

Phase 2 Ground Investigation

Client: Lidl Great Britain Ltd

Briton Ferry Road, Neath

Report No: 769.02.04

February 2026





Executive Summary

Remada Ltd was initially commissioned by Lidl Great Britain Ltd (hereafter 'the Client') to undertake an intrusive Ground Investigation for an proposed store extension at Briton Ferry Road, Neath, South Wales SA11 1AS. However, since the completion of Remada's investigation in 2025, the proposed development was modified to necessitate demolition of the existing Lidl store and other buildings which resulted in regulatory requirements to implement a supplementary investigation.

This Phase 2 Ground Investigation Report presents the findings of Remada's investigation (769.02.03 issued in September 2025) and the supplementary investigation carried out in January 2026.

This report compiles all logs and test results from all previous phases of work.

Summary of Phase 1 Desk Study

The study site occupies an irregular (but very broadly triangular) plot to the west of A474 Briton Ferry Road. The site comprises three distinct areas, with a Lidl store present in the south-western area, a separate retail building previously occupied by 'Vitality Health & Fitness' and 'Poundstretcher' in the north-western area, and associated car parking occupying the eastern half of the site. Access to the study site is from School Road on the eastern boundary.

The earliest available mapping of 1878 and 1881 indicates it to be predominantly occupied by marshland. A railway line associated with the adjacent (off-site) Melin Crythan Works encroaches into the northern margins of the site in an arc. A 'Japan Works' encroaches into the south-western boundary of the site, extending off-site towards the south-west and expanding to occupy the southern half of the site by 1889. The Cryddan Brook bisects the central area of the site and would continue to do so until 1995, when it is no longer shown. By 1919 the railway sidings have expanded into the central area of the site, with rationalisation of these occurring by 1952. Buildings associated with the Melin Crythan Works / Tin Plate Works were constructed in the eastern area of the site in 1882, with the works complex being redeveloped between 1952 and 1958 when a new elongated building was constructed in the north-eastern margins of the site.

Between 1980 and 1987, the majority of the buildings in the southern area of the site are no longer shown, with only a north-west to south-east orientated elongate building still present parallel to Cryddan Brook and still labelled as 'Melyn Works'. A 'tank' of unspecified contents is indicated to be present encroaching into the eastern boundary of the site. By 1989, the majority of the buildings have been removed from the entire site, with only one small rectangular structure remaining adjacent to the eastern boundary. The area to the north of Cryddan Brook was labelled as a Coal Yard. The existing Lidl store building appears to have been constructed between 1993 and 1995, with its associated car park occupying the southern and eastern areas of the site. The Electricity Sub-Station adjacent to the eastern corner first appears in 1995, whilst the two now-defunct retail units in the north-western quadrant appear between the mapping of 1999 and Opus' investigation on-site in 2016.

Published geological maps record that the site is underlain by undivided deposits of Landscaped Ground and superficial Tidal Flat Deposits; the latter being designated as Secondary A and Secondary Undifferentiated Aquifers. The bedrock directly underlying the site is formed of the Hughes Member, for which the parent unit is the Pennant Sandstone Formation and designated as a Secondary A Aquifer.

Information obtained during Opus' intrusive investigation in the northern area of the site in 2016 recorded granular Made Ground to a maximum depth of 4.7m bgl, underlain by very soft grey CLAY. Historic BGS trial pit records in the eastern and north-eastern area of the site dating from 1994 recorded Made Ground to a maximum depth of 2.0m bgl, underlain by very clayey fine SAND to the base of a pit at 3.0m bgl.

Intrusive Investigation

The investigation comprised three (3 No.) cable tool boreholes and three (3 No.) trial pits to expose existing foundations. The investigation was undertaken on the 23rd and 24th July 2020.

Two of the hand dug trial pits HDTP2 and HDTP3 exposed a spread footing bearing on Made Ground at a depth 0.75m bgl and with an estimated approximate width of 1.5m. HDTP1 exposed concrete that extended beyond the maximum excavation depth of 1.3m but stepped out only 0.1m indicative of a pile cap.



The post demolition supplementary investigation comprised ten (10 No.) trial pits and three (3 No.) window sample boreholes with one groundwater monitoring well installed. This investigation took place on 15th January 2026 with three (3 No.) groundwater samples taken on 29th January 2026.

Made Ground comprised asphalt surfacing to a depth of 0.1m overlying sub-base to 0.4m in turn overlying a medium dense gravelly ashy fine to medium sand, gravel is wood, brick, coal and fragments of concrete. Superficial deposits were observed as soft to firm sandy or silty clay at a depth of between 2.6 and 4.0m.

Beneath the Made Ground soft to firm, occasionally sandy, silty clay was encountered to depths of between 3.45 and 5.0m bgl. In borehole BH1-B a slight organic odour was noted. The clay has been interpreted as Tidal Flat Deposits, as indicated to be present on the BGS map.

Beneath the Tidal Flat Deposits dense becoming very dense slightly sandy predominantly angular to subangular fine to coarse gravel comprising mudstone and shale. While the gravel was predominantly angular to subangular, the gravel was also noted to be rounded within BH1-B. There are two potential interpretations for this material: Glaciofluvial Deposits, or weathered bedrock. Given that the materials encountered comprised predominantly angular or subangular mudstone and shale it is considered that this material is more likely to represent a zone of weathered bedrock.

Human Health Assessment

The results of soil chemical analysis were compared to Human Health Generic Assessment Criteria for commercial land use. None of the analytes tested for TPH or BTEX were detected at concentrations that exceeded the human health GAC protective of on-site workers.

Three (3 No.) samples out of 16 locations tested for PAH were detected at concentrations that exceeded the human health GAC protective of on-site workers. Dibenzo(a,h)Anthracene exceeded at locations HDTP1, TP6 and TP9 with 4.2, 4.4 and 12 mg/kg respectively, whilst TP9 also had exceedances of Benzo[b]fluoranthene (120 mg/kg) and Benzo[a]pyrene (96 mg/kg).

Water Resources Assessment

The results of the soil chemical analysis have identified that concentrations of metals and inorganic contaminants are generally within the range of typical Made Ground. However, the organic contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site. In addition, the results of falling head tests with the Made Ground and Superficial Deposits produced low permeability values typical of clayey sands and silt in the range of 10^{-4} to 10^{-6} m/s and therefore the rate of potential contaminant migration towards Cryddan Brook is considered to be minimal. The concentrations of contaminants within the groundwater sampled from six standpipes have been compared with the Water Framework Directive Regulations and exceedances of the EQS levels were identified in MP1 and MP2 which are both located eastwards beyond the site boundary with water samples taken from the brook.

Post-development, the site will continue to be predominantly covered by a retail building and areas of hardstanding. At locations where the concentrations of PAH in Made Ground were found to be greater than GAC the proposed development will be covered by hardstanding (car park surfacing) and therefore the risk of leaching of contaminants as a result of infiltration of groundwater will be limited. Consequently, the risk to controlled waters from contaminants within the Made Ground at the site is considered to be low and no further action is recommended.

Waste Classification

In general, the results of the chemical analyses indicate that the material would be classified as non-hazardous waste. While Waste Acceptance Criteria (WAC) analysis has not been undertaken, the concentrations of the fraction of organic carbon (FOC) indicate that the soil arisings would have Total Organic Carbon (TOC) concentrations of greater than 3% and be classed as non-hazardous. The reported concentration of chrysotile asbestos fibres sampled in HDTP3, TP1, TP2, TP3 and TP9 are less than the threshold concentration for hazardous waste.

For each individual sample, the sum concentration of TPH is <500 mg/kg (except at TP9) and sum concentration of BTEX <1mg/kg, but the sum concentration of PAH >100 mg/kg, indicating the Made Ground would be non-hazardous due to



hydrocarbons except at one location at TP9 at 0.3m bgl which had a total PAH concentration of 1090 mg/kg and total TPH concentration of 1650mg/kg and would therefore be classified as hazardous.

A full assessment of metal concentrations has not been undertaken however the results of the chemical analysis indicate that the Made Ground would be classified as non-hazardous waste except for TP9 which would be classed as hazardous.

One sample of bituminous surfacing was analysed for concentrations of PAH compounds and indicated that the concentrations of PAHs were low (total maximum PAH 17 concentration being below the MDL of 2mg/kg). The maximum concentration of benzo(a)pyrene of <0.1mg/kg was below the 50mg/kg limit defined in WM3. Therefore, the bituminous surfacing represented by this sample would be classified as non-hazardous waste and assigned the List of Wastes code 17 03 02 for bituminous mixtures other than those mentioned in 17 03 01.

Geotechnical Assessment

The Coal Mining Risk Assessment (Remada report ref: 769.01.03) did not identify a potential for unrecorded shallow worked seams to be present beneath the site. All three cable tool boreholes proved the full depth of Made Ground and encountered a soft to firm CLAY to a maximum depth of 5.5m in BH2. The results of undrained shear strength tests on U100 samples produced Cu values of 17 to 34 kPa for the CLAY. All three boreholes refused in a gravel/shale of mudstone at between 4.5 and 6m bgl. Groundwater monitoring has recorded that all wells were dry.

In order to prevent differential settlement between the existing store and proposed extension all foundations should bear on the same strata. The Made Ground and underlying soft to firm slightly organic clay would produce unacceptable amounts of total and differentials settlement and consequently piled foundations are required.

Either ground improvement in the form of vibro concrete columns or piled foundations are considered necessary to transfer foundation loads to a suitable bearing layer. Concrete columns would require a depth in the order of 6m and advice should be sought from a specialist ground improvement contractor. Driven piles are unlikely to be acceptable due to vibration of the existing store and therefore either bored or CFA piles should be considered, however it may not be possible to socket CFA piles into the bedrock. Bored piles would require casing through Made Ground and alluvium and be socketed into the competent bearing strata in order to transfer loads. Rapid excavation of the pile sockets in weak rock is recommended to minimise the potential for deterioration in the walls which could result in the swelling of the mudstone. After formation, the pile should be concreted immediately, preferably on the same day.

Floor slabs should be suspended and bearing on the piled foundations.

A Design Sulphate Class DS-2 is considered appropriate for buried concrete and an ACEC Class of AC-1s is considered appropriate for the location.

Ground Gas

The results of four rounds of gas monitoring visits placed the site into Characteristic Situation 2 and therefore ground gas protection measures will be required within the proposed buildings.



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Issue No	Date	Prepared By	Technical Review	Authorised
01	21.08.2020	P Dickinson	G Jones	G Jones
02	30.03.2022	P Dickinson	G Jones	G Jones
03	19.09.2025	P Dickinson	G Jones	G Jones
04	18.02.2026	K Szybut	G Jones	G Jones



1 INTRODUCTION

Remada Ltd was initially commissioned by Lidl Great Britain Ltd (hereafter 'the Client') to undertake an intrusive Ground Investigation for a proposed store extension at Briton Ferry Road, Neath, South Wales SA11 1AS, at the location indicated in **Figure 1**. However, since the completion of Remada's investigation in 2025, the proposed development was modified to necessitate demolition of the existing Lidl store and other buildings which resulted in regulatory requirements to implement a supplementary investigation.

This Phase 2 Ground Investigation Report presents the findings of Remada's investigation (769.02.03 issued in September 2025) and the supplementary investigation carried out in January 2026.

This report compiles all logs and test results from all previous phases of work.

1.1 Objectives

The objectives of this assessment are as follows:

- to examine whether there have been any potentially contaminative uses on the site or nearby land;
- to develop a conceptual model of the site to identify plausible pollutant linkages;
- to assess ground conditions in relation to the proposed development in relation to construction design issues including the presence, nature, likely severity and extent of soil and groundwater contamination, which may be present, its potential environmental impact and likely requirement for further work; and
- Provide preliminary foundation design recommendations for the proposed development.

1.2 Scope of Work

The scope and layout of this investigation and report is generally in accordance with BS10175:2011+A2 2017 and the Environment Agency's Land Contamination Risk Management guidance for land contamination reports.

Due to the study site's positioning within Wales, the scope was also designed in line with the Welsh Land Contamination Working Group's Development of Land Affected by Contamination: A Guide for Developers version 4: September 2023. This guidance represents the culmination of a co-operative effort involving the Welsh Local Government Association (WLGA) and Natural Resources Wales (NRW). For the purpose of this report, any references to the Environment Agency (EA) should be seen as interchangeable with NRW.

The initial scope of work comprised:

- Three (3 No) cable percussive boreholes to target depths of 10m including SPTs;
- Three (3 No) combined groundwater and gas monitoring standpipes installed within the boreholes;
- Three (3 No) hand excavated pits to expose the existing foundations;
- Suite of geotechnical classification and strength tests;
- 3 No soil sample suites for chemical analysis of CLEA metals, asbestos, speciated hydrocarbons, cyanide and phenols to delineate any potential soil contamination;
- 4 No ground gas and groundwater monitoring visits to satisfy planning requirements; and
- Combined Factual & Interpretative Geoenvironmental Report.

A supplementary phase of investigation in March 2022 comprised:

- 3 No groundwater samples for chemical analysis of dissolved CLEA metals, Total Petroleum Hydrocarbons (TPHCWG) and Polycyclic Aromatic Hydrocarbons (PAH-16).

A post demolition supplementary phase of investigation in January 2026 comprised:

- 14 No. trial pits;
- 3 No. window samples with monitoring wells;
- 1 No. purging of groundwater wells;
- 1 No. sampling of groundwater using low flow sampling techniques;



- 12 No. chemical analysis of soils;
- 3 No. chemical analysis of groundwater.

1.3 Proposed Development

It is understood that the proposed site use for the site will be a Lidl retail store with associated car park and soft landscaping. A proposed indicative site layout plan is presented as **Figure 2**, with the site being accessed off School Road along the eastern boundary. The proposed store footprint is indicated to be in the south-western area of the site, with the remaining areas being a combination of car parking, HGV access and soft landscaping.

1.4 Previous Reports

The following report has previously been prepared for the site by Remada:

- Phase 1 Site Investigation & Preliminary Risk Assessment. Remada Ltd report ref: 769.10.01, issued in September 2025.
- Coal Mining Risk Assessment, Remada Ltd report ref: 769.01.03, issued in September 2025.
- Phase 2 Ground Investigation, Remada Ltd Report 769.02.03 issued in September 2025 (originally prepared for a proposed store extension but re-issued with current layout).
- Supplementary Intrusive Investigation, Remada Ltd Report 769.05.02 issued in September 2025 to address NRW comments with regard to groundwater and re-issued with current layout.
- Briton Ferry, Neath – Infiltration Testing. Remada Ltd Letter Report 769.07.01 issued 16th February 2023.
- Floor Slab Ferro Scan & Cores. Remada Ltd letter ref: 769.08.02 issued in April 2025.
- Remediation Strategy, Remada Ltd report ref: 769.09.02 re-issued with current layout and following preparation of report 769.10.01.
- Phase 1 Site Investigation & Preliminary Risk Assessment, Remada Ltd report ref: 769.10.01 issued in September 2025.

The following report was provided by the Client for review:

- Geo-Environmental Investigation Report Briton Ferry Road, Neath January 2016, Opus CC/J-B0756.00 (R01).

1.5 Regulatory Requirements

Remada contacted the Planning & Contaminated Land Consultant at Neath Port Talbot County Borough Council to propose a scope of supplementary ground investigation following demolition of the existing buildings. The officer consented the supplementary scope of investigations in an email dated 24th October 2024. The proposed scope of supplementary investigation is reproduced as **Figure 2**.

1.6 Limitations

The comments given in this report and the opinions expressed are based on the information reviewed and observations during site work. However, there may be conditions pertaining to the site that have not been disclosed by this assessment and therefore could not be taken into account.



2 BACKGROUND INFORMATION

2.1 Phase 1 Desk Study (Remada, 2025)

The Executive Summary and Conceptual Site Model presented within Remada's Phase 1 Desk Study are reproduced below. Remada's report included a review of Opus Ltd's Geo-Environmental Investigation Report from 2016, which in turn presented a review of an earlier report by Earth Science Partnership (2002):

Site Setting

The study site occupies an irregular (but very broadly triangular) plot to the west of A474 Briton Ferry Road. The site comprises three distinct areas, with a Lidl store present in the south-western area, a separate retail building previously occupied by 'Vitality Health & Fitness' and 'Poundstretcher' in the north-western area, and associated car parking occupying the eastern half of the site. Access to the study site is from School Road on the eastern boundary.

Site History

The earliest available mapping of 1878 and 1881 indicates it to be predominantly occupied by marshland. A railway line associated with the adjacent (off-site) Melin Crythan Works encroaches into the northern margins of the site in an arc. A 'Japan Works' encroaches into the south-western boundary of the site, extending off-site towards the south-west and expanding to occupy the southern half of the site by 1889. The Cryddan Brook bisects the central area of the site and would continue to do so until 1995, when it is no longer shown. By 1919 the railway sidings have expanded into the central area of the site, with rationalisation of these occurring by 1952. Buildings associated with the Melin Crythan Works / Tin Plate Works were constructed in the eastern area of the site in 1882, with the works complex being redeveloped between 1952 and 1958 when a new elongated building was constructed in the north-eastern margins of the site.

Between 1980 and 1987, the majority of the buildings in the southern area of the site are no longer shown, with only a north-west to south-east orientated elongate building still present parallel to Cryddan Brook and still labelled as 'Melyn Works'. A 'tank' of unspecified contents is indicated to be present encroaching into the eastern boundary of the site. By 1989, the majority of the buildings have been removed from the entire site, with only one small rectangular structure remaining adjacent to the eastern boundary. The area to the north of Cryddan Brook was labelled as a Coal Yard. The existing Lidl store building appears to have been constructed between 1993 and 1995, with its associated car park occupying the southern and eastern areas of the site. The Electricity Sub-Station adjacent to the eastern corner first appears in 1995, whilst the two now-defunct retail units in the north-western quadrant appear between the mapping of 1999 and Opus' investigation on-site in 2016.

Geology / Hydrogeology

Published geological maps record that the site is underlain by undivided deposits of Landscaped Ground and superficial Tidal Flat Deposits; the latter being designated as Secondary A and Secondary Undifferentiated Aquifers. The bedrock directly underlying the site is formed of the Hughes Member, for which the parent unit is the Pennant Sandstone Formation and designated as a Secondary A Aquifer.

Information obtained during Opus' intrusive investigation in the northern area of the site in 2016 recorded granular Made Ground to a maximum depth of 4.7m bgl, underlain by very soft grey CLAY. Historic BGS trial pit records in the eastern and north-eastern area of the site dating from 1994 recorded Made Ground to a maximum depth of 2.0m bgl, underlain by very clayey fine SAND to the base of a pit at 3.0m bgl.

Mining

The site is located within an area which 'might be' affected by coal mining activity and is located within a Mining Remediation Authority designated Coal Mining Reporting Area, although it is not located within a Development High Risk Area. Consequently, it is recommended that Remada's previous Coal Mining Risk Assessment is updated to reflect the findings of this Phase 1 report.

Unexploded Ordnance (UXO) Risk

There is no indication of former military use from the desk study. Furthermore, the freely available Zetica UXO risk mapping indicates the site to be located within an area where the bomb risk is 'Low' due to WWII bombardment. This is defined by Zetica as an area having an indicated bombing density of 15 bombs per 1000 acres or less.

Radon

The site is located in both an Intermediate Probability Radon Area (3 to 5% of homes are estimated to be at or above



the Action Level) and a Higher Probability Radon Area (10 to 30% of homes are estimated to be at or above the Action Level). Consequently, full radon protection measures are necessary in the proposed new development.

Recommendations

Environmental

The desk study has identified a number of on-site and off-site potential sources of contamination that would require further investigation. The following is recommended:

- Investigation of the lateral and vertical extent of Made Ground/fill beneath the proposed store footprint.
- Collection of soil and groundwater samples from the areas identified above for contaminants of concern; and
- Ground gas monitoring.

In accordance with CIRIA C665 the monitoring period should comprise not less than four visits for a proposed commercial development and should cover the “worst case” scenario which would occur during falling atmospheric pressure and, in particular, weather conditions such as rainfall and frost.

Geotechnical

It is recommended that a ground investigation is undertaken to enable preliminary foundation design.

2.2 Coal Mining Risk Assessment (Remada, 2025)

The pertinent findings of Remada’s Coal Mining Risk Assessment (report Ref: 769.01.03, issued in September 2025) are reproduced below:

Published Geology

Published geological maps record that the site is underlain by undivided deposits of Landscaped Ground and superficial Tidal Flat Deposits; the latter being designated as Secondary A and Secondary Undifferentiated Aquifers. The bedrock directly underlying the site is formed of the Hughes Member, for which the parent unit is the Pennant Sandstone Formation and designated as a Secondary A Aquifer.

The BGS indicates that the Hughes Member bedrock comprises predominantly sandstone beneath the southern half of the site, and mudstone, siltstone and sandstone beneath the northern half. The BGS mapping indicates that the Westernmoor coal seam bisects the central area of the site, orientated north-west to south-east. The site is located less than 500m south-east from the North-East to South-West trending ‘Neath Disturbance’.

The Generalised Vertical Section (GVS) on the BGS Map Sheet 247 records the following succession of coal seams within the 265m thick Hughes Member within the area (i.e. east of the Neath Disturbance) as: Graigola, Coal, Westernmoor, Mountain Coal, Garlant and Wenallt Rider. Vertical separation between the Westernmoor and Mountain Coal is approximately 80m and the general strike and dip direction is between 12° to 15° to the north north-east.

Consultants Mining Report

The site is located within an area which ‘may be affected by coal mining activity’. The Coal Authority Consultants Mining Report for the site states that ‘no past mining recorded’ on-site and the risk from probable unrecorded shallow mining as ‘none’.

An adit is recorded approximately 75m to the south-east of the study site, adjacent to Walters Road (grid ref: 274725, 196378). The Mining Remediation Authority’s interactive mapping records this adit as bearing 143 degrees, which is away from the study site.

Recommendations

The assessment has not identified a potential for the site to be impacted by either shallow worked seams or shafts and no further investigation or action is recommended.

2.3 Phase 2 Ground Investigation 769.02.03, 2020 reissued September 2025

Scope of Works & Ground Conditions

The investigation comprised three (3 No.) cable tool boreholes and three (3 No.) trial pits to expose existing foundations. The investigation was undertaken on the 23rd and 24th July 2020.



Two of the hand dug trial pits HDTP2 and HDTP3 exposed a spread footing bearing on made ground at a depth 0.75m bgl and with an estimated approximate width of 1.5m. HDTP1 exposed concrete that extended beyond the maximum excavation depth of 1.3m but stepped out only 0.1m indicative of a pile cap.

Made Ground comprised asphalt surfacing to a depth of 0.1m overlying sub-base to 0.4m in turn overlying a medium dense gravelly ashy fine to medium sand, gravel is wood, brick, coal and fragments of concrete. Superficial deposits were observed as soft to firm sandy or silty clay at a depth of between 2.6 and 3.0m.

Beneath the made ground soft to firm, occasionally sandy, silty clay was encountered to depths of between 3.45 and 5.0m bgl. In borehole BH1-B a slight organic odour was noted. The clay has been interpreted as Tidal Flat Deposits, as indicated to be present on the BGS map.

Beneath the Tidal Flat Deposits dense becoming very dense slightly sandy predominantly angular to subangular fine to coarse gravel comprising mudstone and shale. While the gravel was predominantly angular to subangular, the gravel was also noted to be rounded within BH1-B. There are two potential interpretations for this material: Glaciofluvial Deposits, or weathered bedrock. Given that the materials encountered comprised predominantly angular or subangular mudstone and shale it is considered that this material is more likely to represent a zone of weathered bedrock.

Groundwater Analyses

Water samples were recovered from Remada's BH1-B and BH2 and Opus's WS4 on 21st March 2022. Dedicated bailers were used for each monitoring well to prevent cross-contamination.

The average concentration of Dissolved Organic Carbon (DOC) and pH were 75 ug/l and 7.7 respectively. Detectable concentrations of metals were identified in all three samples, although the concentrations of beryllium, cadmium, mercury, lead and Chromium (III and VI) were recorded below the laboratory method detection limit (MDL).

The concentrations of Total Petroleum Hydrocarbon (TPH) were recorded below the MDL in all three samples analysed.

The concentrations of Polyaromatic Hydrocarbons (PAH-16) were recorded below the MDL in all three samples analysed.

Human Health Assessment

The results of soil chemical analysis were compared to Human Health Generic Assessment Criteria for commercial land use. None of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers.

Water Resources Assessment

The site is not indicated to be within a Groundwater Source Protection Zone. The superficial Tidal Flat Deposits underlying the site are designated as Secondary Undifferentiated Aquifers, where it is not possible to designate it as 'A' or 'B'. The Hughes Member bedrock underlaying the site is designated as a Secondary 'A' Aquifer.

The results of the soil chemical analysis undertaken has identified that concentrations of metals and inorganic contaminants are within the range that would be expected for 'typical' made ground. Detectable concentrations of TPH and PAHs were encountered in some samples. However, the contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site.

The groundwater was encountered at depths of between 1.66m and 3.6m bgl within Remada's standpipes in the southern area of the site during the 2020 monitoring programme. During Opus' investigation in the northern area of the site in December 2015, groundwater was encountered in their borehole WS3 at a depth of 1.9m bgl. Standing groundwater levels recorded in the monitoring wells in WS3 and WS4A in December 2015 were 2.52m and 2.0m bgl respectively.

Post-development, the site will continue to be predominantly covered by a retail building and areas of hardstanding. Consequently, the risk of leaching of contaminants as a result of infiltration of groundwater is

limited. Therefore, the risk to controlled waters from contaminants within the made ground at the site is considered to be low and does not warrant further consideration at this stage.

Geotechnical Assessment

The Coal Mining Risk Assessment, Remada 769.01.03 did not identify a potential for unrecorded shallow worked seams to be present beneath the site. All three cable tool boreholes proved the full depth of made ground and encountered a soft to firm CLAY to a maximum depth of 5.5m in BH2. The results of undrained shear strength tests on U100 samples produced C_u values of 17 to 34kPa for the CLAY. All three boreholes refused in a gravel/shale of mudstone at between 4.5 and 6m bgl. Groundwater monitoring has recorded that all wells were dry.

In order to prevent differential settlement between the existing store and proposed extension all foundations should bear on the same strata. The made ground and underlying soft to firm slightly organic clay would produce unacceptable amounts of total and differentials settlement and consequently piled foundations are required.

Either ground improvement in the form of vibro concrete columns or piled foundations are considered necessary to transfer foundation loads to a suitable bearing layer. Concrete columns would require a depth in the order of 6m and advice should be sought from a specialist ground improvement contractor. Driven piles are unlikely to be acceptable due to vibration of the existing store and therefore either bored or CFA piles should be considered, however it may not be possible to socket CFA piles into the bedrock. Bored piles would require casing through made ground and alluvium and be socketed into the competent bearing strata in order to transfer loads. Rapid excavation of the pile sockets in weak rock is recommended to minimise the potential for deterioration in the walls which could result in the swelling of the mudstone. After formation, the pile should be concreted immediately, preferably on the same day.

Floor slabs should be suspended and bearing on the piled foundations.

A Design Sulphate Class DS-2 is considered appropriate for buried concrete and an ACEC Class of AC-1s is considered appropriate for the location.

Ground Gas

The results of four rounds of gas monitoring visits placed the site into Characteristic Situation 2 and therefore ground gas protection measures will be required within the proposed buildings.

The site is located in both an Intermediate Probability Radon Area (3 to 5% of homes are estimated to be at or above the Action Level) and a Higher Probability Radon Area (10 to 30% of homes are estimated to be at or above the Action Level). Consequently, full radon protection measures are necessary in the proposed new development.



Photo 1: View northwards of the southern façade of the existing Lidl store building in July 2020.



Photo 2: View westwards of the eastern façade of the existing Lidl store building in July 2020.



Photo 3: View south-westwards across the southern car park area in July 2020, with the off-site Esso Mile End fuel filling station beyond.

(*) NOTE: At the time of the investigation, the existing store was to be extended.

2.4 Supplementary Intrusive Investigation 2022, reissued 2025

The pertinent findings of Remada's Supplementary Intrusive Investigation report are reproduced below:

Intrusive Investigation

A supplementary intrusive investigation was designed and implemented by Remada Ltd, in order to increase coverage within the proposed building footprint and to further investigate the risk to controlled waters in response to Natural Resources Wales letter reference CAS-181089-F7D7. Three window sample boreholes (WS201 – WS203) were advanced to a target depth of 6.0m bgl within the Lidl store area on 24th August 2022. Access was not possible into the existing Poundstretcher (northern) area on the day of the intrusive investigation.

The findings of the supplementary investigation generally confirmed the findings of Remada's previous intrusive investigation in 2020, with a variable thickness of made ground being encountered overlying superficial Tidal Flat Deposits (a Secondary (Undifferentiated) Aquifer). SPT N-values >50 were recorded at depths of between 4.0m and 6.0m bgl, interpreted as being the top of the Hughes Member bedrock (a Secondary A Aquifer).

Human Health Assessment

The results of soil chemical analysis were compared to Human Health Generic Assessment Criteria for commercial land use. None of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers.

Water Resources Assessment

The concentrations of contaminants with groundwater and surface water sampled from have been compared with the Water Framework Directive Regulations 2015 Schedule 3 General Quality of Groundwater as an applicable Environmental Quality Standards (EQS) for Secondary Aquifers. The AA-EQS level has been adopted.

Elevated concentrations of benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(g,h,i)perylene were detected in exceedance of the respective EQS within all three groundwater samples analyses. The concentrations of fluoranthene recorded in WS201 and WS203 were recorded in exceedance of the EQS, whilst an exceedance for dissolved mercury was detected in WS202. Benzene has been used as a proxy for the comparison of solubility of Total Petroleum Hydrocarbons (TPH).

Within the surface water samples, the downstream sample recorded an elevated concentration of benzo(g,h,i)perylene, although this 0.01 µg/l value was also at the laboratory's limit of detection.

Cryddan Brook flows from east to west proximal to the northern boundary of the site, and whilst the invert level is unknown, it is located circa 2.0m below the adjacent roadway (i.e. approx. 5.5m AOD). The standing water levels recorded with three monitoring wells during Remada's supplementary investigation ranged between 5.48m AOD (WS202) and 4.10m AOD (WS203). Consequently, this indicates that the groundwater level underlying the site is on par with the brook's level and that a potential pathway exists between the two.



The results of the soil chemical analysis undertaken has identified that concentrations of metals and inorganic contaminants are within the range that would be expected for 'typical' made ground i.e, soil contaminants are not greater than respective GAC. Detectable concentrations of TPH and PAHs were encountered in some samples. However, the contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site.

The results of the groundwater chemical analysis have identified detectable concentrations of some dissolved metals, TPH and PAHs within the three most recent samples (from WS201 – WS203). Localised exceedances of the respective EQS for fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(g,h,i)perylene and dissolved mercury were recorded in exceedance of the respective EQS.

The results of the surface water chemical analysis upstream and downstream have also identified detectable concentrations of dissolved metals, TPH and PAH. However, no concentrations were identified above the MDL (the benzo(ghi)perylene concentration in the downstream sample being detected at the MDL).

Post-development, the site will continue to be predominantly covered by a retail building and areas of hardstanding. Consequently, the risk of leaching of contaminants as a result of infiltration of groundwater is limited. Therefore, the risk to controlled waters from contaminants within the made ground at the site is considered to be low and does not warrant further consideration at this stage.

Waste Classification

In general, the results of the chemical analyses indicate that the material would be classified as non-hazardous waste. While Waste Acceptance Criteria (WAC) analysis has not been undertaken, three of the four samples selected for analysis exceeded this TOC limit for disposal in an inert landfill. Therefore, it is considered that the waste should be classified as non-hazardous. WAC testing is not required for disposal of non-hazardous waste to landfill.

Geotechnical Assessment

Remada's previous intrusive investigation in 2020 concluded that all foundations should bear on the same strata, in order to prevent differential settlement. Either ground improvement in the form of vibro concrete columns or piled foundations are considered necessary to transfer foundation loads to a suitable bearing layer. Floor slabs should be suspended and bearing on the piled foundations.

The window sampling undertaken by Remada in 2022 has identified similar ground conditions of made ground and organic superficial deposits, with suspected bedrock encountered between 4.0m and 6.0m bgl. Consequently, the supplementary intrusive investigation supports the foundation recommendations provided within Remada's previous report (ref: 769.02.02 dated March 2022).

The results of the BRE SD1 testing from 2020 and 2022 have been combined, in order to provide a more accurate review of the concrete classification requirements for the site. In accordance with BRE SD1 for buried concrete in a brownfield site with static groundwater, characteristic values for water soluble sulphate and pH have been taken as 440mg/l and 7.3 respectively, whilst the mean of the highest two calculated Total Potential Sulphate (3x Total Sulphur) is 1.92%.

Therefore, a Design Sulphate Class DS-4 is considered appropriate for buried concrete and an ACEC Class of AC-3s is considered appropriate for the location. This is an increase from DS-2 and AC-1s previously reported by Remada and is due to the elevated Total Potential Sulphate concentrations identified within the underlying soils. Further soil sampling and BRE SD1 analysis may be able to reduce this classification.

2.5 Infiltration Testing, 769.07.01, 2023

Remada was appointed by Lidl Great Britain Ltd to undertake borehole infiltration testing:

The results of Remada's falling head testing within boreholes WS201 – WS203 on 8th February 2023 are presented in the table below, whilst the calculation sheets are appended.

Location	Standpipe Depth (m bgl)	Initial Groundwater Level (m bgl)	Test No.	Test Duration (mins)	Calculated Infiltration Rate
WS201	5.00	1.85	01	05	7.68×10^{-7} m/s
			02	05	1.28×10^{-6} m/s
			03	04	9.60×10^{-7} m/s
			04	05	9.60×10^{-7} m/s
WS202	4.00	1.90	01	01	7.35×10^{-6} m/s
			02	01	7.35×10^{-6} m/s
			03	01	7.35×10^{-6} m/s
			04	01	7.35×10^{-6} m/s
WS203	4.00	1.80	01	0.25	2.73×10^{-5} m/s
			02	0.25	2.73×10^{-5} m/s
			03	02	3.41×10^{-6} m/s
			04	02 ☒	3.41×10^{-6} m/s

tel:03%2002%2004%2002

2.6 Floor Slab Ferro Scan & Cores, 769.08.02, 2025

The pertinent findings of Remada's letter report are reproduced below:

Lidl

Core Nos 1 & 2 were taken from the existing Lidl floor slab. The concrete slab has a thickness of approximately 240mm overlain with a 60mm of screed and tile flooring. Two layers of rebar were present within the cores from the concrete floor slab with a diameter of approximately 20mm (lower layer).

Scan images GPR3012 to GPR 3022 revealed that the rebar is present throughout the floor slab with a greater spacing on the lower layer. The rebar also appears to be denser in specific locations which may be indicative of pile caps.

Gym

Cores Nos 3 & 4 were taken from the existing Gym floor slab. The concrete slab has a thickness of approximately 170mm overlain with 20mm of flooring. Two layers of rebar were present within the cores from concrete floor slab with a diameter of approximately 8 to 10mm.

Scan images GPR3024 to GPR 3022 revealed that one layer of rebar is present throughout the floor slab.

2.7 Remediation Strategy 769.09.02 2025, re-issued 2025 following Phase 1

The Remediation Strategy Reviews the above reports and presents requirements for demolition, waste management, ground gas and radon protection, landscape soil thicknesses and quality.

2.8 Site Walkover 2026

Photos below were taken during the post-demolition supplementary ground investigation on 15th January 2026.



Photo 4: View south-westwards across the northern half of the site in the area of the proposed car park.



Photo 5: View approximately southwards along the eastern boundary, in the direction of the proposed new store.



Potential Source Areas	Potential Contaminant of Concern	Pathways	Potential Receptor	Exposure Route (Human unless otherwise stated)	Potential Identified Linkage (unmitigated)	Findings of Ground investigation	Risk (Unmitigated)	Proposed Remediation (Mitigation) Measures	Residual Risk Estimation
On-site Sources									
- Marshland - Japan Works - Melin Crythan Works / Tinplate Works / Melyn Works (Sheet & Tinplate) - Railway lines and sidings - Unspecified tank. - Coal Yard - Infilled / culverted Cryddan Brook - Lidl store, former retail units and associated car park. - Electricity Sub-station	Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH, VOCs and SVOCs.	Disturbance due to construction plant causing direct contact, dusts, vapours.	Occupants of the development / building fabric	Direct Soil Ingestion	No	N/A	N/A	N/A	N/A
				Indoor Dust ingestion	Yes	To be assessed (TBA)	Potential risk	To be assessed (TBA)	To be assessed (TBA)
				Skin Contact with Soils	Yes	As above	Potential risk	TBA	TBA
				Skin Contact with Dust	Yes	As above	Potential risk	TBA	TBA
		Direct Contact with occupants of the proposed development	Adjacent residents during construction	Inhalation of Outdoor Dust	Yes	As above	Potential risk	TBA	TBA
				Ingestion of home grown produce	No	Commercial development devoid of gardens	None	N/A	None
		Inhalation of fibres / vapours / gases by occupants of proposed development		Inhalation of Outdoor Vapours	Yes	As above	Potential risk	TBA	TBA
				Inhalation of Indoor Vapours	Yes	As above	Potential risk	TBA	TBA
				Inhalation of ground gas	Yes	As above	Potential risk	TBA	TBA
				Inhalation of radon gas	Yes	Intermediate & Higher Probability Areas	Moderate risk	Full radon protection measures in new buildings	Low
		Permeation of water supply pipework		Ingestion via permeated water supply pipework	Yes	TBA	Potential risk	TBA	TBA
				Direct contact with Secondary (A & Undifferentiated) Aquifers in Superficial Deposits supplying Cryddan Brook	Yes	As above	Potential risk	TBA	TBA
Off-site Sources									
- Residential properties - Tramway - Smithy - Coal Yard - Various Works - Railway line & sidinga - Fuel Filling Station		Leachate	Secondary (A) & (Undifferentiated) Aquifers	In-direct contact with Secondary (A) Aquifer in bedrock	Yes	As above	Potential risk	TBA	TBA

Table 1: Outline Conceptual Site Model

Direct contact with subsurface soil and/or groundwater during redevelopment works are not assessed as part of the CSM. It is considered that risks to workers will be managed as part of any the redevelopment works at the site through the application of health and safety procedures, where required.



3 ENVIRONMENTAL & GEOTECHNICAL INVESTIGATION METHODOLOGY

3.1 Investigation Strategy

At the time of Remada's initial intrusive investigation, the proposed development incorporated an extension of the existing Lidl store to the south-west, south and east. Three (3 No) cable percussive holes were proposed to a depth of 10m or refusal, targeting the proposed expanded store footprint. Three (3 No) hand excavated inspection pits were conducted along the southern and eastern exterior walls of the existing store to ascertain its foundation design.

The investigation was undertaken on 23rd and 24th July 2020 at the locations indicated on **Figure 2**. Four (4 No) ground gas monitoring visits were scheduled for the site in general accordance with the guidance provided by C665 and BS8576:2013.

However, since the completion of Remada's investigation, the proposed layout of the site has been modified which has resulted in the updating of this Phase 2 Ground Investigation Report. The proposed development at the time of writing in March 2022 is for *'demolition of existing buildings [Lidl store and adjacent Poundstretcher store] and replacement with a Class A1 foodstore with associated carparking, landscaping, engineering and drainage works'*. The position of Remada's exploratory holes and the previous Opus window sample boreholes in relation to the proposed new layout is indicated on **Figure 2**.

This supplementary investigation was carried out on 15th January 2026 when the two former buildings had been demolished. Three (3 No) window sample boreholes were drilled to 4.0m bgl or refusal and ten (10 No) trial pits were excavated across the site to obtain samples for chemical analysis.

All exploratory holes were logged by a suitably qualified Geo-environmental Engineer in general accordance with the recommendations of BS5930:2015+A1:2020. Detailed descriptions, together with relevant comments, are given in the **Exploratory Hole Logs**.

3.2 Buried Service Clearance

Buried service plans were reviewed prior to any fieldwork activities commencing. The Client provided Remada with EDI Survey Ltd's Topographic and Services Survey drawing No. 14433/T/01-02 Rev A, dated November 2015, in advance of the intrusive works.

During the subsequent intrusive works, a visual check and buried services survey using a Cable Avoidance Tool (CAT) and Signal Generator (Genny) was carried out at each exploratory hole location.

3.3 Intrusive Investigation

3.3.1 Cable Percussive Boreholes

Three cable percussive boreholes (BH1, BH2 and BH3) were advanced to a target depth of 10m below existing ground level (bgl). However, suspected concrete obstructions were encountered within two of the cable percussive borehole positions; in BH1 below 1.4m bgl and in BH3 at 1.2m bgl, resulting in their relocation as BH1B and BH3-B.

Combined Groundwater and Ground Gas monitoring standpipes were installed in BH1-B, BH2 and BH3-B.

Standard Penetration Tests (SPTs) in the cable percussive boreholes were carried out at regular intervals as recorded on the borehole logs to assess the relative density and consistency of soils. SPTs were conducted in accordance with BS EN ISO 22476-3 and the recorded SPT N-values are summarised on the borehole logs.

3.3.2 Hand-Excavated Inspection Pits

Three (3 No.) inspection pits (HOTP1 – HOTP3) were excavated alongside the existing Lidl store's exterior walls on 23rd July 2020, in order to examine the design and composition of the foundations. On completion of these pits, the materials were replaced in approximately the same order as they were excavated, compacted by hand and hardstanding reinstated.



3.3.3 Window Sample Boreholes

Three window sample boreholes (WS1 to WS3) were advanced to determine the thickness of Made Ground and penetrate local groundwater levels with monitoring wells proposed for each hole.

Due to shallow refusals within WS2 and WS3, a groundwater monitoring standpipe was installed in WS1 only. WS2 and WS3 were attempted multiple times each, encountering refusals within Made Ground.

3.3.4 Trial Pits

Ten (10 No.) trial pits (TP1 – TP10) were excavated beneath the site on 15th January 2026 to a maximum depth of 1.3m bgl, in order to obtain soils for chemical analysis. On completion of these pits, the materials were replaced in approximately the same order as they were excavated and mechanically compacted with the excavator.

3.4 In-Situ Testing

3.4.1 Standard Penetration Tests

Standard Penetration Tests (SPTs) in the cable percussive boreholes were carried out at regular intervals as recorded on the borehole logs to assess the relative density and consistency of soils.

SPTs were conducted in accordance with BS EN ISO 22476-3 and the recorded SPT N-values are summarised on the borehole logs.

The SPT N-values have been corrected based on the Energy Ratio of 87% for the SPT hammer on the window sampling rig. The SPT Hammer Energy Test Report, undertaken in accordance with BS EN ISO 22476-3:2005 is presented in **Appendix A**.

3.4.2 Hand Shear Vane

Hand shear vane tests were undertaken using an Impact SL810 and in general accordance with the manufacturer's instructions on selected samples of cohesive soils.

3.5 Soil Sampling

3.5.1 Environmental

Made Ground and natural soils were selected by visual and olfactory means for subsequent analysis. Samples for chemical laboratory testing purposes were collected in amber glass jars, amber glass vials and plastic tubs and retained in a cool box for transport to the laboratory.

3.5.2 Geotechnical

Geotechnical samples were collected at depths indicated on the cable percussive logs with samples retrieved either from within the cutters and/or casing during the borehole's advancement. The disturbed samples were placed in sealed and correctly labelled plastic tubs or bags as appropriate. All geotechnical samples were dispatched to the laboratory for testing with a completed chain of custody.

3.6 Gas & Groundwater

3.6.1 Installations

Combined ground gas and groundwater monitoring standpipes were installed in three of the cable percussive boreholes. The standpipes consisted of high-density polyethylene (HDPE) pipe. A bentonite seal was made around the plain pipe and a clean gravel pack was placed around the slotted pipe. Summaries of the installation construction are tabulated below:

Location and Depth	Internal Diameter Pipe	Response Zone (m bgl)	Targeted Strata
BH1-B – 4.7m bgl	50mm HDPE	1.0 – 4.7	Made Ground & Natural Strata
BH2 – 5.3m bgl	50mm HDPE	1.0 – 5.3	Made Ground & Natural Strata



Location and Depth	Internal Diameter Pipe	Response Zone (m bgl)	Targeted Strata
BH3-B – 6.0m bgl	50mm HDPE	1.0 – 6.0	Made Ground & Natural Strata

Table 2: Gas and Groundwater Monitoring Well Installation Details

A groundwater monitoring well was installed within the window sample borehole WS1. The standpipes consisted of high-density polyethylene (HDPE) pipe. A bentonite seal was made around the plain pipe and a clean gravel pack was placed around the slotted pipe. A summary of the installation construction is tabulated below:

Location and Depth	Internal Diameter Pipe	Response Zone (m bgl)	Targeted Strata
WS1 – 3.7m bgl	50mm HDPE	0.7 – 3.7	Made Ground & Natural Strata

Table 3: Groundwater Monitoring Well Installation Details

3.6.2 Monitoring

Ground gas monitoring was undertaken using a Geotech GA5000 gas analyser for the parameters reported below. Groundwater levels were measured with a GeoSense OWP30 oil water interface probe.

Permanent ground gas monitoring involved the measurement of the following in the prescribed order:

- Pressure difference between the monitoring well and the atmosphere,
- Peak and steady flow rates of gas into or out of the monitoring well;
- Peak and steady concentrations of carbon dioxide, methane, oxygen (minimum and steady recorded), carbon monoxide, hydrogen sulphide; and
- Depth to groundwater.

Four ground gas monitoring visits were undertaken as a minimum required for a commercial development in accordance with CIRIA C665. Ground gas concentrations were recorded on 29th July, 3rd August, 10th August and 17th August 2020 at BH1-B, BH2, BH3-B and the results are presented in **Table 4**.

3.6.3 Well Development

On 14th March 2022, all accessible Opus and Remada monitoring wells were developed to remove drilling fluids and sediment from the wells.

3.6.4 Well Purging

Prior to groundwater sampling, all wells were purged with a submersible pump. Purging continued until pH, temperature and conductivity values stabilised to silty material, deposits from the bottom of the well, stagnant oxidised water and to attract fresher groundwater from the aquifer into the well.

3.6.5 Well Sampling

Water samples were recovered from Remada's BH1-B and BH2 and Opus's WS4 on 21st March 2022. Dedicated bailers were used for each monitoring well to prevent cross-contamination.

Water samples were obtained from WS1 on 29th January 2026 using a low flow pump. Groundwater samples were collected in amber glass jars and amber glass vials and retained in a cool box for onwards transport to the laboratory. The low flow sampling test certificates are presented in **Appendix B**.



3.7 Quality Assurance and Quality Control

All samples were submitted to a United Kingdom Accredited Laboratory (UKAS) under a completed chain of custody. The laboratory carried out its own QA/QC programme to ensure that the quality of the analytical data conformed to the appropriate test method protocols.

3.8 Laboratory Analysis & Testing

3.8.1 Chemical Analysis – Soil

Three (3 No) soil samples were scheduled for the analysis of asbestos, arsenic, barium, beryllium, cadmium, chromium (III & VI), copper, mercury, nickel, lead, selenium, zinc, fraction of organic carbon, Total Petroleum Hydrocarbons (TPHCWG), Polyaromatic Hydrocarbons (PAH), BTEX compounds (benzene, toluene, ethylbenzene and xylene) and phenols.

In addition, one sample of bituminous surfacing was analysed for PAH compounds.

During the supplementary investigation, thirteen (13 No) soil samples were scheduled for chemical analysis.

The results of laboratory chemical analyses are presented at **Appendix C**.

3.8.2 Chemical Analysis - Groundwater

Three (3 No) groundwater samples were scheduled for the analysis of arsenic, barium, beryllium, cadmium, chromium (III & VI), copper, mercury, nickel, lead, selenium, zinc, cyanide, fraction of organic carbon, Total Petroleum Hydrocarbons (TPHCWG), Polyaromatic Hydrocarbons (PAH), BTEX compounds (benzene, toluene, ethylbenzene and xylene) and phenols.

During the supplementary ground investigation, three (3 No) groundwater samples were scheduled for analysis.

The results of laboratory chemical analyses are presented at **Appendix D**.

3.8.3 Geotechnical

Samples recovered from the boreholes were submitted to an accredited laboratory for the following tests in general accordance with BS1377:1990:

- Four (4 No) Natural Moisture Contents;
- Four (4 No) Plasticity Indices;
- Three (3 No) Particle Size Distribution tests;
- Three (3 No) Quick Undrained Triaxial Compression Tests; and
- Three (3 No) BRE SD1 suites.

The results of the geotechnical testing are presented at **Appendix E**.



4 GEOTECHNICAL & ENVIRONMENTAL INVESTIGATION FINDINGS

4.1 Ground Conditions

A brief description of the published geology is provided together with a summary of the ground conditions encountered during the intrusive investigation. Exploratory logs are presented at the end of the report.

4.1.1 Made Ground

Made Ground was encountered within all exploratory hole locations and extended to depths of between 2.6m and 3.0m bgl, where proven. The Made Ground comprised asphalt surfacing to a depth of 0.1m overlying sub-base to 0.4m in turn overlying a medium dense gravelly ashy fine to medium sand, gravel is wood, brick, coal and fragments of concrete.

During the supplementary investigation, Made Ground was encountered within all exploratory hole locations to a maximum proven depth of 2.2m bgl. In WS2 and WS3 the Made Ground was encountered to 1.0 and 1.5m bgl respectively but this was not fully penetrated with drilling refusal on buried obstructions. Within the trial pits, Made Ground was encountered to a maximum depth of 1.3m bgl and was not fully penetrated. The Made Ground comprised dark brown and locally black sandy locally clayey GRAVEL or very gravelly SAND. The gravel content comprised concrete, brick, plastic, rebar, wood, metal, glass, rubber and pipe with occasional cobbles and rare boulders of concrete.

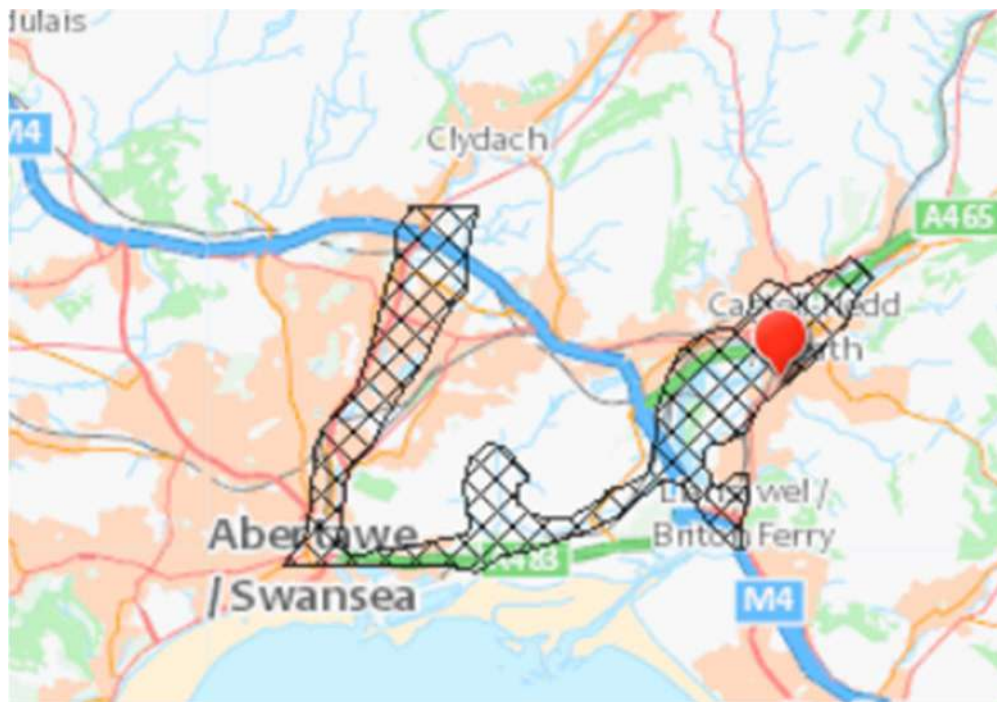
4.1.2 Natural Deposits

Beneath the Made Ground soft to firm, occasionally sandy, silty CLAY was encountered to depths of between 3.45 and 5.0m bgl. In borehole BH1-B a slight organic odour was noted. The clay has been interpreted as Tidal Flat Deposits, as indicated to be present on the BGS map.

Beneath the Tidal Flat Deposits dense becoming very dense slightly sandy predominantly angular to subangular fine to coarse GRAVEL comprising mudstone and shale. While the gravel was predominantly angular to subangular, the gravel was also noted to be rounded within BH1-B. There are two potential interpretations for this material: Glaciofluvial Deposits, or weathered bedrock.

During the supplementary investigation, natural deposits were encountered within WS1 from 2.2m bgl as firm to stiff grey CLAY to 4.0m bgl.

The information contained on the BGS website was further reviewed in order to provide an interpretation. The BGS Geotindex indicated that the site was located on the margins of a buried channel as indicated below:



Further information was provided on the 1:50,000 Scale map sheet 247 'Swansea', Bedrock and Superficial Edition, 2011. A plot of the thickness of superficial indicated that beneath the site the superficial deposits were likely to be in the order of 5 to 10m deep. In addition, a schematic cross section indicated that Glaciofluvial Sheet Deposits (sand and gravel) or Glaciolacustrine Deposits (silt and clay) could be present within the buried channel.

Given that the materials encountered comprised predominantly angular or subangular mudstone and shale it is considered that this material is more likely to represent a zone of weathered bedrock. It is considered that if the material had been moved then other material types would be present alongside the presence of mudstone and shale. The site is indicated to lie on the margins of the buried channel with the anticipated thickness of superficial deposits being in the order of 5 to 10m. The Alluvium was found to extend to depths of 3.45 and 5.0m, which is slightly less than predicted but not significant enough to cast doubt on the interpretation.

4.1.3 Existing Foundations

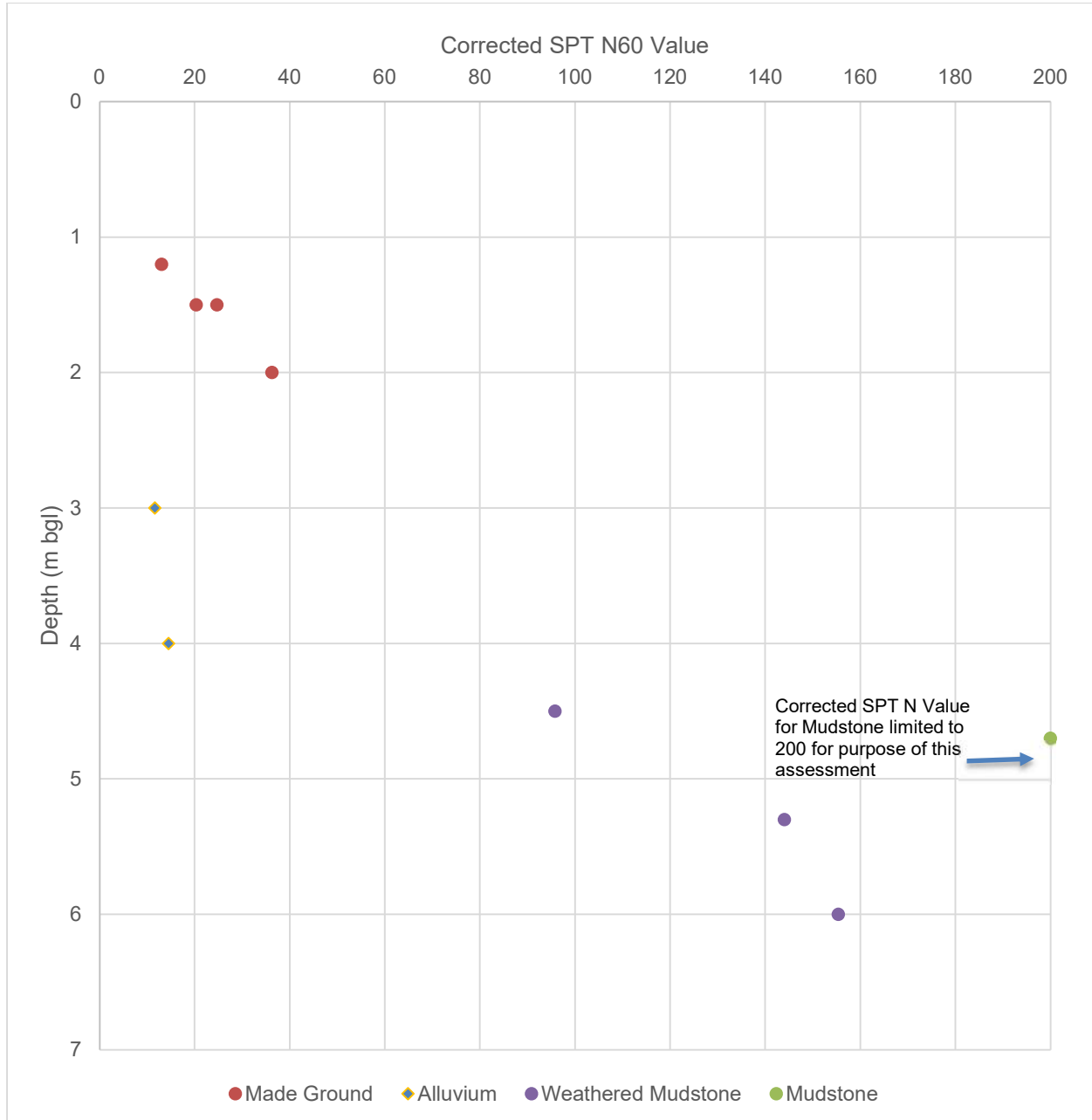
Three trial pits (HDTP1 – HDTP3) were excavated by hand against the existing Lidl store building to depths of between 1.2m and 1.3m bgl on 23rd July 2020. The ground conditions logs are presented at the rear of this report.

- Within trial pit HDTP1, brickwork extended down below ground level to 0.15m bgl. The face of the wall then stepped out 0.075m onto a concrete wall (likely pile cap), which extended down to a concrete footing at 0.18m bgl. The concrete stepped out 0.085m and was chased down to the base of the pit at 1.3m bgl, where it was still present.
- Within trial pit HDTP2, brickwork extended down below ground level to 0.15m bgl. The face of the wall then stepped out 0.29m on a concrete foundation, which extended down to 0.19m bgl. The concrete then stepped out a further 0.09m, before extending down to 0.68m bgl. A bulbous protrusion of this concrete was noted between 0.68m and 0.75m, stepping out a maximum of 0.18m. The entire foundation appeared to be bearing on Made Ground (light brown slightly gravelly coarse sand with moderate cobble content)
- Within trial pit HDTP3, brickwork extended down below ground level to 0.17m bgl. The face of the wall then stepped out by 0.49m onto concrete, which extended down to 0.21m bgl. This concrete was underlain by blockwork to a basal depth of 0.61m bgl, which had stepped out by 0.09m. A bulbous protrusion of this concrete was noted between 0.61m and 0.75m, stepping out a maximum of 0.18m. The entire foundation appeared to be bearing on Made Ground (dark grey gravelly sand).

4.2 In-situ Testing

4.2.1 Standard Penetration Tests (SPTs)

In-situ SPTs were undertaken to assist with the interpretation of strata encountered. The results of corrected N-values versus depth are plotted in the graph below:



Graph 1: Plot of Corrected SPT N-Values Versus Depth

4.2.2 Hand Shear Vane

It was not possible to achieve any successful field vane readings from recovered cohesive deposits during the intrusive investigation.

4.3 Soil Observations

Made Ground was recovered at all locations as a heterogeneous granular material containing a variety of materials including brick, concrete and ash.



There were no visible indicators of contamination including asbestos within the sampled soils.

4.4 Groundwater Observations

Groundwater was not observed in any of the trial holes or boreholes during Remada's initial intrusive investigation.

During the subsequent monitoring programme, groundwater was recorded within all three monitoring standpipes as summarised in **Table 5** below:

Location	Groundwater Level in Standpipe (m AOD)				
	1st Monitoring Visit	2nd Monitoring Visit	3rd Monitoring Visit	4th Monitoring Visit	Average
BH1-B	5.08	5.02	5.02	4.79	4.98
BH2	5.09	5.12	4.92	4.72	4.96
BH3-B	4.18	3.73	3.72	3.63	3.82

Table 5: Groundwater Levels during Monitoring Programme

During the supplementary ground investigation, groundwater was encountered within WS1 only, at 2.2m bgl, and during the subsequent groundwater monitoring at 1.88m bgl.

4.5 Chemical Analysis

4.5.1 Soils

Results of Remada's soil chemical analysis are presented in **Table 6** at the end of the report and full laboratory certificates are presented in **Appendix C**. Results of the chemical analyses are summarised as follows.

The average FOC and pH were 0.037 and 9.6 respectively. Asbestos was detected in the Made Ground sample from HDTP3 between 0.6 – 0.7m bgl, recorded as comprising chrysotile cement fibres/clumps with a total asbestos content of 0.005%.

During the supplementary investigation, the average FOC and pH were 0.027 and 10.9 respectively. Asbestos was detected in the Made Ground from four of the thirteen samples at TP1, TP2, TP3 and TP9. Loose fibres and debris of chrysotile was encountered with a concentration between <0.001 and 0.001%.

Detectable concentrations of metals were identified, although these are generally within the range that would typically be expected for Made Ground.

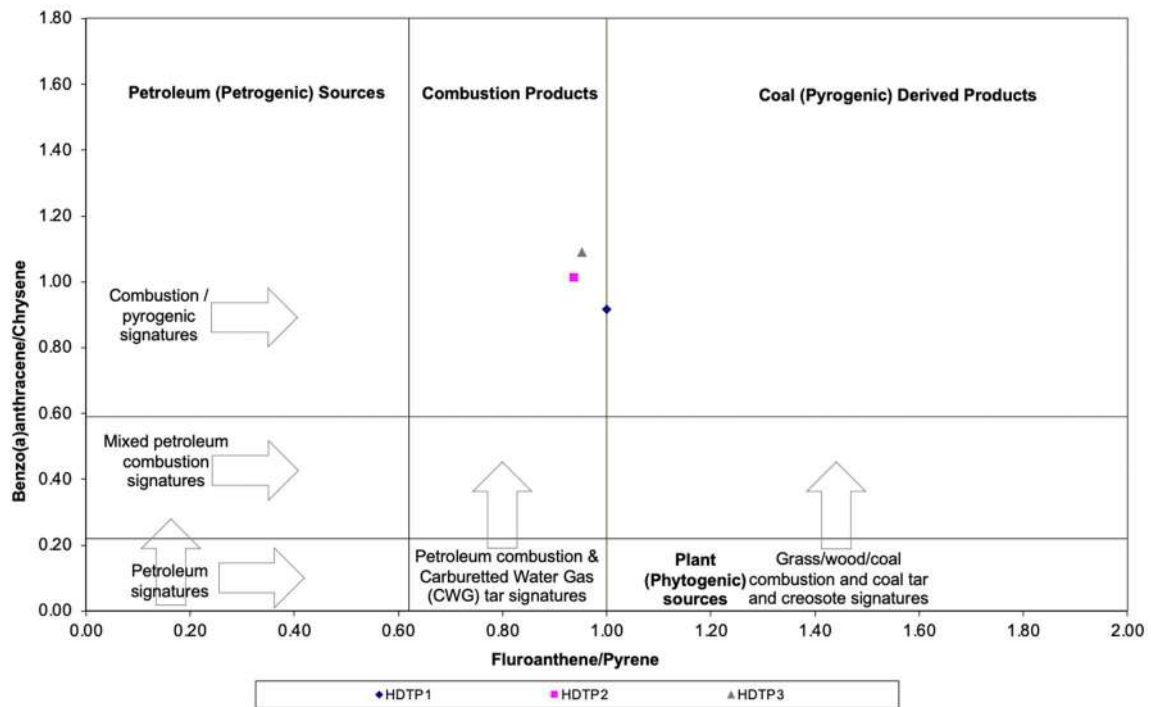
Concentrations of TPH were detected above method detection limit (MDL) in all three of the samples analysed (from HDTP1 – HDTP3). The hydrocarbons were generally heavy end within the aliphatic C16 to C35 carbon range. The maximum total petroleum hydrocarbons recorded was 450mg/kg within the sample from HDTP1 at 0.5m bgl. No BTEX compounds were identified above the MDL.

During the 2026 sampling, TPH concentrations were detected above the MDL in 11 of the 13 samples analysed. These hydrocarbons were generally heavy end within the aliphatic and aromatic C16 to C35 carbon range, however, minimal amounts of C10 to C16 were also encountered.

Concentrations of PAHs were detected above the MDL in all three of the samples analysed. The maximum concentration of 130mg/kg was encountered in both the sample from HDTP1 at 0.5m and from HDTP3 at 0.6 – 0.7m bgl.

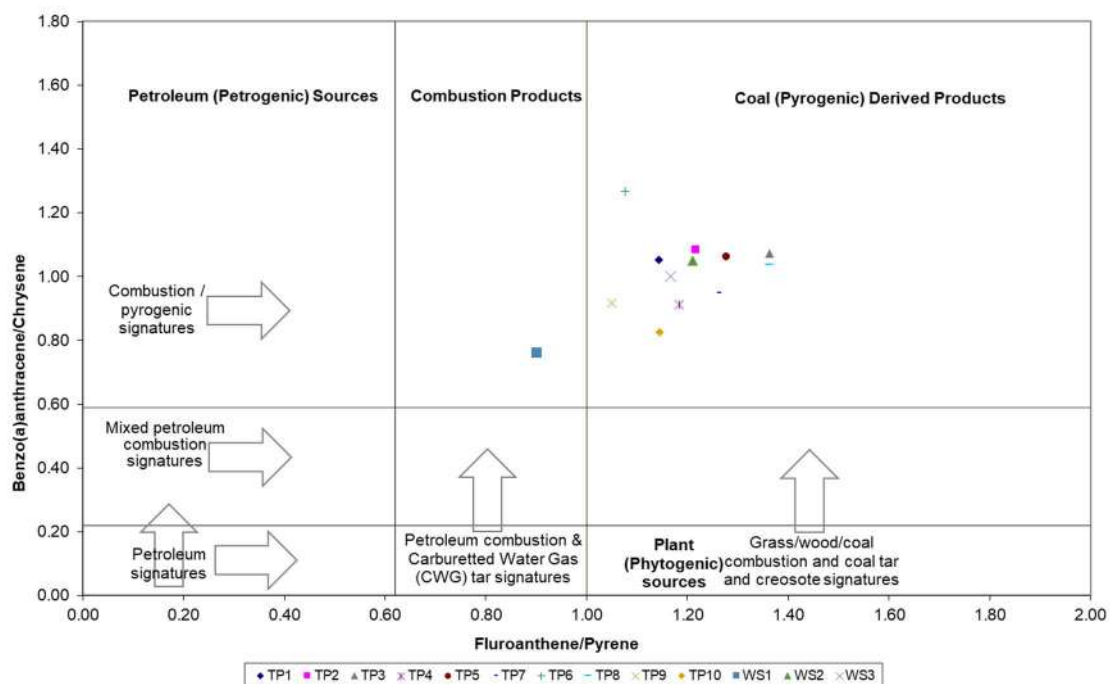
During the supplementary investigation concentrations of PAH were detected above MDL in all samples analysed. The maximum sum concentration of 1090 mg/kg was encountered in TP9 at 0.3m bgl. This trial pit was located close to the site entrance within the car park.

In addition, the PAH concentrations have been plotted on a double ratio plot to provide an indication of the likely source of the PAHs. All of the samples that had detections of the four PAHs used have been plotted and all are indicated to be combustion / pyrogenic related PAHs as shown in **Graph 2**.



Graph 2: PAH Double Ratio Plot

During the post-demolition supplementary investigation, the samples were generally considered to be pyrogenic derived PAH, as shown in **Graph 3**.



Graph 3: PAH Double Ratio Plot (2026)

4.5.2 Groundwater

Results of the groundwater chemical analysis are presented in **Table 7** at the end of the report and full laboratory certificates are presented in **Appendix D**. Results of the chemical analyses are summarised as follows.

The average concentration of Dissolved Organic Carbon (DOC) and pH were 75 µg/l and 7.7 respectively. Detectable concentrations of metals were identified in all five samples, although the concentrations of beryllium, cadmium, mercury, lead and Chromium (III and VI) were recorded below the laboratory method detection limit (MDL).

The concentrations of Total Petroleum Hydrocarbon (TPH) were recorded below the MDL in all three samples analysed.

The concentrations of Polyaromatic Hydrocarbons (PAH-16) were recorded below the MDL in all three samples analysed.

During the supplementary investigation, the average DOC and pH were 2 µg/l and 7.8 respectively. Detectable concentrations of metals were identified in all samples analysed, although concentrations of Chromium (III and VI) were recorded below the laboratory MDL.

The concentrations of Total Petroleum Hydrocarbon (TPH) were recorded below the MDL in all three samples analysed.

The concentrations of Polyaromatic Hydrocarbons (PAH-16) were recorded below the MDL in WS1 and were above the MDL for MP1 and MP2. MP2 detected Phenanthrene at 0.002 µg/l whilst MP1 recorded values for hydrocarbons: Acenaphthene, Fluorene, Phenanthrene, Fluoranthene, Pyrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[k]fluoranthene and Benzo[a]pyrene. Benzo[b]fluoranthene and Benzo[k]fluoranthene were recorded at levels above the Water Framework Directive Regulations 2015 thresholds.

4.6 Geotechnical Testing

Results of the geotechnical testing are summarised below and presented in **Appendix E**.

4.6.1 Plasticity Testing

Plasticity testing was undertaken on four (4 No.) samples of cohesive soils recovered from the window sample boreholes, with the results ranging between 35% and 39%. These indicate the soils to be of high (CH) plasticity, and medium volume change potential as summarised in **Table 8** below:

Location	Depth (m)	Plasticity Index (%)	Passing .425mm (%)	Modified Plasticity Index	Volume Change Potential
BH1-B	3.0 – 3.45	37	81	30.0	Medium
BH2	3.0 – 3.45	35	82	28.7	Medium
BH3-B	3.0 – 3.45	39	100	39.0	Medium
BH3-B	5.0 – 5.45	35	100	35.0	Medium

Table 8: Plasticity Indices and Volume Change Potentials of the Cohesive Strata

4.6.2 Particle Size Distribution (PSD) Analysis

The PSD tests revealed the following:

- Made Ground deposits in BH1B at 0.1 – 0.4m bgl comprised 'grey slightly clayey/silty, slightly sandy fine to coarse GRAVEL'.
- Natural deposits in BH3-B at 5.5 – 5.8m bgl comprised 'grey slightly clayey/silty sandy fine to coarse GRAVEL'.
- Made Ground deposits in HDTP3 at 0.4 – 0.8m bgl comprised 'dark brown slightly clayey/silty sandy fine to coarse GRAVEL'.



4.6.3 BRE SD1 Analysis

The aqueous extract sulphate contents varied from 0.03 and 0.04 g/l in the three soil samples analysed with pH varying from 7.32 to 7.86. The total sulphur content varied from 0.09 to 0.11% and acid soluble sulphate varied from 0.21 to 0.27%.

4.6.4 Undrained Shear Strength

The results of undrained shear strength tests on undisturbed U100 samples from the cable percussive boreholes were submitted for quick undrained triaxial testing for comparison with hand shear vane tests and produced the following:

- Natural deposits in BH1-B at 3.0 – 3.45m recorded undrained shear strengths of 25, 37 and 44kPa for corresponding cell pressures of 60, 120 and 240kPa.
- Natural deposits in BH3-B at 3.0 – 3.45m recorded undrained shear strengths of 27, 33 and 49kPa for corresponding cell pressures of 60, 120 and 240kPa.
- Natural deposits in BH3-B at 5.0 – 5.45m recorded undrained shear strengths of 42, 51 and 63kPa for corresponding cell pressures of 100, 200 and 400kPa.

4.7 Ground Gas Monitoring Results

The results of four rounds of ground gas monitoring are presented in **Table 4** and summarised below:

- Methane concentrations were recorded at a maximum steady state of 7.4% at BH3-B on 29th July 2020.
- Carbon dioxide concentrations were recorded at a maximum steady state concentration of 7.9% v/v in BH3-B on 10th August 2020;
- Oxygen concentrations were recorded at a minimum steady state concentration of 7.3% v/v in BH3 on 17th August 2020;
- Ground gas flow rates were recorded at a maximum negative flowrate of 0.7 litres per hour (l/hr) in BH2 on 3rd August 2020.
- Atmospheric pressure at the time of sampling varied between a high of 1019 millibar (mbar) on 10th August 2020 and a low of 1001 mbar on 17th August 2020. The monitoring visits were undertaken during rising and falling atmospheric pressure trends over the previous 48 hours.



5 GENERIC QUANTITATIVE RISK ASSESSMENT

5.1 Human Health Risk Assessment

In order to provide an up-to-date assessment of the risks to human health, Remada has adopted the most recent Generic Assessment Criteria (GAC) published by LQM/CIEH (S4ULs) and CL:AIRE/EIC/AGS for the assessment of potential risks to human health. The derivation of GAC, methodology, input parameters and technical guidance (CLEA) may be obtained upon request.

Default parameters have been adopted for sandy loam of pH 7 and commercial land use. FOC ranged from 0.003 to 0.059 giving a Soil Organic Matter (SOM) content range of between 0.3 to 5.9% with an average result of 3.73%. In order to present a conservative assessment, the SOM content of 6% has been adopted for the assessment.

The depth to potential sources of contamination for indoor air pathways has been assumed to be 0.5m below building foundation level. The source has been conservatively assumed to be at ground level for outdoor air and direct contact pathways.

For commercial land use the CLEA version 1.06 critical receptor is conservatively modelled as a female working adult with an exposure duration of 49 years. In accordance with the default parameters, it was assumed that employees spend most of their time indoors and that 80% of outdoor area is covered by hardstanding. As such, the potential exposure pathways have been assumed to be:

- Direct Soil and Indoor Dust Ingestion;
- Skin contact with soils and dusts;
- Inhalation of indoor and outdoor dusts and vapours.

Where GAC values for individual TPH fractions are not exceeded, the potential additive effect has been assessed by calculating overall TPH hazard index for each sample.

5.2 Comparison of Soil Analysis Results with Human Health GAC

A comparison of soil chemical analysis with GAC is presented as **Table 6**.

TPH, PAH & BTEX

None of the analytes tested for TPH or BTEX were detected at concentrations that exceeded the human health GAC protective of on-site workers.

Three (3 No.) samples out of 16 locations tested for PAH were detected at concentrations that exceeded the human health GAC protective of on-site workers. Dibenz(a,h)Anthracene exceeded at locations HDTP1, TP6 and TP9 with 4.2, 4.4 and 12 mg/kg respectively, whilst TP9 also had exceedances of Benzo[b]fluoranthene (120 mg/kg) and Benzo[a]pyrene (96 mg/kg).

Metals & Inorganics Excluding Asbestos

None of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers.

Asbestos

Asbestos was detected in the Made Ground samples from HDTP3 between 0.6 – 0.7m bgl, and more recently, TP1 at 0.5m, TP2 at 0.9m, TP3 at 0.7m and TP9 at 0.3m bgl, were recorded as comprising chrysotile cement fibres/clumps and loose fibres with a maximum asbestos content of 0.005%.

5.3 Controlled Waters Risk Assessment

5.3.1 Sensitivity – Groundwater

The site is not indicated to be within a Groundwater Source Protection Zone. The superficial Tidal Flat Deposits underlying the site are designated as Secondary Undifferentiated Aquifers, where it is not possible to designate it



as 'A' or 'B'. The Hughes Member bedrock underlying the site is designated as a Secondary 'A' Aquifer. There are no groundwater abstractions recorded within 1km of the site.

5.3.2 Sensitivity – Surface Waters

The nearest surface water feature is the Cryddan Brook present along the north-western boundary of the site and which flows towards the River Neath to the north-west of the site. There are no surface water abstractions recorded within 1km of the site.

Investigation has revealed that the site is underlain by a Secondary Aquifer in the superficial deposits and Secondary A Aquifer in the bedrock.

5.3.3 Comparison with EQS Levels

The concentrations of contaminants with groundwater sampled from have been compared with the Water Framework Directive Regulations 2015 Schedule 3 General Quality of Groundwater as an applicable Environmental Quality Standards (EQS) for Secondary Aquifers. The AA-EQS level has been adopted.

A comparison of groundwater chemical analysis with EQS levels (and Drinking Water Regulation 2016 levels) is presented as **Table 7**. No exceedances of the EQS levels were identified within the March 2022 samples, however, during the 2026 investigation Cadmium (Dissolved) was found to exceed the Water Framework threshold at 0.30 µg/l in MP1 and MP2 taken from the brook to the east and just to the north-east of the site boundary respectively. Benzo[b]fluoranthene and Benzo[k]fluoranthene were also found to exceed the Water framework thresholds with 0.18 and 0.09 µg/l within MP1 to the north-east of the site only. Benzo[b]fluoranthene was also detected at greater than GAC within Made Ground at TP6 in the northern zone or proposed car park. Samples of Made Ground from TP7, WS1 and WS2 which were situated in closer proximity to Cryddan Brook did not produce concentrations of PAHs greater than either GAC or EQS.

5.3.4 Risk Assessment

The results of the soil chemical analysis undertaken has identified that concentrations of metals and inorganic contaminants are generally within the range that would be expected for 'typical' Made Ground. However, detectable concentrations of TPH and PAHs were encountered in some samples. The contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site.

Shallow groundwater was encountered at depths of between 1.66m and 3.6m bgl within Remada's standpipes in the southern area of the site during the 2020 monitoring programme. During Opus' investigation in the northern area of the site in December 2015, groundwater was encountered in their borehole WS3 at a depth of 1.9m bgl. Standing groundwater levels recorded in the monitoring wells in WS3 and WS4A in December 2015 were 2.52m and 2.0m bgl respectively. During the post demolition supplementary ground investigation, groundwater was encountered within WS1 at 2.2m bgl.

The results of falling head tests with the Made Ground and Superficial Deposits produced low permeability values typical of clayey sands and silt in the range of 10^{-4} to 10^{-6} m/s and therefore the rate of potential contaminant migration towards Cryddan Brook is considered to be minimal.

Post-development, the site will continue to be predominantly covered by a retail building and areas of hardstanding. At locations where the concentrations of PAH in Made Ground were found to be greater than GAC the proposed development will be covered by hardstanding (car park surfacing) and therefore the risk of leaching of contaminants as a result of infiltration of groundwater will be limited. Consequently, the risk to controlled waters from contaminants within the Made Ground at the site is considered to be low and no further action is recommended.

5.4 Ground Gas Assessment

In order to understand the gassing regime at the site, a Characteristic Situation (as defined in CIRIA C665 and BS8576:2013) is determined for the site. CIRIA C665 and BS8576 provides definitions for each Characteristic Situation based on Gas Screening Values (GSV) which are calculated as follows:



- $GSV = \text{Gas Concentration (\% v/v)} \times \text{Measured Borehole Flow Rate (l/hr)}$

BS8576 makes a distinction between the GSV and the Hazardous Gas Flow Rate (Q_{hg}) which is also calculated using the above calculation. BS8576 states that Q_{hg} is calculated for each individual borehole for each monitoring visit, whereas the GSV is taken as the representative value for the site or site zone.

As a worst case assessment, the GSV for the site is therefore taken as the maximum steady-state carbon dioxide/methane concentration recorded in the boreholes which is multiplied by the maximum flow rate recorded during the same monitoring event.

- Methane GSV = $7.4\% \text{ v/v} \times 0.7 \text{ l/hr} = 0.05 \text{ l/hr}$
- Carbon Dioxide GSV = $7.9\% \text{ v/v} \times 0.7 \text{ l/hr} = 0.05 \text{ l/hr}$

The calculated GSV for methane and carbon dioxide places the site into Characteristic Situation 1. BS 8485:2015+A1:2019 states that for Characteristic Situation 1 the methane concentration would typically be less than 1% and carbon dioxide less than 5% and that if concentrations are above these limits, then consideration should be given to placing the site into Characteristic Situation 2. As the concentrations of methane and carbon dioxide were both greater than these typical limits it is considered that the Characteristic Situation 2 classification is appropriate for the site. Therefore, gas protection measures are necessary for the proposed development.

For a commercial building of this type (Type C) at a site classified as Characteristic Situation 2 the required minimum gas protection score for a low risk site in accordance with BS 8485:2015+A1:2019 (Table 4) is 2.5. Appropriate forms of floor and substructure designs are listed Table 5 of BS 8485:2015+A1:2019; it is likely that structural barriers, ventilation and a ground gas membrane would comprise suitable mitigation measures.

5.5 Revised Conceptual Site Model

A revised Conceptual Site Model is presented as **Table 9** below.

5.6 Waste Classification & Waste Acceptance

Waste classification has been undertaken following guidance set out in WM3 EA Technical Guidance 'Guidance on the classification and assessment of waste', 1st Edition, Version 1.2GB, October 2021. The results of this assessment determine the appropriate List of Waste (LoW) Code and whether the waste should be classified as hazardous or non-hazardous. Classification is undertaken using the results of solid (total) analyses and not on the results of the WAC analyses.

Once the waste has been classified as either hazardous or non-hazardous then the WAC testing determines if the waste meets the requirements for disposal in the required landfill. Therefore, if the waste is classified as hazardous waste, then the waste would also need to meet the hazardous waste WAC requirements to be disposed of in a hazardous waste landfill. However, if the final destination of the waste is not to landfill then WAC analysis is not required.

The WAC testing also allows for a distinction to be made between inert and non-hazardous waste. Waste that does not fall within the hazardous waste category and meets the requirements for disposal in an inert landfill can therefore be disposed of in an inert landfill. However, waste that does not meet the requirements for inert landfill will need to be disposed of in a non-hazardous landfill. In certain circumstances hazardous waste can be disposed of in a designated cell within a non-hazardous landfill. In this case the waste would need to meet more stringent leachate requirements for stable non-reactive hazardous waste.

5.6.1 Waste Classification

The results of the assessment indicated that contaminant concentrations within the Made Ground, topsoil and natural soils were generally low and would classify the soils as non-hazardous with LoW Code 17 05 04 (soils and stones other than those mentioned in 17 05 03).

While Waste Acceptance Criteria (WAC) analysis has not been undertaken, the assessment initially included determination of the Fraction of Organic Carbon (FOC) which can be converted to Total Organic Carbon (TOC) by multiplying the result by 100. A TOC limit of 3% is placed on waste destined for disposal in an inert landfill.



Concentrations of greater than 3% TOC were measured in shallow Made Ground from HDTP1 and HDTP3 indicating that the Made Ground would be classified as non-hazardous.

The reported concentration of chrysotile asbestos fibres sampled in HDTP3, TP1 to TP3 and TP9 are less than the threshold concentration for hazardous waste.

For each individual sample, the sum concentration of TPH is <500 mg/kg (except at TP9) and sum concentration of BTEX <1mg/kg, but the sum concentration of PAH >100 mg/kg, indicating the Made Ground would be non-hazardous due to hydrocarbons except at one location at TP9 at 0.3m bgl which had a total PAH concentration of 1090 mg/kg and total TPH concentration of 1650mg/kg and would therefore be classified at hazardous.

A full assessment of metal concentrations has not been undertaken however the results of the chemical analysis indicate that the Made Ground would generally be classified as non-hazardous waste except in the vicinity of TP9 which would be classed as hazardous.

Asbestos was detected at >0.001 but less than <0.1% in the sample from HDTP3 between 0.6 – 0.7m, TP1 at 0.5m, TP2 at 0.9m, TP3 at 0.7m and TP9 at 0.3m bgl and therefore present at Non-Hazardous concentrations.

Bitumen / Coal Tars

One sample of bituminous surfacing was analysed for concentrations of PAH compounds. The purpose of this analysis was to determine if the sample contained coal tar as this would result in a hazardous waste classification. The Environment Agency Technical Guidance document WM3 states that *“where the concentration of benzo(a)pyrene is at or above 50ppm (mg/kg) in the black top alone (excluding other material) then the amount of coal tar should be considered to be sufficient (0.1% or more) for the material to be hazardous”*.

The results from the sample from BH1-B indicate that the concentrations of PAHs were low (total maximum PAH 17 concentration being below the method detection limit of 2mg/kg). The maximum concentration of benzo(a)pyrene of <0.1mg/kg was below the 50mg/kg limit defined in WM3. Therefore, the bituminous surfacing represented by this sample would be classified as non-hazardous waste and assigned the List of Wastes code 17 03 02 for bituminous mixtures other than those mentioned in 17 03 01.

5.7 Health & Safety Considerations

To ensure direct exposure of construction workers involved in the site redevelopment to any impacted contaminated shallow soils is minimised, the guidance stated in HSG 66 “Protection of Workers and the General Public During Redevelopment of Contaminated Land” should be followed.



Potential Source Areas	Potential Contaminant of Concern	Pathways	Potential Receptor	Exposure Route (Human unless otherwise stated)	Potential Identified Linkage (unmitigated)	Findings of Ground investigation	Risk (Unmitigated)	Proposed Remediation (Mitigation) Measures	Residual Risk Estimation
On-site Sources - Marshland - Japan Works - Melin Crythan Works / Tinplate Works / Melyn Works (Sheet & Tinplate) - Railway lines and sidings - Unspecified tank. - Coal Yard - Infilled / culverted Cryddan Brook - Lidl store, former retail units and associated car park. - Electricity Sub-station Off-site Sources - Residential properties - Tramway - Smithy - Coal Yard - Various Works - Railway line & sidings - Fuel Filling Station	Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH, VOCs and SVOCs.	Disturbance due to construction plant causing direct contact, dusts, vapours. Direct Contact with occupants of the proposed development Inhalation of fibres / vapours / gases by occupants of proposed development Permeation of water supply pipework Leachate	Occupants of the development / building fabric Adjacent residents during construction Secondary (A) & (Undifferentiated) Aquifers	Direct Soil Ingestion	No	N/A	N/A	N/A	N/A
				Indoor Dust ingestion	Yes	Concentrations within typical range of Made Ground (< GAC)	Low	Hardstanding to cover retail site minimising direct contact.	Negligible
				Skin Contact with Soils	Yes	Low	As above	Negligible	Low
				Skin Contact with Dust	Yes	Low	As above	Negligible	Low
				Inhalation of Outdoor Dust	Yes	Low	As above	Negligible	Low
				Ingestion of home grown produce	No	Commercial development devoid of gardens	None	N/A	None
				Inhalation of Outdoor Vapours	Yes	Low	As above	Negligible	Low
				Inhalation of Indoor Vapours	Yes	Low	As above	Negligible	Low
				Inhalation of ground gas	Yes	CS2	Moderate risk	Gas protection measures	Low
				Inhalation of radon gas	Yes	Intermediate & Higher Probability Areas	Moderate risk	Full radon protection measures in new buildings	Low
				Ingestion via permeated water supply pipework	Yes	C12-C16 and C16-C44 < threshold for PE pipework.	Low	As per UKWIR	Low
				Direct contact with Secondary (A & Undifferentiated) Aquifers in Superficial Deposits supplying Cryddan Brook	Yes	Concentrations within typical range of Made Ground (< GAC)	Low	Hardstanding to prevent precipitation infiltration and leaching.	Negligible
				In-direct contact with Secondary (A) Aquifer in bedrock	Yes	As above	Low	As above	Negligible

Table 9: Refined Conceptual Site Model

Direct contact with subsurface soil and/or groundwater during redevelopment works are not assessed as part of the CSM. It is considered that risks to workers will be managed as part of any the redevelopment works at the site through the application of health and safety procedures, where required.



6 GEOTECHNICAL SITE ASSESSMENT

6.1 Geotechnical Considerations

Lidl propose to redevelop the existing store as indicated in **Figure 2**, incorporating an existing Lidl store in the southern area and an existing *Poundstretcher* store in the northern area. Opus' ground investigation targeted the northern area of the site, whereas Remada's intrusive investigation was focussed on the southern area. Window sample logs within Opus' ground investigation report for the adjacent building did not prove the full depth of Made Ground and consequently three cable tool borehole were proposed to determine the depth the competent strata. In addition, three trial pits were excavated to expose the existing store foundations.

Two of the hand dug trial pits HDTP2 and HDTP3 exposed a spread footing bearing on Made Ground at a depth 0.75m bgl and with an estimated approximate width of 1.5m. HDTP1 exposed concrete that extended beyond the maximum excavation depth of 1.3m but stepped out only 0.1m indicative of a pile cap.

All three cable tool boreholes proved the full depth of Made Ground and encountered a soft to firm CLAY to a maximum depth of 5.5m in BH2. The results of undrained shear strength tests on U100 samples produced C_u values of 17 to 34 kPa for the CLAY. All three boreholes refused in a gravel/shale of mudstone at between 4.5 and 6m bgl. Groundwater monitoring has recorded that all wells were dry.

The Coal Mining Risk Assessment (Remada report ref: 769.01.03) did not identify a potential for unrecorded shallow worked seams to be present beneath the site.

Details of the proposed permanent and variable design loads (actions) are not currently known although an indicative column load of 400kN has been provided.

6.2 Foundations

In order to prevent differential settlement between the existing store and proposed extension all foundations should bear on the same strata. The Made Ground and underlying soft to firm slightly organic clay would produce unacceptable amounts of total and differentials settlement and consequently an alternative foundation solution will be required such as ground improvement or piled foundations.

Due to the close proximity of the existing store, there is the potential for vibrations to cause damage to existing structures. If ground improvement or driven piles are adopted then assurances will need to be sought from the specialist contractor to ensure that the installation technique does not damage nearby structures.

Ground improvement techniques such as vibro-replacement stone or concrete columns could be considered for the site. Both ground improvement techniques involve inserting a vibrating poker into the ground, which displaces the soil. The resultant void is then infilled with either stone or concrete. Vibro-replacement stone columns may provide a potential pathway for the migration of ground gas, which could be produced from the underlying Alluvium and therefore consideration may need to be given to utilising vibro-replacement concrete columns instead.

In order for concrete columns to work effectively they will need to penetrate the full thickness of the Made Ground and cohesive Alluvium. Therefore a column depth in the order of 6m bgl should be anticipated. Beneath the cohesive materials a dense granular layer was encountered, that has been interpreted as weathered bedrock, that would provide a suitable bearing layer for the concrete columns. It is recommended that specialist advice is sought from a ground improvement contractor with regard to the suitability of this technique in these ground conditions and the anticipated achievable bearing capacities. If either of these techniques is selected, it is recommended that appropriate insitu testing is specified in order to assess the performance of these foundations.

If a piled foundation solution is adopted then either driven or replacement piles (bored or continuous flight auger (CFA)) piles could be utilised. Driven piles have the advantage of improving the density of the ground, but are unlikely to be suitable due to the potential for unacceptable vibrations. CFA piles may not be suitable as it will be necessary to install sockets into the bedrock, which may not be achievable. Alternatively consideration could be given to bored piles. To install bored piles a void is formed which is then filled with concrete. The sides of the shaft will need to be supported, normally by the use of casing. Support will be required through the Made Ground and



the Alluvium. The majority of the working load will be provided by the end resistance in a rock socket. The rock socket needs to be sufficiently deep to support the sides the pile. Care needs to be taken to remove debris from the base of the rock socket prior to forming the pile. Rapid excavation of the pile sockets in weak rock is recommended to minimise the potential for deterioration in the walls which could result in the swelling of the mudstone. After formation, the pile should be concreted immediately, preferably on the same day.

6.3 Floor Slab

The proposed floor slab should be suspended on the pile foundations.

6.4 Shrinkage and Swelling

All samples of CLAY were reported as being HIGH plasticity with between 81% and 100% passing a 0.425mm sieve. The modified plasticity index equates to Medium Volume Change Potential.

BRE 412 states that where the natural moisture content is less than 0.4 times the Liquid Limit ($w < 0.4 w_L$) it is indicative of desiccation. There is no evidence of soil desiccation within the four cohesive soil samples analysed.

The minimum foundation depths outside the zone of tree influence as specified by the NHBC have been reproduced in **Table 10** below, however:

Volume Change Potential	A) Minimum foundation depth (m) (allowing for restricted new planting)	B) Minimum foundation depth (m) (where planting is outside the zone of influence of trees)
High	1.50	1.0
Medium	1.25	0.9
Low	0.9	0.75

Table 10: NHBC 2023 Table 4 Minimum Foundation Depths

6.5 Imported Fill

All imported fill material should comply with an earthworks specification to be prepared by the engineer and not contain concentrations of contaminants at greater than the Generic Assessment Criteria (GAC) presented in **Table 5**.

6.6 Excavations and Temporary Works

Side slopes within the Made Ground and the underlying natural soft clay are unlikely to remain stable even in the short term without support or without being battered back to a safe slope gradient. A detailed inspection of the side slopes should be made during excavation and a risk assessment carried out to fully assess the support measures required.

The ground investigation took place following a period of dry weather and seepages may occur in excavations.

6.7 Protection of Buried Concrete

In accordance with BRE SD1 for buried concrete in a brownfield site with static groundwater, analysis of selected samples for water soluble sulphate returned values of up to 0.04 g/l and pH >7.32. A total potential sulphate value of 0.33% was also calculated from the total sulphur results. Therefore, a Design Sulphate Class DS-2 is considered appropriate for buried concrete and an ACEC Class of AC-1s is considered appropriate for the location.

6.8 General Construction Advice

Topsoil should be stripped from proposed zones of construction.

All formations should be cleaned, and subsequently inspected, by a suitably qualified engineer prior to placing concrete. Should any soft, compressible or otherwise unsuitable materials be encountered they should be removed and replaced by blinding concrete.



Foundation concrete, or alternatively, a blinding layer of concrete, should be placed immediately after excavation and inspection in order to protect the formation against softening and disturbance.

Generally, all formations should be placed wholly within the same material type, unless specific geotechnical inspection and assessment have been undertaken.

Where applicable ground beneath the proposed building footprint and potentially car parking may require to be stripped to reveal localised areas of Made Ground and structures. Excavations should be backfilled with suitably re-compacted materials to achieve formation level.

During foundation excavation works arisings should be constantly monitored for the presence of contamination.



7 CONCLUSIONS & RECOMMENDATIONS

7.1 Conclusions

The following conclusions have been made based on the findings of this investigation.

7.1.1 Phase 2 Site Investigation

The proposed development at the time of writing in March 2022 was for '*demolition of existing buildings [Lidl store and adjacent Poundstretcher store] and replacement with a Class A1 foodstore with associated carparking, landscaping, engineering and drainage works*'. Borehole logs within Opus' ground investigation report for the adjacent building did not prove the full depth of Made Ground and consequently three cable tool boreholes were proposed to determine the depth the competent strata. In addition, three trial pits were excavated to expose the existing store foundations.

Two of the hand dug trial pits HDTP2 and HDTP3 exposed a spread footing bearing on Made Ground at a depth 0.75m bgl and with an estimated approximate width of 1.5m. HDTP1 exposed concrete that extended beyond the maximum excavation depth of 1.3m but stepped out only 0.1m indicative of a pile cap.

The post-demolition supplementary investigation comprised ten trial pits beneath the former building footprints and car park, and three window sampling boreholes along the eastern boundary. Made Ground was encountered to a maximum depth of 2.2m bgl where proven.

Made Ground comprised asphalt surfacing to a depth of 0.1m overlying sub-base to 0.4m in turn overlying a medium dense gravelly ashy fine to medium sand, gravel is wood, brick, coal and fragments of concrete. Superficial deposits were observed as soft to firm sandy or silty clay at a depth of between 2.6 and 3.0m.

Post demolition Made Ground comprised dark brown and locally black sandy locally clayey GRAVEL or very gravelly SAND. The gravel content comprised concrete, brick, plastic, rebar, wood, metal, glass, rubber and pipe with occasional cobbles and rare boulders of concrete.

Beneath the Made Ground soft to firm, occasionally sandy, silty clay was encountered to depths of between 3.45 and 5.0m bgl. In borehole BH1-B a slight organic odour was noted. The clay has been interpreted as Tidal Flat Deposits, as indicated to be present on the BGS map.

Beneath the Tidal Flat Deposits dense becoming very dense slightly sandy predominantly angular to subangular fine to coarse gravel comprising mudstone and shale. While the gravel was predominantly angular to subangular, the gravel was also noted to be rounded within BH1-B. There are two potential interpretations for this material: Glaciofluvial Deposits, or weathered bedrock. Given that the materials encountered comprised predominantly angular or subangular mudstone and shale it is considered that this material is more likely to represent a zone of weathered bedrock.

7.1.2 Human Health Risk Assessment

The results of soil chemical analysis were compared to Human Health Generic Assessment Criteria for commercial land use. Three of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers. Benzo[b]fluoranthene, Benzo[a]pyrene and Dibenz(a,h)Anthracene were encountered above GAC thresholds in sample TP9 and Dibenz(a,h)Anthracene also exceeded within HDTP1 and TP5. All of these exploratory hole locations are proposed beneath either the building footprint or car park of the new development and therefore no pathway is present and the risk to human health is low.

7.1.3 Water Resources Risk Assessment

The results of the soil chemical analysis have identified that concentrations of metals and inorganic contaminants are generally within the range of typical Made Ground. However, the organic contaminants identified are of low solubility and mobility and as such are unlikely to present a risk to groundwater beneath the site. In addition, the results of falling head tests with the Made Ground and Superficial Deposits produced low permeability values typical of clayey sands and silt in the range of 10^{-4} to 10^{-6} m/s and therefore the rate of potential contaminant migration towards Cryddan Brook is considered to be minimal. The concentrations of contaminants within the groundwater



sampled from six standpipes have been compared with the Water Framework Directive Regulations and exceedances of the EQS levels were identified in MP1 and MP2 which are both located eastwards beyond the site boundary with water samples taken from the brook.

Post-development, the site will continue to be predominantly covered by a retail building and areas of hardstanding. At locations where the concentrations of PAH in Made Ground were found to be greater than GAC the proposed development will be covered by hardstanding (car park surfacing) and therefore the risk of leaching of contaminants as a result of infiltration of groundwater will be limited. Consequently, the risk to controlled waters from contaminants within the Made Ground at the site is considered to be low and no further action is recommended.

7.1.4 Waste Classification

In general, the results of the chemical analyses indicate that the material would be classified as non-hazardous waste.

While Waste Acceptance Criteria (WAC) analysis has not been undertaken, the concentrations of the fraction of organic carbon (FOC) indicate that the soil arisings would have Total Organic Carbon (TOC) concentrations of greater than 3% and be classed as non-hazardous. The reported concentration of chrysotile asbestos fibres sampled in HDTP3, TP1 to TP3 and TP9 are less than the threshold concentration for hazardous waste.

For each individual sample, the sum concentration of TPH is <500 mg/kg (except at TP9) and sum concentration of BTEX <1mg/kg, but the sum concentration of PAH >100 mg/kg, indicating the Made Ground would be non-hazardous due to hydrocarbons except at one location at TP9 at 0.3m bgl which had a total PAH concentration of 1090 mg/kg and total TPH concentration of 1650mg/kg and would therefore be classified as hazardous.

A full assessment of metal concentrations has not been undertaken however the results of the chemical analysis indicate that the Made Ground would be generally classified as non-hazardous waste except in the vicinity of TP9 which would be classed as hazardous.

One sample of bituminous surfacing was analysed for concentrations of PAH compounds. The results from the sample from BH1-B indicate that the concentrations of PAHs were low (total maximum PAH 17 concentration being below the method detection limit of 2mg/kg). The maximum concentration of benzo(a)pyrene of <0.1mg/kg was below the 50mg/kg limit defined in WM3. Therefore, the bituminous surfacing represented by this sample would be classified as non-hazardous waste and assigned the List of Wastes code 17 03 02 for bituminous mixtures other than those mentioned in 17 03 01.

7.2 Recommendations

The Coal Mining Risk Assessment (Remada report ref: 769.01.03) did not identify a potential for unrecorded shallow worked seams to be present beneath the site. All three cable tool boreholes proved the full depth of Made Ground and encountered a soft to firm CLAY to a maximum depth of 5.5m in BH2. The results of undrained shear strength tests on U100 samples produced Cu values of 17 to 34 kPa for the CLAY. All three boreholes refused in a gravel/shale of mudstone at between 4.5 and 6m bgl and groundwater monitoring has recorded that all wells were dry.

In order to prevent differential settlement between the existing store and proposed extension all foundations should bear on the same strata. The Made Ground and underlying soft to firm slightly organic clay would produce unacceptable amounts of total and differentials settlement and consequently piled foundations are required.

Either ground improvement in the form of vibro-concrete columns or piled foundations are considered necessary to transfer foundation loads to a suitable bearing layer. Concrete columns would require a depth in the order of 6m and advice should be sought from a specialist ground improvement contractor. Driven piles are unlikely to be acceptable due to vibration of the existing store and therefore either bored or CFA piles should be considered, however it may not be possible to socket CFA piles into the bedrock. Bored piles would require casing through Made Ground and alluvium and be socketed into the competent bearing strata in order to transfer loads. Rapid excavation of the pile sockets in weak rock is recommended to minimise the potential for deterioration in the walls which could result in the swelling of the mudstone. After formation, the pile should be concreted immediately, preferably on the same day.



Floor slabs should be suspended and bearing on the piled foundations.

A Design Sulphate Class DS-2 is considered appropriate for buried concrete and an ACEC Class of AC-1s is considered appropriate for the location.

Where found, it is recommended that any asbestos identified on site should be buried at a suitable depth of greater than 2m bgl, covered with an impermeable membrane and placed beneath hardstanding.

7.3 Ground Gas

The results of four rounds of gas monitoring visits placed the site into Characteristic Situation 2 and therefore ground gas protection measures will be required within the proposed buildings.

The site is located in both an Intermediate Probability Radon Area (3 to 5% of homes are estimated to be at or above the Action Level) and a Higher Probability Radon Area (10 to 30% of homes are estimated to be at or above the Action Level). Consequently, full radon protection measures are necessary in the proposed development.



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STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Remada, Ltd with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with (the 'Client'). Remada does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Remada is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have published, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, Remada's professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice pending changes in legislation, of which Remada is aware, have been considered. Following delivery of the report Remada has no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are to the best of Remada's belief, Remada cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have received.

8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Remada does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.



TABLES

(not presented within text)

Table 4: Gas Groundwater Monitoring Data

GAS & GROUNDWATER MONITORING DATA														Remada								
SITE		Briton Ferry Road, Neath, SA11 1AS																				
PROJECT No.		769.02		Atmospheric & Ground Conditions																		
Carried Out by: Idris Shafqat Date: 29.07.2020				Atmospheric Pressure Variations During Visit												Ground Surface Conditions						
				1016mb												Dry						
Instrument Details		GA 5000 G501261		Atmospheric Pressure Trend Over Previous 48hrs												Weather Conditions						
				Rising												Sunny, warm, blue skies						
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		Duration (secs)^	Flow Rate (l/hr)	Relative Pressure (Pa)	PID (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m AoD)	Depth of Pipe (m bgl)	Comments			
			Peak	Steady		Peak	Steady	Minimum	Steady				Peak	Steady								
BH1-B	6.740	50	0.1	0.1	2.0	1.5	1.1	9.3	12.2	60	-0.2	0.02	-	-	1016	1.660	5.080					
BH2	7.070	50	0.1	0.0	0.0	0.6	0.4	15.3	18.7	60	-0.4	0.16	-	-	1016	1.980	5.090					
BH3-B	7.230	50	11.6	7.4	148.0	4.7	3.9	9.2	10.6	60	-0.5	0.23	-	-	1016	3.050	4.180					

Notes: NR = Not Recorded ^ For measurement of gas concentrations > = Above LEL WST = Water Sample Taken GL = Ground Level

GAS & GROUNDWATER MONITORING DATA														Remada								
SITE		Briton Ferry Road, Neath, SA11 1AS																				
PROJECT No.		769.02		Atmospheric & Ground Conditions																		
Carried Out by: Idris Shafqat Date: 03.08.2020				Atmospheric Pressure Variations During Visit										Ground Surface Conditions								
				1014mb										Dry								
Instrument Details		GA 5000 G501261				Atmospheric Pressure Trend Over Previous 48hrs								Weather Conditions								
						Rising								Sunny, warm, blue skies								
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		Duration (secs)^	Flow Rate (l/hr)	Relative Pressure (Pa)	PID (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m AoD)	Depth of Pipe (m bgl)	Comments			
			Peak	Steady		Peak	Steady	Minimum	Steady				Peak	Steady								
BH1-B	6.740	50	0.1	0.1	2.0	1.7	1.2	7.1	10.4	60	-0.5	0.24	-	-	1014	1.720	5.020					
BH2	7.070	50	0.1	0.0	0.0	1.3	1.1	10.0	10.4	60	-0.7	0.52	-	-	1014	1.950	5.120					
BH3-B	7.230	50	7.9	4.7	94.0	5.1	5.0	8.6	8.9	60	-1.0	0.77	-	-	1014	3.500	3.730					

Notes: NR = Not Recorded ^ For measurement of gas concentrations > = Above LEL WST = Water Sample Taken GL = Ground Level

GAS & GROUNDWATER MONITORING DATA														Remada								
SITE		Briton Ferry Road, Neath, SA11 1AS																				
PROJECT No.		769.02		Atmospheric & Ground Conditions																		
Carried Out by: Idris Shafqat Date: 10.08.2020				Atmospheric Pressure Variations During Visit										Ground Surface Conditions								
				1019mb										Dry								
Instrument Details		GA 5000 G501261				Atmospheric Pressure Trend Over Previous 48hrs										Weather Conditions						
						Rising										Sunny, warm, blue skies						
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		Duration (secs)^	Flow Rate (l/hr)	Relative Pressure (Pa)	PID (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m AoD)	Depth of Pipe (m bgl)	Comments			
			Peak	Steady		Peak	Steady	Minimum	Steady				Peak	Steady								
BH1-B	6.740	50	0.1	0.1	2.0	0.7	0.3	18.3	18.5	60	-0.3	1019	-	-	1019	1.720	5.020					
BH2	7.070	50	0.1	0.1	2.0	0.7	0.1	15.0	18.3	60	-0.5	1019	-	-	1019	2.150	4.920					
BH3-B	7.230	50	11.0	5.7	114.0	5.2	7.9	8.3	11.0	60	-0.6	1019	-	-	1019	3.510	3.720					

Notes: NR = Not Recorded ^ For measurement of gas concentrations > = Above LEL WST = Water Sample Taken GL = Ground Level

GAS & GROUNDWATER MONITORING DATA														Remada								
SITE		Briton Ferry Road, Neath, SA11 1AS																				
PROJECT No.		769.02		Atmospheric & Ground Conditions																		
Carried Out by:		Idris Shafqat		Atmospheric Pressure Variations During Visit										Ground Surface Conditions								
Date:		17.08.2020		1001mb										Wet								
Instrument Details	GA 5000 G501261			Atmospheric Pressure Trend Over Previous 48hrs										Weather Conditions								
				Falling										Cold, windy, wet, raining								
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		Duration (secs)^	Flow Rate (l/hr)	Relative Pressure (Pa)	PID (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m AoD)	Depth of Pipe (m bgl)	Comments			
			Peak	Steady		Peak	Steady	Minimum	Steady				Peak	Steady								
BH1-B	6.740	50	0.2	0.1	2.0	2.5	1.4	3.1	10.2	60	0.0	-0.24	-	-	1001	1.950	4.790					
BH2	7.070	50	0.1	0.1	2.0	1.3	0.3	10.6	14.9	60	-0.2	0.05	-	-	1001	2.350	4.720					
BH3-B	7.230	50	9.8	7.4	148.0	5.7	4.4	6.6	7.3	60	-0.2	0.26	-	-	1001	3.600	3.630					

Notes: NR = Not Recorded ^ For measurement of gas concentrations > = Above LEL WST = Water Sample Taken GL = Ground Level

Table 6: Comparison of Soil Chemical Analyses with GAC

Lab Sample Number:				1040112			1040113			1040114			803356			803357			803358			803359			803360			803361			803362			803363			803364			803365			803366			803367			803368		
Sample Reference:				HDTP1			HDP2			HDP3			TP2			TP3			TP4			TP5			TP6			TP7			TP8			TP9			TP10			WS1			WS2			WS3					
Top Depth (m):				0.50			0.75			0.60			0.5			0.7			0.5			0.8			1			0.4			0.6			0.3			0.8			1.5			0.8								
Basal Depth (m):							0.85			0.70			None Supplied			None Supplied			None Supplied			None Supplied			None Supplied			None Supplied			None Supplied			None Supplied			None Supplied			None Supplied			None Supplied								
Strata/Material Type													MADE GROUND			MADE GROUND			MADE GROUND			MADE GROUND			MADE GROUND			MADE GROUND			MADE GROUND			MADE GROUND			MADE GROUND			MADE GROUND			MADE GROUND								
Date Sampled:				23/07/2020			23/07/2020			23/07/2020			15/01/2026			15/01/2026			15/01/2026			15/01/2026			15/01/2026			15/01/2026			15/01/2026			15/01/2026			15/01/2026			15/01/2026			15/01/2026								
Determinand	Units	Limit of detection	Accreditation Status	[mg/kg unless stated]																												Limit of detection																			
Stones	%	0.02	NONE	-	9.00	7.60	8.90	0.01	41.20	50.90	67.30	53.20	39.30	11.70	70.30	10.20	59.70	7.40	53.10	57.30	67.80																														
Moisture	%	0.02	NONE	-	No Asbestos Detected	7.60	8.90	0.01	14	8.6	5.9	6	9	10.0	7.1	13	5.6	15	14	7.9	7.7																														
Asbestos in Soil	Type	N/A	ISO 17025	-	No Asbestos Detected	No Asbestos Detected	Chrysotile	N/A	Detected	Detected	Detected	Not-detected	Not-detected	Not-detected	Not-detected	Detected	Not-detected	Not-detected	Not-detected	Not-detected																															
Asbestos % by hand picking/weighting	%			-			0.005	0.00100	< 0.001	< 0.001	< 0.001	-	-	-	-	-	< 0.001	-	-	-																															
Asbestos Containing Material Types Detected (ACI)	Type	N/A	MCERTS	-			Cement	Loose Fibres	Fibre Fibres	Fibre Fibres	Fibre Fibres	Use Fibrous De																																							
pH	pH	N/A	MCERTS	-	9.80	9.70	9.52	9.40	10.0	10.7	11.8	11.4	9.2	8.7	9.6	8	7.9	8.1	9.6	8.6																															
Magnesium (Water Soluble)				-																																															
Sulphate (2:1 Water Soluble) as SO4				-																																															
Total Sulphur				-																																															
Chloride (Water Soluble)				-																																															
Nitrate (Water Soluble)				-																																															
Ammonium (Water Soluble)				-																																															
Sulphate (Acid Soluble)				-																																															
Arsenic	mg/kg	1.00	MCERTS	640	35	21	36	1.00	43	28	16	25	22	33	20	37	10	65	55	20	46																														
Beryllium	mg/kg	1.00	MCERTS	12	< 1.0	< 1.0	< 1.0	0.06	0.78	0.57	0.69	0.98	0.86	1.1	0.34	1.1	0.34	2.5	0.72	0.62																															
Boron	mg/kg	0.40	MCERTS	240000	0.83	1.2	0.66	0.20	1.4	0.8	2.2	1.1	0.7	1.5	0.9	2.3	0.3	1.1	1.6	0.5	0.4																														
Cadmium	mg/kg	0.10	MCERTS	190	0.66	< 0.10	1.2	0.20	1.3	0.3	0.5	0.5	0.3	0.4	0.5	0.3	< 0.2	0.2	0.3	0.3	0.4																														
Chromium (Hexavalent)	mg/kg	0.50	MCERTS	33	< 0.50	< 0.50	< 0.50	1.80	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8																														
Chromium (Trivalent)	mg/kg	1.00	NONE	8600	240	20	160	1.00	130	35	21	190	84	40	34	38	12	26																																	
Chromium (aqueous extractable)	mg/kg	1.00	MCERTS	12000	1000	100	100	1.00	130	35	21	190	84	40	34	38	12	26																																	
Copper	mg/kg	0.50	MCERTS	68000	99	7.7	130	1.00	530	110	41	88	130	110	81	120	150	28	1500	81	100	66																													
Lead	mg/kg	0.50	MCERTS	2330	350	17	230	1.00	340	160	67	150	120	150	110	130	30	330	62	110	100																														
Mercury	mg/kg	0.10	MCERTS	58 TM (25.8)	0.72	< 0.10	1.2	0.30	4.1	2	0.4	2	34	< 0.3	0.4	4.6	< 0.3	26	< 0.3	0.4	1.3																														
Nickel	mg/kg	0.50	MCERTS	980	30	9.8	41	1.00	25	20	12	18	26	29	15	32	13	47	54	30	21																														
Selenium	mg/kg	20.0	MCERTS	12000	0.43	< 0.20	0.55	1.00	1.5	< 1.0	1.3	2.4	< 1.0	3.5	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0																														
Selenium	mg/kg	20.0	MCERTS	9000	28	28	58	1.00	47	29	39	91	120	59	36	68	15	49	69	26																															
Zinc	mg/kg	0.50	MCERTS	730000	250	30	690	1.00	640	290	150	300	200	260	230	210	76	400	130	180	200																														
Total Cyanide	mg/kg	1.00	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0																														
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	0.06	0.00	0.05	0.001	0.021	0.011	0.0076	0.014	0.023	0.023	0.013	0.03	0.02	0.12	0.031	0.02	0.022																														
Calculated SOC from FOC	-	-	-	-	5.90	0.30	5.00	-	2.10	1.10	0.76	1.40	2.30	2.30	1.30	3.00	2.00	12.00	3.10	2.00	2.20																														
Calculated TOC from FOC	-	-	-	-	10.17	0.52	8.62	-	3.62	1.90	1.31	2.41	3.97	3.97	2.24	5.17	3.45	20.69	5.34	3.79																															
Aliphatic TPH >C5-C6	mg/kg	1.00	NONE	12000sol (1150)	< 1.0	< 1.0	< 1.0	0.01	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010																														
Aliphatic TPH >C6-C8	mg/kg	1.00	NONE	4000sol (736)	< 1.0	< 1.0	< 1.0	0.01	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010																														
Aliphatic TPH >C8-C10	mg/kg	1.00	NONE	1100vap (451)	< 1.0	< 1.0	< 1.0	0.01	0.025	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010																														
Aliphatic TPH >C10-C12	mg/kg	1.00	MCERTS	4700vap (283)	< 1.0	< 1.0	< 1.0	1.0	4.1	< 1.0	2.9	4.8	< 1.0	2.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0																														
Aliphatic TPH >C12-C16	mg/kg	1.00	MCERTS	9000sol (142)	< 1.0	< 1.0	< 1.0	2.00	7.2	< 2.0	9.4	14	6	14	8.4	< 2.0	2.9	< 2.0	13	14	13																														
Aliphatic TPH >C16-C21	mg/kg	1.00	MCERTS	180000	< 1.0	< 1.0	< 1.0	8.00	14	< 8.0	12	20	13	26	19	< 8.0	12	< 8.0	11	35	19																														
Aliphatic TPH >C21-C35	mg/kg	1.00	MCERTS	-	7.2	< 1.0	< 1.0	8.00	78	55	42	73	81	95	74	15	130	< 1.0	9.7	360	71																														
Total Aliphatic Hydrocarbons:	mg/kg	5.00	NONE	-	7.20	< 5.0	< 5.0	10.00	100	55	66	110	100	140	100	15	150	< 10	39	410	110																														
Aromatic TPH >C5-C7	mg/kg	1.00	NONE	8600sol (37)	< 1.0	< 1.0	< 1.0	0.01	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010																														
Aromatic TPH >C7-C9	mg/kg	1.00	NONE	18000vap (4360)	< 1.0	< 1.0	< 1.0	0.01	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010																														
Aromatic TPH >C9-C10	mg/kg	1.00	NONE	1700vap (3590)	< 1.0	< 1.0	< 1.0	0.02	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020																														
Aromatic TPH >C10-C12	mg/kg	1.00	MCERTS	34000sol (2800)	< 1.0	< 1.0	< 1.0	< 1.0	<																																										

Determinand concentration below the GAI

Determinand concentration in exceedance of GAC

Determinand concentration in exceedance of the vapour/solubility saturation limit.

NC: No published criteria, U'S: Unsuitable sample.

vap: Screening criteria presented exceed the vapour saturation limit, which is presented in brackets.

sol: Screening criteria presented exceed the solubility saturation limit, which is presented in brackets

dir: Screening criteria based on threshold protective of direct skin contact (guideline in brackets based on health effects following long term exposure provided for illustration only).

(f): For assessment based on the use of the surrogate marker approach the GAC for Coal Tar must be used instead of benzo(a)pyrene

* Value presented in mg/kg

Table 7: Comparison of Groundwater Chemical Analyses with EQS

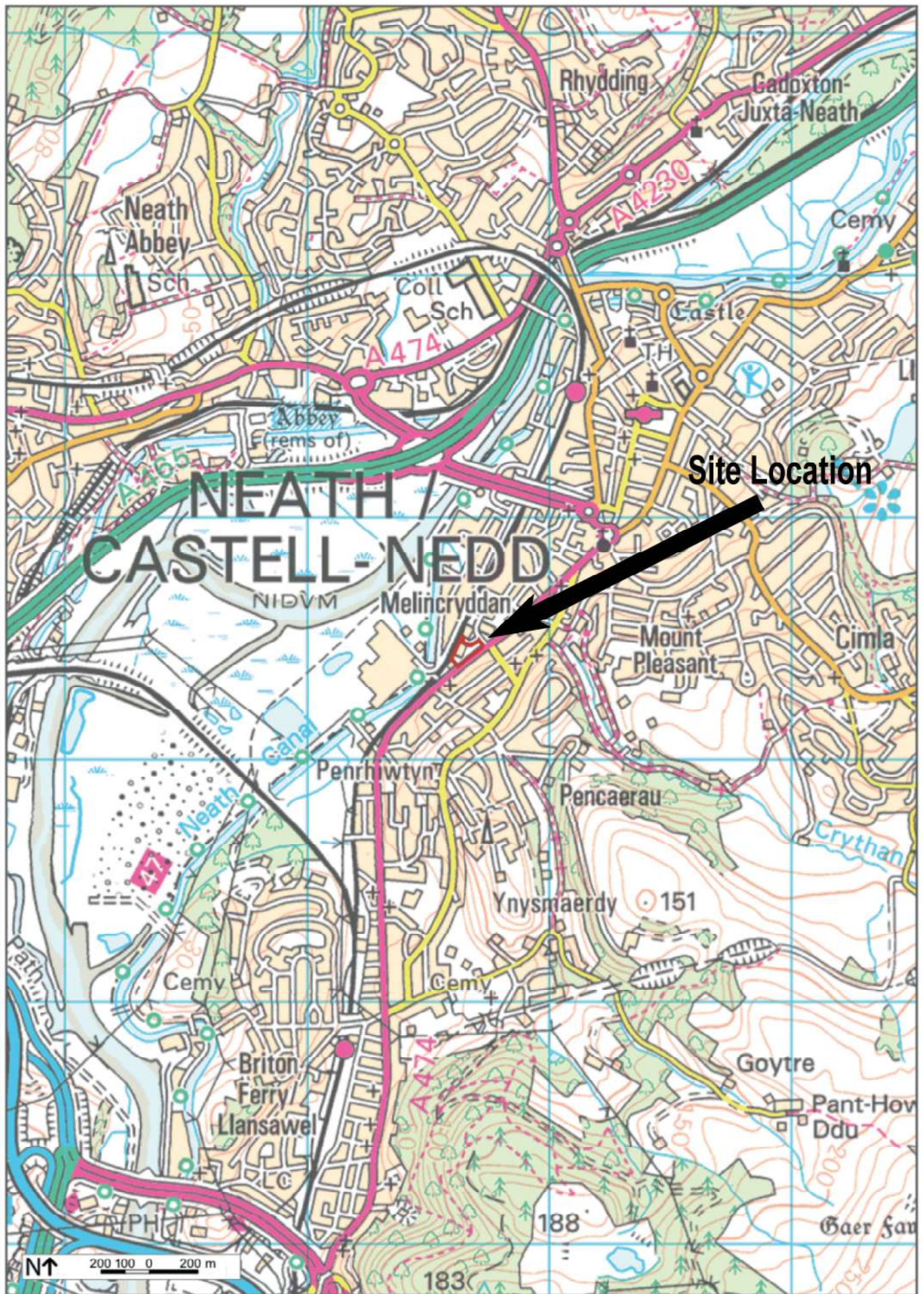
Client: Remada Ltd	Water Framework Directive Regs 2015 Schedule 3 General Quality of Groundwater (Annual Average µg/l)	Drinking Water Regulations 2016 (µg/l)			22-11218	22-11218	22-11218				
Quotation No.:					1398215	1398216	1398217		816534	816535	816536
					WS1B	WS2	WS4		WS1	MP1	MP2
					WATER	WATER	WATER		Ground water	Other water	Other water
					21-Mar-2022	21-Mar-2022	21-Mar-2022		29/01/2026	29/01/2026	29/01/2026
Determinand			Units	LOD				LOD			
pH				N/A	7.6	7.7	7.7	N/A	8.0	7.6	7.6
Arsenic (Dissolved)	50	10	µg/l	1.0	18	1.4	1.2	0.15	0.35	0.65	0.66
Boron (Dissolved)	2000	1000	µg/l	20	150	150	79	10	120	12.00	12.00
Beryllium (Dissolved)			µg/l	1.0	< 1.0	< 1.0	< 1.0	0.1	< 0.1	0.03	0.04
Cadmium (Dissolved)	0.09	5	µg/l	0.080	< 0.11	< 0.11	< 0.11	0.02	0	0.30	0.30
Copper (Dissolved)		2000	µg/l	1.0	< 0.50	1.1	4.6	0.2	< 0.2	3.6	3.1
Mercury (Dissolved)	0.07***	1	µg/l	0.50	< 0.05	< 0.05	< 0.05	0.05	1.9	< 0.05	< 0.05
Nickel (Dissolved)		20	µg/l	1.0	< 0.50	3.2	1.9	0.5	1.9	1.2	1.2
Lead (Dissolved)		10	µg/l	1.0	< 0.50	< 0.50	< 0.50	0.2	< 0.2	< 0.2	< 0.2
Selenium (Dissolved)		10	µg/l	1.0	< 0.50	0.61	< 0.50	0.6	4.9	< 0.6	< 0.6
Vanadium (Dissolved)			µg/l	1.0	< 0.50	< 0.50	1.1	0.2	< 0.2	< 0.2	< 0.2
Zinc (Dissolved)		5000	µg/l	1.0	12	12	37	0.5	6	6	8
Chromium (Trivalent)	4.7	50	µg/l	20	< 20	< 20	< 20	5	< 5.0	< 5.0	< 5.0
Chromium (Hexavalent)	3.4	50	µg/l	20	< 20	< 20	< 20	5	< 5.0	< 5.0	< 5.0
Dissolved Organic Carbon			mg/l	2.0	90	94	41	0.1	2	2	2
Aliphatic TPH >C5-C6			µg/l	0.10	< 0.10	< 0.10	< 0.10	1	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8			µg/l	0.10	< 0.10	< 0.10	< 0.10	1	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10			µg/l	0.10	< 0.10	< 0.10	< 0.10	1	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12			µg/l	0.10	< 0.10	< 0.10	< 0.10	10	< 10	< 10	< 10
Aliphatic TPH >C12-C16			µg/l	0.10	< 0.10	< 0.10	< 0.10	10	< 10	< 10	< 10
Aliphatic TPH >C16-C21			µg/l	0.10	< 0.10	< 0.10	< 0.10	10	< 10	< 10	< 10
Aliphatic TPH >C21-C35			µg/l	0.10	< 0.10	< 0.10	< 0.10	10	< 10	< 10	< 10
Aliphatic TPH >C35-C44			µg/l	0.10	< 0.10	< 0.10	< 0.10				
Total Aliphatic Hydrocarbons			µg/l	5.0	< 5.0	< 5.0	< 5.0	10	< 10	< 10	< 10
Aromatic TPH >C5-C7			µg/l	0.10	< 0.10	< 0.10	< 0.10	1	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8			µg/l	0.10	< 0.10	< 0.10	< 0.10	1	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10			µg/l	0.10	< 0.10	< 0.10	< 0.10	1	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12			µg/l	0.10	< 0.10	< 0.10	< 0.10	10	< 10	< 10	< 10
Aromatic TPH >C12-C16			µg/l	0.10	< 0.10	< 0.10	< 0.10	10	< 10	< 10	< 10
Aromatic TPH >C16-C21			µg/l	0.10	< 0.10	< 0.10	< 0.10	10	< 10	< 10	< 10
Aromatic TPH >C21-C35			µg/l	0.10	< 0.10	< 0.10	< 0.10	10	< 10	< 10	< 10
Aromatic TPH >C35-C44			µg/l	0.10	< 0.10	< 0.10	< 0.10				
Total Aromatic Hydrocarbons			µg/l	5.0	< 5.0	< 5.0	< 5.0	10	< 10	< 10	< 10
Total Petroleum Hydrocarbons			µg/l	10	< 10	< 10	< 10	10	<20	<20	<20
Naphthalene	130		µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene			µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	< 0.01	< 0.01
Acenaphthene			µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.05	< 0.01
Fluorene			µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.04	< 0.01
Phenanthrene			µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.3	0.02
Anthracene	0.1		µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	0.12		µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.38	< 0.01
Pyrene			µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.31	< 0.01
Benzo[a]anthracene			µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.15	< 0.01
Chrysene			µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.19	< 0.01
Benzo[b]fluoranthene	0.017		µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.18	< 0.01
Benzo[k]fluoranthene	0.017		µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.09	< 0.01
Benzo[a]pyrene	0.27		µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	0.14	< 0.01
Indeno(1,2,3-c,d)Pyrene	N/A		µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)Anthracene			µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	< 0.01	< 0.01
Benzo[g,h,i]perylene	0.0082		µg/l	0.10	< 0.10	< 0.10	< 0.10	0.01	< 0.01	< 0.01	< 0.01
Total Of 16 PAH's			µg/l	2.0	< 2.0	< 2.0	< 2.0	0.16	< 0.16	1.82	< 0.16
Phenol			mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	1.0	< 1.0	< 1.0	< 1.0

Solubility of Benzene in water = 1780 ug/l. TPH concentrations as Benzene are greater than the limit of solubility

Less than EQS
LOD>EQS
>EQS



FIGURES



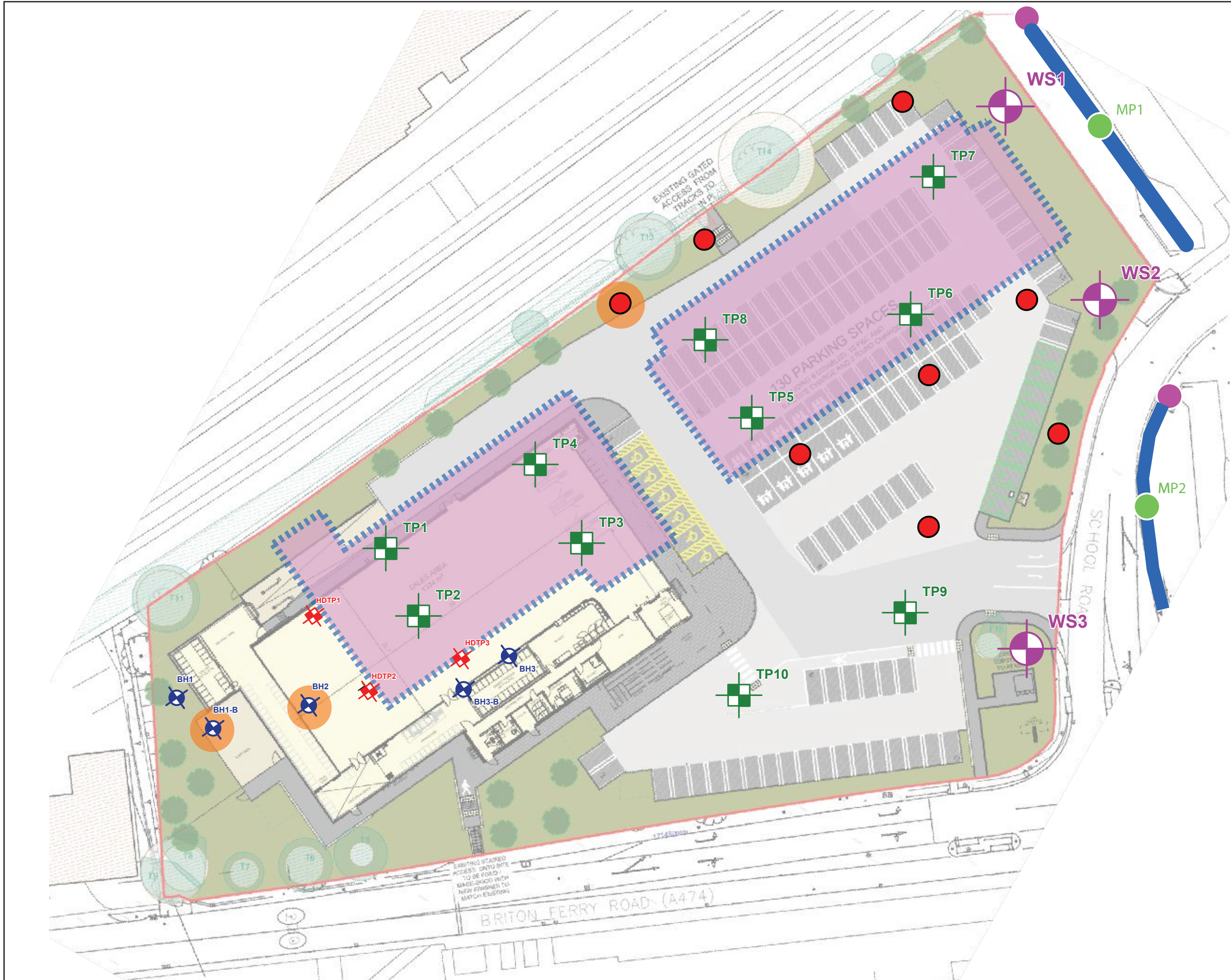
Notes

Promap
LANDMARK INFORMATION

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Plotted Scale - 1:50000. Paper Size - A4

Issue	Approved	Date	Project Title	Scale	Drawn	Size
-	AH	29.09.22	Briton Ferry Road, Neath	as shown	AH	A4
Drawing Title				Date	Job No.	Figure No.
Site Location Plan				29.09.22	769.05	01
Drawing Reference			Client			
769.05-Fig1			Lidl Great Britain Ltd			





Legend

Previous Exploratory Holes

Cable Percussive Borehole Location 2020

Hand Excavated Inspection Pit 2020

Groundwater samples March 2022

River water sample 2022

Opus window sample holes 2016

Existing Footprint

GI November 2025

Trial Pit to prove depth to natural soil and to sample Made Ground

Monitoring Well

Monitoring Point

Notes

Proposed site layout plan reproduced from client-supplied HTC Architects's Proposed Lidl Site Plan, drawing ref: 2782-P4403-Rev H dated October 2024.

Overlay of 1935 historical map on existing and proposed layout

Issue	Approved	Date

Project Title

Briton Ferry Road, Neath

Drawing Title

Exploratory Hole Location Plan

Client

Lidl Great Britain Ltd

Scale	Drawn	Size
as shown	KS	A4

Date	Job No.	Figure No.
18.02.26	769.11	02

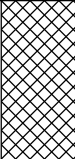
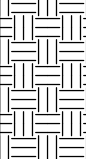
Drawing Reference



EXPLORATORY HOLE LOGS

BOREHOLE LOG

Project Briton Ferry Road, Neath SA11 1AS				BOREHOLE No BH1	
Job No 769.02	Date 23-07-20	Ground Level (m) 6.73	Co-Ordinates () E 274,606.0 N 196,412.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA		Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION			
0.30	D			6.63		0.10	MADE GROUND: Asphalt.			
				6.33		0.40	MADE GROUND: Brownish grey gravelly fine to medium sand. Gravel is angular to subangular of mudstone and quartz.			
0.50	D					(1.00)	MADE GROUND: Dark grey mottled brown gravelly ashy fine to medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including rare wood fragments, brick, slag and coal.			
1.40	D			5.33		1.40	MADE GROUND: Concrete fragments.			
				4.93		(0.40) 1.80				

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											Terminated within concrete at 1.8m bgl; unable to progress despite chiselling. Backfilled with arisings. Position relocated 6m to south-east (see corresponding log for BH1-B)
All dimensions in metres Scale 1:43.75			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By PD		

BOREHOLE LOG

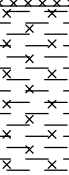
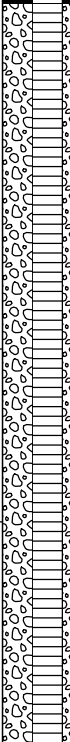
Project Briton Ferry Road, Neath SA11 1AS				BOREHOLE No BH1-B
Job No 769.02	Date 23-07-20	Ground Level (m) 6.75	Co-Ordinates () E 274,612.0 N 196,412.0	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			Water				STRATA		Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION			
0.00-0.10	ES	N14		6.65		0.10	MADE GROUND: Asphalt.			
0.10-0.40	B						MADE GROUND: Brownish grey gravelly fine to medium sand. Gravel is angular to subangular of mudstone and quartz.			
0.30	D			6.35		0.40	MADE GROUND: Medium dense dark grey mottled brown gravelly ashy fine to medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including rare wood fragments, brick, slag and coal.			
0.50	D									
1.00	D	N14				(2.20)				
1.50										
2.60	D			4.15		2.60				
3.00-3.45	U					(0.85)				
3.50	D	N50/ 21 mm		3.30		3.45	Dense brownish grey slightly clayey slightly sandy subangular to rounded fine to coarse GRAVEL of mudstone and shale.			
						(1.05)				
				2.25		4.50				
4.70				2.05		4.70	Dark grey mottled reddish brown MUDSTONE/SHALE, recovered as dense sandy angular to subangular fine to coarse GRAVEL.			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											Chiselling required to progress below 4.5m bgl. Installation to 4.7m bgl; 1.0m plain pipe, 3.7m slotted pipe.
All dimensions in metres Scale 1:43.75			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By PD		

BOREHOLE LOG

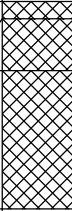
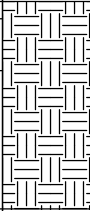
Project Briton Ferry Road, Neath SA11 1AS				BOREHOLE No BH2
Job No 769.02	Date 23-07-20	Ground Level (m) 7.01	Co-Ordinates () E 274,626.0 N 196,420.0	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			Water				STRATA		Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION			
0.30 0.50	D D	N17	6.91		0.10	MADE GROUND: Asphalt.				
	6.61		0.40		MADE GROUND: Brownish grey gravelly fine to medium sand. Gravel is angular to subangular of mudstone and quartz.					
1.50			4.01		3.00	MADE GROUND: Medium dense dark grey mottled brown gravelly ashy fine to medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, slag and coal.				
3.00-3.45 3.00	B	N8	3.01		(1.00)	Soft to firm grey mottled dark grey silty CLAY.				
4.50 4.50	D	N50/ 227 mm	1.71		(1.30)	Dense becoming very dense dark grey slightly sandy angular to subangular fine to coarse GRAVEL of mudstone and shale.				
5.30 5.30	D	N50/ 151 mm								

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											Chiselling required to progress between 5.2m and 5.3m bgl (1 hour). Installation to 5.3m bgl; 1.0m plain pipe, 4.3m slotted pipe.
All dimensions in metres Scale 1:43.75			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By PD		

BOREHOLE LOG

Project Briton Ferry Road, Neath SA11 1AS				BOREHOLE No BH3	
Job No 769.02	Date 23-07-20	Ground Level (m) 7.20	Co-Ordinates () E 274,648.0 N 196,443.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA		Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION			
0.20 0.40	D D			7.10		0.10	MADE GROUND: Asphalt.			
				6.80		0.40	MADE GROUND: Brownish grey gravelly fine to medium sand. Gravel is angular to subangular of mudstone and quartz.			
						(0.80)	MADE GROUND: Dark grey mottled brown gravelly ashy fine to medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, slag and coal.			
				6.00		1.20				

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											Terminated within concrete at 1.2m bgl; unable to progress despite chiselling. Backfilled with arisings. Position relocated 6m to south-west (see corresponding log for BH3-B)
All dimensions in metres Scale 1:43.75			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By PD		

BOREHOLE LOG

Project Briton Ferry Road, Neath SA11 1AS				BOREHOLE No BH3-B
Job No 769.02	Date 23-07-20 24-07-20	Ground Level (m) 7.20	Co-Ordinates () E 274,643.0 N 196,434.0	
Contractor				Sheet 1 of 1

SAMPLES & TESTS			Water				STRATA		Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION			
0.20	D	N9			0.10	MADE GROUND: Asphalt.				
0.50	D				0.40	MADE GROUND: Brownish grey gravelly fine to medium sand. Gravel is angular to subangular of mudstone and quartz.				
1.20					(0.80)	MADE GROUND: Medium dense dark grey mottled brown gravelly ashy fine to medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, slag and coal.				
2.00			N25		1.50	MADE GROUND: Concrete fragments.				
3.00-3.45	U				3.00	MADE GROUND: Medium dense dark grey mottled brown gravelly ashy fine to medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, slag and coal.				
4.00			N10		(2.50)	MADE GROUND: Concrete fragments.				
5.00-5.45	U			5.50	MADE GROUND: Medium dense dark grey mottled brown gravelly ashy fine to medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, slag and coal.					
6.00		N50/ 140 mm		6.00	MADE GROUND: Concrete fragments.					

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Dia. mm	Water Depth	From	To	Hours	From	To	
											Chiselling required to progress below 5.5m bgl. Installation to 6.0m bgl; 1.0m plain pipe, 5.0m slotted pipe.
All dimensions in metres Scale 1:43.75			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By PD		

Trial Pit Log

Project Name: BRITON FERRY ROAD		Client: Lidl Great Britain Ltd		Date: 23/07/2020	
Location: Neath		Contractor:		Co-ords: E274614.00 N196434.00	
Project No. : 769.02		Crew Name:		Equipment: Hand digging tools.	
Location Number HDTP1	Location Type IP	Level 7.42m AoD	Logged By PD	Scale 1:13	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.50 - 0.70	ES		0.05	7.42		MADE GROUND: Concrete paving slab.	1
					0.10	7.37		MADE GROUND Light brown fine sand.	
					0.36	7.32		MADE GROUND: Dark grey gravelly sand with low cobble content and rare boulders. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, shale and rare clinker. Cobbles and boulders are angular of brick.	
								MADE GROUND: Dark grey gravelly ashy fine to coarse sand. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, shale and rare clinker fragments.	
					1.30	7.06		End of Borehole at 1.300m	2

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
0.60	0.60	Sides stable.	No shoring required.				

Remarks

- Hand excavated inspection pit to expose foundations to 1.3m bgl.
- No groundwater encountered.
- Backfilled with arisings upon completion.



Trial Pit Log

Project Name: BRITON FERRY ROAD		Client: Lidl Great Britain Ltd		Date: 23/07/2020	
Location: Neath		Contractor:		Co-ords: E274626.00 N196429.00	
Project No. : 769.02		Crew Name:		Equipment: Hand digging tools.	
Location Number HDTP2	Location Type IP	Level 7.42m AoD	Logged By PD	Scale 1:13	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.05 0.08 0.13	7.42 7.37 7.34		MADE GROUND: Concrete paving slab. MADE GROUND: Light brown medium sand. MADE GROUND: Dark grey gravelly fine to medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including brick and coal fragments. MADE GROUND: Light brown slightly gravelly coarse sand with moderate cobble content. Gravel is angular to subangular fine to coarse predominantly of coarse-grained sandstone. Cobbles are angular of sandstone.	
		0.75 - 0.85	ES						1
					1.20	7.29		End of Borehole at 1.200m	2

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
0.60	0.60	Sides stable.	No shoring required.				

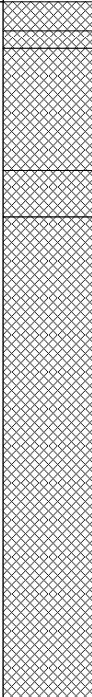
Remarks

- Hand excavated inspection pit to expose foundations to 1.2m bgl.
- No groundwater encountered.
- Backfilled with arisings upon completion.



Trial Pit Log

Project Name: BRITON FERRY ROAD		Client: Lidl Great Britain Ltd		Date: 23/07/2022	
Location: Neath		Contractor:		Co-ords: E274641.00 N196436.00	
Project No. : 769.02		Crew Name:		Equipment: Hand digging tools.	
Location Number HDTP3	Location Type IP	Level 7.44m AoD	Logged By PD	Scale 1:13	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 - 0.80	B		0.05	7.44		MADE GROUND: Concrete paving slab.	1
					0.08	7.39		MADE GROUND: Light brown medium sand.	
								MADE GROUND: Dark grey gravelly ashy medium to coarse sand. Gravel is angular to subangular fine to coarse of mixed lithologies including clinker, coal and brick.	
					0.29	7.36		MADE GROUND: Light grey gravelly fine to medium sand. Gravel is angular to subangular medium of limestone and quartzite.	
					0.37	7.15		MADE GROUND: Dark grey gravelly ashy medium to coarse sand. Gravel is angular to subangular fine to coarse of mixed lithologies including clinker, coal and brick fragments.	
		0.60 - 0.70	ES						
					1.20	7.07		End of Borehole at 1.200m	2

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
0.60	0.60	Sides stable.	No shoring required.				

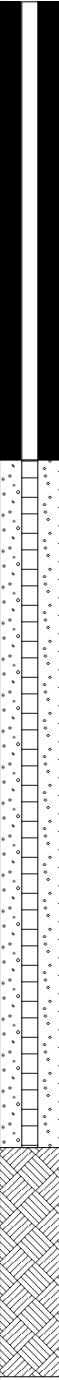
Remarks

1. Hand excavated inspection pit to expose foundations to 1.2m bgl.
2. No groundwater encountered.
3. Backfilled with arisings upon completion.



Percussion Drilling Log

Project Name: BRITON FERRY ROAD		Client: Lidl Great Britain Ltd		Date: 24/08/2022	
Location: Neath		Contractor:		Co-ords: E274633.00 N196481.00	
Project No. : 769		Crew Name:		Drilling Equipment: Tracked Rig	
Borehole Number WS201	Hole Type WS	Level 7.23m AoD	Logged By CE	Scale 1:33	Page Number Sheet 1 of 1

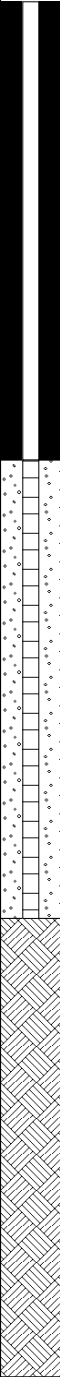
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20	7.03		MADE GROUND: Grey reinforced concrete.	1
								<i>Plastic membrane encountered at 0.2m bgl.</i>	
		0.65	ES		0.50	6.73		MADE GROUND: Dark bluish grey angular coarse gravel of limestone.	
					0.80	6.43		MADE GROUND: Brown and creamish brown fine to coarse sand with frequent coarse gravel-sized fragments of concrete and rare clinker.	
		1.00	SPT	N=4 (1,1/1,1,1,1)				MADE GROUND: Very loose dark brown and black coarse sand with frequent coarse gravel-sized fragments of brick, concrete, sandstone and rare clinker.	2
		1.60	ES						
		2.00	SPT	N=1 (0,0/1,0,0,0)					
					2.60	4.63		Soft dark brown and dark brownish grey sandy SILT with occasional fragments of black organic matter (up to 10mm).	
		2.70	ES		3.00	4.23		Very soft to soft bluish grey silty CLAY with occasional relict roots (up to 5mm thick) and rare fragments of black organic matter (up to 10mm).	3
		3.00	SPT	N=0 (0,0/0,0,0,0)					
		3.20	D						
		4.00	SPT	N=0 (1,0/0,0,0,0)					
		5.00	SPT	N=0 (1,0/0,0,0,0)					5
					6.00	1.23		End of Borehole at 6.000m	
		6.00	SPT	50 (5,12/50 for 200mm)					

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater encountered at 2.5m bgl. 2. Installation to 5.0m bgl; 2.0m plain pipe, 3.0m slotted pipe.										
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Percussion Drilling Log

Project Name: BRITON FERRY ROAD		Client: Lidl Great Britain Ltd		Date: 24/08/2022	
Location: Neath		Contractor:		Co-ords: E274663.00 N196462.00	
Project No. : 769		Crew Name:		Drilling Equipment: Tracked Rig	
Borehole Number WS202	Hole Type WS	Level 7.29m AoD	Logged By CE	Scale 1:33	Page Number Sheet 1 of 1

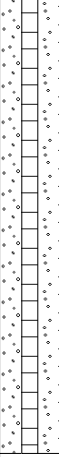
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.16 0.25	7.13 7.04		MADE GROUND: Asphalt.	
								MADE GROUND: Dark bluish grey angular coarse gravel of limestone.	
								MADE GROUND: Brown and creamish brown fine to coarse sand with frequent coarse gravel sized fragments of concrete and rare clinker.	
		1.00	SPT	N=4 (1,1/1,1,1,1)					1
		1.20	ES						
		2.00	SPT	N=2 (1,0/1,0,0,1)					2
					2.20	5.09			
		2.65	D					Soft dark brown and dark brownish grey sandy SILT with occasional fragments of black organic matter (up to 10mm).	
		3.00	SPT	N=2 (1,1/0,0,1,1)	3.00	4.29		Soft dark brown and dark brownish grey sandy SILT with occasional fragments of black organic matter (up to 10mm).	3
		4.00	SPT	N=0 (0,0/0,0,0,0)				Soft dark brown and dark brownish grey sandy SILT with occasional fragments of black organic matter (up to 10mm).	4
		4.50	D						
		5.00	SPT	N=0 (0,0/0,0,0,0)					5
		5.50	D						
		6.00	SPT	50 (25 for 85mm/50 for 160mm)	5.90 6.00	1.39 1.29		Weak grey fine to medium grained SANDSTONE. Recovered as sandy angular coarse GRAVEL. End of Borehole at 6.000m	6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater encountered at 2.2m bgl. 2. Installation to 4.0m bgl; 2.0m plain pipe, 2.0m slotted pipe.										
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Percussion Drilling Log

Project Name: BRITON FERRY ROAD		Client: Lidl Great Britain Ltd		Date: 24/08/2022	
Location: Neath		Contractor:		Co-ords: E274712.00 N196474.00	
Project No. : 769		Crew Name:		Drilling Equipment: Tracked Rig	
Borehole Number WS203	Hole Type WS	Level 6.95m AoD	Logged By CE	Scale 1:33	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.12			0.12	6.83		MADE GROUND: Asphalt.	
		0.30			0.30	6.65		MADE GROUND: Dark bluish grey angular coarse gravel of limestone.	
		0.50	ES					MADE GROUND: Light grey and yellowish grey very sandy angular gravel of brick, clinker and concrete, with occasional cobbles of concrete. Sand is coarse.	
		1.00	SPT	N=38 (10,10/14,10,7,7)					1
		1.40			1.40	5.55			
		1.60	ES					MADE GROUND: Dark brown and black very sandy angular coarse gravel of brick, clinker and limestone. Sand is coarse.	
		2.00	SPT	N=0 (0,0/0,0,0,0)	2.00	4.95		Very soft becoming firm dark grey and dark bluish grey sandy clayey SILT with occasional fragments of black organic matter (up to 15mm). Sand is fine.	2
		2.50	D						
		3.00	SPT	N=20 (1,1/0,0,10,10)					3
		4.00	SPT	50 (25 for 85mm/50 for 160mm)	4.00	2.95		End of Borehole at 4.000m	4
									5
									6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater encountered at 2.0m bgl. 2. Installation to 4.0m bgl; 2.0m plain pipe, 2.0m slotted pipe.										
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Key to exploratory hole symbols and abbreviations

SAMPLE TYPES

ACM - Asbestos sample	AMAL - Amalgamated sample	B - Bulk disturbed sample
BLK - Block sample	C - Core sample	CBR - CBR test sample
D - Disturbed sample	ES - Environmental sample	EW - Environmental water sample
G - Gas sample	J - Jar sample	L - Liner sample
TW - Pushed thin wall sample	U - Undisturbed sample	UT - Undisturbed thin wall sample
W - Water sample		

IN-SITU TESTS

HV - Hand shear vane	HV(r) - Hand shear vane residual	PID - Photo ionisation detector
PP - Hand penetrometer	SPT - Standard penetration test	SPT(C) - SPT using cone

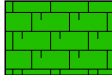
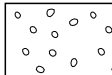
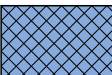
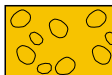
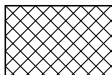
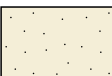
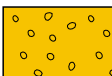
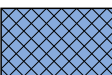
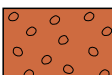
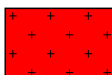
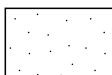
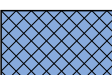
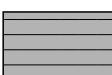
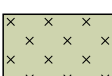
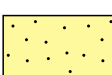
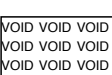
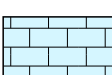
GROUNDWATER

 Groundwater strike	 Groundwater rest level
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ROTARY CORE DETAILS

TCR - Total core recovery (%)	SCR - Solid core recovery (%)	RQD - Rock quality designation (%)
FI - Fracture index	NI - Non-intact core	AZCL - Assumed zone of core loss

LEGEND

 Topsoil	 Clay	 Chalk	 Sand backfill
 Peat	 Silt	 Breccia	 Gravel backfill
 Made ground	 Sand	 Conglomerate	 Arising
 Concrete	 Gravel	 Metamorphic	 Bentonite
 Wood	 Cobbles	 Igneous	 Concrete
 Brick	 Boulders		 Grout
 Bituminous material	 Mudstone		 Plain pipe
 Gypsum	 Siltstone		
 Coal	 Sandstone		 Slotted pipe
 Void	 Limestone		



Trial Pit

TP1
Sheet 1 of 1

Hole Type TP	Easting 274620.00	Northing 196453.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.50	ES 1			(1.20)		MADE GROUND: Dark brown and black very sandy locally slightly clayey angular to subrounded fine to coarse gravel of concrete, brick, plastic and rebar.	0.5
						1.20			1.0
								End of Trial Pit at 1.20m	1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater encountered at 1.0m. 3) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 1.20m TP 16T Excavator Stable	Logger KS
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Trial Pit

TP2
Sheet 1 of 1

Hole Type TP	Easting 274632.00	Northing 196444.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.90	ES 1			(1.00)		MADE GROUND: Dark brown sand and angular to rounded fine to coarse gravel of brick, concrete, wood, metal and quartzite with occasional cobbles of brick.	0.5
						1.00			
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0



Trial Pit

TP3
Sheet 1 of 1

Hole Type TP	Easting 274633.00	Northing 196474.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata						
		Depth (m)	Type/ Ref	Results			Legend	Description					
		0.70	ES 1			(1.00)		MADE GROUND: Dark brown and black very sandy locally slightly clayey angular to subrounded fine to coarse gravel of concrete, brick, plastic, wood, pipe, quartzite and rebar with cobbles of brick and concrete boulders.	0.5				
1.00								1.0					
End of Trial Pit at 1.00m								1.0					
								1.5					
								2.0					
								2.5					
								3.0					
								3.5					
								4.0					
								4.5					
								5.0					

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Backfilled with arisings upon completion. 4) Trial pit terminated due to refusal on buried concrete.	Method, Plant, Stability, Dimensions 0.00 - 1.00m TP 16T Excavator Stable	Logger KS
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Trial Pit

TP4
Sheet 1 of 1

Hole Type TP	Easting 274647.00	Northing 196463.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.40	ES 1			(0.70)		MADE GROUND: Dark brown and black very sandy locally slightly clayey angular to subrounded fine to coarse gravel of concrete, brick, plastic, wood, pipe, quartzite and rebar with cobbles of brick and concrete boulders.	0.5
						0.70		End of Trial Pit at 0.70m	1.0
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 0.70m TP 16T Excavator Stable	Logger KS
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Trial Pit

TP5
Sheet 1 of 1

Hole Type TP	Easting 274662.00	Northing 196492.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (thickness) (m)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.80	ES 1			(1.00)		MADE GROUND: Dark brown very gravelly sand. Gravel is angular to rounded fine to coarse brick, concrete, sandstone and quartzite with rare cobbles of concrete.	0.5
								End of Trial Pit at 1.00m	1.0
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 1.00m TP 16T Excavator Stable	Logger KS
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Trial Pit

TP6
Sheet 1 of 1

Hole Type TP	Easting 274677.00	Northing 196523.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		1.00	ES 1			(0.90)		MADE GROUND: Dark brown very gravelly sand. Gravel is angular to rounded fine to coarse brick, concrete, sandstone and quartzite with rare concrete boulder.	0.5
						0.90 (0.20)		MADE GROUND: Dark brown and black gravelly sand. Gravel is angular to rounded fine to coarse ash, tarmac and mudstone.	1.0
						1.10		End of Trial Pit at 1.10m	
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 1.10m TP 16T Excavator Stable	Logger KS
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Trial Pit

TP7
Sheet 1 of 1

Hole Type TP	Easting 274667.00	Northing 196537.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.40	ES 1			(1.30)		MADE GROUND: Dark brown slightly sandy locally slightly clayey angular to subrounded fine to coarse gravel of brick and sandstone.	0.5
						1.30			1.0
								End of Trial Pit at 1.30m	1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 1.30m TP 16T Excavator Loose side walls	Logger KS
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Trial Pit

TP8
Sheet 1 of 1

Hole Type TP	Easting 274649.00	Northing 196499.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata								
		Depth (m)	Type/ Ref	Results			Legend	Description							
		0.60	ES 1			(1.00)		MADE GROUND: Dark brown very gravelly sand. Gravel is angular to rounded fine to coarse brick, concrete, glass, rubber, sandstone and quartzite with rare cobbles of concrete.	0.5						
									1.0						
									End of Trial Pit at 1.00m						
										1.5					
										2.0					
										2.5					
										3.0					
										3.5					
										4.0					
										4.5					
										5.0					

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 1.00m TP 16T Excavator Stable	Logger KS
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Trial Pit

TP9
Sheet 1 of 1

Hole Type TP	Easting 274696.00	Northing 196471.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.30	ES 1			(0.40)		MADE GROUND: Grey sandy angular to subrounded fine to medium gravel of concrete, sandstone and mudstone.	
						0.40			
								End of Trial Pit at 0.40m	0.5
									1.0
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Backfilled with arisings upon completion. 4) Trial pit terminated due to refusal on buried concrete.	Method, Plant, Stability, Dimensions 0.00 - 0.40m TP 16T Excavator Stable	Logger KS
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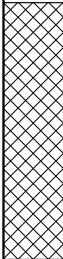
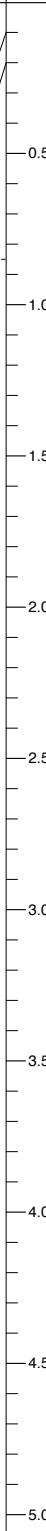


Trial Pit

TP10
Sheet 1 of 1

Hole Type TP	Easting 274664.00	Northing 196446.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (thickness) (m)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.80	ES 1			(0.10)		MADE GROUND: Grey sandy angular to rounded fine to coarse gravel of concrete, sandstone and quartzite.	
						0.10		MADE GROUND: Light brown subbase.	
						0.10		MADE GROUND: Dark brown and red very gravelly sand. Gravel is angular to rounded fine to coarse brick, concrete, sandstone and quartzite with rare cobbles of concrete.	
						0.20			
					(0.65)			0.5	
					0.85		End of Trial Pit at 0.85m		1.0
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 0.85m TP 16T Excavator Stable	Logger KS
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Key to exploratory hole symbols and abbreviations

SAMPLE TYPES

ACM - Asbestos sample	AMAL - Amalgamated sample	B - Bulk disturbed sample
BLK - Block sample	C - Core sample	CBR - CBR test sample
D - Disturbed sample	ES - Environmental sample	EW - Environmental water sample
G - Gas sample	J - Jar sample	L - Liner sample
TW - Pushed thin wall sample	U - Undisturbed sample	UT - Undisturbed thin wall sample
W - Water sample		

IN-SITU TESTS

HV - Hand shear vane	HV(r) - Hand shear vane residual	PID - Photo ionisation detector
PP - Hand penetrometer	SPT - Standard penetration test	SPT(C) - SPT using cone

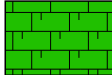
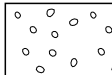
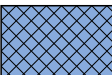
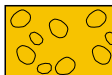
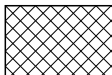
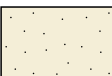
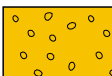
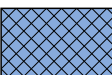
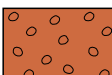
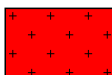
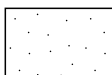
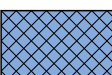
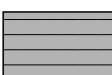
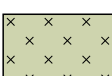
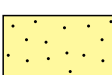
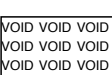
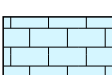
GROUNDWATER

 Groundwater strike	 Groundwater rest level
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ROTARY CORE DETAILS

TCR - Total core recovery (%)	SCR - Solid core recovery (%)	RQD - Rock quality designation (%)
FI - Fracture index	NI - Non-intact core	AZCL - Assumed zone of core loss

LEGEND

 Topsoil	 Clay	 Chalk	 Sand backfill
 Peat	 Silt	 Breccia	 Gravel backfill
 Made ground	 Sand	 Conglomerate	 Arisings
 Concrete	 Gravel	 Metamorphic	 Bentonite
 Wood	 Cobbles	 Igneous	 Concrete
 Brick	 Boulders		 Grout
 Bituminous material	 Mudstone		 Plain pipe
 Gypsum	 Siltstone		
 Coal	 Sandstone		 Slotted pipe
 Void	 Limestone		



Dynamic (Windowless) Sampler

WS1

Sheet 1 of 1

Hole Type WLS	Easting 274669.00	Northing 196547.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m)	Strata	
		Depth (m)	Type/ Ref	Results			Legend	Description
						(0.30)		MADE GROUND: Grey sandy subangular to subrounded fine to coarse gravel of concrete and mudstone.
						0.30		
						(0.70)		MADE GROUND: Brown gravelly sand. Gravel is subangular to subrounded fine to coarse brick and sandstone.
						1.00		
						(1.20)		MADE GROUND: Light reddish brown slightly clayey slightly sandy subangular to subrounded fine to coarse gravel of brick, slag and sandstone with occasional cobbles of cemented gravel.
		1.50	ES 1					
								Slight hydrocarbon odour. (1.50m)
						2.20		Firm to stiff grey CLAY.
						(1.80)		
								No recovery. (3.60 - 4.00m)
						4.00		End of Borehole at 4.00m

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater encountered at 2.2m. 3) Groundwater monitoring pipe installed. 4) Borehole drilled to 4.0m then collapsed to 2.3m and redrilled to 3.7m.	Method, Plant, Stability, Dimensions 0.00 - 4.00m WLS Window Sampler Rig	Logger JH
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Dynamic (Windowless) Sampler

WS2a
Sheet 1 of 1

Hole Type WLS	Easting 274702.00	Northing 196516.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata						
		Depth (m)	Type/ Ref	Results			Legend	Description					
						(0.30)		MADE GROUND: Brown clayey sand (Topsoil).	0.5				
						0.30				MADE GROUND: Dark brown slightly clayey gravelly sand. Gravel is subangular to subrounded fine to coarse concrete, brick, plastic, sandstone and quartzite.			
						(0.50)							
						0.80	End of Borehole at 0.80m						
								1.0					
								1.5					
								2.0					
								2.5					
								3.0					
								3.5					
								4.0					
								4.5					
								5.0					

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Borehole terminated at 0.8m due to concrete obstruction. 4) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 0.80m WLS Window Sampler Rig	Logger JH
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Dynamic (Windowless) Sampler

WS2b
Sheet 1 of 1

Hole Type WLS	Easting 274701.00	Northing 196517.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (thickness) (m)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.80	ES 1			(0.30)		MADE GROUND: Brown clayey sand (Topsoil).	0.5
						0.30		MADE GROUND: Dark brown slightly clayey gravelly sand with cobbles of concrete. Gravel is subangular to subrounded fine to coarse concrete, brick, plastic, sandstone and quartzite.	
						(0.70)			
						1.00			
<i>End of Borehole at 1.00m</i>								1.0	
								1.5	
								2.0	
								2.5	
								3.0	
								3.5	
								4.0	
								4.5	
								5.0	

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Borehole terminated at 1.0m due to concrete obstruction. 4) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 1.00m WLS Window Sampler Rig	Logger JH
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Dynamic (Windowless) Sampler

WS2c
Sheet 1 of 1

Hole Type WLS	Easting 274702.00	Northing 196518.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
						(0.30)		MADE GROUND: Brown clayey sand (Topsoil).	
						0.30			
						(0.30)		MADE GROUND: Dark brown slightly clayey gravelly sand. Gravel is subangular to subrounded fine to coarse concrete, brick, plastic, sandstone and quartzite.	0.5
						0.60		End of Borehole at 0.60m	
									1.0
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Borehole terminated at 0.6m due to concrete obstruction. 4) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 0.60m WLS Window Sampler Rig	Logger JH
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Dynamic (Windowless) Sampler

WS3a

Sheet 1 of 1

Hole Type WLS	Easting 274709.00	Northing 196479.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
						(0.30)		MADE GROUND: Brown slightly clayey sand (Topsoil).	
						0.30		MADE GROUND: Grey slightly gravelly sand with occasional cobbles of concrete. Gravel is subangular to subrounded fine to coarse concrete, brick, plastic, wood, sandstone and quartzite.	0.5
						(0.70)			
						1.00			1.0
								End of Borehole at 1.00m	
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Borehole terminated at 1.0m due to concrete obstruction. 4) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 1.00m WLS Window Sampler Rig	Logger JH
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Dynamic (Windowless) Sampler

WS3b
Sheet 1 of 1

Hole Type WLS	Easting 274710.00	Northing 196481.00	Ground Level (m)	Scale 1:25
Project Name Briton Ferry	Project No. 769.11	Start Date 2026-01-15	End Date 2026-01-15	

Client Lidl Great Britain Ltd	Consultant Remada Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.60	ES 1			(0.30)		MADE GROUND: Brown slightly sandy gravelly clay. Gravel is subangular to subrounded fine to coarse brick, sandstone and quartzite (Topsoil).	0.5
						0.30		MADE GROUND: Dark brown gravelly sand. Gravel is subangular to subrounded fine to coarse concrete, brick, asphalt and sandstone.	
						(1.20)			1.0
						1.50			1.5
								End of Borehole at 1.50m	1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
									5.0

Remarks 1) Location CAT scanned prior to drilling. 2) Groundwater not encountered. 3) Borehole terminated at 1.5m due to concrete obstruction. 4) Backfilled with arisings upon completion.	Method, Plant, Stability, Dimensions 0.00 - 1.50m WLS Window Sampler Rig	Logger JH
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APPENDIX A

SPT Hammer Energy Test Certificate

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING (UK) LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: DART300
Test Date: 06/09/2021
Report Date: 06/09/2021
File Name: DART300.spt
Test Operator: JL

Instrumented Rod Data

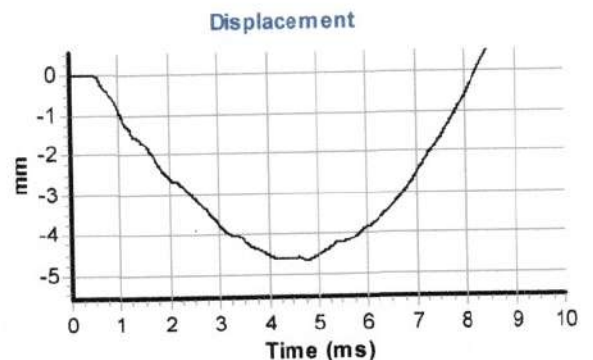
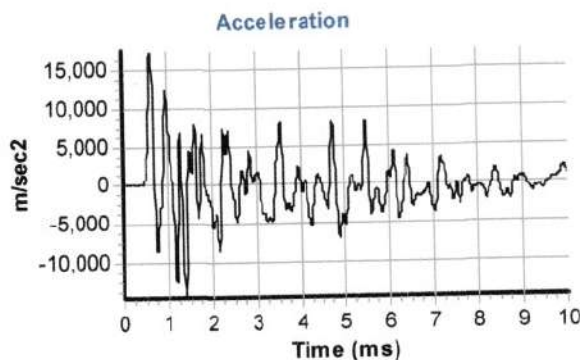
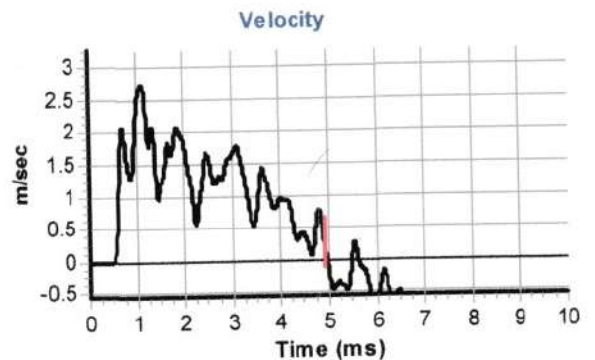
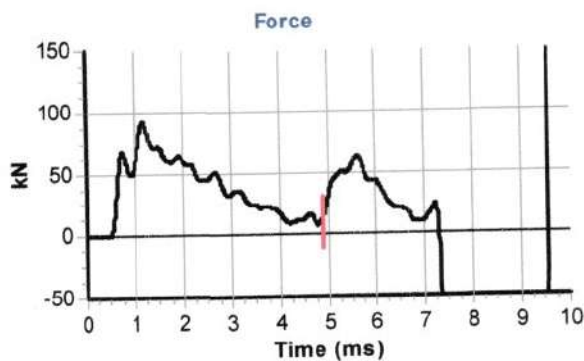
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 200
Accelerometer No.1: 7080
Accelerometer No.2: 11609

SPT Hammer Information

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

Comments / Location

REGIONAL DRILLING / 77130



Calculations

Area of Rod A (mm²): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 276

Energy Ratio E_r (%):

58

Signed: C. McCLUSKEY

Title: FITTER

The recommended calibration interval is 12 months



James Fisher Testing Services
Ruby House
40a Hardwick Grange
Woolton
Warrington
WA1 4RF

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

SPT Hammer Ref: R33
Test Date: 13/09/2019
Report Date: 16/09/2019
File Name: R33.spt
Test Operator: OT

Instrumented Rod Data

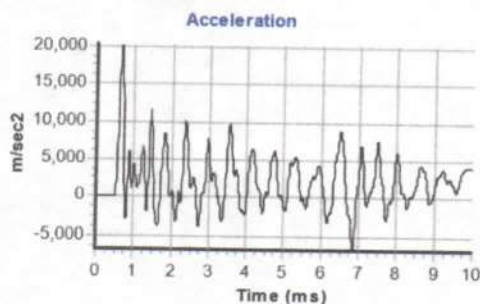
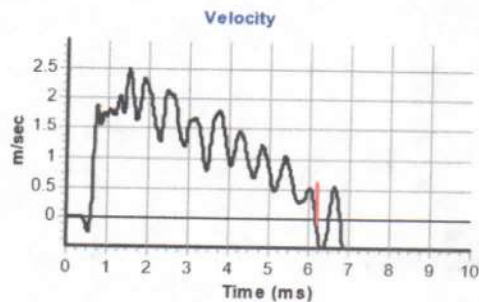
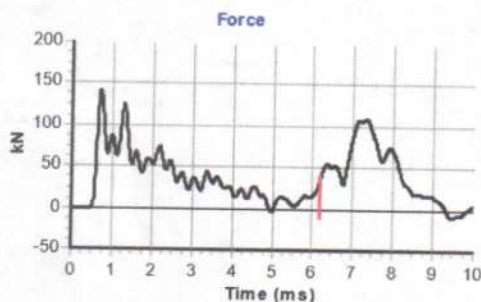
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.5
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 8965
Accelerometer No.2: 11949

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 14.5

Comments / Location

Client: Vincent Camron Drilling
Location: JFTS Laboratory
Hammer Type: Trip Hammer



Calculations

Area of Rod A (mm²): 970
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 411

Energy Ratio E_r (%): **87**

Signed: Oliver Turpin
Title: Team Leader



APPENDIX B

Low Flow Certificates

Table 4.2: Low Flow Sampling Paramters

Site:	Neath
Project No.:	769.05

Operator:	AH
Date:	29/09/2022

Instrument Details:	
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Well No.	Well Screen (m bgl)	Well Diameter (mm)	Depth to base (m bgl)	Depth to product (m bgl)	Depth to water (m bgl)	Well elevation (m aOD)	Groundwater elevation (m aOD)	Purge time (t)	Purge Vol (l)	pH	Temp. (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/l)	ORP (mV)	Corrected ORP* (mV)	Comments
WS201	2-6	50	4.35	N/A	1.80	7.230	5.430	5	4	6.72	18.59	996	0.10	-183.2	200.7	
								10	8	6.68	18.64	998	0.06	-189.3	200.6	
								15	12	6.65	18.74	994	0.03	-198.3	200.5	
								20	16	6.67	18.71	1004	0.00	-213.6	200.6	
								25	27	6.66	18.83	999	0.32	-227.8	200.4	
								30	36	6.67	18.82	1001	0.38	-234.6	200.5	
WS202	2-4	50	3.50	N/A	1.70	7.290	5.590	5	4	6.84	18.91	1259	0.14	-204.6	200.4	
								10	8	6.83	19.01	1249	0.13	-206.4	200.3	
								15	12	6.81	19.09	1240	0.25	-199.5	200.2	
								20	15	6.81	19.07	1240	0.15	-203.1	200.2	
								25	19	6.81	19.00	1242	0.08	-209.9	200.3	
								30	23	6.81	19.02	1240	0.11	-211.2	200.3	
WS203	2-6	50	3.95	N/A	1.83	6.950	5.120	5	3	7.02	18.10	410	-0.01	-260.4	201.1	
								10	6	7.02	18.10	209	-0.03	-260.9	201.1	
								15	9	7.05	18.07	208	0.16	-266.5	201.1	
								20	12	7.09	18.02	407	0.22	-268.3	201.1	
								25	15	7.09	17.90	407	0.30	-265.9	201.2	
								30	18	7.11	17.88	407	0.36	-268.4	201.3	

Legend

NA - Not applicable
 ND - not detected
 m bgl - metres below ground level
 mb TOC - metres below Top of Casing
 m AOD - metres Above Ordnance Datum
 l - litres
 °C - degrees celsius
 µS/cm^c - micro siemens per centimetre
 mV - milli volts
 pH - potential of Hydrogen (dimensionless)
 ORP - Oxidation Reduction Potential
 NVO - No visual or olfactory evidence of contamination

*** ORP Correction Factor:**

ORP values are dependent on solution composition, temperature, and sensor type. In order to normalise these to a standard hydrogen electrode (SHE) the following correction factor is applied:

$$E_h = E_m + E_{ref}$$

Where: E_h = Corrected ORP value
 E_m = ORP measured by probe

$$E_{ref} = \text{Correction factor} = [215.81 - \text{temperature} \times (0.77942 + \text{temperature} \times 0.001934)]$$

Therefore:	Temp. (°C)	Approximate correction
	10	207.8
	15	203.7
	20	199.4



APPENDIX C

Laboratory Chemical Analyses – Soil



Final Report

Report No.:	20-19735-1		
Initial Date of Issue:	04-Aug-2020		
Client	Remada Ltd		
Client Address:	Forward House 17 High Street Henley in Arden B95 5AA		
Contact(s):	Peter Dickinson Greg Jones		
Project	769.02 Briton Ferry Road, Neath		
Quotation No.:		Date Received:	29-Jul-2020
Order No.:	769.02	Date Instructed:	29-Jul-2020
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	04-Aug-2020
Date Approved:	04-Aug-2020		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Miscellaneous Solid

Project: 769.02 Briton Ferry Road, Neath

Client: Remada Ltd	Chemtest Job No.:				20-19735
Quotation No.:	Chemtest Sample ID.:				1040115
	Client Sample ID.:				4
	Sample Location:				BH1-B
	Sample Type:				MISCSOLID
	Top Depth (m):				0.00
	Bottom Depth (m):				0.10
	Date Sampled:				23-Jul-2020
Determinand	Accred.	SOP	Units	LOD	
Naphthalene	N	2700	mg/kg	0.10	< 0.10
Acenaphthylene	N	2700	mg/kg	0.10	< 0.10
Acenaphthene	N	2700	mg/kg	0.10	< 0.10
Fluorene	N	2700	mg/kg	0.10	< 0.10
Phenanthrene	N	2700	mg/kg	0.10	< 0.10
Anthracene	N	2700	mg/kg	0.10	< 0.10
Fluoranthene	N	2700	mg/kg	0.10	< 0.10
Pyrene	N	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene	N	2700	mg/kg	0.10	< 0.10
Chrysene	N	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	N	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	N	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	N	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	N	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	N	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	N	2700	mg/kg	0.10	< 0.10
Coronene	N	2700	mg/kg	0.10	< 0.10
Total Of 17 PAH's	N	2700	mg/kg	2.0	< 2.0
Moisture	N		%	0.10	< 0.10

Results - Soil

Project: 769.02 Briton Ferry Road, Neath

Client: Remada Ltd	Chemtest Job No.:				20-19735	20-19735	20-19735
Quotation No.:	Chemtest Sample ID.:				1040112	1040113	1040114
	Client Sample ID.:				1	2	3
	Sample Location:				HDTP1	HDTP2	HDTP3
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.75	0.60
	Bottom Depth (m):					0.85	0.70
	Date Sampled:				23-Jul-2020	23-Jul-2020	23-Jul-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	Cement, Fibres/Clumps
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	Chrysotile
ACM Detection Stage	U	2192		N/A	-	-	Stereo Microscopy
Asbestos by Gravimetry	U	2192	%	0.001			0.005
Total Asbestos	N	2192	%	0.001			0.005
Moisture	N	2030	%	0.020	9.0	7.6	8.9
Soil Colour	N	2040		N/A	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand
Chromatogram (TPH)	N			N/A	See Attached	See Attached	See Attached
pH	M	2010		4.0	9.8	9.7	9.4
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.83	1.2	0.66
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO ₄	M	2120	g/l	0.010	0.16	0.64	0.042
Total Sulphur	M	2175	%	0.010	0.28	0.10	0.11
Chloride (Water Soluble)	M	2220	g/l	0.010	0.020	0.011	0.023
Nitrate (Water Soluble)	N	2220	g/l	0.010	< 0.010	< 0.010	< 0.010
Ammonium (Water Soluble)	M	2120	g/l	0.01	< 0.01	< 0.01	< 0.01
Sulphate (Acid Soluble)	M	2430	%	0.010	0.15	0.28	0.092
Arsenic	M	2450	mg/kg	1.0	35	21	36
Beryllium	U	2450	mg/kg	1.0	2.0	< 1.0	< 1.0
Cadmium	M	2450	mg/kg	0.10	0.66	< 0.10	1.2
Copper	M	2450	mg/kg	0.50	99	7.7	130
Mercury	M	2450	mg/kg	0.10	0.72	< 0.10	12
Nickel	M	2450	mg/kg	0.50	30	9.8	41
Lead	M	2450	mg/kg	0.50	350	17	230
Selenium	M	2450	mg/kg	0.20	0.43	< 0.20	0.55
Vanadium	U	2450	mg/kg	5.0	160	28	58
Zinc	M	2450	mg/kg	0.50	350	30	690
Chromium (Trivalent)	N	2490	mg/kg	1.0	240	20	160
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.059	0.0030	0.050
Aliphatic TPH >C ₅ -C ₆	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C ₆ -C ₈	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 769.02 Briton Ferry Road, Neath

Client: Remada Ltd	Chemtest Job No.:				20-19735	20-19735	20-19735
Quotation No.:	Chemtest Sample ID.:				1040112	1040113	1040114
	Client Sample ID.:				1	2	3
	Sample Location:				HDTP1	HDTP2	HDTP3
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.75	0.60
	Bottom Depth (m):					0.85	0.70
	Date Sampled:				23-Jul-2020	23-Jul-2020	23-Jul-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	7.2	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	7.2	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	8.4	16	8.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	430	150	120
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	440	170	120
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	450	170	120
Naphthalene	M	2700	mg/kg	0.10	0.77	0.30	0.58
Acenaphthylene	M	2700	mg/kg	0.10	1.1	0.14	0.25
Acenaphthene	M	2700	mg/kg	0.10	1.2	0.48	1.1
Fluorene	M	2700	mg/kg	0.10	1.2	0.49	1.2
Phenanthrene	M	2700	mg/kg	0.10	7.0	5.8	11
Anthracene	M	2700	mg/kg	0.10	2.5	2.0	2.9
Fluoranthene	M	2700	mg/kg	0.10	14	15	20
Pyrene	M	2700	mg/kg	0.10	14	16	21
Benzo[a]anthracene	M	2700	mg/kg	0.10	11	8.3	12
Chrysene	M	2700	mg/kg	0.10	12	8.2	11
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	20	9.4	15
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	6.6	3.5	5.4
Benzo[a]pyrene	M	2700	mg/kg	0.10	14	7.8	11
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	11	4.5	6.5
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	4.2	1.2	2.0
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	12	4.3	5.5
Total Of 16 PAH's	M	2700	mg/kg	2.0	130	87	130
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 769.02 Briton Ferry Road, Neath

Client: Remada Ltd	Chemtest Job No.:				20-19735	20-19735	20-19735
Quotation No.:	Chemtest Sample ID.:				1040112	1040113	1040114
	Client Sample ID.:				1	2	3
	Sample Location:				HDTP1	HDTP2	HDTP3
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.50	0.75	0.60
	Bottom Depth (m):					0.85	0.70
	Date Sampled:				23-Jul-2020	23-Jul-2020	23-Jul-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30

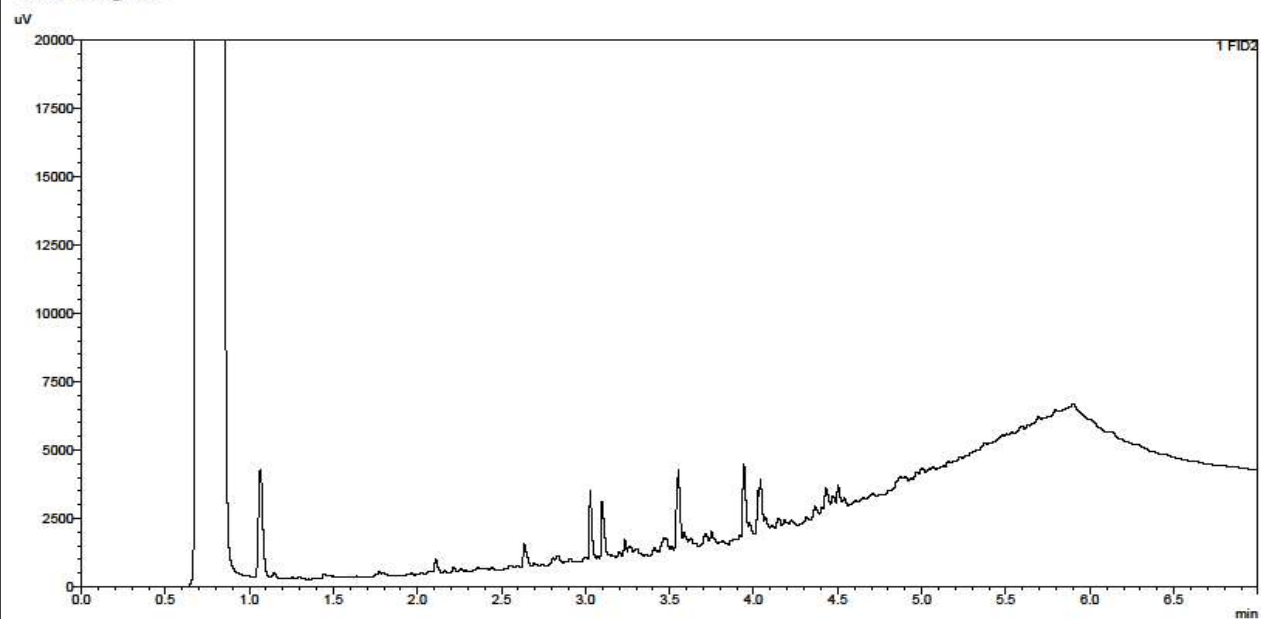
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Sample Name : 1040112 20-19735
Data Filename : 31 July 2020_31072020_1040112 20-19735_058.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 104
Date Acquired : 31/07/2020 22:42:04
Date Processed : 31/07/2020



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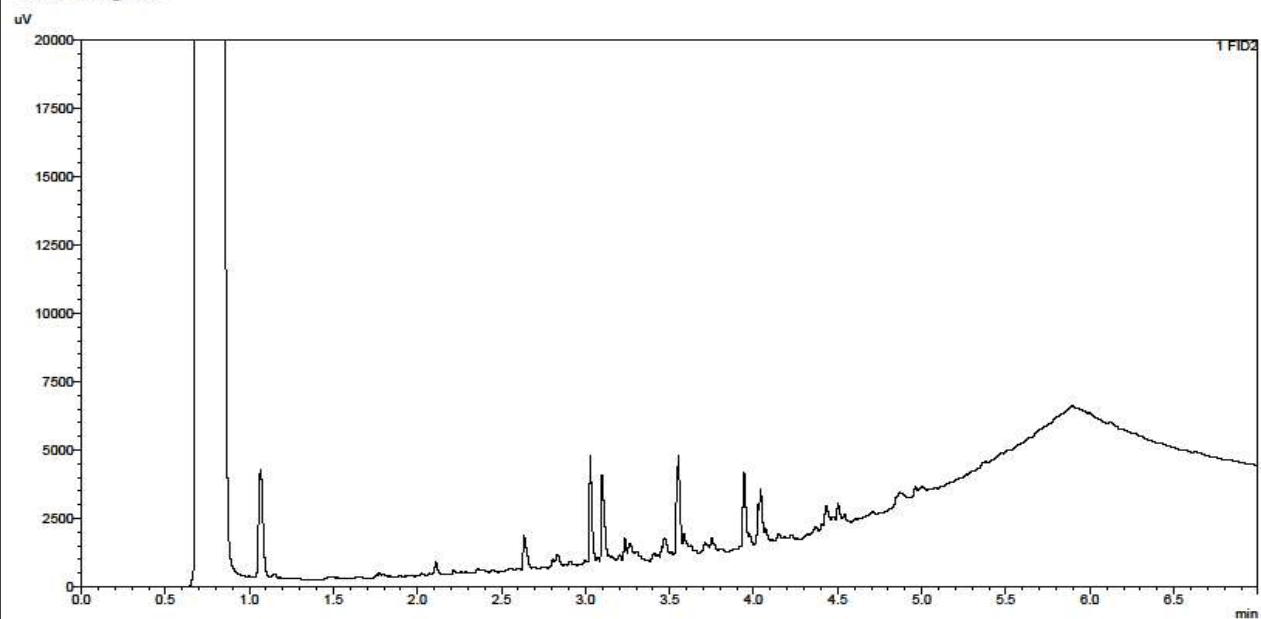
TPH Chromatogram on Soil Sample: 1040113

<Sample Information>

Sample Name : 1040113 20-19735
Data Filename : 31 July 2020_31072020_1040113 20-19735_080.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 105
Date Acquired : 31/07/2020 22:54:57
Date Processed : 31/07/2020



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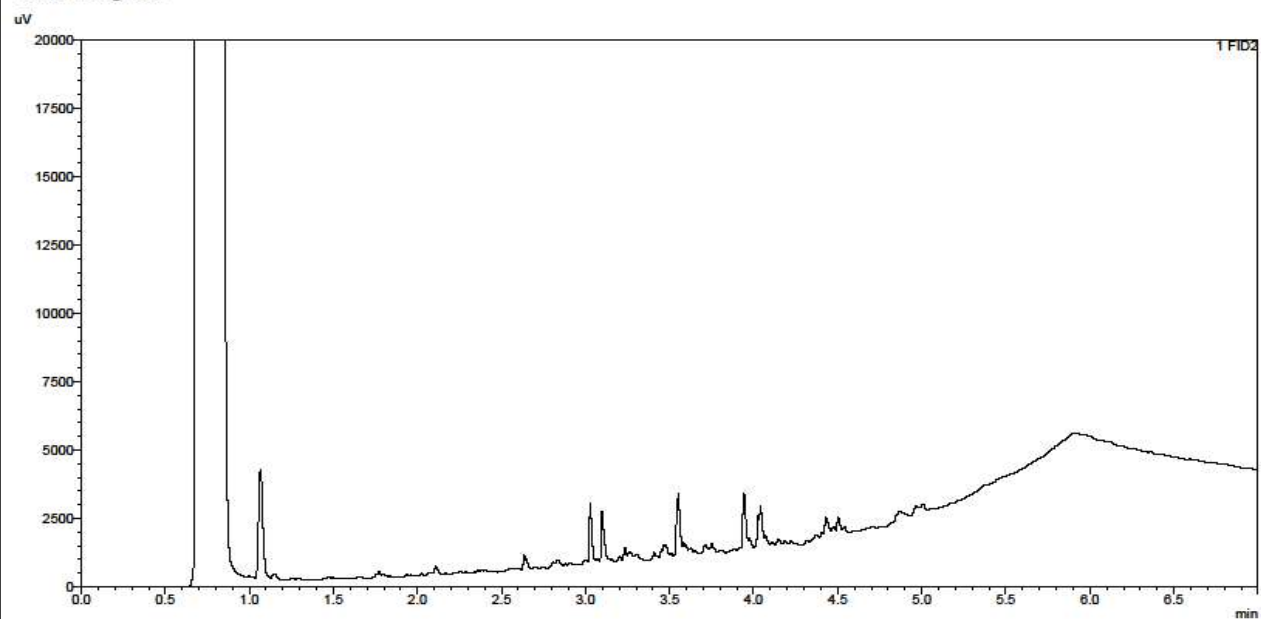
TPH Chromatogram on Soil Sample: 1040114

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Sample Name : 1040114 20-19735
Data Filename : 31 July 2020_31072020_1040114 20-19735_062.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 106
Date Acquired : 31/07/2020 23:07:57
Date Processed : 31/07/2020



<Chromatogram>



Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

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

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



2183

Final Report

Report No.:	22-32794-1		
Initial Date of Issue:	02-Sep-2022		
Client	Remada Ltd		
Client Address:	Forward House 17 High Street Henley in Arden B95 5AA		
Contact(s):	Peter Dickinson		
Project	769.05 Lidl Neath		
Quotation No.:		Date Received:	26-Aug-2022
Order No.:	769.05	Date Instructed:	26-Aug-2022
No. of Samples:	6		
Turnaround (Wkdays):	5	Results Due:	02-Sep-2022
Date Approved:	02-Sep-2022		
Approved By:			



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: 769.05 Lidl Neath

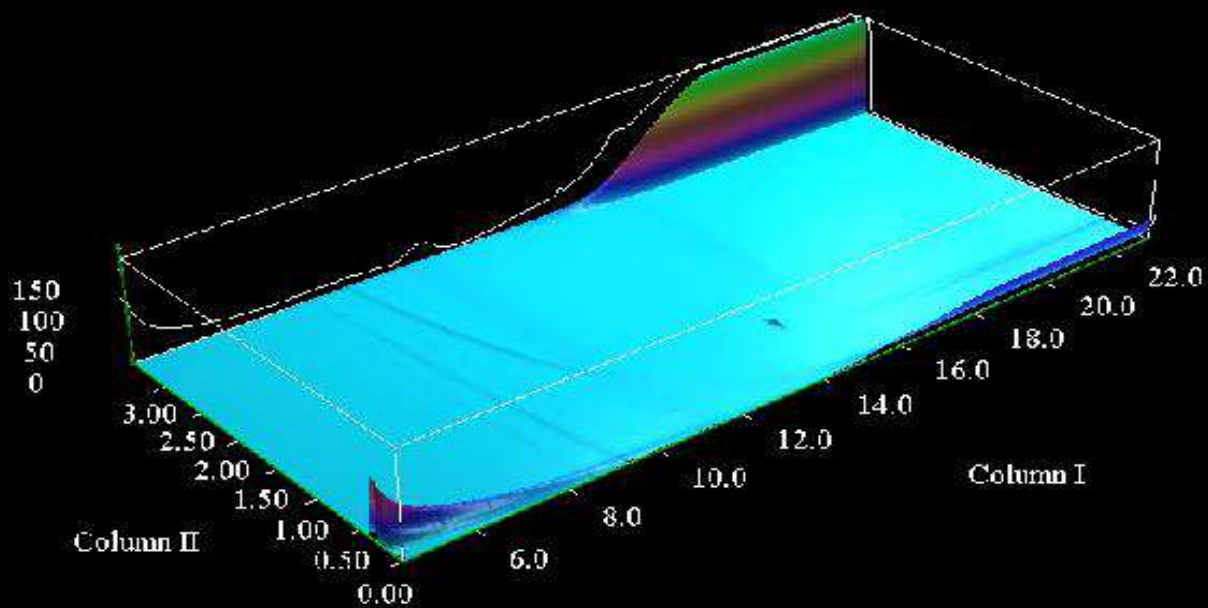
Client: Remada Ltd	Chemtest Job No.:		22-32794	22-32794	22-32794	22-32794	22-32794	22-32794
Quotation No.:	Chemtest Sample ID.:		1495486	1495487	1495488	1495489	1495490	1495491
	Sample Location:		WS201	WS201	WS201	WS202	WS203	W2S03
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.65	1.6	2.7	1.2	0.5	1.5
	Date Sampled:		24-Aug-2022	24-Aug-2022	24-Aug-2022	24-Aug-2022	24-Aug-2022	24-Aug-2022
	Asbestos Lab:		DURHAM	DURHAM		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	4.2	21	28	16
Chromatogram (TPH)	N			N/A	See Attached	See Attached	See Attached	See Attached
pH	U	2010		4.0	9.5	8.3	8.0	8.7
pH (2.5:1)	N	2010		4.0		8.3	7.3	8.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	1.5		0.46
Magnesium (Water Soluble)	U	2120	mg/kg	20		< 20	< 20	< 20
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010		0.032	0.24	0.025
Total Sulphur	U	2175	%	0.010		0.31	0.97	0.22
Chloride (Water Soluble)	U	2220	g/l	0.010		0.034	0.037	0.011
Nitrate (Water Soluble)	N	2220	g/l	0.010		0.014	< 0.010	< 0.010
Ammonium (Extractable)	U	2425	mg/kg	0.50		7.3	48	2.3
Sulphate (Total)	U	2430	%	0.010		0.14	0.87	0.17
Arsenic	U	2455	mg/kg	0.5	4.2	33		33
Beryllium	U	2455	mg/kg	0.5	< 0.5	1.2		0.8
Cadmium	U	2455	mg/kg	0.10	0.31	1.3		0.25
Copper	U	2455	mg/kg	0.50	12	120		180
Mercury	U	2455	mg/kg	0.05	< 0.05	1.2		2.0
Nickel	U	2455	mg/kg	0.50	3.7	35		35
Lead	U	2455	mg/kg	0.50	26	91		86
Selenium	U	2455	mg/kg	0.25	< 0.25	1.2		0.81
Vanadium	U	2455	mg/kg	0.5	19	26		29
Zinc	U	2455	mg/kg	0.50	53	340		100
Chromium (Trivalent)	N	2490	mg/kg	1.0	42	12		17
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50		< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.063	0.27		0.10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0		< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0		< 1.0

Results - Soil

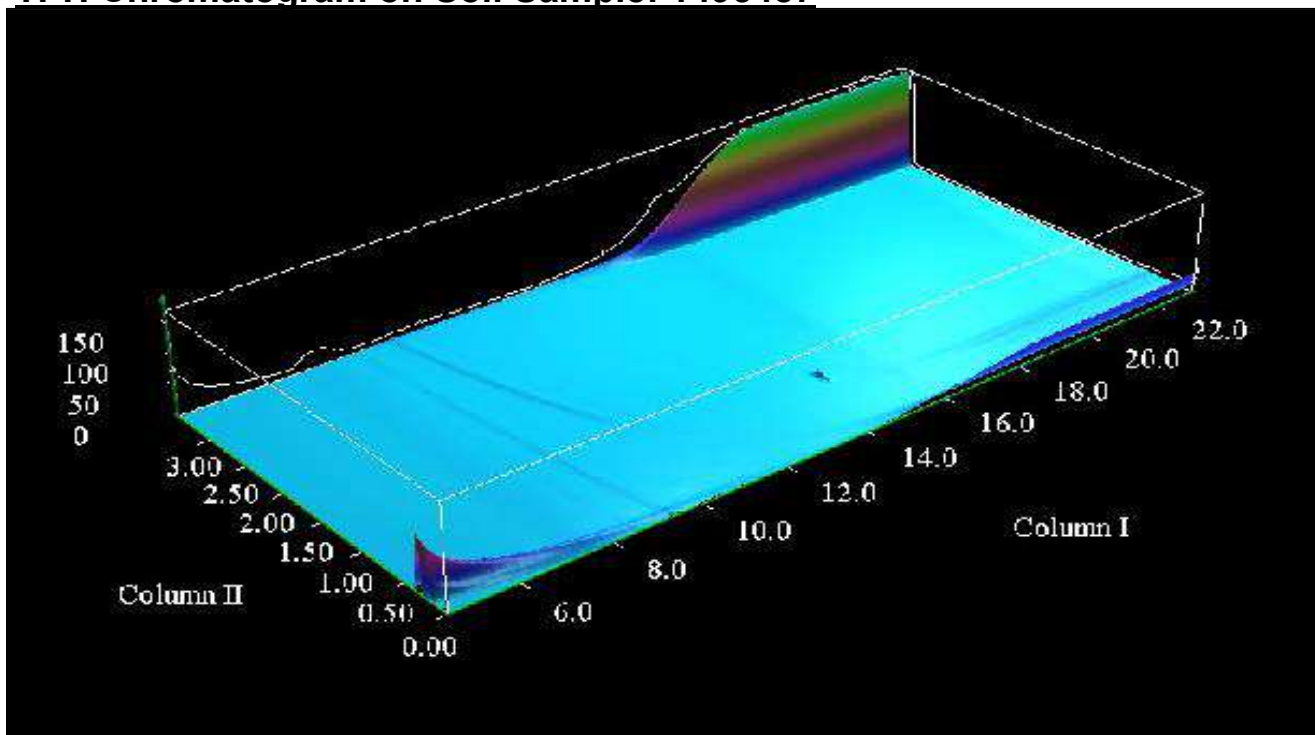
Project: 769.05 Lidl Neath

Client: Remada Ltd	Chemtest Job No.:		22-32794	22-32794	22-32794	22-32794	22-32794	22-32794
Quotation No.:	Chemtest Sample ID.:		1495486	1495487	1495488	1495489	1495490	1495491
	Sample Location:		WS201	WS201	WS201	WS202	WS203	W2S03
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.65	1.6	2.7	1.2	0.5	1.5
	Date Sampled:		24-Aug-2022	24-Aug-2022	24-Aug-2022	24-Aug-2022	24-Aug-2022	24-Aug-2022
	Asbestos Lab:		DURHAM	DURHAM		DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.57	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.13	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.19	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.16	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.99	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.11	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.29	0.32	1.4	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.45	0.25	1.2	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.56	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.83	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.1	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.44	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.89	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	8.6	< 2.0
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

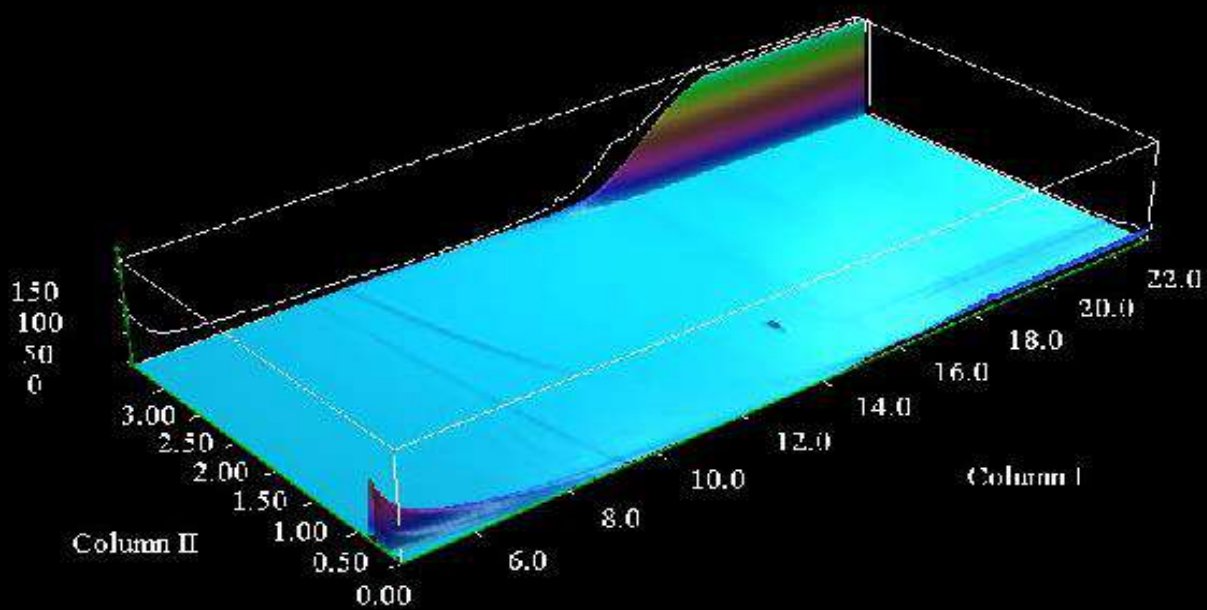
TPH Chromatogram on Soil Sample: 1495486



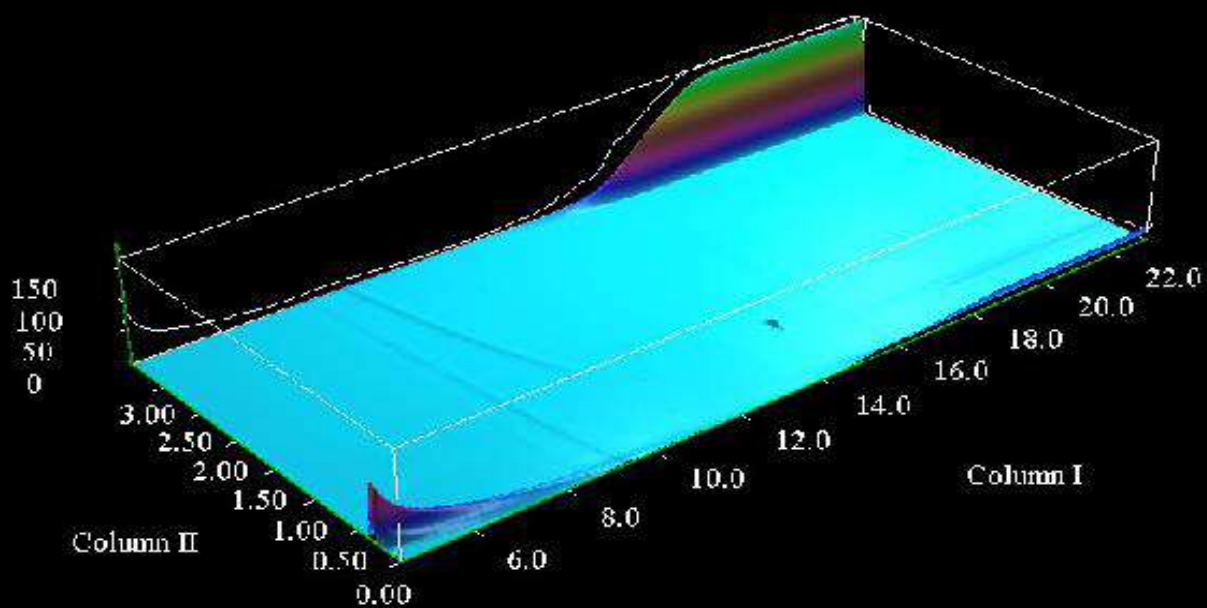
TPH Chromatogram on Soil Sample: 1495487



TPH Chromatogram on Soil Sample: 1495489



TPH Chromatogram on Soil Sample: 1495490



Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

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

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

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Remada Ltd
Forward House
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Henley-in-Arden
Warwickshire
B955AA

i2 Analytical Ltd.
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Croxley Green
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t: 01923 225404

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Analytical Report Number : 26-002179

Project / Site name:	Briton Ferry	Samples received on:	16/01/2026
Your job number:	769.11	Samples instructed on/ Analysis started on:	19/01/2026
Your order number:	769.11	Analysis completed by:	27/01/2026
Report Issue Number:	1	Report issued on:	27/01/2026
Samples Analysed:	13 soil samples - 2 bulk samples		



Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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

Analytical Report Number: 26-002179
Project / Site name: Briton Ferry
Your Order No: 769.11

Lab Sample Number	803356	803357	803358	803359	803360
Sample Reference	TP1	TP2	TP3	TP4	TP5
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	0.90	0.70	0.50	0.80
Date Sampled	15/01/2026	15/01/2026	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	41.2	50.9	67.3	53.2	39.3
Moisture Content	%	0.01	NONE	14	8.6	5.9	6	9
Total mass of sample received	kg	0.1	NONE	1.2	1.2	1.2	1.7	1.5
Whole Sample Crushed	N/A	N/A	NONE	-	Crushed	Crushed	Crushed	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	Detected	Detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MBI	MBI	MBI	MBI	MBI
Analysis completed	N/A	N/A	N/A	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026
Actinolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Amosite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	Detected	Detected	-	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	0.001	< 0.001	< 0.001	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	Loose Fibres	Loose Fibrous Debris	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10	10.7	11.8	11.4	9.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.021	0.011	0.0076	0.014	0.023
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Analytical Report Number: 26-002179

Project / Site name: Briton Ferry

Your Order No: 769.11

Lab Sample Number	803356	803357	803358	803359	803360
Sample Reference	TP1	TP2	TP3	TP4	TP5
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	0.90	0.70	0.50	0.80
Date Sampled	15/01/2026	15/01/2026	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.8	0.18	< 0.05	0.17	0.39
Acenaphthylene	mg/kg	0.05	MCERTS	0.75	0.2	0.4	0.12	0.35
Acenaphthene	mg/kg	0.05	MCERTS	0.77	0.16	0.16	0.32	1.7
Fluorene	mg/kg	0.05	MCERTS	0.85	0.3	0.37	0.39	1.7
Phenanthrene	mg/kg	0.05	MCERTS	14	2.2	2.9	3.6	7.6
Anthracene	mg/kg	0.05	MCERTS	3.2	0.63	1.2	0.95	2.2
Fluoranthene	mg/kg	0.05	MCERTS	40	4.5	7.5	7.7	12
Pyrene	mg/kg	0.05	MCERTS	35	3.7	5.5	6.5	9.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	20	2.6	4.4	4.1	8.6
Chrysene	mg/kg	0.05	MCERTS	19	2.4	4.1	4.5	8.1
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	26	2.9	4.8	5	13
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	8.7	1.4	2	2	3.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	18	2.2	2.8	3.6	8.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	9.9	1.2	1.7	1.9	4.4
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	2.7	0.46	0.61	< 0.05	1.6
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	11	1.5	1.6	1.9	4.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	211	26.5	39.9	42.6	85.9
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	43	28	16	25	22
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.78	0.57	0.59	0.98	0.86
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	0.8	2.2	1.1	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.3	0.3	0.5	0.5	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	130	35	21	190	84
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	130	35	21	190	84
Copper (aqua regia extractable)	mg/kg	1	MCERTS	530	110	41	88	130
Lead (aqua regia extractable)	mg/kg	1	MCERTS	340	160	67	150	120
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	4.1	1	0.4	2	34
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	20	12	18	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.5	< 1.0	1.3	2.4	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	69	47	29	91	120
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	640	290	150	300	200

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS,1D,AL}	mg/kg	0.01	MCERTS	0.025	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH,CU,1D,AL}	mg/kg	1	MCERTS	4.1	< 1.0	2.9	4.8	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH,CU,1D,AL}	mg/kg	2	MCERTS	7.2	< 2.0	9.4	14	6
TPHCWG - Aliphatic >EC16 - EC21 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	14	< 8.0	12	20	13
TPHCWG - Aliphatic >EC21 - EC35 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	78	55	42	73	81
TPHCWG - Aliphatic >EC5 - EC35 _{EH,CU+HS,1D,AL}	mg/kg	10	NONE	100	55	66	110	100

Analytical Report Number: 26-002179

Project / Site name: Briton Ferry

Your Order No: 769.11

Lab Sample Number	803356	803357	803358	803359	803360
Sample Reference	TP1	TP2	TP3	TP4	TP5
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	0.90	0.70	0.50	0.80
Date Sampled	15/01/2026	15/01/2026	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

TPHCWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	2.1	4.6	2.7	< 2.0	3.3
TPHCWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	52	17	32	10	28
TPHCWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	130	73	81	67	150
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_ID_AR	mg/kg	10	NONE	190	95	120	77	180

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	6.4	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

Analytical Report Number: 26-002179
Project / Site name: Briton Ferry
Your Order No: 769.11

Lab Sample Number	803361	803362	803363	803364	803365
Sample Reference	TP6	TP7	TP8	TP9	TP10
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	1.00	0.40	0.60	0.30	0.80
Date Sampled	15/01/2026	15/01/2026	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	11.7	70.3	10.2	59.7	7.4
Moisture Content	%	0.01	NONE	10	7.1	13	5.6	15
Total mass of sample received	kg	0.1	NONE	1.1	1.7	1.4	0.6	1.1
Whole Sample Crushed	N/A	N/A	NONE	-	Crushed	-	Crushed	-

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KWB	KWB	KWB	KWB	KWB
Analysis completed	N/A	N/A	N/A	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026
Actinolite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	Detected	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	< 0.001	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	Loose Fibres	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.7	9.6	8	9	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.023	0.013	0.03	0.02	-
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	-	-	-	0.12

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Lab Sample Number	803361	803362	803363	803364	803365
Sample Reference	TP6	TP7	TP8	TP9	TP10
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	1.00	0.40	0.60	0.30	0.80
Date Sampled	15/01/2026	15/01/2026	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.86	< 0.05	0.52	2.2	0.09
Acenaphthylene	mg/kg	0.05	MCERTS	0.4	< 0.05	0.5	0.89	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	1.3	0.31	1.3	7.5	< 0.05
Fluorene	mg/kg	0.05	MCERTS	1.7	0.27	1.5	5.9	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	8.1	1.5	9.2	66	0.43
Anthracene	mg/kg	0.05	MCERTS	3.5	0.43	2.6	19	0.08
Fluoranthene	mg/kg	0.05	MCERTS	14	2.9	15	210	0.71
Pyrene	mg/kg	0.05	MCERTS	13	2.3	11	200	0.62
Benzo(a)anthracene	mg/kg	0.05	MCERTS	19	1.9	8.2	110	0.47
Chrysene	mg/kg	0.05	MCERTS	15	2	7.9	120	0.57
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	27	3	11	120	0.53
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	12	0.95	3.7	53	0.24
Benzo(a)pyrene	mg/kg	0.05	MCERTS	27	2.1	7.3	96	0.43
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	17	1.2	4	38	0.26
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	4.4	0.38	1.2	12	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	17	1.4	4	41	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	181	20.7	88.2	1090	4.41
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	33	20	37	10	65
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.9	0.65	1.1	0.34	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	1.5	0.9	2.3	0.3	1.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.5	0.3	< 0.2	0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	40	34	38	12	26
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	34	38	12	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	120	150	28	1500
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	110	130	30	330
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	4.6	< 0.3	26
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	15	32	13	47
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	3.6	1.4	< 1.0	1.3	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	59	36	68	15	49
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	260	230	210	76	400

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH,CU,1D,AL}	mg/kg	1	MCERTS	2.4	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH,CU,1D,AL}	mg/kg	2	MCERTS	14	8.4	< 2.0	2.9	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	26	19	< 8.0	12	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	95	74	15	130	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH,CU+HS,1D,AL}	mg/kg	10	NONE	140	100	15	150	< 10

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Lab Sample Number	803361	803362	803363	803364	803365
Sample Reference	TP6	TP7	TP8	TP9	TP10
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	1.00	0.40	0.60	0.30	0.80
Date Sampled	15/01/2026	15/01/2026	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

TPHCWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	1.1	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	6.4	< 2.0	3.1	18	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	35	< 10	18	400	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	190	36	65	1000	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_ID_AR	mg/kg	10	NONE	230	36	86	1500	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

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

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Lab Sample Number	803366	803367	803368
Sample Reference	WS1	WS2	WS3
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	1.50	0.80	0.60
Date Sampled	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Stone Content	%	0.1	NONE	53.1	57.3	67.8
Moisture Content	%	0.01	NONE	14	7.9	7.7
Total mass of sample received	kg	0.1	NONE	1.4	1.8	1.5
Whole Sample Crushed	N/A	N/A	NONE	Crushed	Crushed	Crushed

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA
Analysis completed	N/A	N/A	N/A	23/01/2026	23/01/2026	23/01/2026
Actinolite detected	Type	N/A	ISO 17025	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.1	9.6	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.031	0.02	0.022
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Lab Sample Number	803366	803367	803368
Sample Reference	WS1	WS2	WS3
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	1.50	0.80	0.60
Date Sampled	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	2.4	0.2	0.39
Acenaphthylene	mg/kg	0.05	MCERTS	0.08	0.16	0.13
Acenaphthene	mg/kg	0.05	MCERTS	0.12	0.56	0.9
Fluorene	mg/kg	0.05	MCERTS	0.13	0.45	0.81
Phenanthrene	mg/kg	0.05	MCERTS	0.64	2.8	8.2
Anthracene	mg/kg	0.05	MCERTS	0.1	0.86	2.2
Fluoranthene	mg/kg	0.05	MCERTS	0.54	4.6	21
Pyrene	mg/kg	0.05	MCERTS	0.6	3.8	18
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.32	4.2	12
Chrysene	mg/kg	0.05	MCERTS	0.42	4	12
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.5	5.6	14
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.2	1.6	4.8
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.27	3.8	11
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.17	2.4	5.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.79	1.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.2	2.9	5.7

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	6.76	38.5	117
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	55	20	46
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	2.5	0.72	0.62
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	0.6	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.3	0.4
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	33	140	25
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	140	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	91	100	66
Lead (aqua regia extractable)	mg/kg	1	MCERTS	62	110	100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	1.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	54	30	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	2.4	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	69	60	26
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	180	200

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS,1D,AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH,CU,1D,AL}	mg/kg	1	MCERTS	5.7	3.1	4.6
TPHCWG - Aliphatic >EC12 - EC16 _{EH,CU,1D,AL}	mg/kg	2	MCERTS	13	14	13
TPHCWG - Aliphatic >EC16 - EC21 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	11	35	19
TPHCWG - Aliphatic >EC21 - EC35 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	9.7	360	71
TPHCWG - Aliphatic >EC5 - EC35 _{EH,CU+HS,1D,AL}	mg/kg	10	NONE	39	410	110

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Lab Sample Number	803366	803367	803368
Sample Reference	WS1	WS2	WS3
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	1.50	0.80	0.60
Date Sampled	15/01/2026	15/01/2026	15/01/2026
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

TPHCWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	1.2	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	2	2.8	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	< 10	18	37
TPHCWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	< 10	140	120
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_ID_AR	mg/kg	10	NONE	< 10	160	160

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0

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

Analytical Report Number : 26-002179

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
803356	TP1	None Supplied	0.5	Brown sand with gravel and stones
803357	TP2	None Supplied	0.9	Brown sand with gravel and stones
803358	TP3	None Supplied	0.7	Brown sand with gravel and stones
803359	TP4	None Supplied	0.5	Brown gravelly sand with stones
803360	TP5	None Supplied	0.8	Brown gravelly sand with stones
803361	TP6	None Supplied	1	Brown sand with gravel and stones
803362	TP7	None Supplied	0.4	Brown clay and sand with vegetation and stones
803363	TP8	None Supplied	0.6	Brown sand with gravel and stones
803364	TP9	None Supplied	0.3	Brown sand with gravel and stones
803365	TP10	None Supplied	0.8	Brown sand with gravel and stones
803366	WS1	None Supplied	1.5	Brown gravelly sand with clinker and stones
803367	WS2	None Supplied	0.8	Brown loam and sand with vegetation and stones
803368	WS3	None Supplied	0.6	Brown gravelly sand with stones

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Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
TPH Chromatogram in soil	TPH Chromatogram in soil	In-house method	L064B	D	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL/L130B	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS

Analytical Report Number : 26-002179

Project / Site name: Briton Ferry

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate	In-house method	L009B	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE
Whole Sample Crushed	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis	In house method, applicable to dry samples only	L019B	D	NONE
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate	In-house method	L023B	D	MCERTS
Asbestos identification in Bults	Asbestos Identification in bulk material with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

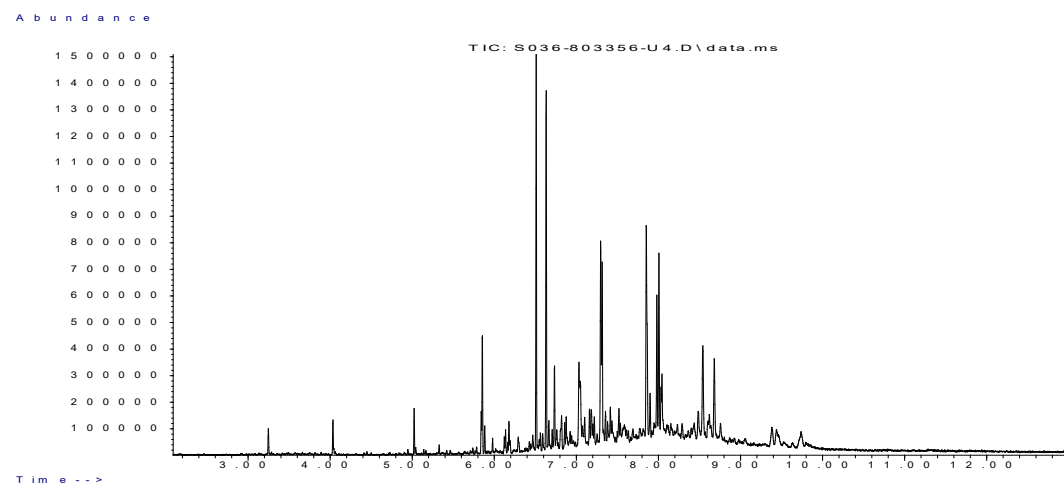
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

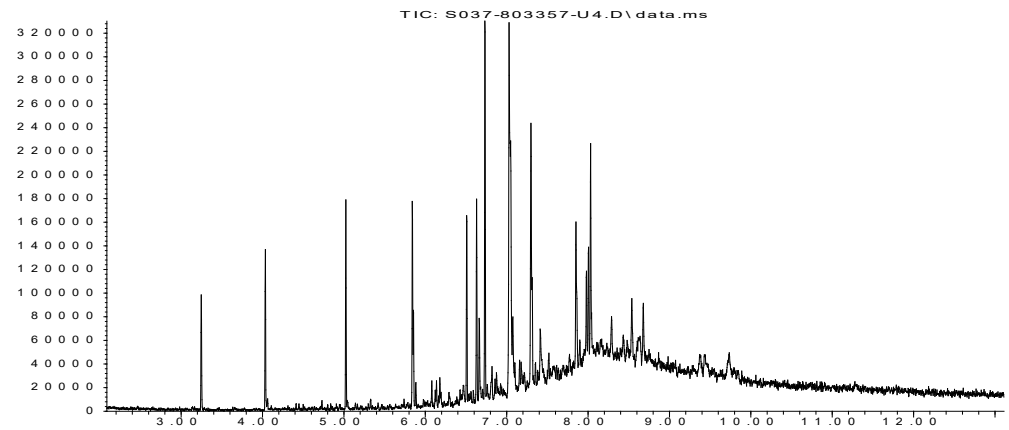
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

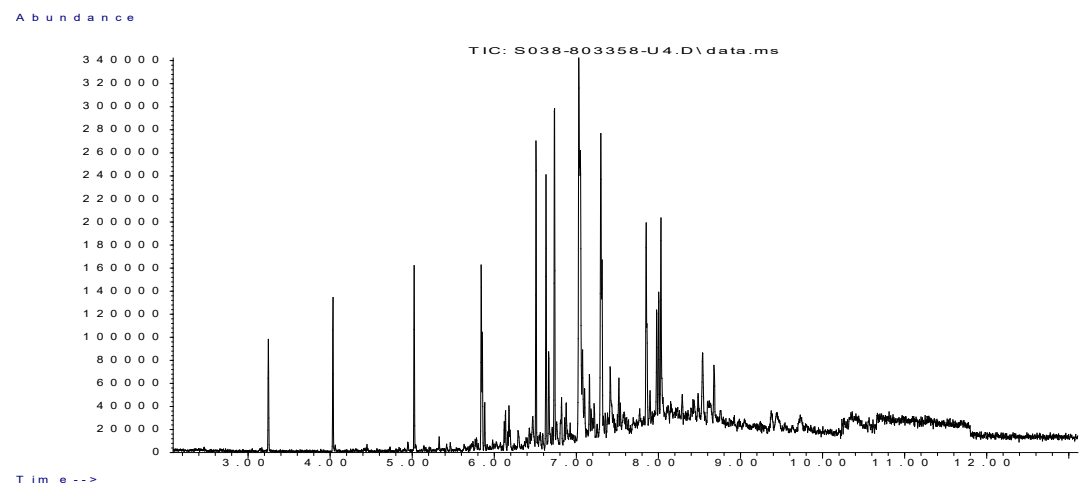
The result for sum should be interpreted with caution



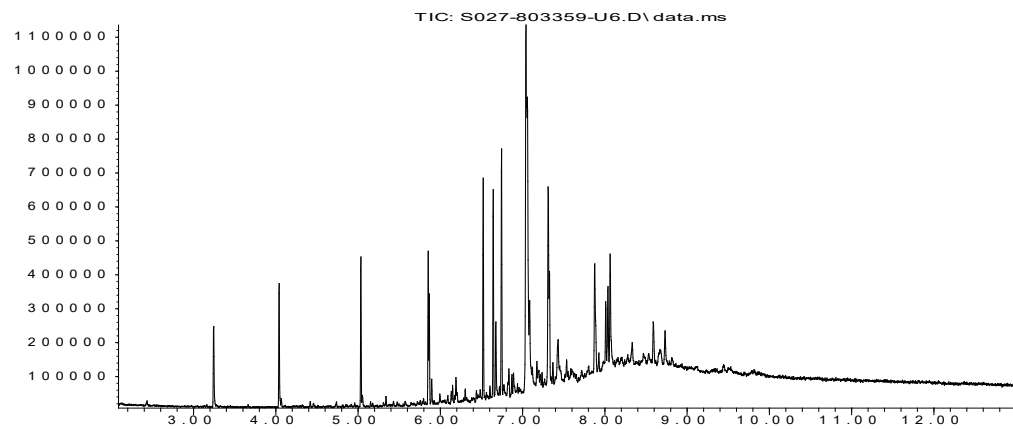
Abundance



Time-->

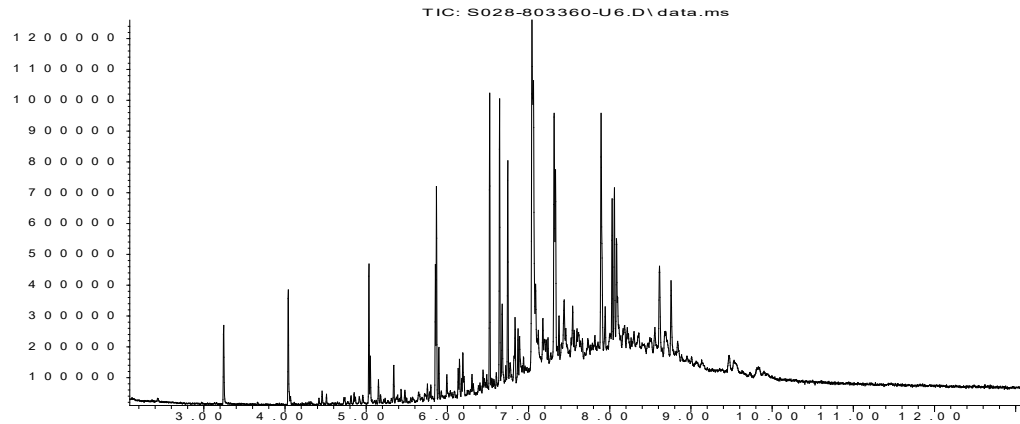


Abundance

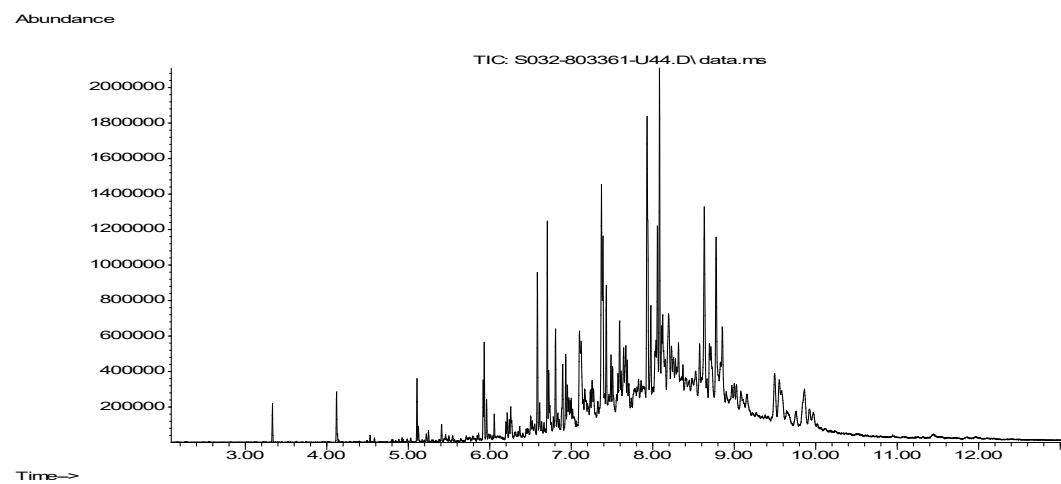


Time-->

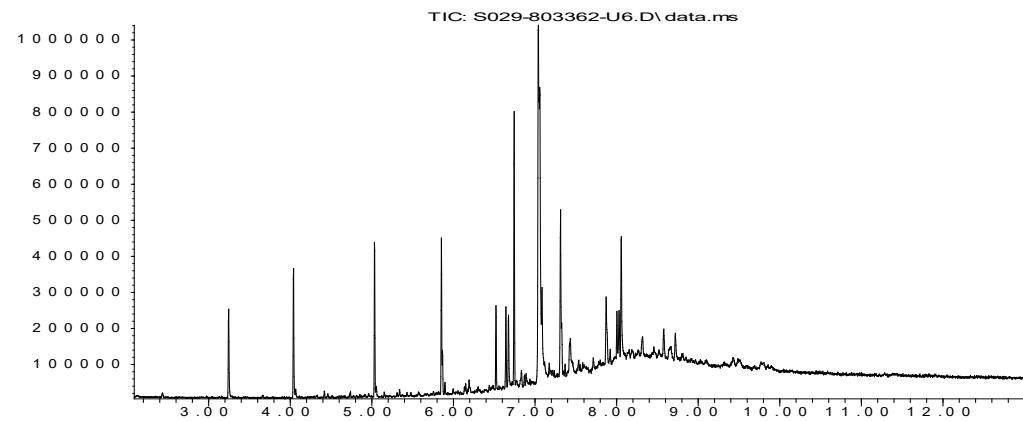
Abundance



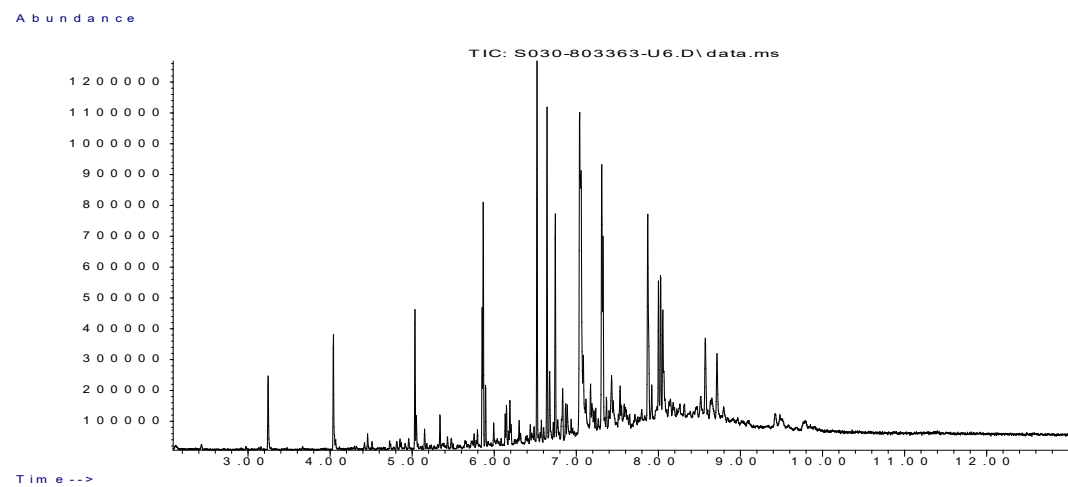
Time -->

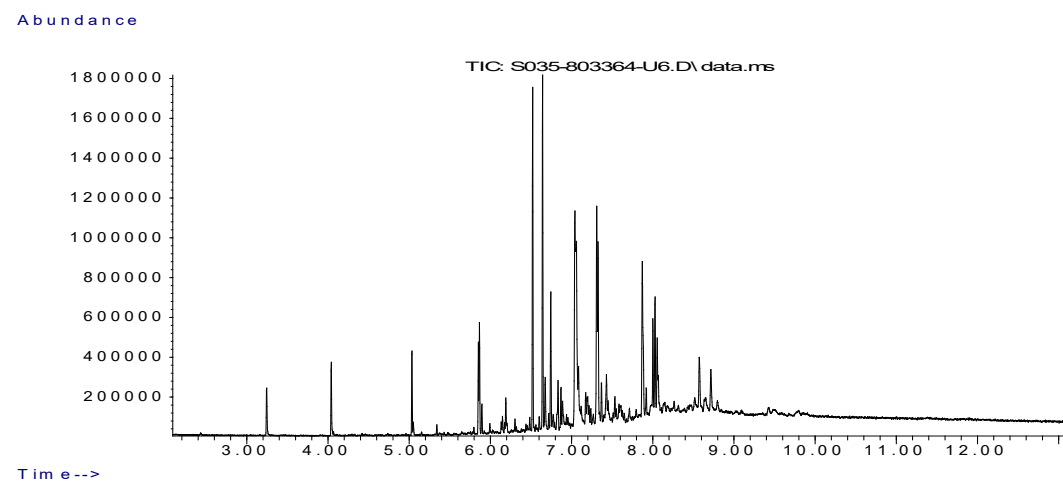


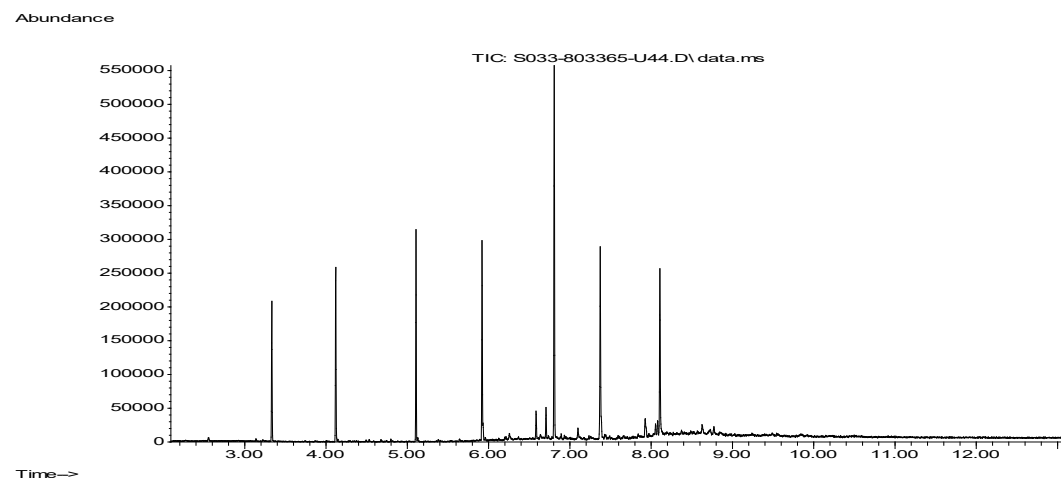
Abundance

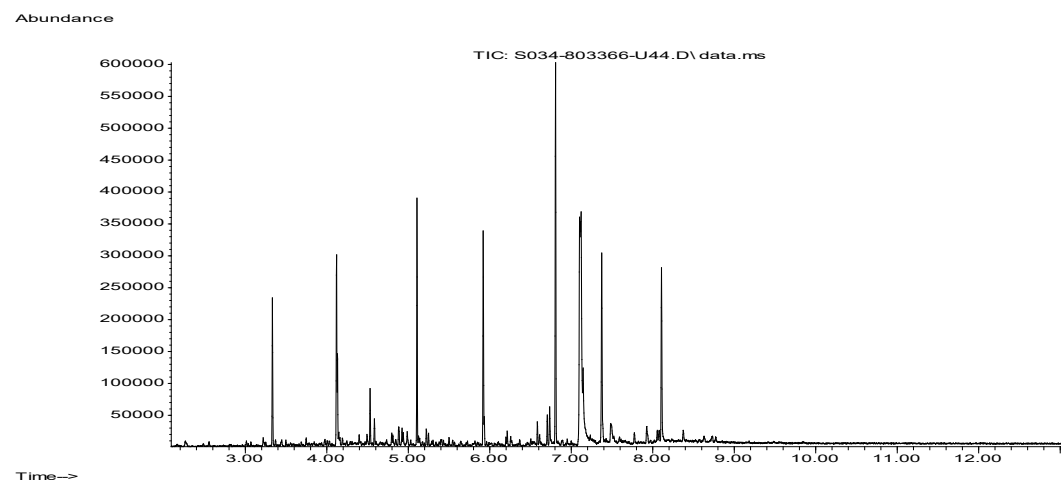


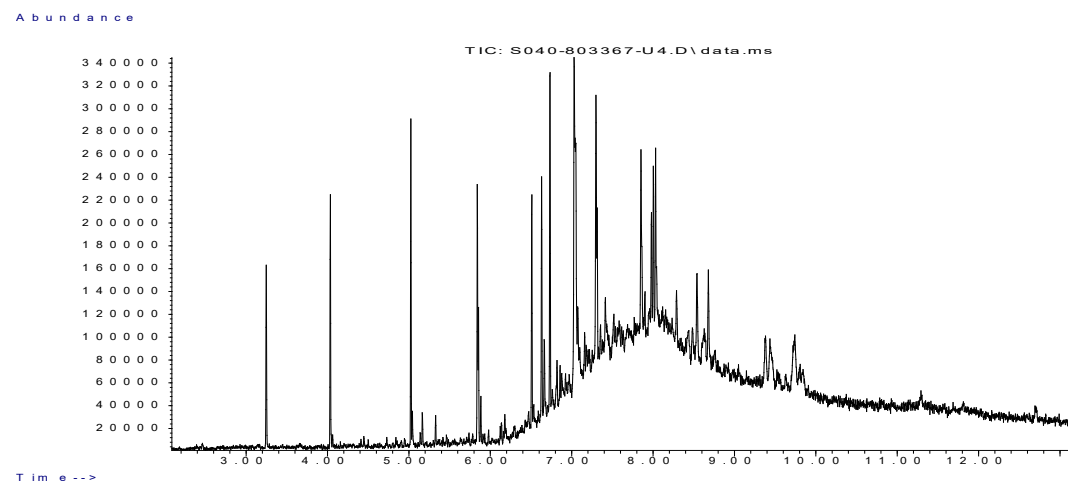
Time -->



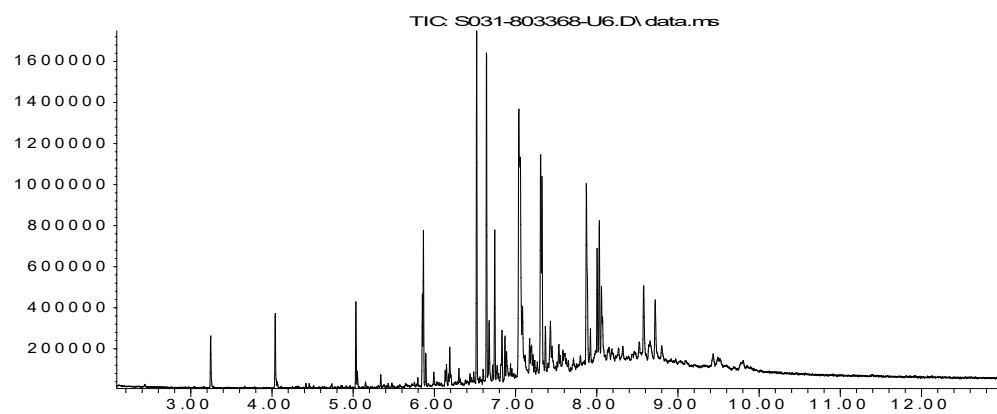








Abundance



Time-->



APPENDIX D

Laboratory Chemical Analyses – Groundwater



2183

Final Report

Report No.: 22-11218-1
Initial Date of Issue: 29-Mar-2022
Client Remada Ltd
Client Address: Forward House
17 High Street
Henley in Arden
B95 5AA
Contact(s): Dom Williams
Greg Jones
Peter Dickinson
Callum Whitehead
Project 769.02 Briton Ferry Road, Neath
Quotation No.:
Order No.: 769.02
No. of Samples: 3
Turnaround (Wkdays): 5
Date Approved: 29-Mar-2022

Date Received: 24-Mar-2022

Date Instructed: 24-Mar-2022

Results Due: 30-Mar-2022

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Water

Project: 769.02 Briton Ferry Road, Neath

Client: Remada Ltd	Chemtest Job No.:				22-11218	22-11218	22-11218
Quotation No.:	Chemtest Sample ID.:				1398215	1398216	1398217
	Sample Location:				WS1B	WS2	WS4
	Sample Type:				WATER	WATER	WATER
	Date Sampled:				21-Mar-2022	21-Mar-2022	21-Mar-2022
Determinand	Accred.	SOP	Units	LOD			
pH	U	1010		N/A	7.6	7.7	7.7
Arsenic (Dissolved)	U	1455	µg/l	0.20	18	1.4	1.2
Boron (Dissolved)	U	1455	µg/l	10.0	150	150	79
Beryllium (Dissolved)	U	1455	µg/l	1.00	< 1.0	< 1.0	< 1.0
Cadmium (Dissolved)	U	1455	µg/l	0.11	< 0.11	< 0.11	< 0.11
Copper (Dissolved)	U	1455	µg/l	0.50	< 0.50	1.1	4.6
Mercury (Dissolved)	U	1455	µg/l	0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	µg/l	0.50	< 0.50	3.2	1.9
Lead (Dissolved)	U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	< 0.50	0.61	< 0.50
Vanadium (Dissolved)	U	1455	µg/l	0.50	< 0.50	< 0.50	1.1
Zinc (Dissolved)	U	1455	µg/l	2.5	12	12	37
Chromium (Trivalent)	N	1490	µg/l	20	< 20	< 20	< 20
Chromium (Hexavalent)	U	1490	µg/l	20	< 20	< 20	< 20
Dissolved Organic Carbon	U	1610	mg/l	2.0	90	94	41
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10	< 10	< 10
Naphthalene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10

Results - Water

Project: 769.02 Briton Ferry Road, Neath

Client: Remada Ltd	Chemtest Job No.:				22-11218	22-11218	22-11218
Quotation No.:	Chemtest Sample ID.:				1398215	1398216	1398217
	Sample Location:				WS1B	WS2	WS4
	Sample Type:				WATER	WATER	WATER
	Date Sampled:				21-Mar-2022	21-Mar-2022	21-Mar-2022
Determinand	Accred.	SOP	Units	LOD			
Pyrene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Chrysene	N	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	1700	µg/l	2.0	< 2.0	< 2.0	< 2.0
Phenol	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

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

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

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



4041

Remada Ltd
Forward House
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Warwickshire
B955AA

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t: 01923 225404
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Analytical Report Number : 26-004689

Project / Site name:	Briton Ferry	Samples received on:	30/01/2026
Your job number:	769.11	Samples instructed on/ Analysis started on:	30/01/2026
Your order number:	769.11	Analysis completed by:	06/02/2026
Report Issue Number:	1	Report issued on:	06/02/2026
Samples Analysed:	3 water samples		



Signed:

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

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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



Analytical Report Number: 26-004689

Project / Site name: Briton Ferry

Your Order No: 769.11

Lab Sample Number				816534
Sample Reference				WS1
Sample Number				None Supplied
Water Matrix				Ground water
Depth (m)				3.40
Date Sampled				29/01/2026
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status	

General Inorganics

pH (L099)	pH Units	N/A	ISO 17025	8
Total Cyanide	µg/l	10	ISO 17025	< 10
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	1.88

Total Phenols

Total Phenols (Monohydric) Low Level	µg/l	1	NONE	< 1.0
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.35
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	1.9
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Mercury (dissolved)	µg/l	0.05	NONE	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.9
Selenium (dissolved)	µg/l	0.6	ISO 17025	4.9
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	5.5

Boron (dissolved)	µg/l	10	ISO 17025	120
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0

Analytical Report Number: 26-004689

Project / Site name: Briton Ferry

Your Order No: 769.11

Lab Sample Number				816534
Sample Reference				WS1
Sample Number				None Supplied
Water Matrix				Ground water
Depth (m)				3.40
Date Sampled				29/01/2026
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0
TPH - Aromatic >EC8 - EC10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10
TPH - Aromatic >EC5 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0
Benzene	µg/l	1	ISO 17025	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0

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

Analytical Report Number: 26-004689

Project / Site name: Briton Ferry

Your Order No: 769.11

Lab Sample Number	816535	816536
Sample Reference	MP1	MP2
Sample Number	None Supplied	None Supplied
Water Matrix	Other water	Other water
Depth (m)	None Supplied	None Supplied
Date Sampled	29/01/2026	29/01/2026
Time Taken	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Test Limit of detection
		Test Accreditation Status

General Inorganics

pH (L099)	pH Units	N/A	NONE	7.6	7.6
Total Cyanide	µg/l	10	NONE	< 10	< 10
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	1.84	1.92

Total Phenols

Total Phenols (Monohydric) Low Level	µg/l	1	NONE	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	NONE	0.05	< 0.01
Fluorene	µg/l	0.01	NONE	0.04	< 0.01
Phenanthrene	µg/l	0.01	NONE	0.3	0.02
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	0.38	< 0.01
Pyrene	µg/l	0.01	NONE	0.31	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	0.15	< 0.01
Chrysene	µg/l	0.01	NONE	0.19	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	0.18	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	0.09	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	0.14	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	1.82	< 0.16
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	NONE	0.65	0.66
Beryllium (dissolved)	µg/l	0.1	NONE	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	NONE	0.03	0.04
Chromium (dissolved)	µg/l	0.2	NONE	0.3	0.3
Copper (dissolved)	µg/l	0.5	NONE	3.6	3.1
Lead (dissolved)	µg/l	0.2	NONE	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	NONE	1.2	1.2
Selenium (dissolved)	µg/l	0.6	NONE	< 0.6	< 0.6
Vanadium (dissolved)	µg/l	0.2	NONE	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	NONE	6.4	8.4

Boron (dissolved)	µg/l	10	NONE	12	12
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0



4041

Analytical Report Number: 26-004689

Project / Site name: Briton Ferry

Your Order No: 769.11

Lab Sample Number				816535	816536
Sample Reference				MP1	MP2
Sample Number				None Supplied	None Supplied
Water Matrix				Other water	Other water
Depth (m)				None Supplied	None Supplied
Date Sampled				29/01/2026	29/01/2026
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{HS_1D_AR}	µg/l	1	NONE	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC5 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	NONE	< 3.0	< 3.0
Benzene	µg/l	1	NONE	< 1.0	< 1.0
Toluene	µg/l	1	NONE	< 1.0	< 1.0
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0
o-xylene	µg/l	1	NONE	< 1.0	< 1.0

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



4041

Analytical Report Number : 26-004689**Project / Site name: Briton Ferry****Water matrix abbreviations:****Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)****Final Sewage Effluent (FSE) Landfill Leachate (LL)**

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited matrices: SW, PW, GW, except B - SW, GW, Hg - SW, PW, Al - SW, PW	In-house method based on USEPA Method 6020 & 200.8 for the determination of trace elements in water by ICP-MS	L012B	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR Analyser. Accredited matrices: SW, PW, GW, FSE, LL	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited matrices: SW, PW, GW, FSE, LL; PrW, DI PrW (Al, Cu, Fe, Zn)	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Total Petroleum Hydrocarbons with carbon banding in water by GC-MS	Determination of total petroleum hydrocarbons in water by GC-MS with carbon banding aliphatic and aromatic	In-house method	L070B	W	NONE
Total Petroleum Hydrocarbons with carbon banding in water by GC-MS/HS-GC-MS	Determination of total petroleum hydrocarbons in water by GC-MS/HS-GC-MS with carbon banding aliphatic and aromatic (Summed Bands)	Calculation	L070B/L088-PL	W	NONE
TPH Chromatogram in water	TPH Chromatogram in water	In-house method	L070B	W	NONE
BTEX and/or Volatile Organic Compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW, PW, GW	In-house method based on USEPA 8260	L073B	W	ISO 17025
Chromium(III) in water	In-house method by calculation from total Cr and Cr(VI)	In-house method by calculation	L080-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5-diphenylcarbazide, followed by colorimetry. Accredited matrices: SW, PW, GW, FSE, LL	In-house method by continuous flow analyser	L080-PL	W	ISO 17025
Monohydric phenols (low level) in water	Determination of phenols in water by continuous flow analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	NONE
Total cyanide in water	Determination of total cyanide in water by distillation followed by colorimetry. Accredited matrices: SW, PW, GW, FSE, LL	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Total Petroleum Hydrocarbons in water by HS-GC/MS	Determination of total petroleum hydrocarbons in water by headspace HS-GC/MS. Accredited matrices: SW, PW, GW	In-house method	L088-PL	W	ISO 17025
pH of water at 20°C (automated)	Determination of pH of water by electrochemical measurement. Accredited matrices: SW, PW, GW, FSE, LL	In-house method	L099-PL	W	ISO 17025

Analytical Report Number : 26-004689

Project / Site name: Briton Ferry

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated PAHs and/or Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds (including PAHs) in water by extraction in dichloromethane followed by GC-MS. Accredited matrices (PAHs): SW, PW, GW	In-house method based on USEPA 8270	L102B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

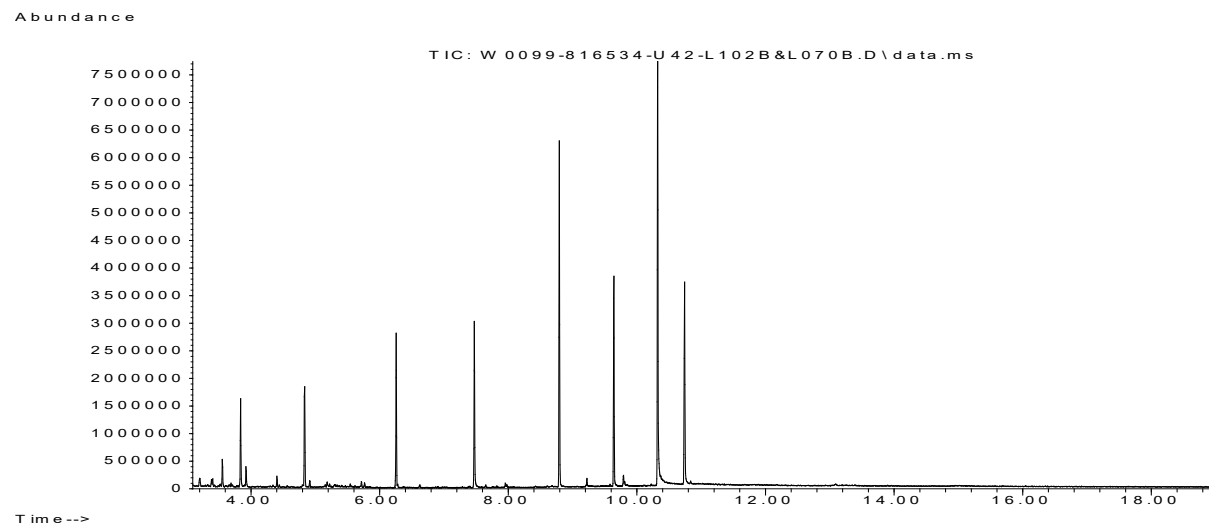
Information in Support of Analytical Results

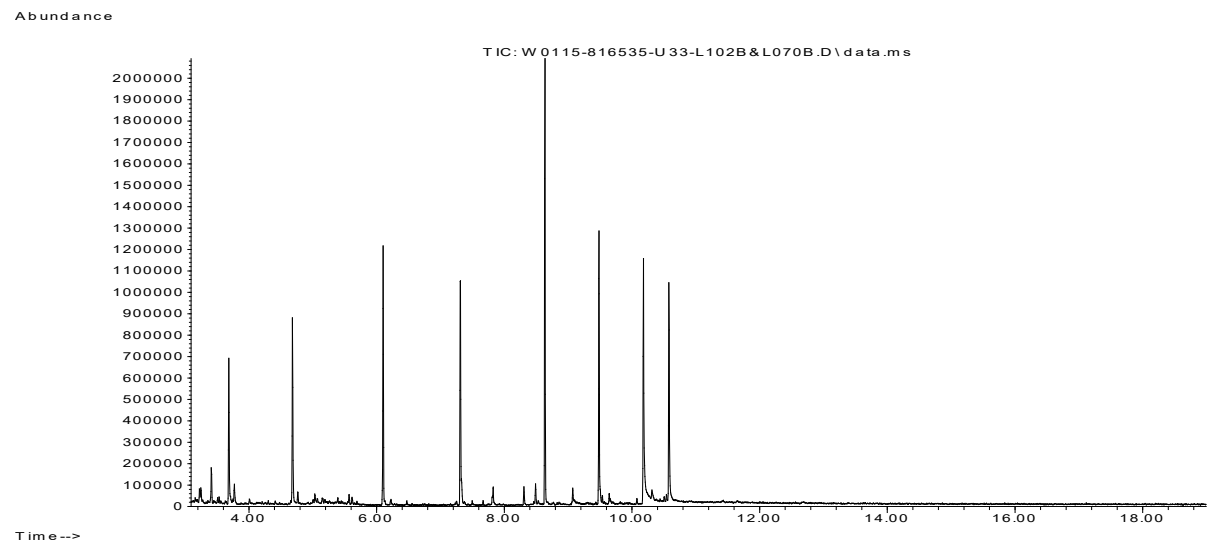
List of HWOL Acronyms and Operators

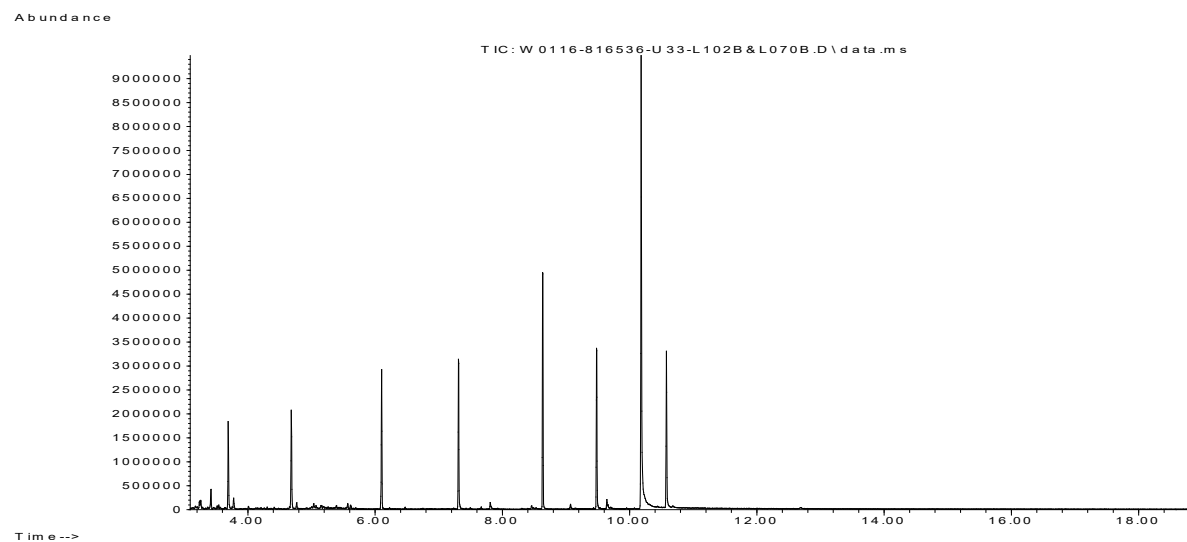
Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution









APPENDIX E

Laboratory Geotechnical Tests



Laboratory Report



Contract Number: 49475

Client Ref: **769.02**Report Date: **18-08-2020**Client PO: **769.02**Client **Remada Limited****Forward house, 17 high street, Henley in Arden
B95 5AA**Contract Title: **Briton Ferry Road, Neath**
For the attention of: **Peter Dickinson**Date Received: **28-07-2020**Date Completed: **18-08-2020**

Test Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	4
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	4
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	3
BRE Reduced Suite includes pH, water & acid soluble sulphate and total sulphur BRE - BR279 - @ Non Accredited Test	3
Quick Undrained Triaxial Compression test - set of 3 - 38mm diameter specimens BS 1377:1990 - Part 7 : 8 - * UKAS	3
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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 Signatories:

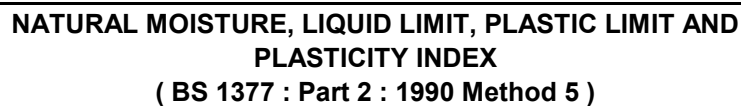
Emma Sharp (Office Manager) - Paul Evans (Quality/Technical Manager) - Richard John (Advanced Testing Manager)

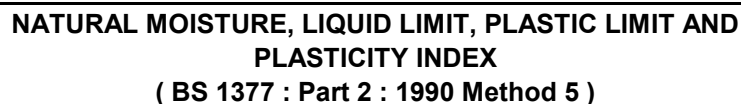
Sean Penn (Administrative/Accounts Assistant) - Shaun Jones (Laboratory manager) - Wayne Honey (Administrative/Quality Assistant)

GEO Site & Testing Services Ltd

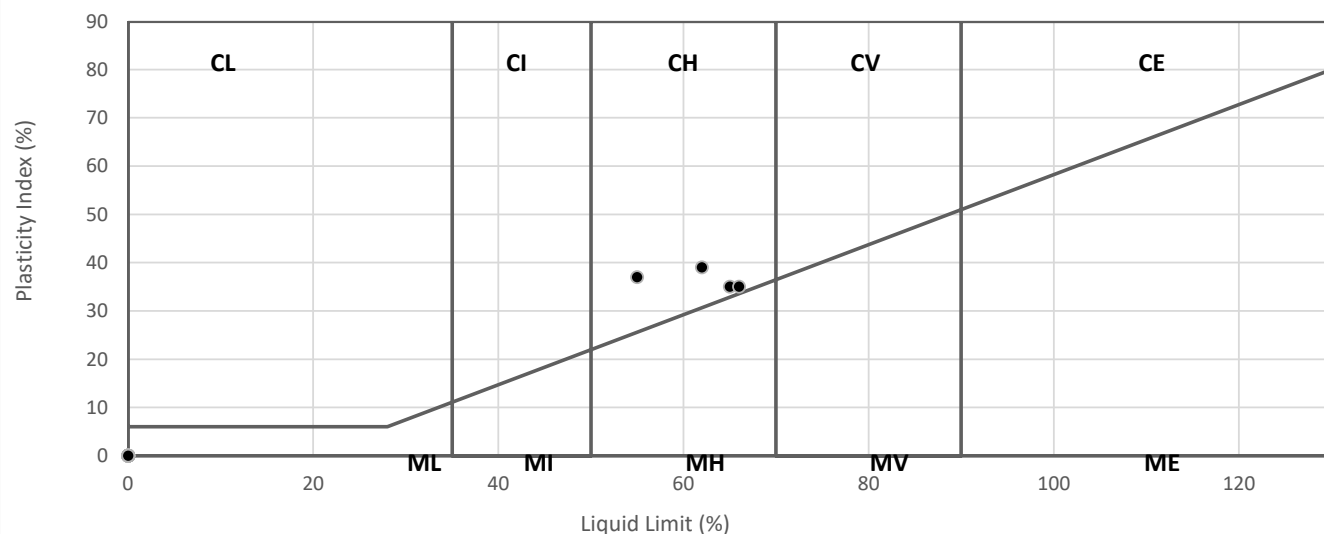
Unit 3-4, Heol Aur, Dafen Ind Estate, Dafen, Llanelli, Carmarthenshire SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

[illegible]

[illegible]

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION BS 5930:1999+A2:2010





PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2

Contract Number **49475**

Borehole/Pit No. **BHB-B**

Site Name **Briton Ferry Road, Neath**

Sample No.

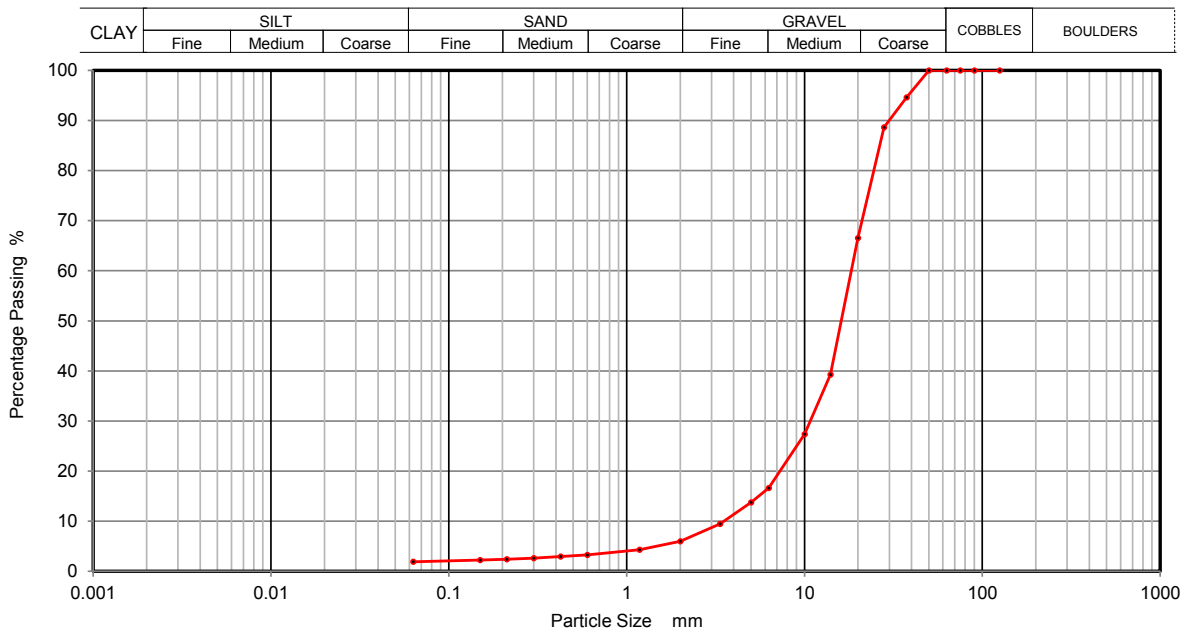
Soil Description **Grey slightly clayey/silty slightly fine to coarse sandy fine to coarse GRAVEL**

Depth Top **0.10**

Depth Base **0.40**

Date Tested **13/08/2020**

Sample Type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	95		
28	89		
20	67		
14	39		
10	27		
6.3	17		
5	14		
3.35	9		
2	6		
1.18	4		
0.6	3		
0.425	3		
0.3	3		
0.212	2		
0.15	2		
0.063	2		

Sample Proportions	% dry mass
Cobbles	0
Gravel	94
Sand	4
Silt and Clay	2

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	17/08/2020	Wayne Honey	<i>W. Honey</i>
RO/MH	Approved	18/08/2020	Paul Evans	<i>DP Evans</i>





**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

Contract Number **49475**

Borehole/Pit No. **BH3-B**

Site Name **Briton Ferry Road, Neath**

Sample No.

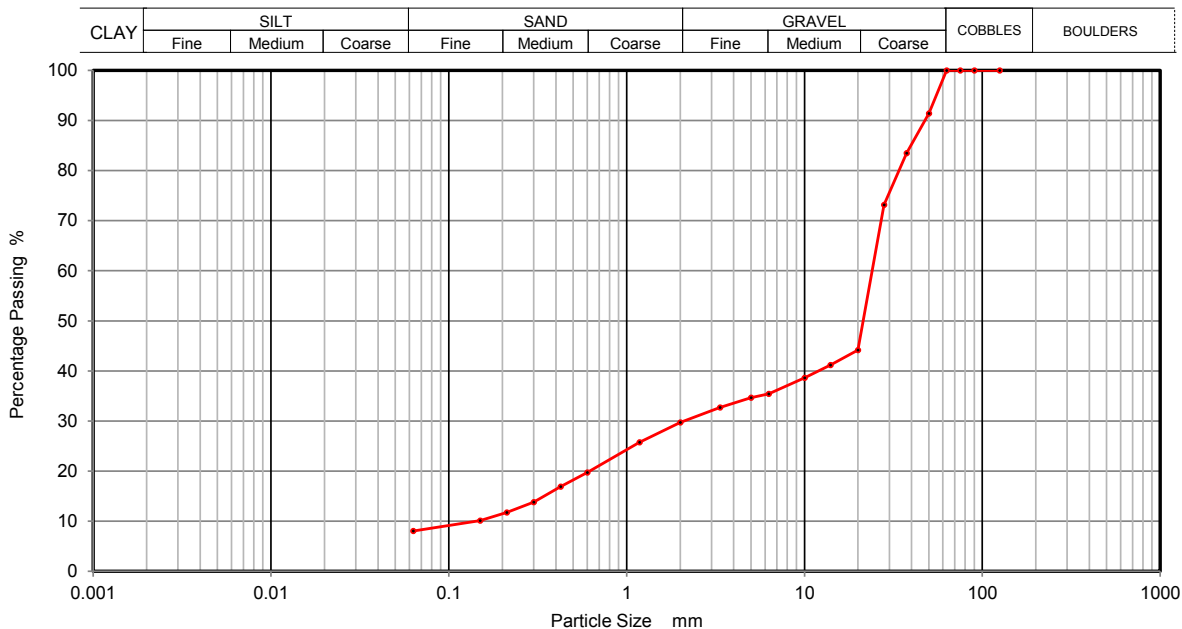
Soil Description **Grey slightly clayey/silty fine to coarse sandy fine to coarse GRAVEL**

Depth Top **5.50**

Depth Base **5.80**

Date Tested **13/08/2020**

Sample Type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	91		
37.5	83		
28	73		
20	44		
14	41		
10	39		
6.3	35		
5	35		
3.35	33		
2	30		
1.18	26		
0.6	20		
0.425	17		
0.3	14		
0.212	12		
0.15	10		
0.063	8		

Sample Proportions	% dry mass
Cobbles	0
Gravel	70
Sand	22
Silt and Clay	8

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	17/08/2020	Wayne Honey	<i>W. Honey</i>
RO/MH	Approved	18/08/2020	Paul Evans	<i>DP Evans</i>





**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

Contract Number **49475**

Borehole/Pit No. **HDTP3**

Site Name **Briton Ferry Road, Neath**

Sample No.

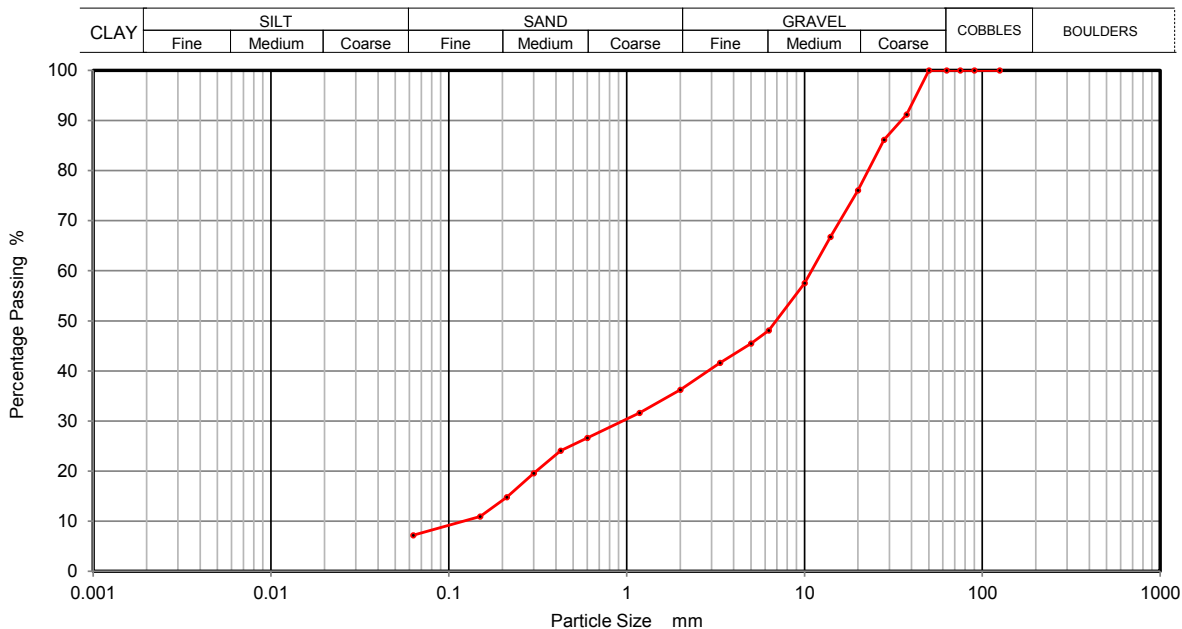
Soil Description **Dark brown slightly clayey/silty fine to coarse sandy fine to coarse GRAVEL**

Depth Top **0.40**

Depth Base **0.80**

Date Tested **13/08/2020**

Sample Type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	91		
28	86		
20	76		
14	67		
10	58		
6.3	48		
5	45		
3.35	42		
2	36		
1.18	32		
0.6	27		
0.425	24		
0.3	20		
0.212	15		
0.15	11		
0.063	7		

Sample Proportions	% dry mass
Cobbles	0
Gravel	64
Sand	29
Silt and Clay	7

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	17/08/2020	Wayne Honey	<i>W. Honey</i>
RO/MH	Approved	18/08/2020	Paul Evans	<i>DP Evans</i>



DP Gang



**Undrained Shear Strength in Triaxial Compression
BS1377 : Part 7 : Clause 8 : 1991 Set of Three 38 mm
without the measurement of Pore Pressure**

Contract Number 49475

Borehole/Pit No. BH1-B

Site Name Briton Ferry Road, Neath

Sample No.

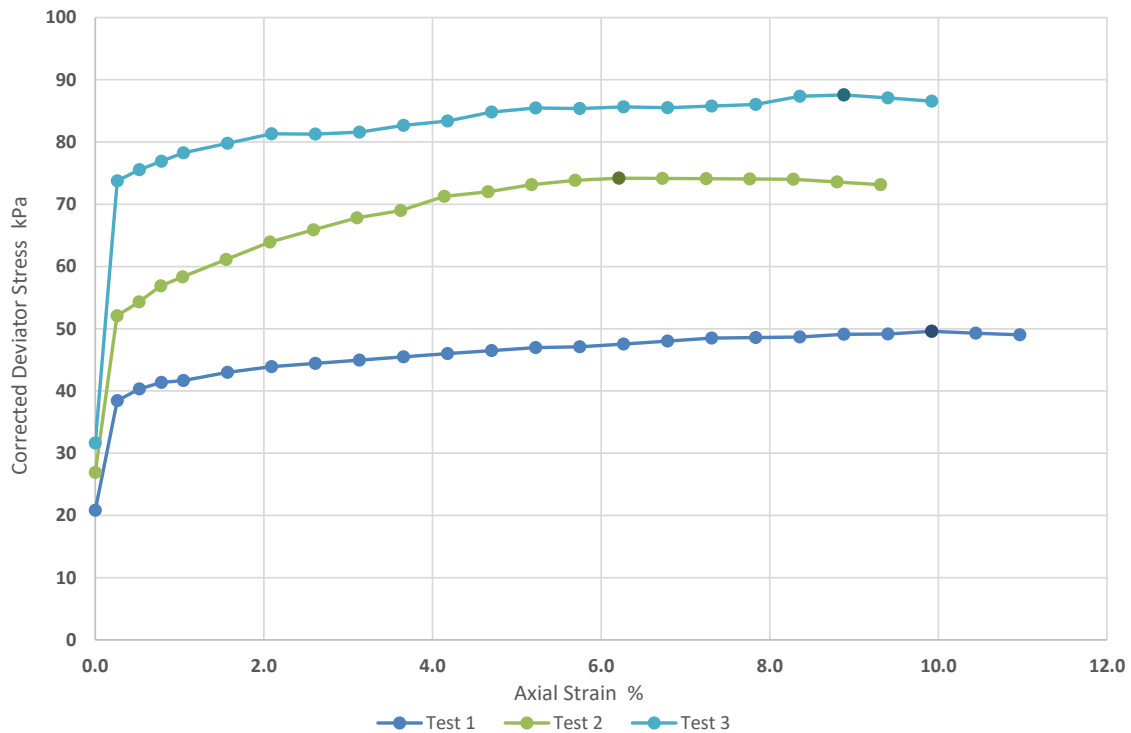
Soil Description Brown fine gravelly sandy silty CLAY

Depth Top 3.00

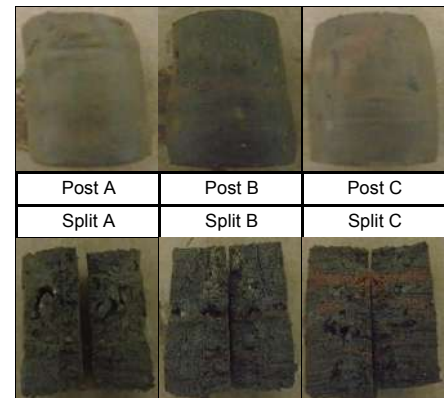
Depth Base 3.45

Date Tested 12/08/2020

Sample Type U100



	Specimen 1	Specimen 2	Specimen 3
Moisture Content (%)	20	20	20
Bulk Density (Mg/m ³)	1.90	1.82	1.89
Dry Density (Mg/m ³)	1.58	1.52	1.58
Specimen Length (mm)	77	77	77
Specimen Diameter (mm)	39	38	38
Cell Pressures (kPa)	60	120	240
Deviator Stress (kPa)	50	74	88
Undrained Shear Strength (kPa)	25	37	44
Failure Strain (%)	9.9	6.2	8.9
Mode Of Failure	Plastic	Plastic	Plastic
Membrane Used/Thickness	Rubber/0.3mm	Rubber/0.3mm	Rubber/0.3mm
Rate of Strain (%/min)	1.96	1.94	1.96



Checked	17/08/2020	Emma Sharp	
Approved	18/08/2020	Paul Evans	





**Undrained Shear Strength in Triaxial Compression
BS1377 : Part 7 : Clause 8 : 1991 Set of Three 38 mm
without the measurement of Pore Pressure**

Contract Number 49475

Borehole/Pit No. BH3-B

Site Name Briton Ferry Road, Neath

Sample No.

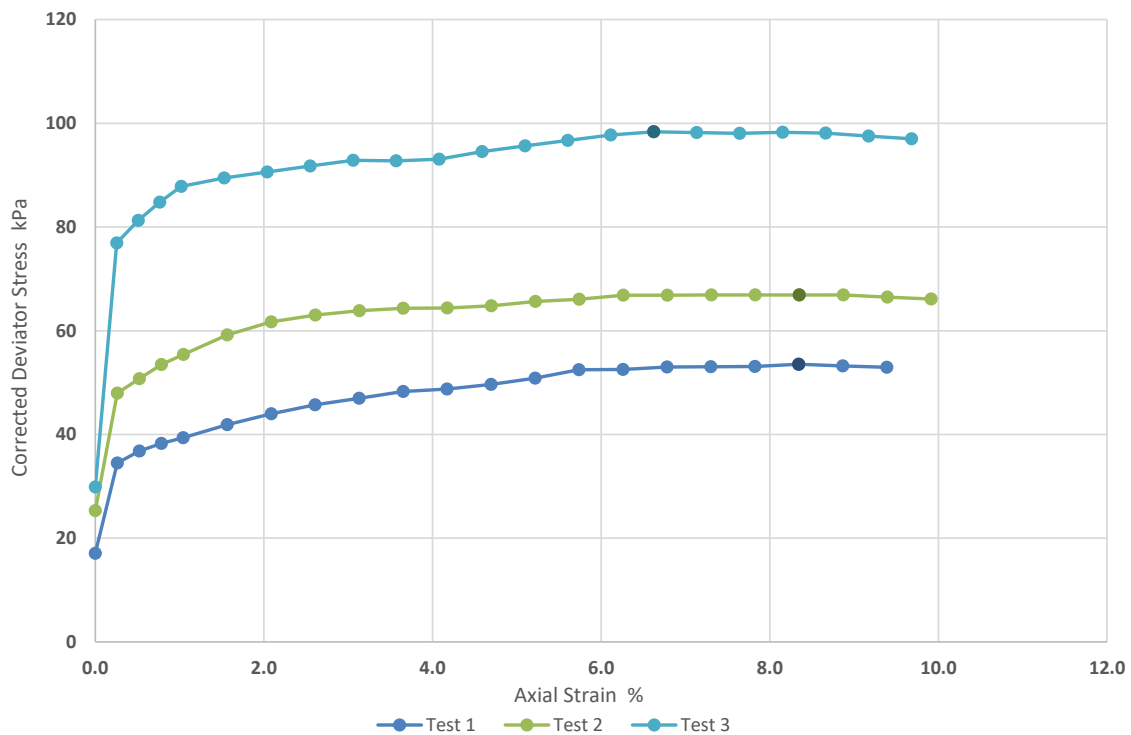
Soil Description Brown silty CLAY

Depth Top 3.00

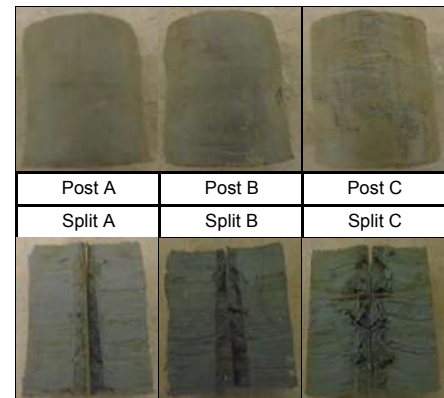
Depth Base 3.45

Date Tested 12/08/2020

Sample Type U100



	Specimen 1	Specimen 2	Specimen 3
Moisture Content (%)	47	47	47
Bulk Density (Mg/m ³)	1.62	1.69	1.76
Dry Density (Mg/m ³)	1.10	1.15	1.20
Specimen Length (mm)	77	77	79
Specimen Diameter (mm)	38	38	38
Cell Pressures (kPa)	60	120	240
Deviator Stress (kPa)	54	67	98
Undrained Shear Strength (kPa)	27	33	49
Failure Strain (%)	8.3	8.3	6.6
Mode Of Failure	Plastic	Plastic	Plastic
Membrane Used/Thickness	Rubber/0.3mm	Rubber/0.3mm	Rubber/0.3mm
Rate of Strain (%/min)	1.96	1.96	1.91



Checked	17/08/2020	Emma Sharp	
Approved	18/08/2020	Paul Evans	





**Undrained Shear Strength in Triaxial Compression
BS1377 : Part 7 : Clause 8 : 1991 Set of Three 38 mm
without the measurement of Pore Pressure**

Contract Number 49475

Borehole/Pit No. BH3-B

Site Name Briton Ferry Road, Neath

Sample No.

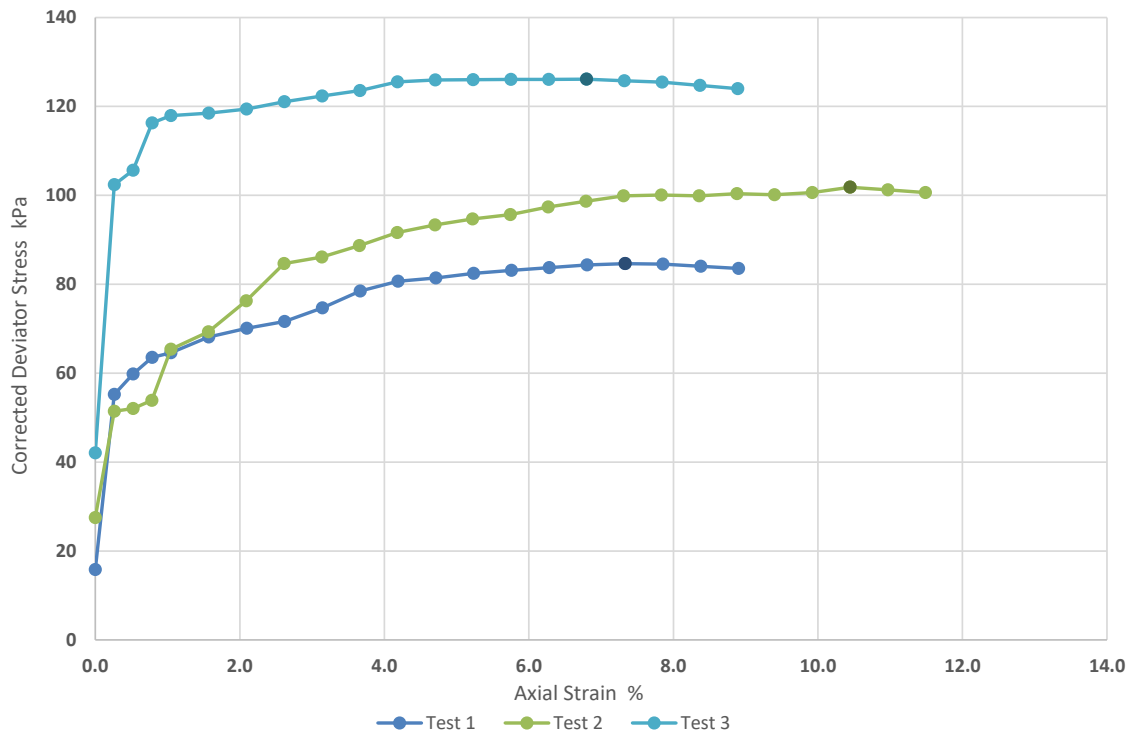
Soil Description Brown silty CLAY

Depth Top 5.00

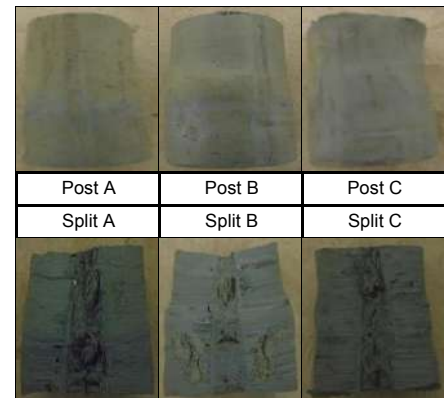
Depth Base 5.45

Date Tested 12/08/2020

Sample Type U100



	Specimen 1	Specimen 2	Specimen 3
Moisture Content (%)	33	33	33
Bulk Density (Mg/m ³)	1.79	1.81	1.85
Dry Density (Mg/m ³)	1.35	1.36	1.40
Specimen Length (mm)	76	77	77
Specimen Diameter (mm)	38	39	39
Cell Pressures (kPa)	100	200	400
Deviator Stress (kPa)	85	102	126
Undrained Shear Strength (kPa)	42	51	63
Failure Strain (%)	7.3	10	6.8
Mode Of Failure	Plastic	Plastic	Plastic
Membrane Used/Thickness	Rubber/0.3mm	Rubber/0.3mm	Rubber/0.3mm
Rate of Strain (%/min)	1.96	1.96	1.96



Checked	17/08/2020	Emma Sharp	
Approved	18/08/2020	Paul Evans	





Laboratory Report



Contract Number: 61080

Client Ref: **769.05**

Client PO: **769.05**

Date Received: **30-08-2022**

Date Completed: **13-09-2022**

Report Date: **13-09-2022**

Client: **Remada Limited**
Forward house
17 high street
Henley in Arden
B95 5AA

This report has been checked and approved by:

Paul Evans
Director

Contract Title: **Lidl Neath**

For the attention of: **Peter Dickinson**

Test Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	5
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	5
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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Approved Signatories:

Brendan Evans (Office Administrator) - Paul Evans (Director) - Richard John (Quality/Technical Manager)

Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager) - Wayne Honey (Human Resources/ Health and Safety Coordinator)

GEO Site & Testing Services Ltd

Units 3-4, Heol Aur, Dafen, Llanelli, Carmarthenshire, Wales SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

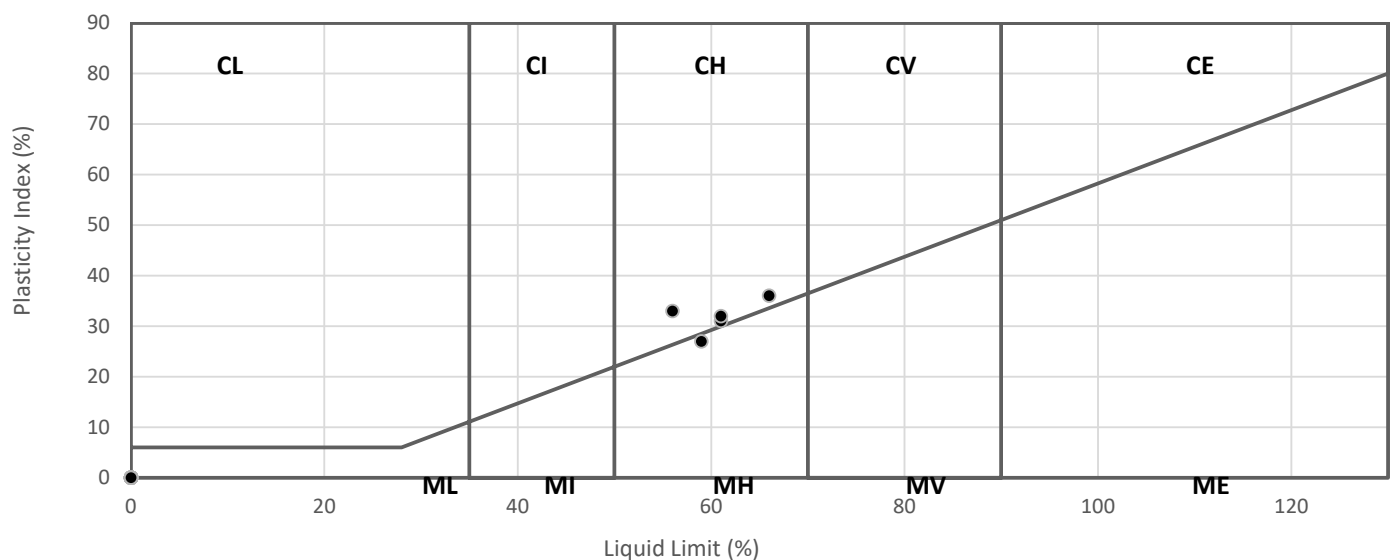
[illegible]

Contract Number	61080	
Project Location	Lidl Neath	
Date Tested	12/09/2022	

[illegible]

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION BS 5930:1999+A2:2010



Operators
Clayton Jenkins

