF THE pH VALUE AND THE SULPHATE CONTENT OF SOIL AND GROUNDWATER

Method of Preparation :

Method of Test :

Remarks :

**SUB SURFACE**

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

BRE Special Digest 1

AGGRESSIVE CHEMICAL ENVIRONMENT FOR CONCRETE (ACEC) SITE CLASSIFICATION.**Table C1 Aggressive Chemical Environment for Concrete (ACEC) classification for natural ground locations^a**

Sulfate Design Sulfate Class for location	2:1 water/soil extract ^b	Groundwater	Total potential sulfate ^c	Groundwater Static water	Mobile water	ACEC Class for location
1	2 (SO ₄ mg/l)	3 (SO ₄ mg/l)	4 (SO ₄ %)	5 (pH)	6 (pH)	7
DS-1	< 500	< 400	< 0.24	≥ 2.5	> 5.5 ^d 2.5–5.5	AC-1s AC-1 ^d AC-2z
DS-2	500–1500	400–1400	0.24–0.6	> 3.5 2.5–3.5	> 5.5 2.5–5.5	AC-1s AC-2 AC-2s AC-3z
DS-3	1600–3000	1500–3000	0.7–1.2	> 3.5 2.5–3.5	> 5.5 2.5–5.5	AC-2s AC-3 AC-3s AC-4
DS-4	3100–6000	3100–6000	1.3–2.4	> 3.5 2.5–3.5	> 5.5 2.5–5.5	AC-3s AC-4 AC-4s AC-5
DS-5	> 6000	> 6000	> 2.4	> 3.5 2.5–3.5	≥ 2.5	AC-4s AC-5

Notes

- a** Applies to locations on sites that comprise either undisturbed ground that is in its natural state (ie is not brownfield – Table C2) or clean fill derived from such ground.
b The limits of Design Sulfate Classes based on 2:1 water/soil extracts have been lowered relative to previous Digests (Box C7).
c Applies only to locations where concrete will be exposed to sulfate ions (SO₄) which may result from the oxidation of sulfides (eg pyrite) following ground disturbance (Appendix A1 and Box C8).
d For flowing water that is potentially aggressive to concrete owing to high purity or an aggressive carbon dioxide level greater than 15 mg/l (Section C2.2.3), increase the ACEC Class to AC-2z.

Explanation of suffix symbols to ACEC Class

- Suffix 's' indicates that the water has been classified as static.
- Concrete placed in ACEC Classes that include the suffix 'z' primarily have to resist acid conditions and may be made with any of the cements or combinations listed in Table D2 on page 42.

Table C2 Aggressive Chemical Environment for Concrete (ACEC) classification for brownfield locations^a

Sulfate and magnesium						Groundwater		ACEC
Design Sulfate Class for location	2:1 water/soil extract ^b		Groundwater		Total potential sulfate ^c	Static water	Mobile water	Class for location
1	2 (SO ₄ mg/l)	3 (Mg mg/l)	4 (SO ₄ mg/l)	5 (Mg mg/l)	6 (SO ₄ %)	7 (pH) ^d	8 (pH) ^d	9
DS-1	< 500		< 400		< 0.24	≥ 2.5	> 6.5 ^d 5.5–6.5 4.5–5.5 2.5–4.5	AC-1s AC-1 AC-2z AC-3z AC-4z
DS-2	500–1500		400–1400		0.24–0.6	> 5.5 2.5–5.5	> 6.5 5.5–6.5 4.5–5.5 2.5–4.5	AC-1s AC-2 AC-2s AC-3z AC-4z AC-5z
DS-3	1600–3000		1500–3000		0.7–1.2	> 5.5 2.5–5.5	> 6.5 5.5–6.5 2.5–5.5	AC-2s AC-3 AC-3s AC-4 AC-5
DS-4	3100–6000	≤ 1200	3100–6000	≤ 1000	1.3–2.4	> 5.5 2.5–5.5	> 6.5 2.5–6.5	AC-3s AC-4 AC-4s AC-5
DS-4m	3100–6000	> 1200 ^a	3100–6000	> 1000 ^a	1.3–2.4	> 5.5 2.5–5.5	> 6.5 2.5–6.5	AC-3s AC-4m AC-4ms AC-5m
DS-5	> 6000	≤ 1200	> 6000	≤ 1000	> 2.4	> 5.5 2.5–5.5	≥ 2.5	AC-4s AC-5
DS-5m	> 6000	> 1200 ^a	> 6000	> 1000 ^a	> 2.4	> 5.5 2.5–5.5	≥ 2.5	AC-4ms AC-5m

Notes

- a** Brownfield locations are those sites, or parts of sites, that might contain chemical residues produced by or associated with industrial production (Section C5.1.3).
b The limits of Design Sulfate Classes based on 2:1 water/soil extracts have been lowered from previous Digests (Box C7).
c Applies only to locations where concrete will be exposed to sulfate ions (SO₄), which may result from the oxidation of sulfides such as pyrite, following ground disturbance (Appendix A1 and Box C8).
d An additional account is taken of hydrochloric and nitric acids by adjustment to sulfate content (Section C5.1.3).
e The limit on water-soluble magnesium does not apply to brackish groundwater (chloride content between 12 000 mg/l and 17 000 mg/l). This allows 'm' to be omitted from the relevant ACEC classification. Seawater (chloride content about 18 000 mg/l) and stronger brines are not covered by this table.

Explanation of suffix symbols to ACEC Class

- Suffix 's' indicates that the water has been classified as static.
- Concrete placed in ACEC Classes that include the suffix 'z' have primarily to resist acid conditions and may be made with any of the cements in Table D2 on page 42.
- Suffix 'm' relates to the higher levels of magnesium in Design Sulfate Classes 4 and 5.

CONTAMINATION ANALYSIS RESULTS



Certificate of Analysis

Certificate Number 23-27060

Issued: 29-Nov-23

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-27060

Client Reference 7794B

Order No (not supplied)

Contract Title TRAVIS COURT, HEYWOOD OLD ROAD,MIDDLETON

Description One Water sample.

Date Received 17-Nov-23

Date Started 17-Nov-23

Date Completed 29-Nov-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Water Samples

Our Ref 23-27060

Client Ref 7794B

Contract Title TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON

Lab No	2263508
Sample ID	M4
Depth	1.78
Other ID	
Sample Type	WATER
Sampling Date	15/11/2023
Sampling Time	n/s

Test	Method	LOD	Units	
Petroleum Hydrocarbons				
Aliphatic C5-C6: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETS 3072*	10	ug/l	< 10
Aromatic C5-C7: HS_1D_AR	DETS 3322	0.1	ug/l	< 0.1
Aromatic C7-C8: HS_1D_AR	DETS 3322	0.1	ug/l	< 0.1
Aromatic C8-C10: HS_1D_AR	DETS 3322	0.1	ug/l	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETS 3072*	1	ug/l	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETS 3072*	1	ug/l	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETS 3072*	1	ug/l	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETS 3072*	1	ug/l	< 1.0
Aromatic C5-C35: EH_CU+HS_1D_AR	DETS 3072*	10	ug/l	< 10
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETS 3072*	10	ug/l	< 10

Information in Support of the Analytical Results

Our Ref 23-27060
Client Ref 7794B
Contract TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Holding time exceeded for tests	Inappropriate container for tests
		Sampled	Containers Received		
2263508	M4 1.78 WATER	15/11/23	GB 1L, GV, PB 1L		
Key: G-Glass P-Plastic B-Bottle V-Vial DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.					

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :- Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

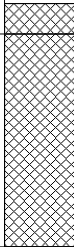
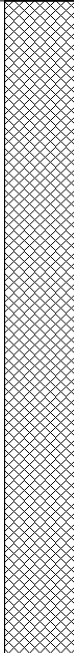
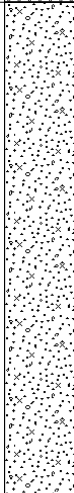
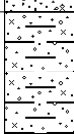
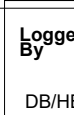
List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_CU+HS_1D_Total

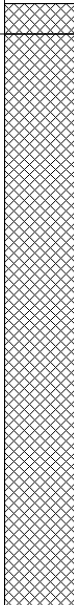
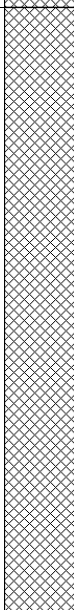
End of Report

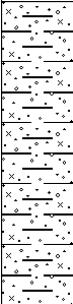
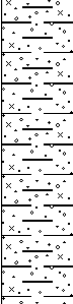
BOREHOLE RECORD SHEETS

S S SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Borehole Number BH1	
Boring Method LIGHT CABLE PERCUSSIVE		Casing Diameter 150mm cased to 13.00m			Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794A	
		Location AS PLAN			Dates 18/10/2023		Engineer		Sheet 1/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.10-0.80	B					(0.10) 0.10	MADE GROUND : bituminous macadam hardstanding.			
						(0.70)	MADE GROUND : black, dark greyish brown speckled dark reddish brown very sandy clayey angular to subrounded fine to coarse gravel sized fragments of brick, stone and sandstone. Occasional soft brownish grey pockets of silty clay, fragments of clinker and concrete present.			
0.80-1.20	B					0.80	MADE GROUND : soft to firm medium strength dark greyish brown and black speckled orange and yellowish brown slightly sandy gravelly silty clay. Sand is fine. Gravel sized fragments are angular to subrounded fine to coarse of brick, concrete and siltstone.			
1.20-1.65 1.20-1.65	SPT(C) N=13 B			2,3/3,3,4,3			... between 1.20m and 1.65m : low cobble sized fragments of subangular brick present.			
2.00-2.45 2.00-2.45	SPT(C) N=13 B			2,3/4,3,3,3		(2.15)	... below 2.00m : soft to firm medium strength greyish brown and black mottled brown sandy gravelly silty clay.			
3.00-3.45 3.00-3.45	SPT(C) N=9 B			2,2/2,3,2,2		2.95	Loose brown speckled black and grey slightly gravelly silty fine to coarse SAND. Gravel sized fragments are subrounded to rounded fine to coarse of sandstone and siltstone.			
4.00-4.45 4.00-4.45	SPT(C) N=10 B			2,2/3,2,2,3		(1.65)				
4.60	D					4.60	Soft to firm brown, orangish brown and greyish brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel sized fragments are subangular to subrounded fine to coarse of sandstone and siltstone.			
5.00-5.45	SPT N=29			3,3/4,6,10,9						
Remarks Hand dug inspection pit from GL to 1.20m to check for services - 1 hour. Water added to assist drilling possibly masking groundwater inflow. Upon completion, the borehole was backfilled with gravel and arisings.								Scale (approx)	Logged By	
								1:25	DB/HB	
								Figure No. 7794A.BH1		

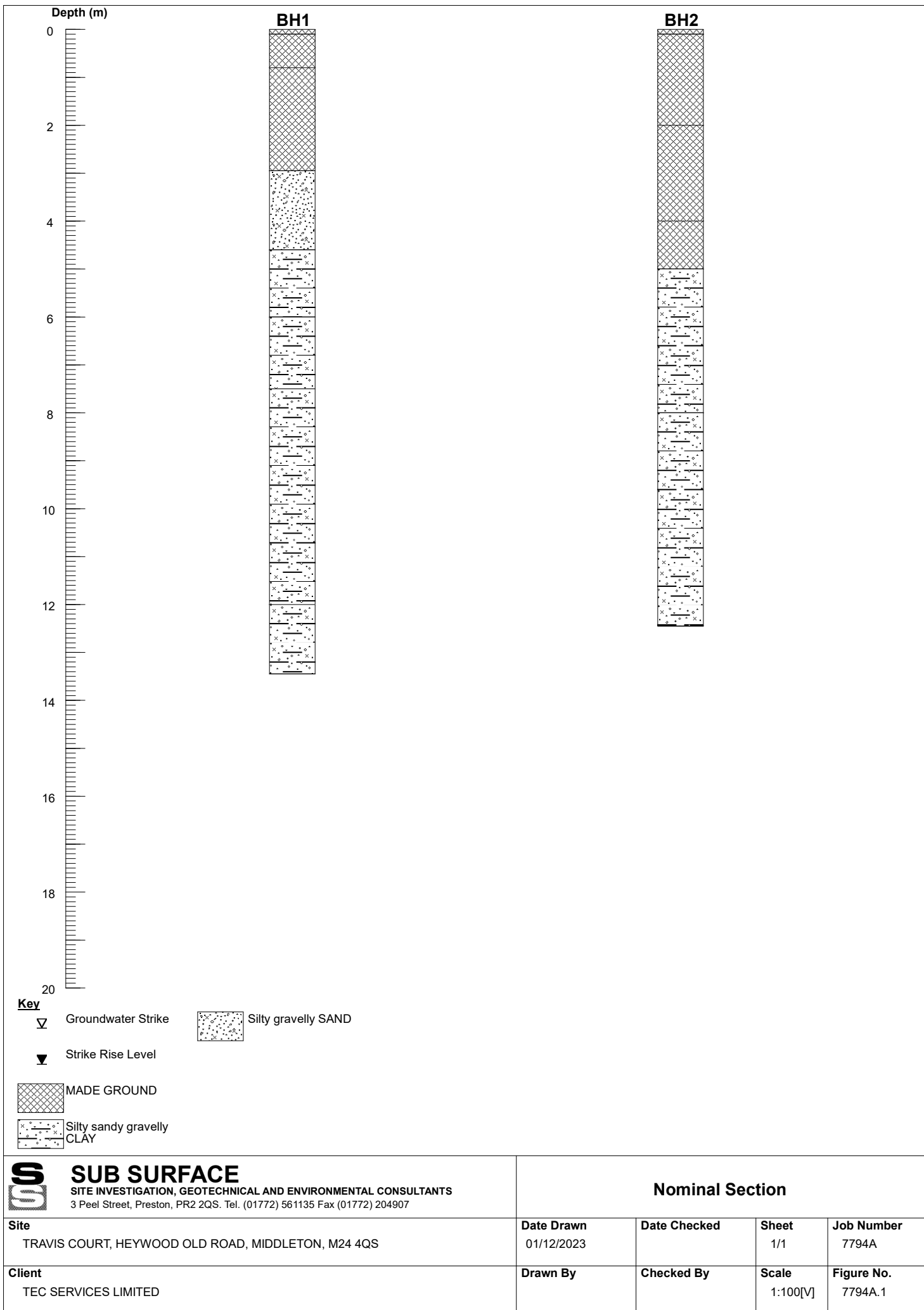
S S SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Borehole Number BH1	
Boring Method LIGHT CABLE PERCUSSIVE		Casing Diameter 150mm cased to 13.00m			Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794A	
		Location AS PLAN			Dates 18/10/2023		Engineer		Sheet 2/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
5.00-5.45 5.00-5.45	B D					(1.40)	... between 5.00m and 5.45m : predominantly greyish brown and brown slightly gravelly very sandy silty clay.			

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Borehole Number BH1
Boring Method LIGHT CABLE PERCUSSIVE		Casing Diameter 150mm cased to 13.00m		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794A	
		Location AS PLAN		Dates 18/10/2023		Engineer		Sheet 3/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.50-10.95	U c=80kPa						... between 10.50m and 10.95m : becoming brown mottled reddish brown and light brown.		
11.00	D								
12.00-12.45	SPT N=39			5,8/8,9,10,12		12.00	Very stiff very high strength brown and light brown slightly sandy gravelly silty CLAY. Sand is fine to medium. Gravel sized fragments are subangular to rounded fine to coarse of sandstone and siltstone.		
12.00-12.45	D					(1.45)			
13.00-13.45	SPT N=42			5,7/9,9,11,13					
13.00-13.45	D								
				18/10/2023:		13.45	Complete at 13.45m		
Remarks								Scale (approx) 1:25	Logged By DB/HB
								Figure No. 7794A.BH1	

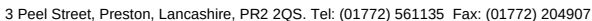
S S SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907						Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Borehole Number BH2	
Boring Method LIGHT CABLE PERCUSSIVE		Casing Diameter 150mm cased to 12.00m		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794A	
		Location AS PLAN		Dates 19/10/2023		Engineer		Sheet 1/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10-0.70	B					(0.10) 0.10	MADE GROUND : bituminous macadam hardstanding (driller's description).		
0.70-1.20	B						MADE GROUND : medium dense dark greyish brown, light brown and dark reddish brown very gravelly clayey fine to coarse sand with low cobble sized fragments of brick. Gravel sized fragments are subangular to subrounded fine to coarse of stone, sandstone and brick.		
1.20-1.65 1.20-1.65	SPT(C) N=15 B			3,3/4,3,4,4		(1.90)	... below 0.70m : high cobble sized fragments of brick present.		
2.00-2.45 2.00-2.45	SPT(C) N=16 B			3,4/4,3,4,5		2.00	MADE GROUND : medium dense dark greyish brown, light brown and dark reddish brown very sandy clayey subangular to subrounded fine to coarse gravel sized fragments of sandstone, siltstone and brick. Medium cobble sized fragments of brick present.		
3.00-3.45 3.00-3.45	SPT(C) N=13 B			3,3/3,4,3,3		(2.00)	... between 3.00m and 3.45m : greyish brown, white and dark reddish brown sandy very clayey gravel. Occasional fragments of tiling and abundant fragments of wood present.		
4.00-4.45 4.00-4.45	SPT(C) N=15 B			3,3/4,4,3,4		4.00	MADE GROUND : soft to firm medium strength dark greyish brown, black and light brown sandy gravelly peaty organic silt. Sand is fine to coarse. Gravel sized fragments are angular to subrounded fine to coarse of sandstone and brick. Low cobble sized fragments of subangular to subrounded concrete and brick.		
						(1.00)			
Remarks Hand dug inspection pit from GL to 1.20m to check for services - 1 hour. Water added to assist drilling, possibly masking groundwater inflow. Upon completion, the borehole was backfilled with gravel and arisings.								Scale (approx)	Logged By
								1:25	DB/HB
								Figure No. 7794A.BH2	

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Borehole Number BH2
Boring Method LIGHT CABLE PERCUSSIVE		Casing Diameter 150mm cased to 12.00m		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794A	
		Location AS PLAN		Dates 19/10/2023		Engineer		Sheet 2/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
5.00-5.45	U c=41kPa					5.00	Soft to firm medium strength locally very high strength brown gravelly slightly sandy silty CLAY. Gravel sized fragments are subangular to rounded fine to coarse sandstone and siltstone.		
6.00-6.45 6.00-6.45 6.00-6.45	SPT N=11 B D			2,2/3,2,3,3		(3.00)			
7.50-7.95	U c=68kPa								
8.00	D					8.00	Firm medium strength locally very high strength brown gravelly slightly sandy silty CLAY. Gravel sized fragments are subangular to rounded fine to coarse of sandstone and siltstone.		
9.00-9.45 9.00-9.45 9.00-9.45	SPT N=40 B D			5,6/8,10,10,12			...at 9.00m: very high strength.		
Remarks								Scale (approx) 1:25	Logged By DB/HB
								Figure No. 7794A.BH2	

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Site TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QS		Borehole Number BH2	
Boring Method LIGHT CABLE PERCUSSIVE		Casing Diameter 150mm cased to 12.00m		Ground Level (mOD)		Client TEC SERVICES LIMITED		Job Number 7794A		
		Location AS PLAN		Dates 19/10/2023		Engineer		Sheet 3/3		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
10.50-10.95	U c=64kPa					(4.45)				
12.00-12.45 12.00-12.45	SPT N=45 D			5,7/9,11,12,13			... below 12m : stiff very high strength slightly sandy gravelly clay.			
				19/10/2023:		12.45	Complete at 12.45m			
Remarks								Scale (approx) 1:25	Logged By DB/HB	
								Figure No. 7794A.BH2		



GROUND GAS AND GROUNDWATER MONITORING RESULTS

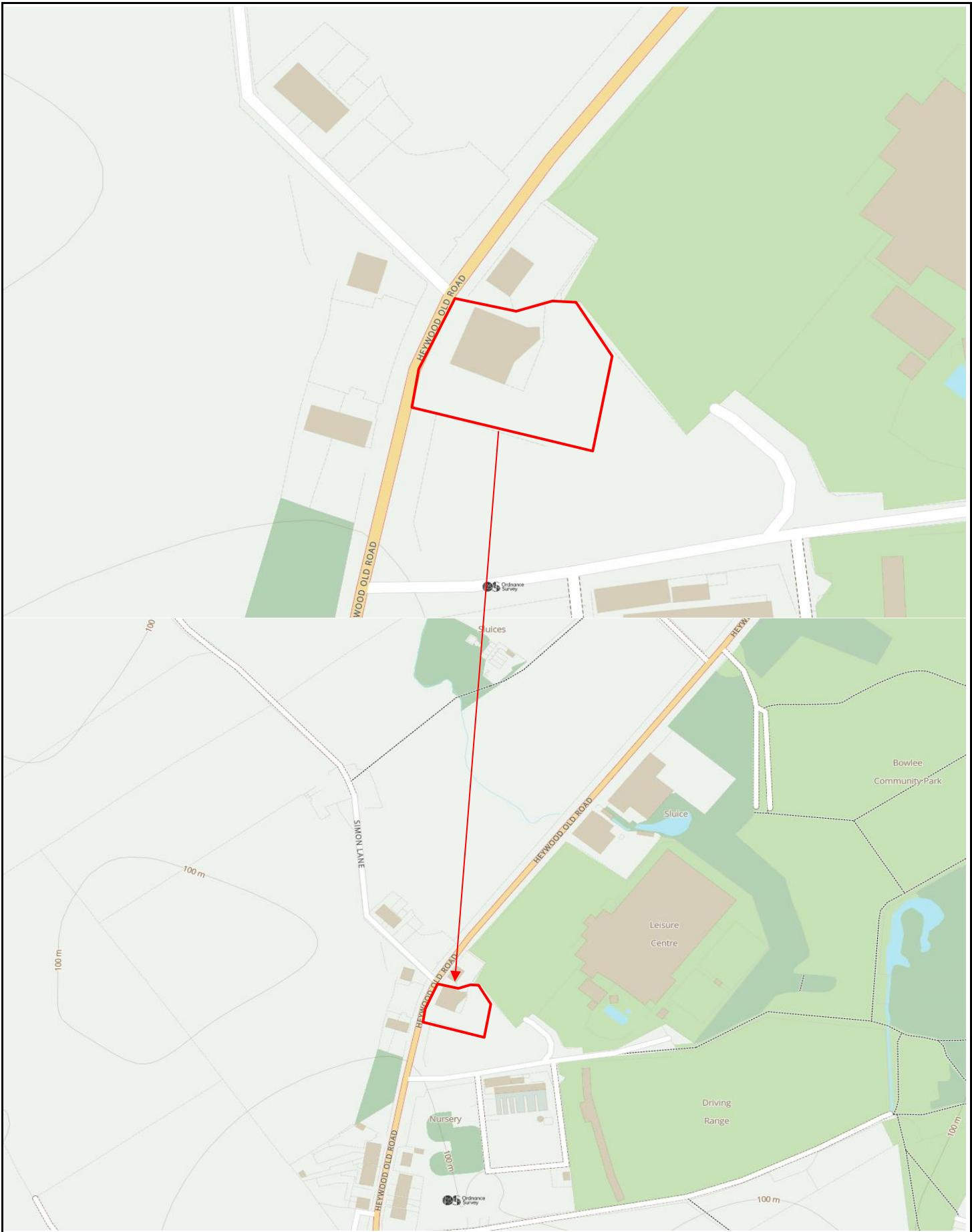


Site:	342 TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON, M24 4QG	Job Number: 7794
Client:	TEC SERVICES NW LTD	Sheet: 1 / 1
Engineer:	BUILD VISION CONSULTING ENGINEERS	

[illegible]

Remarks: Elevated levels of methane and carbon dioxide and depleted levels of oxygen are shown in ***bold/italics***.
* - Gas bung left open.

FIGURES



CROWN COPYRIGHT © REPRODUCED FROM THE ORDNANCE SURVEY WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. LICENCE NO: 100033464

SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907	Site Location Plan				
	Site: TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON M24 4QS	Date Drawn: 21-Nov-23	Date Checked:	Orientation: 	Job Number: 7794A
	Client: TEC SERVICES LIMITED	Drawn By: DB	Checked By:	Scale: —	Figure Number: 1

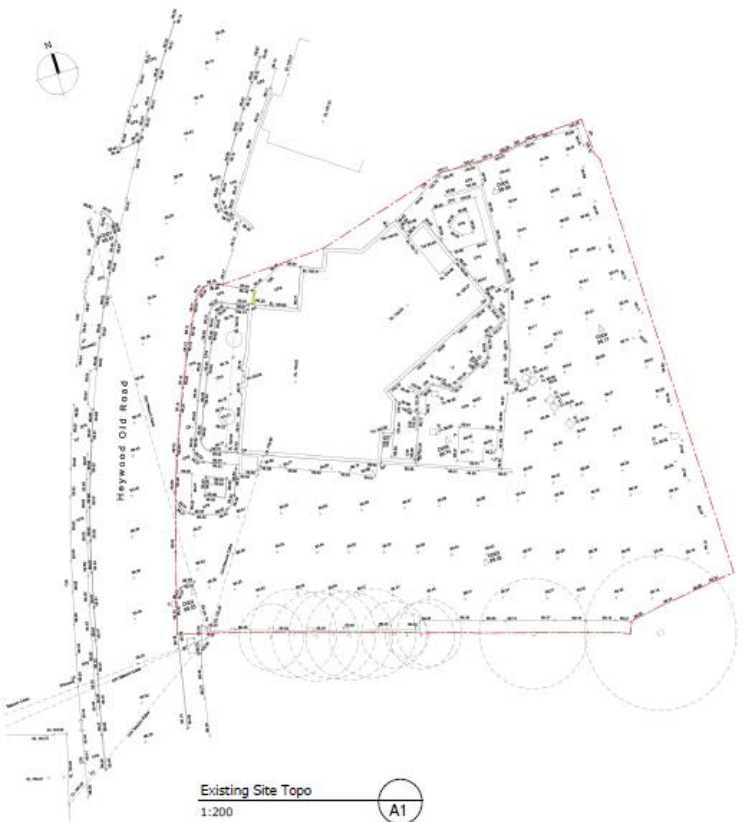


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S SUB SURFACE
SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Site Plan/ Walkover Photo Locations

Site:	Date Drawn: 21-Nov-23			Date Checked:	Orientation:	Job Number:
TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON	M24 AQS					7794A
Client:	TEC SERVICES LIMITED			Drawn By: DB	Checked By:	Scale: 1:500
						Figure Number: 2



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S SUB SURFACE
SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Proposed Development

Site:	TRAVIS COURT, HEYWOOD OLD ROAD, MIDDLETON	Date Drawn:	21-Nov-23	Date Checked:		Orientation:		Job Number:	7794A
Client:	TEC SERVICES LIMITED	Drawn By:	DB	Checked By:		Scale:	—	Figure Number:	3

APPENDIX C

ENVIRONMENTAL INFORMATION

- § Human Health GAC's
- § Residential GAC's
- § Inhalation Pathway GAC's
- § Drinking Water DWS GAC's
- § Surface Water EQS GAC's

Risk Parameter: Human Health - residential with plant uptake (1.0% SOM)
Data set: ALL

Project No: 1324 Client: TEC Services Ltd.
Project: Travis Court, Heywood Old Road

All values in mg/kg unless otherwise stated							Soil Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL		
							Location:	M1	M2	M3	M4	M4	TP1	TP2	TP3	TP4	TP5		
							Depth:	0.1-0.3	0.1-0.8	0.1-1.1	0.1-1.2	4.5-4.8	0.5	0.1	0.3-0.5	0.5-0.7	0.2-0.3		
							Lab	S	S	S	S	S	S	S	S	S	S		
Chemicals of Potential Concern	No Samples	Min. Value	Max. Value	No. Samples >or = GAC	GAC	US ₉₅	Result of Significance Test												
							Further Assessment Required	N.D.	N.D.	N.D.	YES	N.D.	N.D.	N.D.	N.D.	N.D.	YES		
General Suite																			
Arsenic	10	5.4	28		37	14.710	Potentially Suitable For Use	8.3	8.9	13	5.4	5.5	14	10	6.5	28	11		
Boron	10	0.2	1.2		290	0.644	Potentially Suitable For Use	0.6	0.2	0.5	0.2	0.4	0.4	0.5	1.2	0.4	0.5		
Cadmium	10	0.1	0.4		11	0.269	Potentially Suitable For Use	0.20	0.10	0.40	0.40	0.10	0.1	0.2	0.1	0.1	0.30		
Chromium (III)	10	8.3	19		910	13.944	Potentially Suitable For Use	10	13	12	8.5	19	9.3	15	8.3	14	12		
Chromium (VI)	10	1	1		6	1.000	Potentially Suitable For Use	1	1	1	1	1	1	1	1	1	1		
Copper	10	12	60		2400	38.718	Potentially Suitable For Use	20	26	31	12	30	36	42	24	60	34		
Lead	10	14	590	3	200	258.882	Further Assessment Required	370	130	41	14	15	590	76	48	210	61		
Mercury, inorganic	10	0.05	0.28		40	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.10	0.13	0.05	0.28	0.15		
Mercury elemental	10	0.05	0.28		1.2	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.1	0.13	0.05	0.28	0.15		
Mercury Methyl	10	0.05	0.28		11	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.10	0.13	0.05	0.28	0.15		
Nickel	10	7.3	25		130	17.577	Potentially Suitable For Use	11	14	14	7.3	25	12	16	9.8	23	13		
Selenium	10	0.5	0.5		250	0.500	Potentially Suitable For Use	0.5	0.5	0.50	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
Zinc	10	37	77		3700	64.711	Potentially Suitable For Use	37	41	55	40	61	69	64	49	77	74		
Cyanide (free)	10	0.1	0.4		24	0.248	Potentially Suitable For Use	0.1	0.20	0.1	0.1	0.1	0.2	0.1	0.4	0.1	0.4		
Phenol (total)	10	0.3	0.3		120	0.300	Potentially Suitable For Use	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Acenaphthene	10	0.1	2		210	1.090	Potentially Suitable For Use	0.7	0.1	2	2	0.1	0.1	0.1	1.2	0.1	0.1		
Acenaphthylene	10	0.1	2		170	0.928	Potentially Suitable For Use	0.1	0.1	2	2	0.1	0.1	0.1	0.2	0.1	0.1		
Anthracene	10	0.1	2.2		2400	1.257	Potentially Suitable For Use	0.6	0.1	2	2	0.1	0.1	0.1	2.2	0.1	0.2		
Benzo(a)anthracene	10	0.1	3.4		7.2	1.616	Potentially Suitable For Use	0.3	0.1	2	2	0.20	0.1	0.6	3.4	0.5	0.9		
Benzo(a)pyrene	10	0.1	3.9	1	2.2	1.863	Further Assessment Required	1.2	0.1	2	2	0.3	0.1	0.8	3.9	0.6	1.2		
Benzo(b)fluoranthene	10	0.1	2.9	1	2.6	1.555	Further Assessment Required	0.9	0.1	2	2	0.2	0.1	0.8	2.9	0.5	0.8		
Benzo(ghi)perylene	10	0.1	2		320	1.246	Potentially Suitable For Use	0.4	0.1	2	2	0.2	0.1	0.4	1.8	0.5	0.6		
Benzo(k)fluoranthene	10	0.1	2.1		77	1.443	Potentially Suitable For Use	0.8	0.1	2	2	0.7	0.1	0.8	2.1	0.7	1		
Chrysene	10	0.1	3.7		15	1.691	Potentially Suitable For Use	0.6	0.1	2	2	0.2	0.1	0.7	3.7	0.4	0.7		
Dibenz(a,h)anthracene	10	0.1	2	4	0.24	0.967	Further Assessment Required	0.4	0.1	2	2	0.2	0.1	0.1	0.3	0.1	0.1		
Fluoranthene	10	0.1	9.1		280	3.376	Potentially Suitable For Use	1.6	0.1	2.4	2	0.4	0.2	1	9.1	1.1	1.4		
Fluorene	10	0.1	2		170	1.186	Potentially Suitable For Use	0.5	0.1	2	2	0.1	0.1	0.1	1.9	0.1	0.1		
Indeno(1,2,3,cd)pyrene	10	0.1	2		27	1.257	Potentially Suitable For Use	0.6	0.1	2	2	0.2	0.1	0.4	1.8	0.3	0.7		
Napthalene	10	0.1	2		2.3	0.943	Potentially Suitable For Use	0.2	0.1	2	2	0.1	0.1	0.1	0.3	0.1	0.1		
Phenanthrene	10	0.1	7.7		95	2.892	Potentially Suitable For Use	2.5	0.1	2	2	0.2	0.2	0.5	7.7	0.5	0.5		
Pyrene	10	0.1	9		620	3.247	Potentially Suitable For Use	1.1	0.1	2	2	0.4	0.2	0.9	9	1	1.4		
VOCs-BTEX & MTBE																			
Benzene	10	0.01	0.01		0.087	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Toluene	10	0.01	0.01		130	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Ethylbenzene	10	0.01	0.01		47	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene o-	10	0.01	0.01		60	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene m-	10	0.01	0.01		59	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene p-	10	0.01	0.01		56	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
MTBE	10	0.01	0.01		49	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
TPH Fractions																			
TPH ali EC05-EC06	10	0.01	0.1		42	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC06-EC08	10	0.01	0.1		100	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC08-EC10	10	0.01	0.1		27	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC10-EC12	10	1.5	150	4	48	83.966	Further Assessment Required	130	10	150	110	10	10	61	1.5	19	28		
TPH ali >EC12-EC16	10	1.2	150	5	24	83.953	Further Assessment Required	130	10	150	110	10	10	61	1.2	19	28		
TPH ali >EC16-EC35	10	4.9	1300		65000	694.925	Potentially Suitable For Use	960	10	1100	1300	10	10	530	4.9	69	86		
TPH ali >EC35-EC44	10	3.4	1200		65000	619.889	Potentially Suitable For Use	830	10	970	1200	10	10	470	3.4	50	58		
TPH aro EC05-EC07	10	0.01	0.1		70	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC07-EC08	10	0.01	0.1		130	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC08-EC10	10	0.01	0.1		34	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC10-EC12	10	0.9	150	3	74	83.939	Further Assessment Required	130	10	150	110	10	10	61	0.9	19	28		
TPH aro >EC12-EC16	10	0.5	150	1	140	83.922	Further Assessment Required	130	10	150	110	10	10	61	0.5	19	28		
TPH aro >EC16-EC21	10	10	150		260	84.534	Potentially Suitable For Use	130	10	150	110	10	10	61	13	19	28		
TPH aro >EC21-EC35	10	10	1300	2	1100	696.006	Further Assessment Required	960	10	1100	1300	10	10	530	25	69	86		
TPH aro >EC35-EC44	10	1.4	1200	1	1100	619.782	Further Assessment Required	830	10	970	1200	10	10	470	1.4	50	58		
TPH >EC44-EC70					1600														
Dioxins, furans & dioxin-like-PCBs																			
Total Dioxins, furans & DL-PCB (aerial dep)							0.0085												
Non-dioxin-like PCBs																			
PCB-28							0.2												
PCB-52							0.2												
PCB-101							0.34												
PCB-138							0.36												
PCB-153							0.36												
PCB-180							0.37												

Legend: MG denotes Made Ground, NAT denotes Natural Ground

Risk Parameter: Human Health - residential with plant uptake (2.5% SOM);
Data set: ALL

Project No: 1324 Client: TEC Services Ltd.
Project: Travis Court, Heywood Old Road

All values in mg/kg unless otherwise stated							Soil Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL		
							Location:	M1	M2	M3	M4	M4	TP1	TP2	TP3	TP4	TP5		
							Depth:	0.1-0.3	0.1-0.8	0.1-1.1	0.1-1.2	4.5-4.8	0.5	0.1	0.3-0.5	0.5-0.7	0.2-0.3		
							Lab	S	S	S	S	S	S	S	S	S	S		
Chemicals of Potential Concern	No Samples	Min. Value	Max. Value	No. Samples >or = GAC	GAC	US ₉₅	Result of Significance Test												
							Further Assessment Required	N.D.	N.D.	N.D.	YES	N.D.	N.D.	N.D.	N.D.	N.D.	YES		
General Suite																			
Arsenic	10	5.4	28		37	14.710	Potentially Suitable For Use	8.3	8.9	13	5.4	5.5	14	10	6.5	28	11		
Boron	10	0.2	1.2		290	0.644	Potentially Suitable For Use	0.6	0.2	0.5	0.2	0.4	0.4	0.5	1.2	0.4	0.5		
Cadmium	10	0.1	0.4		11	0.269	Potentially Suitable For Use	0.20	<0	0.40	0.40	0.10	0.1	0.2	0.1	0.1	0.3		
Chromium (III)	10	8.3	19		910	13.944	Potentially Suitable For Use	10	13	12	8.5	19	9.3	15	8.3	14	12		
Chromium (VI)	10	1	1		6	1.000	Potentially Suitable For Use	1	1	1	1	1	1	1	1	1	1		
Copper	10	12	60		2400	38.718	Potentially Suitable For Use	20	26	31	12	30	36	42	24	60	34		
Lead	10	14	590	3	200	258.882	Further Assessment Required	370	130	41	14	15	590	76	48	210	61		
Mercury, inorganic	10	0.05	0.28		40	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.1	0.13	0.05	0.28	0.15		
Mercury elemental	10	0.05	0.28		1.2	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.1	0.13	0.05	0.28	0.15		
Mercury Methyl	10	0.05	0.28		11	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.1	0.13	0.05	0.28	0.15		
Nickel	10	7.3	25		130	17.577	Potentially Suitable For Use	11	14	14	7.3	25	12	16	9.8	23	13		
Selenium	10	0.5	0.5		250	0.500	Potentially Suitable For Use	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
Zinc	10	37	77		3700	64.711	Potentially Suitable For Use	37	41	55	40	61	69	64	49	77	74		
Cyanide (free)	10	0.1	0.4		24	0.248	Potentially Suitable For Use	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.4	0.1	0.4		
Phenol (total)	10	0.3	0.3		200	0.300	Potentially Suitable For Use	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Acenaphthene	10	0.1	2		480	1.090	Potentially Suitable For Use	0.7	0.1	2	2	0.1	0.1	0.1	1.2	0.1	0.1		
Acenaphthylene	10	0.1	2		420	0.928	Potentially Suitable For Use	0.1	0.1	2	2	0.1	0.1	0.1	0.2	0.1	0.1		
Anthracene	10	0.1	2.2		5400	1.257	Potentially Suitable For Use	0.6	0.1	2	2	0.1	0.1	0.1	2.2	0.1	0.2		
Benzo(a)anthracene	10	0.1	3.4		11	1.616	Potentially Suitable For Use	0.3	0.1	2	2	0.2	0.1	0.6	3.4	0.5	0.9		
Benzo(a)pyrene	10	0.1	3.9	1	2.7	1.863	Further Assessment Required	1.2	0.1	2	2	0.3	0.1	0.8	3.9	0.6	1.2		
Benzo(b)fluoranthene	10	0.1	2.9		3.3	1.555	Potentially Suitable For Use	0.9	0.1	2	2	0.2	0.1	0.8	2.9	0.5	0.8		
Benzo(ghi)perylene	10	0.1	2		340	1.246	Potentially Suitable For Use	0.4	0.1	2	2	0.2	0.1	0.4	1.8	0.5	0.6		
Benzo(k)fluoranthene	10	0.1	2.1		93	1.443	Potentially Suitable For Use	0.8	0.1	2	2	0.7	0.1	0.8	2.1	0.7	1		
Chrysene	10	0.1	3.7		22	1.691	Potentially Suitable For Use	0.6	0.1	2	2	0.2	0.1	0.7	3.7	0.4	0.7		
Dibenz(a,h)anthracene	10	0.1	2	4	0.28	0.967	Further Assessment Required	0.4	0.1	2	2	0.2	0.1	0.1	0.3	0.1	0.1		
Fluoranthene	10	0.1	9.1		560	3.376	Potentially Suitable For Use	1.6	0.1	2.4	2	0.4	0.2	1	9.1	1.1	1.4		
Fluorene	10	0.1	2		400	1.186	Potentially Suitable For Use	0.5	0.1	2	2	0.1	0.1	0.1	1.9	0.1	0.1		
Indeno(1,2,3,cd)pyrene	10	0.1	2		36	1.257	Potentially Suitable For Use	0.6	0.1	2	2	0.2	0.1	0.4	1.8	0.3	0.7		
Napthalene	10	0.1	2		5.6	0.943	Potentially Suitable For Use	0.2	0.1	2	2	0.1	0.1	0.1	0.3	0.1	0.1		
Phenanthrene	10	0.1	7.7		220	2.892	Potentially Suitable For Use	2.5	0.1	2	2	0.2	0.2	0.5	7.7	0.5	0.5		
Pyrene	10	0.1	9		1200	3.247	Potentially Suitable For Use	1.1	0.1	2	2	0.4	0.2	0.9	9	1	1.4		
VOCs-BTEX & MTBE																			
Benzene	10	0.01	0.01		0.17	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Toluene	10	0.01	0.01		290	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Ethylbenzene	10	0.01	0.01		110	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene o-	10	0.01	0.01		140	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene m-	10	0.01	0.01		140	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene p-	10	0.01	0.01		130	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
MTBE	10	0.01	0.01		84	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
TPH Fractions																			
TPH ali EC05-EC06	10	0.01	0.1		78	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC06-EC08	10	0.01	0.1		230	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC08-EC10	10	0.01	0.1		65	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC10-EC12	10	1.5	150	2	118	83.966	Further Assessment Required	130	10	150	110	10	10	61	1.5	19	28		
TPH ali >EC12-EC16	10	1.2	150	4	59	83.953	Further Assessment Required	130	10	150	110	10	10	61	1.2	19	28		
TPH ali >EC16-EC35	10	4.9	1300		92000	694.925	Potentially Suitable For Use	960	10	1100	1300	10	10	530	4.9	69	86		
TPH ali >EC35-EC44	10	3.4	1200		92000	619.889	Potentially Suitable For Use	830	10	970	1200	10	10	470	3.4	50	58		
TPH aro EC05-EC07	10	0.01	0.1		140	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC07-EC08	10	0.01	0.1		290	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC08-EC10	10	0.01	0.1		83	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC10-EC12	10	0.9	150		180	83.939	Potentially Suitable For Use	130	10	150	110	10	10	61	0.9	19	28		
TPH aro >EC12-EC16	10	0.5	150		330	83.922	Potentially Suitable For Use	130	10	150	110	10	10	61	0.5	19	28		
TPH aro >EC16-EC21	10	10	150		540	84.534	Potentially Suitable For Use	130	10	150	110	10	10	61	13	19	28		
TPH aro >EC21-EC35	10	10	1300		1500	696.006	Potentially Suitable For Use	960	10	1100	1300	10	10	530	25	69	86		
TPH aro >EC35-EC44	10	1.4	1200		1500	619.782	Potentially Suitable For Use	830	10	970	1200	10	10	470	1.4	50	58		
TPH >EC44-EC70					1800														
Dioxins, furans & dioxin-like-PCBs																			
Total Dioxins, furans & DL-PCB (aerial dep)					0.0087														
Non-dioxin-like PCBs																			
PCB-28					0.27														
PCB-52					0.28														
PCB-101					0.37														
PCB-138					0.37														
PCB-153					0.38														
PCB-180					0.38														

Legend: MG denotes Made Ground, NAT denotes Natural Ground

Risk Parameter: Human Health - residential with plant uptake (6.0% SOM);
Data set: ALL

Project No: 1324 Client: TEC Services Ltd.
Project: Travis Court, Heywood Old Road

All values in mg/kg unless otherwise stated							Soil Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL		
							Location:	M1	M2	M3	M4	M4	TP1	TP2	TP3	TP4	TP5		
							Depth:	0.1-0.3	0.1-0.8	0.1-1.1	0.1-1.2	4.5-4.8	0.5	0.1	0.3-0.5	0.5-0.7	0.2-0.3		
							Lab	S	S	S	S	S	S	S	S	S	S		
Chemicals of Potential Concern	No Samples	Min. Value	Max. Value	No. Samples >or = GAC	GAC	US ₉₅	Result of Significance Test												
							Further Assessment Required	N.D.	N.D.	N.D.	YES	N.D.	N.D.	N.D.	N.D.	N.D.	YES		
General Suite																			
Arsenic	10	5.4	28		37	14.710	Potentially Suitable For Use	8.3	8.9	13	5.4	5.5	14	10	6.5	28	11		
Boron	10	0.2	1.2		290	0.644	Potentially Suitable For Use	0.6	0.2	0.5	0.2	0.4	0.4	0.5	1.2	0.4	0.5		
Cadmium	10	0.1	0.4		11	0.269	Potentially Suitable For Use	0.2	0.1	0.4	0.4	0.1	0.1	0.2	0.1	0.1	0.3		
Chromium (III)	10	8.3	19		910	13.944	Potentially Suitable For Use	10	13	12	8.5	19	9.3	15	8.3	14	12		
Chromium (VI)	10	1	1		6	1.000	Potentially Suitable For Use	1	1	1	1	1	1	1	1	1	1		
Copper	10	12	60		2400	38.718	Potentially Suitable For Use	20	26	31	12	30	36	42	24	60	34		
Lead	10	14	590	3	200	258.882	Further Assessment Required	370	130	41	14	15	590	76	48	210	61		
Mercury, inorganic	10	0.05	0.28		40	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.1	0.13	0.05	0.28	0.15		
Mercury elemental	10	0.05	0.28		1.2	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.1	0.13	0.05	0.28	0.15		
Mercury Methyl	10	0.05	0.28		11	0.139	Potentially Suitable For Use	0.05	0.07	0.05	0.05	0.05	0.1	0.13	0.05	0.28	0.15		
Nickel	10	7.3	25		130	17.577	Potentially Suitable For Use	11	14	14	7.3	25	12	16	9.8	23	13		
Selenium	10	0.5	0.5		250	0.500	Potentially Suitable For Use	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.50	0.50	0.50		
Zinc	10	37	77		3700	64.711	Potentially Suitable For Use	37	41	55	40	61	69	64	49	77	74		
Cyanide (free)	10	0.1	0.4		24	0.248	Potentially Suitable For Use	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.4	0.1	0.4		
Phenol (total)	10	0.3	0.3		380	0.300	Potentially Suitable For Use	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Acenaphthene	10	0.1	2		1000	1.090	Potentially Suitable For Use	0.7	0.1	2	2	0.1	0.1	0.1	1.2	0.1	0.1		
Acenaphthylene	10	0.1	2		920	0.928	Potentially Suitable For Use	0.1	0.1	2	2	0.1	0.1	0.1	0.2	0.1	0.1		
Anthracene	10	0.1	2.2		11000	1.257	Potentially Suitable For Use	0.6	0.1	2	2	0.1	0.1	0.1	2.2	0.1	0.2		
Benzo(a)anthracene	10	0.1	3.4		13	1.616	Potentially Suitable For Use	0.3	0.1	2	2	0.2	0.1	0.6	3.4	0.5	0.9		
Benzo(a)pyrene	10	0.1	3.9	1	3	1.863	Further Assessment Required	1.2	0.1	2	2	0.3	0.1	0.8	3.9	0.6	1.2		
Benzo(b)fluoranthene	10	0.1	2.9		3.7	1.555	Potentially Suitable For Use	0.9	0.1	2	2	0.2	0.1	0.8	2.9	0.5	0.8		
Benzo(ghi)perylene	10	0.1	2		350	1.246	Potentially Suitable For Use	0.4	0.1	2	2	0.2	0.1	0.4	1.8	0.5	0.6		
Benzo(k)fluoranthene	10	0.1	2.1		100	1.443	Potentially Suitable For Use	0.8	0.1	2	2	0.7	0.1	0.8	2.1	0.7	1		
Chrysene	10	0.1	3.7		27	1.691	Potentially Suitable For Use	0.6	0.1	2	2	0.2	0.1	0.7	3.7	0.4	0.7		
Dibenz(a,h)anthracene	10	0.1	2	4	0.3	0.967	Further Assessment Required	0.4	0.1	2	2	0.2	0.1	0.1	0.3	0.1	0.1		
Fluoranthene	10	0.1	9.1		890	3.376	Potentially Suitable For Use	1.6	0.1	2.4	2	0.4	0.2	1	9.1	1.1	1.4		
Fluorene	10	0.1	2		860	1.186	Potentially Suitable For Use	0.5	0.1	2	2	0.1	0.1	0.1	1.9	0.1	0.1		
Indeno(1,2,3,cd)pyrene	10	0.1	2		41	1.257	Potentially Suitable For Use	0.6	0.1	2	2	0.2	0.1	0.4	1.8	0.3	0.7		
Napthalene	10	0.1	2		13	0.943	Potentially Suitable For Use	0.2	0.1	2	2	0.1	0.1	0.1	0.3	0.1	0.1		
Phenanthrene	10	0.1	7.7		440	2.892	Potentially Suitable For Use	2.5	0.1	2	2	0.2	0.2	0.5	7.7	0.5	0.5		
Pyrene	10	0.1	9		2000	3.247	Potentially Suitable For Use	1.1	0.1	2	2	0.4	0.2	0.9	9	1	1.4		
VOCs-BTEX & MTBE																			
Benzene	10	0.01	0.01		0.37	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Toluene	10	0.01	0.01		660	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Ethylbenzene	10	0.01	0.01		260	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene o-	10	0.01	0.01		330	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene m-	10	0.01	0.01		320	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
Xylene p-	10	0.01	0.01		310	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
MTBE	10	0.01	0.01		160	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
TPH Fractions																			
TPH ali EC05-EC06	10	0.01	0.1		160	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC06-EC08	10	0.01	0.1		530	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC08-EC10	10	0.01	0.1		150	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC10-EC12	10	1.5	150		283	83.966	Potentially Suitable For Use	130	10	150	110	10	10	61	1.5	19	28		
TPH ali >EC12-EC16	10	1.2	150	1	142	83.953	Further Assessment Required	130	10	150	110	10	10	61	1.2	19	28		
TPH ali >EC16-EC35	10	4.9	1300		110000	694.925	Potentially Suitable For Use	960	10	1100	1300	10	10	530	4.9	69	86		
TPH ali >EC35-EC44	10	3.4	1200		110000	619.889	Potentially Suitable For Use	830	10	970	1200	10	10	470	3.4	50	58		
TPH aro EC05-EC07	10	0.01	0.1		300	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC07-EC08	10	0.01	0.1		660	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC08-EC10	10	0.01	0.1		190	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC10-EC12	10	0.9	150		380	83.939	Potentially Suitable For Use	130	10	150	110	10	10	61	0.9	19	28		
TPH aro >EC12-EC16	10	0.5	150		660	83.922	Potentially Suitable For Use	130	10	150	110	10	10	61	0.5	19	28		
TPH aro >EC16-EC21	10	10	150		930	84.534	Potentially Suitable For Use	130	10	150	110	10	10	61	13	19	28		
TPH aro >EC21-EC35	10	10	1300		1700	696.006	Potentially Suitable For Use	960	10	1100	1300	10	10	530	25	69	86		
TPH aro >EC35-EC44	10	1.4	1200		1700	619.782	Potentially Suitable For Use	830	10	970	1200	10	10	470	1.4	50	58		
TPH >EC44-EC70					1900														
Dioxins, furans & dioxin-like-PCBs																			
Total Dioxins, furans & DL-PCB (aerial dep)																			
					0.0087														
Non-dioxin-like PCBs																			
PCB-28					0.32														
PCB-52					0.34														
PCB-101					0.38														
PCB-138					0.38														
PCB-153					0.38														
PCB-180					0.39														

Legend: MG denotes Made Ground, NAT denotes Natural Ground

Risk Parameter: Residential SOM 1% Inhalation Pathway only for VOC PAHs & TPHs

Project No:

1324 Client:

TEC Services Ltd.

Data set: ALL

Project:

Travis Court, Heywood Old Road

All values in mg/kg unless otherwise stated								Soil Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL		
								Location:	M1	M2	M3	M4	M4	TP1	TP2	TP3	TP4	TP5		
								Depth:	0.1-0.3	0.1-0.8	0.1-1.1	0.1-1.2	4.5-4.8	0.5	0.1	0.3-0.5	0.5-0.7	0.2-03		
								Lab	S	S	S	S	S	S	S	S	S	S		
Chemicals of Potential Concern	No Samples	Min. Value	Max. Value	No. Samples >or = GAC	GAC	Cheby chev US ₉₅	US ₉₅	Result of Significance Test												
General Suite																				
Napthalene	10	0.1	2		16	1.541	0.943	Potentially Suitable For Use	0.2	0.1	2	2	0.1	0.1	0.1	0.3	0.1	0.1		
VOCs-BTEX & MTBE																				
Benzene	10	0.01	0.01		0.27	0.010	0.010	Potentially Suitable For Use	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		
TPH Fractions																				
TPH ali EC05-EC06	10	0.01	0.1		30	0.128	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC06-EC08	10	0.01	0.1		73	0.128	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC08-EC10	10	0.01	0.1		19	0.128	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH ali >EC10-EC12	10	1.5	150	3	93	126.725	83.966	Further Assessment Required	130	10	150	110	10	10	61	1.5	19	28		
TPH ali >EC12-EC16	10	1.2	150		782	126.734	83.953	Potentially Suitable For Use	130	10	150	110	10	10	61	1.2	19	28		
TPH aro EC05-EC07	10	0.01	0.1		266	0.128	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC07-EC08	10	0.01	0.1		626	0.128	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC08-EC10	10	0.01	0.1		33	0.128	0.107	Potentially Suitable For Use	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1		
TPH aro >EC10-EC12	10	0.9	150		182	126.744	83.939	Potentially Suitable For Use	130	10	150	110	10	10	61	0.9	19	28		
TPH aro >EC12-EC16	10	0.5	150		2000	126.758	83.922	Potentially Suitable For Use	130	10	150	110	10	10	61	0.5	19	28		

Legend: MG denotes Made Ground, NAT denotes Natural Ground

Risk Parameter: Controlled Water - Drinking Water Standards (DWS)
Data set: ALL

Project No: 1324 Client: TEC Services Ltd.
Project: Travis Court, Heywood Old Road

All values in ug/l unless otherwise stated								Soil Type:	WATER	WATER										
								Location:	M4	M4										
								Depth:	1.9	1.78										
								Lab	W	W										
Chemicals of Potential Concern	No Samples	Min. Value	Max. Value	No. Samples >or = GAC	GAC		US ₉₅	Result of Significance Test												
General Suite																				
Arsenic	1	2.7	2.7		10			Potentially Suitable For Use	2.7											
Boron	1	110	110		1000			Potentially Suitable For Use	110											
Cadmium	1	0.03	0.03		5			Potentially Suitable For Use	0.03											
Chromium (III)	1	0.29	0.29		50			Potentially Suitable For Use	0.29											
Chromium (VI)	1	7	7		50			Potentially Suitable For Use	7											
Copper	1	1.1	1.1		2000			Potentially Suitable For Use	1.1											
Lead	1	0.2	0.2		10			Potentially Suitable For Use	0.2											
Mercury, inorganic	1	0.01	0.01		1			Potentially Suitable For Use	0.01											
Mercury elemental	1	0.01	0.01		1			Potentially Suitable For Use	0.01											
Mercury Methyl	1	0.01	0.01		1			Potentially Suitable For Use	0.01											
Nickel	1	2.8	2.8		20			Potentially Suitable For Use	2.8											
Selenium	1	0.82	0.82		10			Potentially Suitable For Use	0.82											
Zinc	1	54	54		5000			Potentially Suitable For Use	54											
Cyanide (free)	1	0.04	0.04		50			Potentially Suitable For Use	0.04											
Phenol (total)	1	0.1	0.1		0.5			Potentially Suitable For Use	0.1											
Acenaphthene	1							Further Assessment Required	0.05											
Acenaphthylene	1							Further Assessment Required	0.01											
Anthracene	1							Further Assessment Required	0.01											
Benzo(a)anthracene	1							Further Assessment Required	0.01											
Benzo(a)pyrene	1	0.01	0.01	1	0.01			Further Assessment Required	0.01											
Benzo(b)fluoranthene	1	0.01	0.01		0.1			Potentially Suitable For Use	0.01											
Benzo(ghi)perylene	1	0.01	0.01		0.1			Potentially Suitable For Use	0.01											
Benzo(k)fluoranthene	1	0.01	0.01		0.1			Potentially Suitable For Use	0.01											
Chrysene	1							Further Assessment Required	0.01											
Dibenz(a,h)anthracene	1							Further Assessment Required	0.01											
Fluoranthene	1							Further Assessment Required	0.02											
Fluorene	1							Further Assessment Required	0.01											
Indeno(1,2,3,cd)pyrene	1	0.01	0.01		0.1			Potentially Suitable For Use	0.01											
Napthalene	1							Further Assessment Required	0.05											
Phenanthrene	1							Further Assessment Required	0.02											
Pyrene	1							Further Assessment Required	0.03											
VOCs-BTEX & MTBE																				
Benzene	1	0.99	0.99		1			Potentially Suitable For Use	0.99											
Toluene	1	0.99	0.99		50			Potentially Suitable For Use	0.99											
Ethylbenzene	1	0.99	0.99		20			Potentially Suitable For Use	0.99											
Xylene o-	1	0.99	0.99		30			Potentially Suitable For Use	0.99											
Xylene m-	1	0.99	0.99		30			Potentially Suitable For Use	0.99											
Xylene p-	1	0.99	0.99		30			Potentially Suitable For Use	0.99											
MTBE	1	0.99	0.99		20			Potentially Suitable For Use	0.99											
TPH Fractions																				
TPH ali EC05-EC06	2	0.1	1		15000			Potentially Suitable For Use	1	0.1										
TPH ali >EC06-EC08	2	0.1	1		15000			Potentially Suitable For Use	1	0.1										
TPH ali >EC08-EC10	2	0.1	1		300			Potentially Suitable For Use	1	0.1										
TPH ali >EC10-EC12	2	1	1100	1	300			Further Assessment Required	1100	1										
TPH ali >EC12-EC16	2	1	1100	1	300			Further Assessment Required	1100	1										
TPH ali >EC16-EC35	2	1	4200		15000			Potentially Suitable For Use	4200	2										
TPH ali >EC35-EC44	1	3100	3100		15000			Potentially Suitable For Use	3100											
TPH aro EC05-EC07	2	0.1	1		10			Potentially Suitable For Use	1	0.1										
TPH aro >EC07-EC08	2	0.1	1		700			Potentially Suitable For Use	1	0.1										
TPH aro >EC08-EC10	2	0.1	1		300			Potentially Suitable For Use	1	0.1										
TPH aro >EC10-EC12	2	1	1100	1	90			Further Assessment Required	1100	1										
TPH aro >EC12-EC16	2	1	1100	1	90			Further Assessment Required	1100	1										
TPH aro >EC16-EC21	2	1	1100	1	90			Further Assessment Required	1100	1										
TPH aro >EC21-EC35	2	1	3100	1	90			Further Assessment Required	3100	1										
TPH aro >EC35-EC44	1	1	3100	1	90			Further Assessment Required	3100											
TPH >EC44-EC70					90															
Dioxins, furans & dioxin-like-PCBs																				
Total Dioxins, furans & DL-PCB (aerial dep)																				
Non-dioxin-like PCBs																				
PCB-28																				
PCB-52																				
PCB-101																				
PCB-138																				
PCB-153																				
PCB-180																				

Legend: MG denotes Made Ground, NAT denotes Natural Ground

Risk Parameter: Controlled Water - Surface Water Assessment Levels (EQS)
Data set: ALL

Project No: 1324 Client: TEC Services Ltd.
Project: Travis Court, Heywood Old Road

All values in ug/l unless otherwise stated								Soil Type:	WATER	WATER										
								Location:	M4	M4										
								Depth:	1.9	1.78										
								Lab	W	W										
Chemicals of Potential Concern	No Samples	Min. Value	Max. Value	No. Samples >or = GAC	GAC	max.	US ₉₅	Result of Significance Test												
General Suite																				
Arsenic	1	2.7	2.7		50			Potentially Suitable For Use	2.7											
Boron	1	110	110		2000			Potentially Suitable For Use	110											
Cadmium	1	0.03	0.03		0.1	0.45		Potentially Suitable For Use	0.03											
Chromium (III)	1	0.29	0.29		4.7	32		Potentially Suitable For Use	0.29											
Chromium (VI)	1	7	7	1	3.4			Further Assessment Required	7											
Copper	1	1.1	1.1	1	1			Further Assessment Required	1.1											
Lead	1	0.2	0.2		1.2	14		Potentially Suitable For Use	0.2											
Mercury, inorganic	1	0.01	0.01		0.07			Potentially Suitable For Use	0.01											
Mercury elemental	1	0.01	0.01		0.07			Potentially Suitable For Use	0.01											
Mercury Methyl	1	0.01	0.01		0.07			Potentially Suitable For Use	0.01											
Nickel	1	2.8	2.8		4	34		Potentially Suitable For Use	2.8											
Selenium																				
Zinc	1	54	54	1	10.9			Further Assessment Required	54											
Cyanide (free)	1	0.04	0.04		1	5		Potentially Suitable For Use	0.04											
Phenol (total)	1	0.1	0.1		7.7	46		Potentially Suitable For Use	0.1											
Acenaphthene																				
Acenaphthylene																				
Anthracene	1				0.1			Potentially Suitable For Use	0.01											
Benzo(a)anthracene																				
Benzo(a)pyrene	1	0.01	0.01		0.27			Potentially Suitable For Use	0.01											
Benzo(b)fluoranthene	1	0.01	0.01		0.017			Potentially Suitable For Use	0.01											
Benzo(ghi)perylene	1	0.01	0.01	1	0.0082			Further Assessment Required	0.01											
Benzo(k)fluoranthene	1	0.01	0.01		0.017			Potentially Suitable For Use	0.01											
Chrysene																				
Dibenz(a,h)anthracene																				
Fluoranthene	1			1	0.0063	0.12		Potentially Suitable For Use	0.02											
Fluorene																				
Indeno(1,2,3,cd)pyrene																				
Napthalene	1				2	130		Potentially Suitable For Use	0.05											
Phenanthrene																				
Pyrene																				
VOCs-BTEX & MTBE																				
Benzene	1	0.99	0.99		10	50		Potentially Suitable For Use	0.99											
Toluene	1	0.99	0.99		74	380		Potentially Suitable For Use	0.99											
Ethylbenzene																				
Xylene o-	1	0.99	0.99		30			Potentially Suitable For Use	0.99											
Xylene m-	1	0.99	0.99		30			Potentially Suitable For Use	0.99											
Xylene p-	1	0.99	0.99		30			Potentially Suitable For Use	0.99											
MTBE																				
TPH Fractions																				
TPH ali EC05-EC06	2	0.1	1		50			Potentially Suitable For Use	1	0.1										
TPH ali >EC06-EC08	2	0.1	1		50			Potentially Suitable For Use	1	0.1										
TPH ali >EC08-EC10	2	0.1	1		50			Potentially Suitable For Use	1	0.1										
TPH ali >EC10-EC12	2	1	1100	1	50			Further Assessment Required	1100	1										
TPH ali >EC12-EC16	2	1	1100	1	50			Further Assessment Required	1100	1										
TPH ali >EC16-EC35	2	1	4200	1	50			Further Assessment Required	4200	2										
TPH ali >EC35-EC44	1	3100	3100	1	50			Further Assessment Required	3100											
TPH aro EC05-EC07	2	0.1	1		50			Potentially Suitable For Use	1	0.1										
TPH aro >EC07-EC08	2	0.1	1		50			Potentially Suitable For Use	1	0.1										
TPH aro >EC08-EC10	2	0.1	1		50			Potentially Suitable For Use	1	0.1										
TPH aro >EC10-EC12	2	1	1100	1	50			Further Assessment Required	1100	1										
TPH aro >EC12-EC16	2	1	1100	1	50			Further Assessment Required	1100	1										
TPH aro >EC16-EC21	2	1	1100	1	50			Further Assessment Required	1100	1										
TPH aro >EC21-EC35	2	1	3100	1	50			Further Assessment Required	3100	1										
TPH aro >EC35-EC44	1	1	3100	1	50			Further Assessment Required	3100											
TPH >EC44-EC70					50															
Dioxins, furans & dioxin-like-PCBs																				
Total Dioxins, furans & DL-PCB (aerial dep)																				
Non-dioxin-like PCBs																				
PCB-28																				
PCB-52																				
PCB-101																				
PCB-138																				
PCB-153																				
PCB-180																				

Legend: MG denotes Made Ground, NAT denotes Natural Ground