Remediation Verification Report

9 September 2024

Bowmer and Kirkland Limited

River Academy,
Richfield Avenue,
Reading,
RG1 8EQ

ASHFIELD
SOLUTIONS GROUP

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1 Introduction

1.1 Terms of Reference

Ashfield Solutions Ltd ("Ashfield") has been appointed by Bowmer and Kirkland Limited ("B+K" or "the client"), to prepare a Remediation Verification Report to allow for sign-off of conditions associated with land condition related risks at the newly constructed River Academy, Richfield Avenue, Reading, RG1 8EQ.

The development includes a new main school building, separate sports block, Multi Use Games Area ("MUGA"), new playing pitches together with car and cycle parking works, new accesses onto the public highway and all ancillary works and landscaping. The site location can be seen in Drawing 01. The whole site illustrative masterplan for the proposed development is included as Appendix A.

The Academy has been constructed by Bowmer & Kirkland for the Department for Education ("DfE"); the school is to be operated by the Maiden Erlegh Trust, who successfully operate multiple schools in the area. The land is currently owned by Reading Borough Council ("RBC").

1.2 Scope & Objectives

To provide a Remediation Verification Report in accordance with the principles and requirements of the Environment Agency's Land Contamination: Risk Management (2020) ("LCRM"), the National Planning Policy Framework and DEFRAs 'Contaminated Land Statutory Guidance'. The term "Verification Report" has been adopted by this document in line with LCRM guidance nomenclature. This report provides the following:

- Summary of background information and site environmental setting;
- Summary of the results of the risk assessment and final conceptual model adopted for the site;
- Outline of remedial works undertaken and evidence supporting its successful implementation.

The overall objective of this document is to demonstrate that the intended remediation works necessary to remove unacceptable land contamination risks to end users to ensure safe development have been satisfactorily completed in accordance with the approved remediation strategy.

A Remediation Strategy[1] was produced by Ashfield to address land condition related risks associated with the development of River Academy, and was accepted by Reading Borough Council prior to the commencement of works.

1.3 Planning Context

Reading Borough Council granted Full Planning Approval (Ref. 212061) for "*the demolition of existing driving range structures and the development of a new three-storey 8 form entry school for years 11 -16, including a SEND unit and 300 place 6th form (total school capacity of 1500 pupils) including the creation of a new access from Richfield Avenue, new parking area, cycle parking landscaped areas, external play areas, Multi Use Games Area (MUGA) and sporting pitches*".

[1] FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

As part of the Planning Approval, the following conditions were applied in relation to land condition, site remediation and verification, discussed either in part, or in full, within the agreed Remediation Strategy and this subsequent Verification Report:

- ***Condition 5: Contamination Verification Report***

  Prior to any part of the permitted development being brought into use, a verification report demonstrating the completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to, and approved in writing, by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met.

  REASON: To ensure that the site does not pose any further risk to the water environment by demonstrating that the requirements of the approved verification plan have been met and that remediation of the site is complete. This is in line with paragraph 174 of the National Planning Policy Framework. Clean cover emplacement and groundwater monitoring works are proposed during development which will need to be verified in accordance with Policy EN16 of the Reading local Plan 2019.

This Remediation Verification Report is considered to meet the requirement of Condition 5 for a verification report demonstrating the completion of works set out as in the approved remediation strategy.

- ***Condition 6: Long Term Monitoring and Maintenance***

  Following the approval of the remediation verification report (see condition 5) and prior to any part of the permitted development being brought into use a long term monitoring and maintenance scheme with a timetable for the submission of reports on the effectiveness of the remediation over a period of 10 years starting from the date the verification report is approved shall be submitted to and approved in writing by the Local Planning Authority.

  REASON: To ensure the development is suitable for its end use and the wider environment and does not create undue risks to occupiers of the site or surrounding areas in accordance with Policy EN16 of the Reading local Plan 2019.

The requirement for a Long Term Monitoring and Maintenance document is undertaken under a separate cover.

The standalone 'Long Term Monitoring and Maintenance Plan' (Ashfield, August 2024) has been submitted in support of the discharge of condition 6.

- ***Condition 7: Finding Contamination***

  If contamination not previously identified is found at any time when carrying out the approved development construction works shall be halted on that part of the site where the contamination has been found and it shall be reported in writing to the Local Planning Authority.

  An assessment of the nature and extent of contamination shall be undertaken and where remediation is necessary a remediation scheme, together with a timetable for its implementation, shall be submitted in writing to the Local Planning Authority for its written approval.

  The measures in the approved remediation scheme shall be implemented in accordance with the approved timetable. Halted works shall not be recommenced until the measures identified in the approved remediation scheme have been completed and a validation report has been submitted to and been approved in writing by the Local Planning Authority.

  REASON: To ensure the development is suitable for its end use and the wider environment and does not create undue risks to occupiers of the site or surrounding areas in accordance with Policy EN16 of the Reading local Plan 2019.

No contamination not previously identified was encountered during remediation / construction works. There was no requirement to halt works to inform regulatory authorities of any encountered contamination. This report, and its references, detail the remediation / construction works undertaken.

On the basis of the above, this report should be submitted to planning in support of the discharge of condition 7.

- ***Condition 11: Implementation of Approved Remediation Scheme (Ground Gas)***
  The land gas remediation scheme shall be implemented in accordance with the approved timetable of works. A validation report (that demonstrates the effectiveness of the remediation carried out) must be submitted to and approved by the Local Planning Authority prior to any part of the accommodation hereby approved is occupied, unless the Local Planning Authority otherwise agrees in writing.
  REASON: To ensure the development is suitable for its end use and the wider environment and does not create undue risks to occupiers of the site or surrounding areas in accordance with Policy EN16 of the Reading local Plan 2019.

The requirements of condition 11 for the implementation of an approved remediation scheme to address gas / VOC vapour risk is undertaken under a separate cover.

It is understood the standalone 'GeoShield Verification Plan[2]', 'GeoShield Verification Report[3]', 'GeoShield Verification Certificate[4]', 'ASL Environmental 12-month Gas Monitoring Plan'[5], and 'Ashfield Appendix to 12-month Gas Monitoring Plan – Gas Screening Criteria[6]' should be submitted in support of the discharge of condition 11.

1.4 Report Structure

The report commences with a reproduction of sections of the approved remediation strategy, the approved remediation methodology and a summary of verification requirements for the key tasks to be undertaken, as outlined in the approved Remediation Plan.

Details of the verification works undertaken as part of the development are then described together with supporting evidence.

1.5 Report Limitations

This report has been prepared with due care and diligence in accordance with industry best practice and guidance. This report is based on a review of remediation verification records and information provided by the Client and their appointed sub-contractors who undertook the remediation works. Third party information, including site records and verification information provided by others have been relied upon in good faith and Ashfield provide no warranty, expressed or implied for the works completed by others. In undertaking this commission, we have drawn upon professional expertise and experience to evaluate the significance of key information in relation to environmental risks.

[2] GEO103260 PV Plan. SWC. 300-22-1018 Riverside Academy
[3] GEO103260 SWC QC (Report Number 001 – 032)
[4] GEO103260 CERTIFICATE
[5] ASL Environmental – Email outlining 12-month Gas Monitoring Plan – dated 23 January 2023
[6] Ashfield Appendix to 12-month Gas Monitoring Plan – Gas Screening Criteria – v3

The report has been prepared for the exclusive benefit of the Client and those parties designated by them. The conclusions presented in this report represent Ashfield's best professional judgement based upon the information available and conditions existing as of the date of this report.

2 Background Information

2.1 Site Location

The site is located to the north of the centre of Reading, on the southern side of the River Thames. The site is accessed via an unnamed lane off Richfield Avenue to the east, and Cow Lane to the south. The site is located at coordinates XY: 470413, 174483 (nearest post code: RG1 8EQ) and occupies an area of approximately 4.65 hectares (ha). The site's location can be seen within Drawing 01.

2.2 Site History

From widely available historical maps, the site is shown as undeveloped from the earliest map edition dated 1878, which references the site being liable to flooding. The mapping record and other historical information for the period of the 1950s, 1960s and 1970s is disjointed, so the site use/timings, especially during the 1950s/1960s, has not been fully established by past reports. However, it is known that landfilling took place both on the site and on land to the east during this period and that landfill filling operations ceased in the 1970s. The landfilled areas are not accurately mapped; however, it is possible that there were two landfills in the area, an older 'Cow Lane landfill' and a younger 'Richfield Avenue Landfill'.

2.3 Geology and Physical Ground Conditions

2.3.1 Published Geology

The site is mapped as being underlain by superficial Langley Silt Member across the majority of the site and Alluvium in the north, likely to be followed by the Kempton Park Gravel Member. Bedrock is mapped as the Seaford Chalk Formation and Newhaven Chalk Formation.

2.3.2 Proven Ground Conditions

Comprehensive investigations were undertaken on the site to characterise the nature of the capping soils and landfill materials. In general, the encountered capping soils/materials are generally granular 'sub-soil' materials and are 0.4m to 1.2m thick, with the waste materials generally 1.6m to 2m thick.

The geology encountered across the landfilled northern portion of the site subjected to remediation and construction work is summarised in Table 1 below.

Table 1 – Ground Conditions

Strata	Description	Depth Range Top (m)	Depth Range Base (m)	Thickness Range (m)
Made Ground – Surficial landfill "capping" material	Typically gravelly sand with some inclusions of anthropogenic material (plastic / glass / brick fragments).	0.0	0.4-1.2	0.4-1.2
Made Ground - Landfill material	Typically gravelly sandy infill with varying quantities of anthropogenic materials (metal, glass, plastic, wood, shoes etc.). Some localised visual and olfactory evidence of contamination noted.	0.4-1.2	1.6-2.4	0.6-1.7

Kempton Park Gravel Member	Sandy gravel	2.0-3.0	7.0-8.7	4.0-5.9
Seaford and Newhaven Chalk Formation	Weathered chalk becoming competent with depth	7.0-8.7	Proven to a maximum of 25m bgl	Not proven

It should be noted that previous investigation only encountered the Langley Silt Member within the southern portion of the site, to a maximum thickness of 0.6m.

2.4 Development Progress

At the time of writing, the development is completed in preparation for handover and occupation in September 2024.

3 Remediation Strategy (Summary)

3.1 Relevant Pollutant Linkages

A final CSM for the site in the context of the development was developed in accordance with LCRM. This was based on a ground model of the site's physical conditions and an exposure model of the possible contaminant linkages. The final conceptual model, as produced within the remediation strategy, has been reproduced below and the following sections set out the requirements to address the Relevant Pollutant Linkages (RPLs) of concern, as per the below table:

Table 2 – Final CSM - Identified RPL

RPL Ref.	Source	End-use / Receptor	Substance / Hazard	Pathway	Comment
People Receptors (Human Health / Nuisance) Soft Cover Areas & Hard Surfaced External Areas					
RPL-1	Soft cover layer i.e. topsoil / subsoils.	Soft Surfacing Areas: comprising two grassed sports pitches and athletic track, grassed outfields, planted areas and habitat areas.	Inorganics Hydrocarbons & Organics	Ingestion, dermal, dust & outdoor vapour inhalation	Mitigation outlined in Section 5.2 & 5.3
People in Buildings, Buildings & Building Materials and Services (BBM&S) Receptors					
RPL-3a and RPL-3b	Capping soils and landfill material / groundwater where within landfill material.	Buildings, Services / Utilities Service Corridors.	Ground/Trace Gases and VOC vapours (incl. hydrocarbons)	Entry to Buildings and Services. Asphyxiation & explosion / conflagration. Health & nuisance effects Incl: CLEA Indoor VOC vapour inhalation.	Mitigation outlined in Section 5.4
RPL-5a	Capping soils and landfill material / groundwater where within landfill material.	All construction areas and materials.	Aggressive soil / water conditions	Building & construction materials integrity / performance / durability.	Mitigation outlined in Section 5.5 & 5.6
RPL-5b	Soils / GW along service corridors	Service corridors	Soil / GW Interaction	Potable Water Pipe Systems Integrity / performance / durability.	Mitigation outlined in Section 5.6 & 5.7
RPL-6	Groundwater within landfill material and natural ground.	Services / piles	GW Interaction	Interaction with GW Plus 'Foreseeable Event': potential rise of water table and new interactions with Buildings, Building Materials & Services.	Mitigation outlined in Section 5.5 & 5.6

RPL-8a	Soft cover layer i.e. topsoil / subsoils.	Soft surfacing areas	Relevant Phytotoxic substances	Plant uptake by roots	Mitigation outlined in Section 5.3
RP-8b	Capping soils and landfill material / groundwater where within landfill material.	Trees only	Relevant Phytotoxic substances	Uptake by deep tree roots	Mitigation outlined in Section 5.3
Foreseeable Events					
RPL-10	Soft cover soils	All areas	Not relevant	Damage to cover soils caused by unlikely flooding event	Mitigation outlined in Section 5.10
RPL-11	Capping soils and landfill material	All areas	Inorganics Hydrocarbons & Organics	Contamination brought to surface via: (i) Uncontrolled excavations (ii) Burrowing animals and (iii) tree storm damage	Mitigation outlined in Section 5.10
RPL-12	Capping soils and landfill material	External areas	All hazards	Capping and landfill - localised variability/difficult-conditions	Mitigation outlined in Section 5.1 & 5.2

4 Remediation Plan (Summary)

The following 'Tasks' have been established by the approved remediation plan related to the RPL objectives of the Remediation Strategy:

- **Task 1:** Project set-up and management.
- **Task 2:** Baseline air quality boundary monitoring.
- **Task 3:** Reduced level dig to formation level with appropriate stockpiling, segregation and screening of excavated soils.
- **Task 4:** Provision of appropriate cover system in all areas of soft cover as necessary.
- **Task 5:** Installation of VOC vapour / odour protection.
- **Task 6:** Appropriate concrete design and mitigation of aggressive ground conditions.
- **Task 7:** Installation of appropriate pipe for potable water supplies.
- **Task 8:** Clean service corridors / buried services protection.
- **Task 9:** Verification - comprising the gathering of information to confirm the effectiveness of remediation and preparation of the Verification Report.
- **Task 10:** Environmental Management and Monitoring.
- **Task 11:** Ongoing Maintenance and Monitoring.

5 Monitoring & Verification

This section identifies the monitoring and validation evidence that has been collated and is organised in terms of the 'Key Tasks' set out in the previous section of the report.

5.1 "Task 1" Project Set Up and Management

Risk Assessment and Method Statements (RAMS), prepared by B+K and the subcontractors to mitigate the risks to the groundworkers on site, are available in the site's Health and Safety file.

Additional documentation required in accordance with CDM Regulations, including Construction Environmental Management Plan (CEMP) & Construction Phase Health and Safety Plan (CPHASP), were prepared prior to works commencing. These documents have been submitted to planning where appropriate.

Prior to appointment, B+K ensured that the chosen earthworks contractor had suitable experience of working in a similar setting, with similar ground conditions and with similar contaminants of concern present in the ground, including working in the presence of potential asbestos.

> Toureen Contractors ("Toureen"), who were appointed by B+K to undertake the earthworks and remediation on site, have prepared a separate Verification Report (ref: TCL1211-RAC-VFR-001. 12 July 2023), known throughout this verification report as the "Toureen report" or "Toureen verification report". The Toureen report verifies the completion of a number of the 'key tasks' outlined by the approved remediation strategy and is referenced throughout this verification report and should be read in conjunction with this report as a key document. The Toureen report is included as Appendix B.

Independent supervision and verification of the works was undertaken by Ashfield, independently of the appointed earthworks and remediation contractor.

Table 3 - Project Team and Responsibilities

Contractor	Remediation Responsibility	Verification Responsibility
Bowmer and Kirkland	Principal Contractor	▪ Collation of verification data ▪ Maintaining record of material movement on/off site
Toureen	Earthworks and Remediation ▪ Reduce level dig to formation ▪ Enabling reuse of landfill cap under MMP ▪ Provision of Cover System (reuse of site won soils)	▪ Verification of all reused cap material ▪ Provision of site boundary monitoring ▪ Provision of MMP Verification Reporting
Burrows	Sports Pitch Contractor ▪ Provision of Cover System (importation of topsoil)	▪ Verification of Sports Pitch Topsoil
Fentons	Groundworks and Piling ▪ Clean Service Corridors ▪ Appropriate Barrier Pipe	▪ Clean Service Corridors ▪ Appropriate Barrier Pipe ▪ Verification of Cover Layer Topsoil
Ashfield	Geo-environmental Advisor ▪ Provision of Cover System	▪ Independent verification sampling

		▪ Provision of Remediation Verification Reporting
Afan Landscapes *Appointed by Fentons*	Amenity Area Planting ▪ Provision of Cover System (importation of topsoil)	▪ Verification of Amenity Area Topsoil
Structural Waterproofing Contracts (SWC) *Appointed by Fentons*	Gas Protection Installation ▪ Gas membrane installation	
GeoShield *Appointed by Fentons*	Gas Protection Independent Verifier	▪ Gas / VOC Verification Report
SCK *Appointed by Toureen*	Asbestos Specialists ▪ Enabling works watching brief	
Hexa Consulting	Appointed Structural Engineers ▪ Appropriate Concrete Design	▪ Appropriate Concrete Design

5.2 "Task 3" Reduced Level Dig to Formation Level

Excavation of the site by mechanical excavators was undertaken by Toureen to achieve the required clean capping and base of engineered subbase for road / car parking and pile mat installation.

Following excavation, soil processing was employed where required to remove deleterious inclusion s such as brick, concrete, wood, metal and glass via the utilisation of a mechanical screener, excavator and riddle bucket, or via hand picking of soils. Following processing, all materials reused were compliant with the required design specifications.

As part of demolition works, Asbestos Containing Materials ("ACMs") were encountered during foundation removal. Toureen appointed specialist contractors SCK, who maintained a watching brief for all of the foundation removal and removed all encountered visible ACMs encountered from arisings.

> Details of the reduced level dig undertaken by Toureen, including methodology, is included in sections 3.1 and 3.2 of the Toureen report, included as Appendix B.

5.3 "Task 4" Provision of Appropriate Cover System

The clean cover system was provided for the site using the imported topsoil and site-won landfill cap material. The required cover system is detailed in Table 4 below.

Table 4 - Cover Systems Overview

Location	Cover System Required
Sports pitches / running track	▪ 200mm imported topsoil ▪ 300mm subsoil The subsoil layer to comprise: (i) imported subsoil; and/or (ii) the existing site capping soils (in-part/all)
Grassed outfields	▪ 150mm imported topsoil ▪ 300mm subsoil The subsoil layer to comprise: (i) imported subsoil; and/or (ii) the existing site capping soils (in-part/all)
Planted / landscaped areas	▪ 150mm imported topsoil ▪ 300mm subsoil

Location	Cover System Required
	▪ For areas of proposed trees, pits to be excavated and additional depth of subsoil provided as per the Landscape Architect's specification for tree pits.
Habitat Area (located in far NW corner of site)	▪ 100mm crushed material 6-20mm; (may comprise adequately verified and inert building rubble inc concrete, brick etc). For avoidance of doubt must be verified as asbestos free. ▪ 200mm subsoil/ capping material The subsoil layer to comprise: (i) imported subsoil; and/or (ii) the existing site capping soils (in-part/all)

5.3.1 Reuse of site-won soils

The placement of material from formation level was undertaken by Toureen comprising the placement of site-won soils in line with the site reuse criteria outlined within the agreed remediation strategy. Following placement, a scheme of sampling was undertaken by Toureen to demonstrate the suitability for soil reuse. The soil verification undertaken by Toureen was undertaken at the frequency outlined within the remediation strategy, with samples taken in a grid basis so that a systemised sampling strategy could be developed. At each sample location a composite sample was collected from 10 spot locations, in the grid. Validation included the verification of chemical quality, material depth and material volume as part of their Materials Management Plan and Remediation Strategy verification requirements. All reused material returned results compliant with the re-use criteria agreed within the remediation strategy. The provision of cover layer materials is included within sections 3.3, 4.0, and 4.1 of the Toureen report, included as Appendix B. Toureen soil chemical results are included as Appendix C to the Toureen report.

5.3.1.1 Independent Verification

In addition to the above, and in accordance with the Remediation Strategy, Ashfield undertook independent geochemical verification of the reused materials. This comprised the validation of soil samples to demonstrate compliance with agreed reuse criteria on a systemised grid. Samples were submitted and compared against the soil reuse criteria as detailed in the agreed Remediation Strategy. In addition, Ashfield the adoption of the SoBRA Sampling Protocol for Asbestos in Soil which involved obtaining a separate soil sample, submitted in a 1l tub for Asbestos ID and Quantification. The independent geochemical verification has confirmed no exceedances against the adopted soil reuse criteria, with the soils being considered suitable for use. The results are included as Appendix C of this report.

5.3.2 Importation of topsoil

The importation of clean cover topsoil material was undertaken by Burrows for the sports pitch area, and by Afan in all other soft-cover amenity areas.

Soils to be used in the sports area was known as the 'Beenham Topsoil', soils imported for use in the external soft landscaped amenity areas was known as the 'Leighton Buzzard Topsoil'.

Prior to import, physical and chemical analysis of both topsoil sources was undertaken. The Beenham Topsoil analysis reporting is included as Appendix D. The Leighton Buzzard Topsoil analysis reporting is included as Appendix E. The reporting does not refer to the chemical criteria set out in Appendix C of the Remediation Strategy, however, reporting does screen their chemical values to residential with homegrown produce GAC. In all cases, of the potential contaminants determined, none were found at levels above their guideline values.

Following importation, additional chemical sampling was undertaken in line with the Remediation Strategy. Imported material was sampled at a minimum of 1 sample every 250m^3 imported to ensure compliance with the chemical

criteria included as Appendix C of the Remediation Strategy. The chemical testing of topsoil included screening for asbestos.

Following placement as part of the clean cover system, additional validation was undertaken comprising hand-dug pits to check the thickness of soft cover areas. Burrows provided evidence of chemical quality and depth in line with pitch specifications, as included in Appendix F. B+K and Burrows provided evidence of soft cover amenity areas cover layer depth and suitability in Appendix G and Appendix H.

The post-placement chemical verification undertaken shows that soils used within the cover system are suitable for use, with no exceedances of agreed criteria noted.

The cover layer system in the soft landscaped amenity areas meets the required specifications. However, in the areas immediately adjacent to the school buildings, the soil thickness could not be fully verified by Ashfield due to the presence of installed gas/VOC membranes, as shown in Appendix G. These planted areas may have a shallower soil layer as they are placed directly on top of the ground gas exclusion blanket extending outward from the building. Nonetheless, this is not considered an issue since the membrane effectively prevents exposure to the underlying soils.

5.4 "Task 5" Installation of VOC Vapour / Odour Protection

Gas / VOC vapour protection was provided beneath the building via installation of mitigation measures and membrane installed in accordance with the provided specifications. The installation was undertaken by specialist installers SWC, whose installers hold NVQ level 2 qualifications in the installation of gas membranes and weld all lap joints.

The design provides protection against a Characteristic Situation 2 (CS2) classification via a combination of the following elements:

- A ground gas retardation apron to prevent the accumulation of VOC vapours / odours within the void space beneath buildings.
- Inherent passive ventilation provided by the floorspace.
- An upgrade of the proposed waterproof membrane to a Gas and VOC resistant membrane (fully welded and sealed).

The following outlines the key aspects of the mitigation adopted, in accordance with the remediation strategy for the site:

- Installation of service ducts. It was outlined that any service trenches should ideally not breach the site capping. Where this cannot be avoided, service ducts to be fully sealed at joints to prevent gas or VOC vapour ingress into the void beneath the building. Where the trench reaches the protection apron, a suitable low permeability plug should be formed within the trench to retard gas and VOC vapour migration. The trench should be lined where it interfaces with waste to manage migration of pollution along preferential pathways.
- Suitable compaction and rolling of the piling mat, and apron around the building footprint. This should extend to where the existing thickness of clay capping is maintained. This layer should be suitable to minimise soil settlement.
- Provision of access locations to the piling mat, should pressure relief or active gas management be required as a future safeguard.
- Laying of a suitably robust geotextile over the piling mat.
- Installation of a sub membrane monitoring network (building footprints only).

- Installation of a suitably robust geomembrane. The membrane should extend across the full apron and be keyed into the capping. Any service penetrations shall be suitably sealed. The membrane shall be chemically resistant to hydrocarbons and retard methane, carbon dioxide and VOCs.
- Covering the surface with a suitable thickness of concrete suitable for water loading under flood conditions and aid post flood cleaning requirements. It is not a design requirement that the concrete does not crack from a gas and VOC management point of view.
- Sealing the internal ducting following installation of services. ϒ Suitable protection of the membrane shall be included to ensure follow-on trades do not damage the membrane in the period following installation but before the floor slab is constructed.

The design solution incorporating the above elements was required to be carefully detailed and appropriate products specified by the design team and advised by a suitably competent gas protection specialist. The key elements are:

- Detailed design for the whole system, including detail drawings for key interfaces.
- Specification of the geotechnical properties of the base layer on which the membrane and concrete cover is to be placed. Settlement of the basal layer in relation to the piling should be minimised to prevent shearing of the membrane from the piles.
- Specification of suitable membrane and jointing/sealing materials suitably impervious to methane, carbon dioxide and VOCs (Benzene should be considered as a primary driver). This can be achieved by provision of suitable product testing (i.e. BS ISO 15105-1:2015 and BS ISO 15105-2:2003) or by site specific modelling as described in CIRIA C748.
- Membranes should be fully welded where feasible.
- Where sealing to concrete surfaces is required (i.e., around piling columns), the surface should be suitably primed, and an appropriate self-adhesive detailing material used to join the membrane to the concrete. This should be heat and pressure applied (no cold jointing).
- Provision of a suitable gas and vapour monitoring network beneath the basal membrane and within the flood void.

The gas membrane protection elements was installed by a suitably competent gas protection installation company. The key elements are:

- NVQ Level 2 qualified gas membrane installation qualification for site operatives.
- Method statement of installation against the design along with their in-house CQA process for recording their work and how they will repair any defects.

Following installation, independent third-party verification of the installed gas membrane was provided by Geoshield. Records of the verification visits and the subsequent Verification Report and Certificate are presented in Appendix I.

5.5 "Task 6" Appropriate Concrete Design

The requirement for sulphate resistant concrete was confirmed and designed by Hexa, and subsequently included within the Hexa General Notes drawing which confirmed the requirement for sulphate class 3 concrete requirements (Appendix J).

The concrete mix design certificates for the compositions utilised by the groundworks and piling contractors are included in Appendix K.

5.6 "Task 7" Potable Water Supply Pipes

Derry Building Services have confirmed the use of compliant potable water supply piping / barrier piping in line with the specification and the requirements of Thames Water, as detailed in their letter included in Appendix L.

5.7 "Task 8" Clean Service Corridors

The provision for clean service corridors was taken through design as noted in the CPW's Site Wide Utility Layout drawing, with specific reference note in service trench detail for over-excavation requirement (300mm width and depth) and backfilled with either suitable site-won soils, or imported materials as per the remediation strategy, and included in Appendix M.

Photographic evidence showing clean service corridor compliance is included in Appendix N.

5.8 Compliant Waste Disposal

The requirement for compliant waste disposal on site was managed via a Site Waste Management Plan. This plan notes the responsibilities of those involved in the management of material on site and is included in Appendix O.

Example Waste Transfer Notes and Environmental Agency documentation have been included to demonstrate compliance and are included in Appendix P.

5.9 "Task 2 & 10" Environmental Management and Monitoring

Environmental monitoring was conducted continuously during the earthworks and remediation activities, encompassing the measurement of noise, vibration, odours, dust, vapours, and asbestos levels. Prior to the commencement of on-site activities, Toureen implemented baseline monitoring in alignment with the approved Remediation Strategy.

Following the initiation of works, daily monitoring of noise, dust, and odours was systematically performed, with dust monitoring occurring on a fortnightly basis or more frequently as required by site conditions.

5.9.1 Air Quality (Dust & Asbestos Fibre)

Regular inspections for dust and potential generation of dust was undertaken by Toureen who employed suitable controls to mitigate dust generation during activities where the generation of dust was a risk. Controls included further dampening down or temporarily covering of exposed areas of soil/stockpiles, using wheel cleaning facilities and road sweeping equipment where required.

Dust gauges were installed at 5 locations along the site boundary and collected every 2 weeks and measured for volume by a UKAS accredited laboratory. No exceedances of thresholds were registered during the works. No airborne asbestos fibres were detected above or at the control limit of 0.01f/cm^3 during works and monitoring events.

Dust and asbestos fibre monitoring is detailed in sections 5.4 and 5.6 of the Toureen report, included as Appendix B.

5.9.2 Noise

Toureen monitoring of noise levels recorded that noise levels did not exceed an average of 75Db(A) during stipulated working hours at the site boundary as noted in within section 5.2 of the Toureen report, included as Appendix B.

5.9.3 Groundwater Monitoring

Groundwater monitoring was conducted by Enitial, commissioned by Ashfield, in accordance with the established water quality monitoring plan. This plan mandated monitoring before, during and post piling works to facilitate the comparison of groundwater geochemistry, compared against established "baseline" groundwater conditions.

Throughout the project, groundwater sampling was carried out at regular intervals, totalling 15 rounds, from monitoring boreholes maintained on site. This included three baseline sampling rounds conducted from July through September 2022.

Post-sampling, the collected data was analysed by a UKAS-accredited laboratory, and results were compared against relevant criteria. The analysis revealed that contaminant levels generally remained consistent with baseline values. Although occasional isolated increases to 'watchpoint' or 'action required' levels were observed, subsequent monitoring indicated a return to baseline levels. By the end of the monitoring period, no concentrations exceeded the 'action required' threshold.

The final assessment concluded that there were no contaminant concentrations of concern or risks to local controlled waters following the completion of works. Groundwater monitoring results are provided in Appendix Q.

5.10 "Task 11" Ongoing Maintenance and Monitoring

A Long Term Management and Maintenance Plan has been developed and submitted to planning in support of the discharge of Planning Condition 6. The plan notes the maintenance requirements to be taken forward to ensure remedial measures are effective throughout the life of the school. The document is included in Appendix R.

6 Conclusion

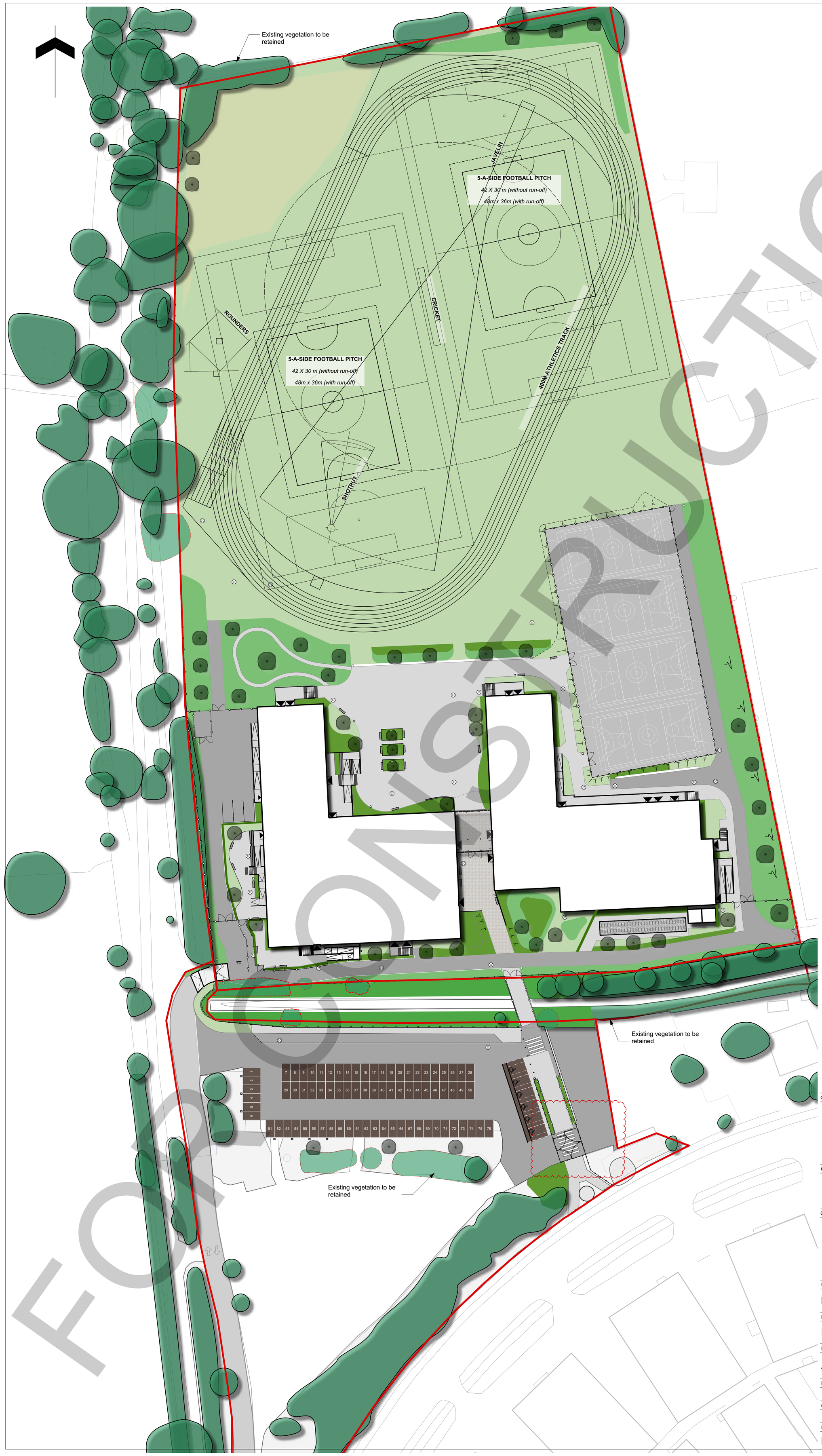
In accordance with the Remediation Strategy, a verification report, produced upon completion of works, was required to be compiled. In accordance with the Remediation Strategy, this report details the works undertaken and provides the record to demonstrate that the remediation has been implemented (by various parties) and verified and fulfils the requirements of LCRM and the relevant planning condition(s).

In accordance with the Remediation Strategy, this report includes the following information:

- Purpose and aims of the report, including author credentials;
- Site details, including summary review of all previous investigation data;
- Correspondence documentation relating to Regulatory liaison;
- Information outlined from this document, including:
  - Ground conditions, hydrogeology and hydrology.
  - Remediation objectives.
  - Remediation methodology.
- Details of remedial works undertaken and by whom, with justification for any changes from the original strategy;
- Results of verification, validation, performance testing and monitoring as specified, including:
  - Soils verification and evidence of compliance with chemical / physical requirements
  - Cover System verification
  - Ground gas / VOC Vapour Verification Report
  - Evidence of built environment mitigation
  - Annotated site plans.
  - Details of any relevant permits, licenses, waste management documentation (including Hazardous Waste Transfer notes and Duty of Care notes to demonstrate compliance).
  - Delivery tickets for all imported soils.
  - Confirmation of any special requirements for building materials and water pipes.
  - Findings of the Water Quality Monitoring Strategy.
  - Description of final site condition at completion;
- Confirmation that remediation objectives have been met and confirmation of any postcompletion maintenance requirements.

> The evidence provided in this report and its appendices are in accordance with the verification requirements and indicates that remediation works have been satisfactorily completed as detailed within the agreed remediation strategy. Given that works are now completed and verified, this report should be submitted to the LPA in order to facilitate the discharge of Planning Condition 5.

Appendix A
Site Illustrative Masterplan



KEY

- Application Boundary
- Existing Trees
- Existing Trees To Be Removed
- Existing Vegetation
- Proposed Building
- Ground Floor Cut-Through (First and Second Floor Connection)
- Building Entrance/Exit Point

HARD LANDSCAPE

- PEDESTRIAN TARMAC
- VEHICULAR TARMAC
- PEDESTRIAN BLOCK PAVING
- PERMEABLE BLOCK PAVING
- PERMEABLE TARMAC

SOFT LANDSCAPE

- PROPOSED GRASS SEED
- PROPOSED AMENITY PLANTING
- PROPOSED MEADOW PLANTING
- PROPOSED WILDFLOWER PLANTING
- PROPOSED NATIVE SHRUB PLANTING
- PROPOSED TREE PLANTING
- PROPOSED HEDGE PLANTING

SITE FURNITURE

- CYCLE STAND WITH CANOPY *120 cycle spaces*
- STEPS
- HANDRAILS FOR STEPS
- RAMP
- HANDRAILS FOR RAMP

FOR CONSTRUCTION

REV	DATE	DESCRIPTION
C08	09/04/2024	Gates shifted down in south of car park - tarmac area slightly increased to allow for this.
C07	18/01/2024	1. Updated to latest layout 2. Native shrub planting added to key
C06	22/03/2023	Titleblock updated

CLIENT

Department for Education

CONTRACTOR

BOWMER + KIRKLAND

CONSULTANT ALA

ares LANDSCAPE ARCHITECTS

PROJECT

River Academy

DRAWING TITLE

Landscape Illustrative Masterplan

DRAWING PURPOSE

A4 - FOR CONSTRUCTION

DRAWN BY	DATE	CHK'D BY	SCALE	MEDIA
MH	10.09.2021	JG	1:500	A1

CONTRACT DRAWING REFERENCE (AS REQUIRED)

PROJECT - ORIGINATOR - ZONE - LEVEL - TYPE - ROLE - NUMBER	REVISION
FS0949-ALA-XX-ZZ-DR-L-0001	C08

Appendix B
Toureen Verification Report

Verification Report:

Toureen Contractors Ltd.

TCL1211 River Academy, Reading

River Academy development,

Richfield Avenue,

Reading,

RG1 8EQ.

TCL1211-RAC-VFR-001

Revision 1 – First Issue

12 July 2023

RW

EXECUTIVE SUMMARY

This document has been prepared on instruction from **Bowmer and Kirkland (The Client),** on behalf of Reading Borough Council. The report is for the sole specific use of the client and for the project as referred to herein. Only with express permission from Toureen Contractors can copies be passed to third parties and then no professional liability or warranty will be extended to such parties. Toureen Contractors accepts no responsibility or liability for the consequences of this document being used for any purpose or project other than for which it was commissioned.

The purpose of this document is to present a factual summary project, referred to herein.

DOCUMENT CONTROL

Revision	Author	Date	Status
1	RW	12/07/2023	First Issue

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APPENDIX B: PERMITTING
APPENDIX C: TOUREEN CHEM-GEO RESULTS
APPENDIX D: ASHFIELD CHEM RESULTS
APPENDIX E: PILE MAT – ROAD DESIGN

APPENDIX F ENVIRONMENTAL MONITORING

APPENDIX G EXPORT

1.0 INTRODUCTION

1.1 Introduction

Toureen Contractors Ltd. (TCL) have been appointed by Bowmer and Kirkland (The Client), on behalf of Reading Borough Council to undertake, remediation, earthworks and ground improvement to facilitate the development of the proposed River Academy development, Richfield Avenue, Reading, RG1 8EQ.

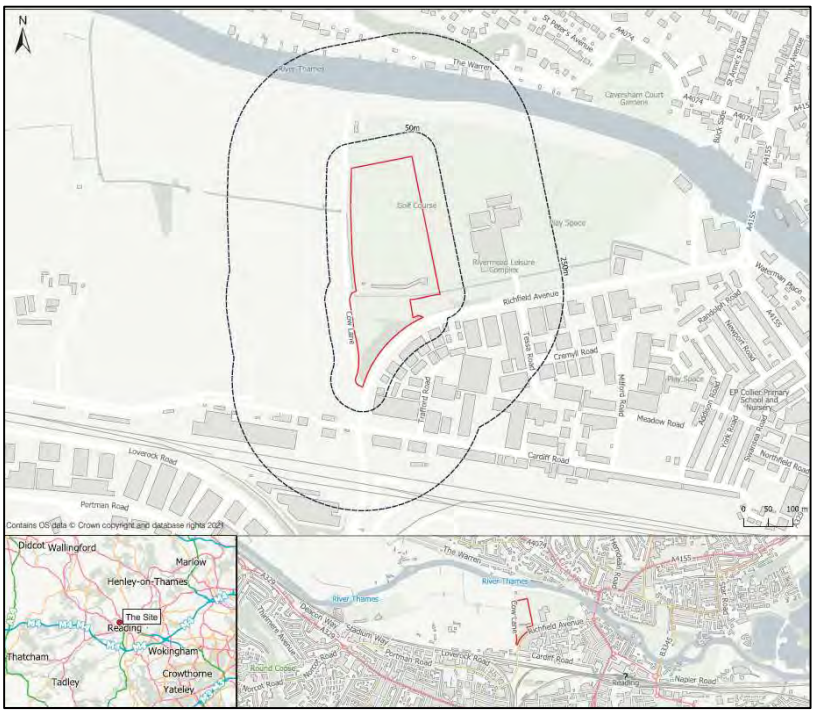


Figure 1: Site Location Plan

1.2 Scope of Works

The end proposal would include a new main school building, separate sports block, Multi Use Games Area ("MUGA"), new playing pitches together with car and cycle parking works, new accesses onto the public highway and all ancillary works and landscaping. The site location can be seen above and in Drawing 01, Site Location Plan (Appendix A). The whole site illustrative masterplan for the proposed development is included as Appendix A and details below.

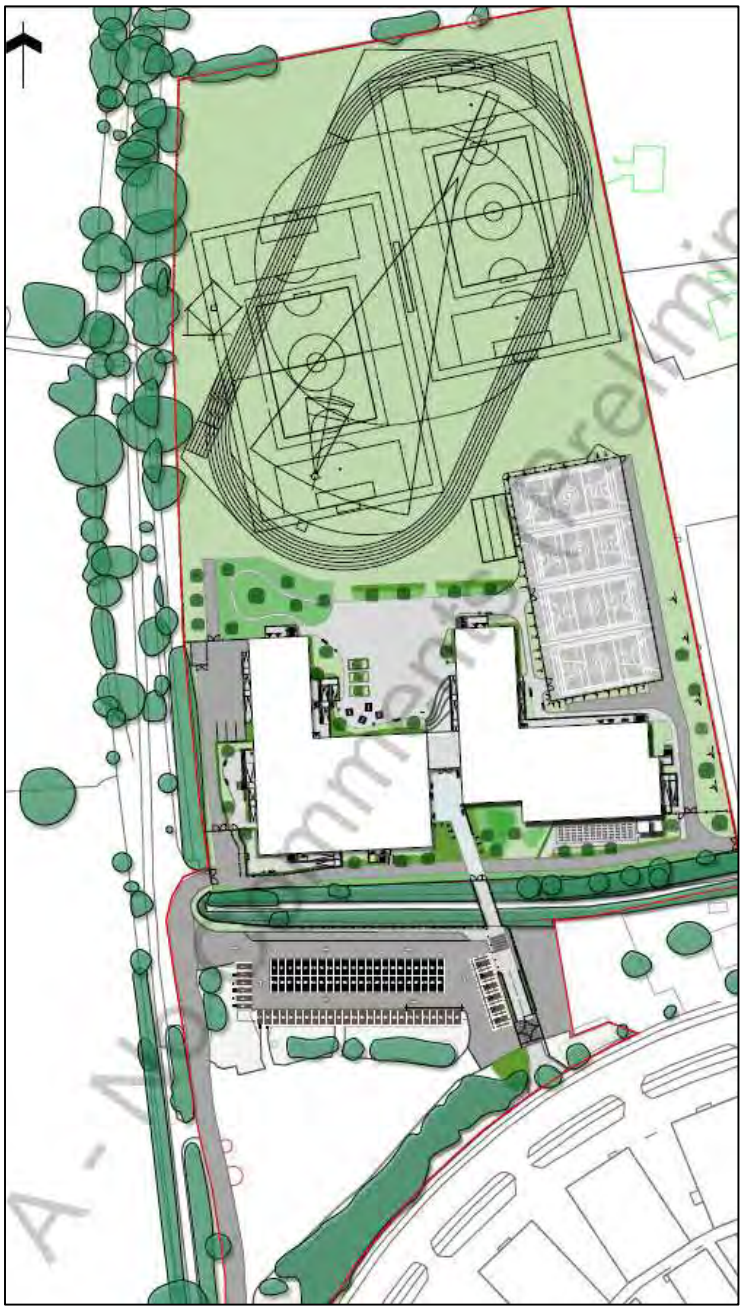


Figure 2: Site Master Plan

The remediations works to be undertaken to address the pollutant linkage (source-pathway-receptor), this will comprise of;

- All works under watching brief/discovery strategy;
- A key aspect of the remediation strategy is the filling to final levels with soils verified as chemically and physically suitable for their intended usage. This is to include the placement of a robust, simple cover layer in all areas of softcover comprising:
    - Grassed sports pitches (2 No.) and athletic track;
    - Grassed outfields;

  - Planted areas including trees; and, "Habitat area" within the far north-western corner of the site.

- Further characterisation of site won and imported soils by means of chemical testing, prior to and during importation/filling;
- Importation of soils under Duty of Care and compliance with CL:AIRE.
- Moisture control of general fill backfilled materials if required to allow adequate compaction and engineering performance;
- Environmental management, as described in the mobile plant permit to be deployed for the duration of the works, will be implemented during the works to lower the potential risks to off-site receptors;
- Although not anticipated, if discovered, underground drainage channels/conduits shall be sealed using clean site won clays to prevent water ingress and potential mobilisation of contaminants off-site and into surface water receptors;
- Any discovered quarantined soils shall be bunded and covered where necessary;

2.0 WORKS SPECIFICATION

2.1 Drawings

This report may reference specific drawings. Drawings referred to in the report are detailed in Appendix A.

2.2 Programme

Toureen commenced the main earthworks and remediation in October 2022, with the completion of remediation works completed in January 2023.

It should be noted that one number return visits were undertaken for the following purposes and periods:

- Due to access the southern area was not possible during the initial mobilisation. Toureen returned between in February 2023 to complete the southern road area as defined on the plan below. Noting this is a hardstand area and therefore not subject to clean capping in Toureen scope of works.



Figure 3: Southern Road Area undertaken during February remobilisation (Drawing TCL6728_EN014_BH_C_L1, Appendix A).

- Toureen were further instructed as a variation to assist in processing the surplus groundworker arisings prior to off-site disposal. Noting that all off-site disposal and duty of care was the Clients responsibility. Toureen mobilised in June 2023 and subsequently demobilised in July 2023 on completion of works.

2.3 Permitting

The reuse of site won soils were permitted and managed in accordance with the Materials Management plan (MMP), the CL:AIRE CoP MMP Declaration is detailed in Appendix B.

Toureen obtained a site specific deployment with the Environment Agency prior to works (Deployment Ref: FB3501TZ/W0002). This is detailed in Appendix B.

Toureen mobilised a crusher during the works to process/crush hard arisings. The permit associated with this crushing equipment is detailed in Appendix B.

No other permits were required as part of the works.

2.4 Health and Safety

Bowmer and Kirkland was Principal Contractor for the enabling works.

All works were undertaken under appropriate Risk Assessment and Method Statements (RAMS). A summary of the works RAMS is detailed below:

AUTHOR	TITLE
Toureen	Remediation and Earthworks.

Table 1: Schedule of Risk Assessments and Method Statements

3.0 Site Works

3.1 Excavation Cut and Fill

Toureen was to excavate the site by mechanical excavators and dozer to achieve the required clean capping and base of engineered subbase for road/car parking and pile mat installation. The site was cut in all areas to the design base levels. This can be further summarised in the tables below:

Location	**Cover System Required**	**Base of Fill**
Sports pitches/ running track	200mm topsoil 300mm subsoil	500mm below finished design levels.
Grassed outfields	150mm topsoil 300mm subsoil	450mm below finished design levels.
Planted/landscape areas	150mm topsoil 300mm subsoil	450mm below finished design levels.
Habitat area	100 crush material 200 subsoil/capping material	300mm below finished design levels.
Reuse of existing capping as cover material	Subsoil/capping material	
Reuse of capping generated from groundworks arisings	-	Backfilled at source location
Location	**Cover System Required**	**Below FFL**
Road/car parking stabilised subbase construction	450mm site won subsoil	Access road to 450mm below FFL and block paving 480mm below FFL
Pile mat construction	600mm stabilised site won material	TBC

Table 2: Summary of excavation, cut and fill

The relative cut/fill required to achieve the 'Cut and Fill to Formation Level' is detailed below and further defined on drawing FS0949-ASO-XX-XX-DR-Y-1102 P03 (Appendix A).



Figure 4: Screenshot of FS0949-ASO-XX-XX-DR-Y-1102 P03 – Cut and Fill to Formation.

3.2 Excavation and Processing of Site Won Soils

Soil processing was employed where required to remove deleterious inclusions such as brick, concrete, wood, metal and glass. This will be achieved by the following methods:

1. Mechanical screener.
2. Excavator and riddle bucket.
3. Hand picking

Where the mechanical screening was adopted, materials were sorted into three streams, oversize, midsize and fines. Deleterious materials were further removed from streams by further riddling and if required, hand picking. Deleterious materials were be cleared by an excavator and loaded into suitable waste skips for removal from site.

Materials were processed as to remove all oversize inclusions. Where required, materials were rescreened to further mechanically remove any oversize that is above the design criteria. The screener mesh was adjusted accordingly to achieve the design specification.

All materials reused following soil processing were compliant with the required design specification and, where applicable the MCHW Series 600.

As per Toureens scope three (3 No.) attenuation tanks excavations were dug to design formation during the works. The design formation TCL6728_EN006_B_L1 (Appendix A). The attenuation tanks and subsequent requirement for validated capping of these areas are down to the future contractor appointed for the works.

Drawing TCL6728_EN0013_BH_E_L1 – Excavate to Formation Levels 13th December 2022 was produced to demonstrate the Toureen as-built formation levels. These levels compared to the required design formation levels details on Drawing TCL6728_EN002_BH_A-L1, Site Formation Levels Oct 2022 demonstrate compliance with achieving the design levels.

During the demolition phase, in which another contractor was appointed for the demolition. Non-licensable Asbestos Containing Materials (ACMs) were encountered during the foundation removal. Toureen was instructed to appoint a specialist contractor to assist in the processing/removal of foundation and foundation soils to facilitate off-site disposal. As such, the appointed contractor (SCK, Licensed Contractor) maintained a watching brief for all of the foundation removal and methodically removed all encountered visible ACMs from arisings. Soils were removed to greater depth in the former building footprint as all foundations were removed to depth and to remove all visible ACMs encountered. The depth of excavation is presented on Drawing TCL6728_EN0013_BH_E_L1.

3.3 Backfill

As detailed in the Remediation Strategy and Verification Plan, Ashfield Solution, March 2022 the following depth of cover systems is required at the site and dictated by the end land use.

Location	Cover System Required
Sports pitches / running track	• 200mm imported topsoil • 300mm subsoil The subsoil layer to comprise: (i) imported subsoil; and/or (ii) the existing site capping soils (in-part/all)
Grassed outfields	• 150mm imported topsoil • 300mm subsoil The subsoil layer to comprise: (i) imported subsoil; and/or (ii) the existing site capping soils (in-part/all)
Planted / landscaped areas	• 150mm imported topsoil • 300mm subsoil • For areas of proposed trees, pits to be excavated and additional depth of subsoil provided as per the Landscape Architect's specification for tree pits.
Habitat Area (located in far NW corner of site)	• 100mm crushed material 6-20mm; (may comprise adequately verified and inert building rubble inc concrete, brick etc). For avoidance of doubt must be verified as asbestos free. • 200mm subsoil/ capping material The subsoil layer to comprise: (i) imported subsoil; and/or (ii) the existing site capping soils (in-part/all)

Table 3: Clean Capping Depth Criteria, extracted from Remediation Strategy and Verification Plan, Ashfield Solution, March 2022

Only soils fully compliant with the site reuse criteria as per the Remediation Strategy were reused in the clean capping system. Chemical validation of these soils is detailed later in this document.

The levels in which validated subsoil was installed to design finished levels and compliant with the required capping thickness above is detailed on Drawing TCL6728 _EN005_BH_D_L1 – Top of Subsoil Remediation Levels 20th December 2022.

3.4 Pile Mat and Modified/Stabilised Fill

Toureen were required to install a pile mat on the south site of the site (red defined area on Figure 5). The pile mat was installed as per design consisting of 525mm 6F2/6F5 material. The required 6F2/6F5 was sourced from site won crushed aggregate and imported product. As per the design a 30/30 geogrid was installed at the base of the granular material. Piling has subsequently now been completed. The pile mat design and geogrid datasheet are detailed in Appendix E.

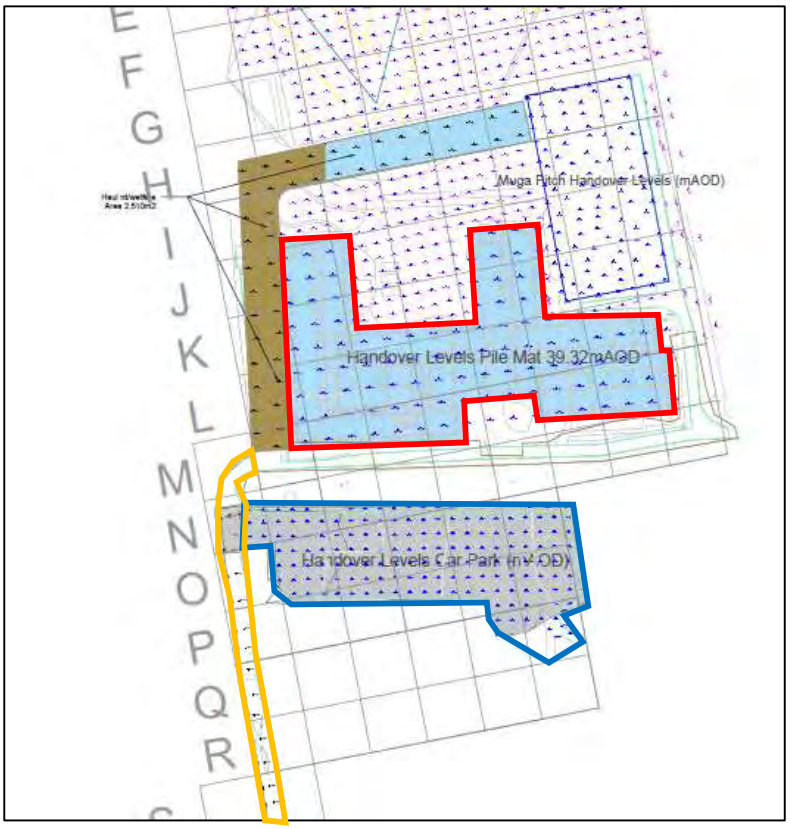


Figure 5: Extract from HANDOVER CHECKED LEVELS (mAOD) 20th DECEMBER 2022, Drawing TCL6728_EN008_BH_D-L1 (Appendix A)

As per instructed works discussed with the Client and the groundwork contractor. Toureen stabilised with 4% Ordinary Portland Cement (OPC) 300mm in-situ soil at the base of the pile mat. This 300mm stabilised layer was to 38.79mAOD.

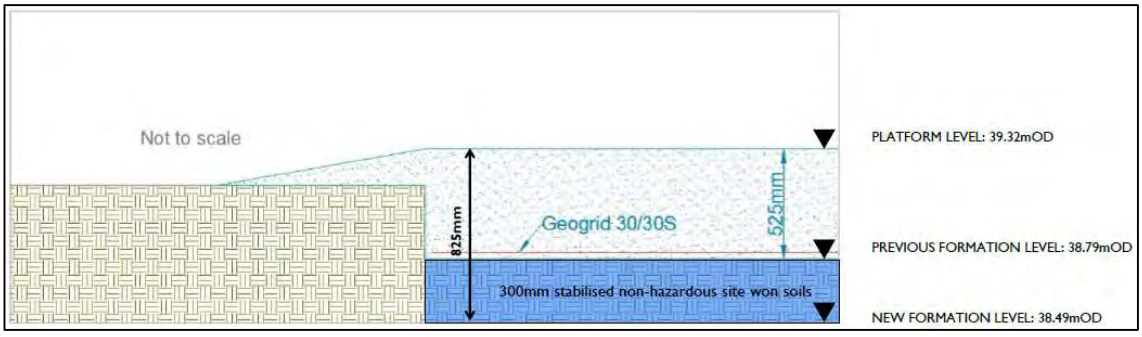


Figure 6: Pile mat and Stabilisation cross section

As per the Client supplied design Toureen installed the required capping to 480mm below FFL in the 'car park area' (Blue defined area on Figure 5). The construction of further layers in the design and construction was undertaken by others.

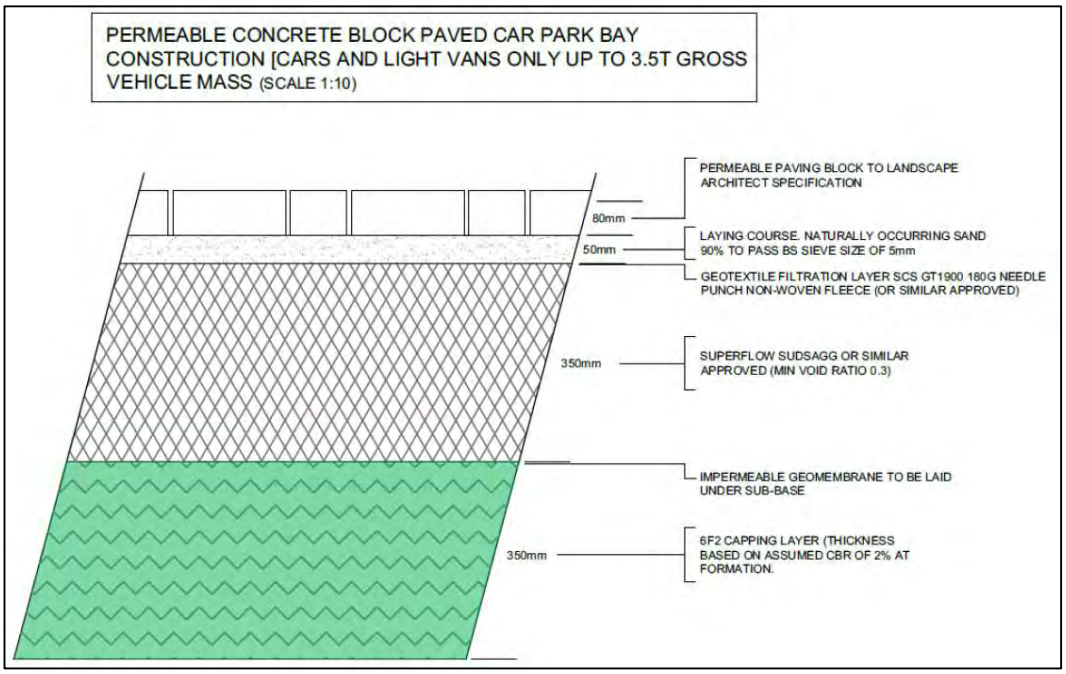


Figure 7: Client Design – Permeable concrete block paved car park bay construction (Appendix E)

As per the Client supplied design Toureen installed the required engineered fill to 200mm below FFL for the 'Access Road' (Orange defined area on Figure 5). As discussed with the Client and installed as valued engineering. The subbase from 950mm below FFL to 200mm below FFL Toureen stabilised with 4% Ordinary Portland Cement (OPC). This area of stabilised/modified fill is defined on Figure 8 below in red. As requested by the Client, a frost susceptibility test was undertaken on the material modified in lieu of the 150mm granular type 1 sub-base. This was confirmed as non-frost susceptible and the certificate from the laboratory of this result is presented in Appendix E. The construction of further layers in the design and construction was undertaken by others.

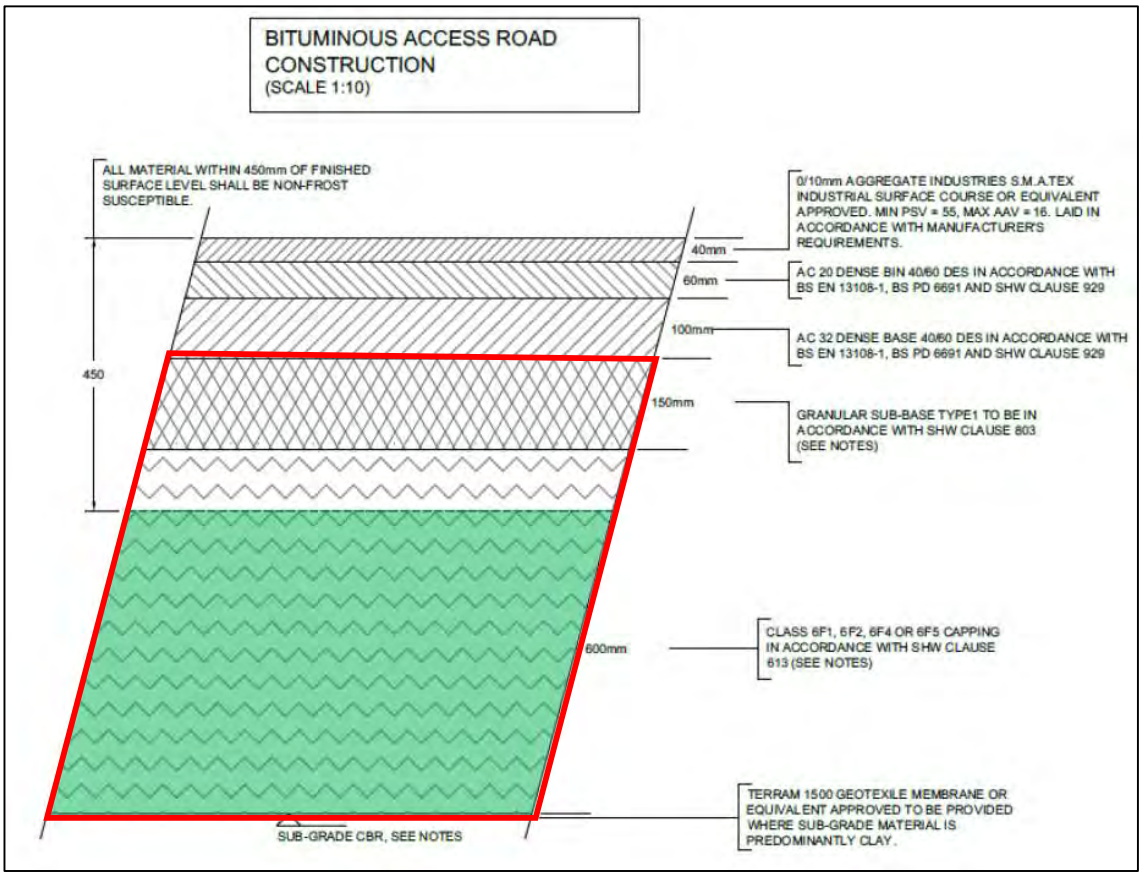


Figure 8: Client Design – Bituminous Road Construction

Toureen were instructed to stabilise the following areas for the purpose of the Client to construct a temporary access road and temporary welfare. (Red defined area on Figure 9). A 300mm stabilised layer with 4% Ordinary Portland Cement (OPC) was installed to the following mAOD:

1. Haul Road and Welfare Location – 38.60mAOD
2. Septic Tank Location – 24.90mAOD

All stabilised materials were placed above validated clean capping material placed during the remediation works.

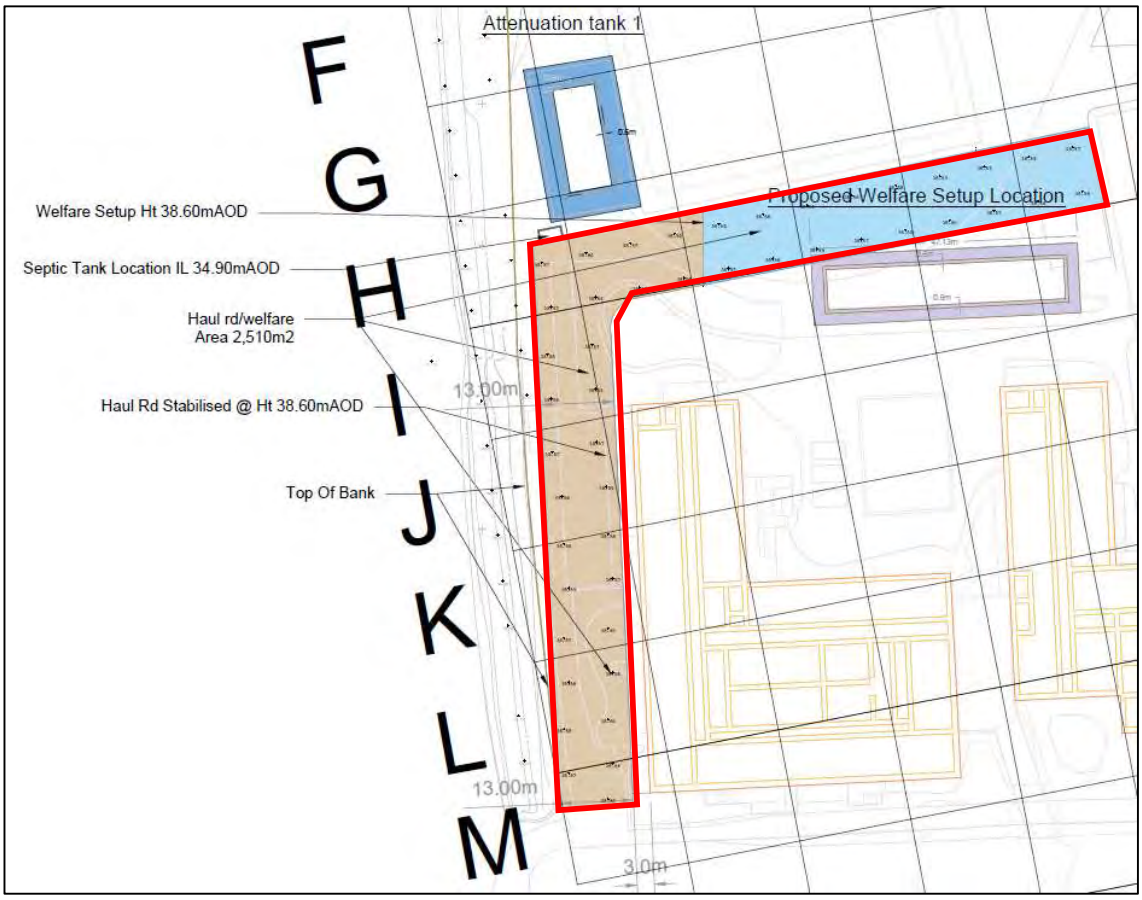


Figure 9: Septic Tank and Welfare Location, Drawing TCL6728 _EN011_BH_C_L1 (Appendix A)

The stabilisation works were undertaken in accordance with MCHW Series 600 utilising a combined spreader and dust free mixer and compacted as per the method stipulated (Table 6/4, MCHW Series 600).

3.5 As-Built Records

The following As-built records have been produced, presented in Appendix A:

- Drawing TCL6728 _EN005_BH_D_L1 – Top of Subsoil Remediation Levels 20th December 2022.
- Drawing TCL6728 _EN008_BH_A_L1 – Handover Car Park Checked Levels (mAOD) 11th November 2022.
- Drawing TCL6728 _EN008_BH_B_L1 – Handover Checked Levels (mAOD) 20th November 2022.
- Drawing TCL6728 _EN008_BH_C_L1 – Handover Checked Levels (mAOD) 20th December 2022.
- Drawing TCL6728 _EN008_BH_D_L1 – Handover Checked Levels Including Road Areas (mAOD) 20th December 2022.
- Drawing TCL6728 _EN008_BH_D_L1 – Handover Checked Levels Including Road Areas (mAOD) 20th December 2022.

- Drawing TCL6728 _EN0011_BH_C_L1 – Septic Tank & Welfare Location 2nd December 2022. This drawing details the finished handover levels of the stabilised haul road, welfare setup and septic tank.
- Drawing TCL6728 _EN0011_BH_D_L1 – Crane Area Location 22nd December 2022. This drawing details the base of excavation of the Toureen excavation and handover level for the crane pad area. As discussed, and agreed with the Client this area was left at a lower level than the original scope of works for the Client/Clients contractor to install a crane pad. In leaving this area lower than originally contracted this subsequently resulted in additional off-site disposal of approximately 754m^3 of subsoil that would have usually be reused as part of the works.
- TCL6728_EN0013_BH_E_L1 – Excavate to Formation Levels 13th December 2022.

Regular surveys were undertaken for the purposes of material tracking on the project. Drawings TCL6728 _EN007_BH_A_L1 to TCL6728 _EN007_BH_F_L1 demonstrate the tracking excavated soil movements during the excavation phase, these were subsequently tested and placed back in source location.

4.0 SAMPLING AND TESTING

Soil sampling was conducted by appropriately trained and competent Geo-Environmental Engineers. The chemical and geotechnical data below is collated in Appendix F with all relevant certificates. Soil sampling was undertaken in general accordance with standards outlined within BS ISO 18400- 102:2017. Sampling for geotechnical purposes was undertaken in general accordance with BS EN ISO 22475- 1:2006 'Geotechnical Investigation and testing – sampling methods – Part 1: Technical Principals for Excavation and Standard for Highways Series 600 Specification.

As per the remediation strategy samples were collected on the following frequency:

Import material - Testing shall be undertaken at a rate of one test per 250m^3, with a minimum of three tests per import round.

Site won material - Testing shall be undertaken at a rate of one test per 200m^3 prior to use.

The results of chemical testing of all material to be used in the cover system are to be compared with the criteria detailed below as per the agreed remediation strategy:

Substance	SACs for Soft Cover Soils	Phytotoxic SACs for Planted Areas
Arsenic	40	50
Cadmium	11 (1)	3
Chromium	910	400
Copper	1,000 (1)	200
Lead	310	-
Mercury	10 (1)	1
Nickel	180	110
Selenium	430	-
Vanadium	500 (1)	-
Zinc	1,000 (1)	300
Total Cyanide	24	-
Asbestos	TOPSOIL – Asbestos not identified. SUBSOIL – Ideally asbestos not identified, but also consider allowing for 'sporadic' Chrysotile Stage 2 results at <0.001% if no visible ACMs.	-
Sum TPH Fractions	500	-
TPH (C5 - C8)	50	-
TPH (C8 - C10)	30	-
TPH (C10 - C12)	130	-
TPH (C12 - C35)	Via Sum	-
Benzene	0.1	-
Sum TEX	1 (1)	-
Sum 16-PAH	250	-
Naphthalene	2.3	-
BaP 'Coal Tar'	5.3	-
Total Phenols	10 (1)	-
Soil pH (Potential skin irritant)	Ideally, soil should be in the range of pH 5 to 9	-
Deleterious, noxious & odourous materials'	Qualitative 'absence'	-
Notes: (1) Lowered from published criteria		

Table: Clean Capping Reuse Criteria, extracted from Remediation Strategy and Verification Plan (Appendix C), Ashfield Solution, March 2022)

4.1 Chemical Testing

For chemical analysis Toureen used ELABS and i2 as UKAS accredited laboratories.

Chemical samples were collected on a grid basis so that a systemised sampling strategy was adopted. This grid is presented on Drawing TCL6728_EN001_B_L1, Site Grid Overlay 16th Oct 2022. At each sample location a composite sample was collected from 10 spot locations, in the grid. Or at the stockpile grid location. The composite sample was mixed prior to transferral into laboratory samples containers. Using the methodology detailed in the SoBRA Sampling Protocol for Asbestos in Soil. A separate soil sample will be submitted in a 1l tub for Asbestos ID and Quantification.

The collection of samples was then subsequently tracked to ensure sufficient coverage of sampling was collected.

Further validation testing was undertaken by Ashfield Solutions following Toureen works as independent verification of placed soils.

Toureen chemical testing results for validation purposes are summarised in Appendix C:

- Figure 1 – Sample Tracker (also detailed below)
- Table - Capping Chemical Results Summary
- Table - Capping ACM Results Summary
- Table - Capping WAC Results Summary

It should be noted that all results were compliant with clean capping reuse criteria. No asbestos was detected in any samples.

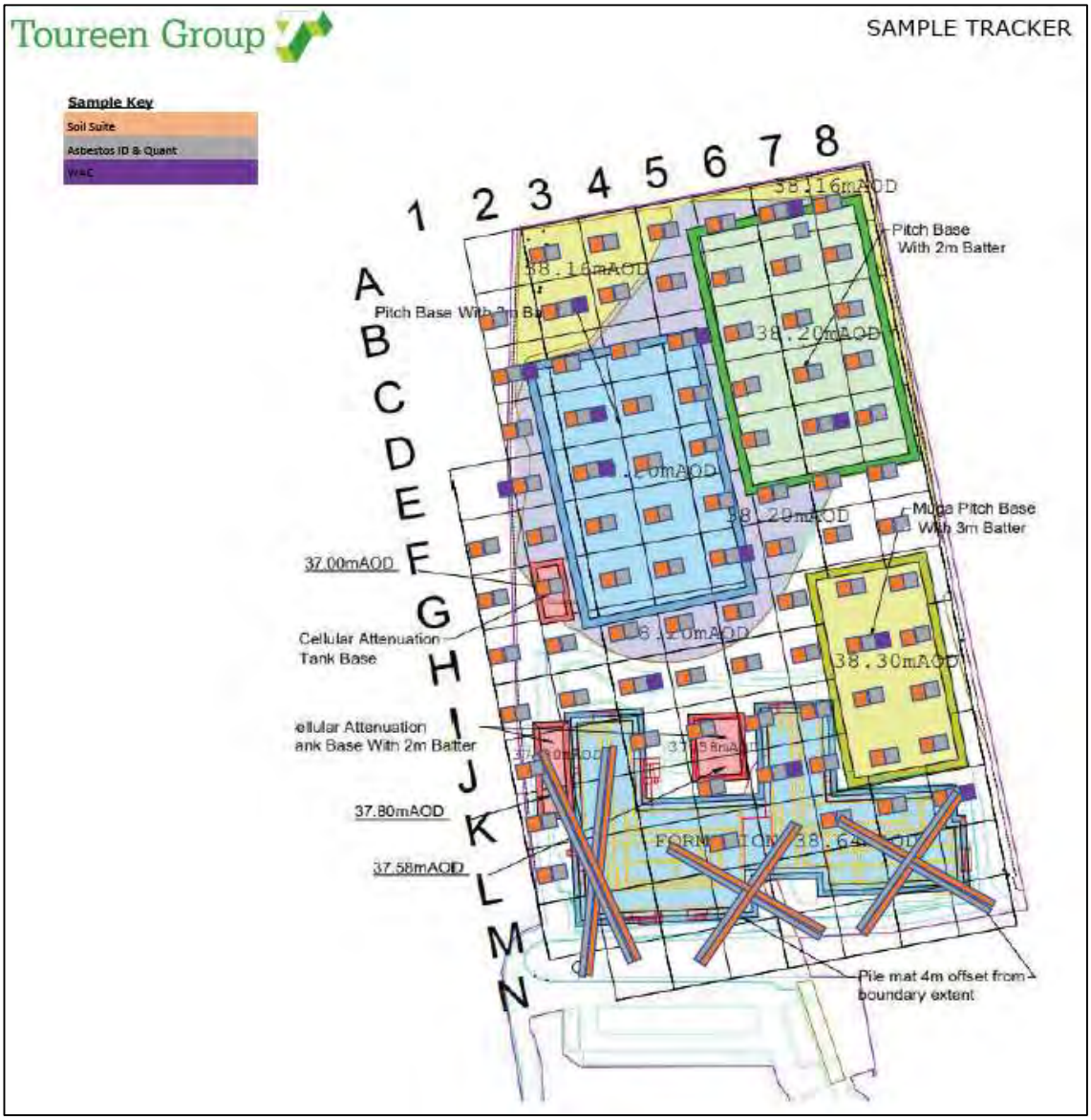


Figure 10: Toureen Sample Tracker

Ashfield Solutions independent chemical testing results for validation purposes are summarised in Appendix D:

- Figure 1 – Ashfield Sample Tracker (also detailed below)
- Table – Ashfield Capping Chemical Results Summary
- Table – Ashfield Capping ACM Results Summary

It should be noted that all results were compliant with clean capping reuse criteria. One detect of asbestos was identified in Grid D7 validation sample. This was not visible during the sample event, in addition this was detected <0.001% and subsequently compliant with the reuse criteria.

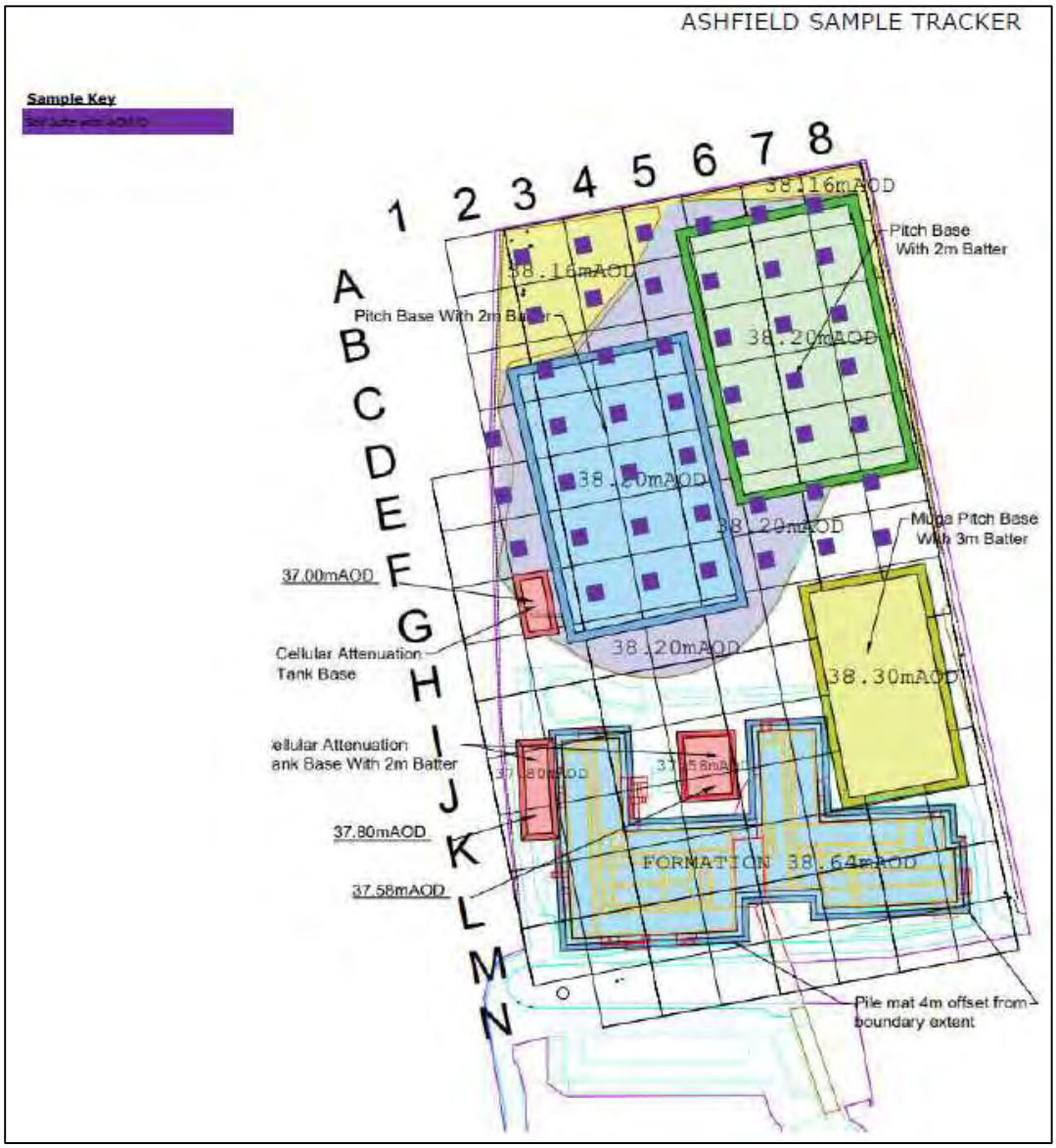


Figure 11: Ashfield Solutions Sample Tracker

4.2 Geotechnical Testing

For geotechnical analysis Toureen used Eurotest as UKAS accredited laboratories.

Both site won and imported 6F2 was used in the construction of the pile mat on-site. As such, PSD and constituent part tests were undertaken to demonstrate conformance to this standard. Laboratory results indicate conformance to 6F2 by means of PSD, and less than 1% Class X materials in the aggregate matrix. There results are summarised and presented in Appendix C.

To validate the car park, pile mat and road performance CBR tests were undertaken by means of end product validation. All results demonstrated <10mm deformation, and subsequently full compliance with target. There results are summarised and presented in Appendix C.

A mexicone penetrometer was used to demonstrate the end performance of the landscape area. This is a rapid test undertaken by the Toureen engineer following landscape light compaction. All results demonstrated compliance above a target CBR of 3%.



Figure 12: Landscape CBR Test Locations

5.0 ENVIRONMENTAL MONITORING

5.1 Environmental Monitoring Overview

Environmental monitoring was undertaken at 5 points (EMP's) around the site during Toureen works.

Receptors and surrounding land use off-site included:

- The north by Rivermead Park and Thameside Promenade public open spaces (the latter is a mown grass area by the River Thames with specimen trees and a riverside tarmac surfaced public right of way). The River Thames is situated approximately 150m to the north of the site as a 60m wide navigable channel flowing west to east; there is residential land to the north of the Thames.
- The west by Cow Lane and agricultural hedge-lined fields/farmland; these fields are used by the Reading Festival. There is also a tree lined drainage channel adjacent to the northern part of the western boundary (outside the red-line planning area) that is fed by the east to west drainage ditch in the southern part of the site.
- The east by Rivermead Leisure Centre (adjacent to southern part of eastern boundary) and Rivermead Park (adjacent to southern part of eastern boundary); Rivermead Park is also used for camping by the Reading Festival.
- The southeast Caversham Bridge Garden Centre.
- The south by Richfield Avenue and the Cardiff Road mixed commercial, light industrial and retail area, with the east-west running Great Western mainline railway beyond.

Commercial premises located on all boundaries of site, Public open spaces, roads and associated footpaths.



Figure 13: Screenshot of FS0949-ASO-XX-XX-DR-Y-1102 P03 – Cut and Fill to Formation.

Before works commence on site, Toureen carried out background monitoring (baseline monitoring) in accordance with the agreed Remediation Strategy. Once the works began, daily monitoring of noise, dust and odour shall was recorded, with dust monitoring carried out fortnightly or when conditions warranted.

5.2 Control of Noise and Vibration

Noise levels did not exceed an average of 75Db(A) during the stipulated working hours at the boundary of the site. Sound levels were be monitored according to the methods set out in Annex E of BS 5228: Part 1, and all measurements will be made on a sound level meter complying with BS 7580: 1997 Part 1 (Type 1), during the works, 1 time a day at each monitoring point.

Vibration levels were kept to levels which as a result of the works being undertaken do not result in a vibration reading of 2mm or greater being registered at the boundary.

5.3 Odours

No significant odorous materials were encountered during the works.

5.4 Dust

Toureen made regular inspections for dust and potential generation of dust, employing suitable controls to mitigate this when it became a potential risk.

Dust deposit gauges were installed around the site boundaries. Samples from these gauges were collected by a UKAS accredited laboratory every 2 weeks and measured for volume (results reported as mg/m2/day. Acceptability levels of under 200mg/m2/day were in place, in line with M17 Guidance, No exceedances of the thresholds were registered during the works.

Controls included further dampening down or temporarily covering of exposed areas of soil/stockpiles, using wheel cleaning facilities and road sweeping equipment where required.

5.5 Vapours

No significant concentrations of volatile organic carbons (VOCs) were registered during the works.

5.6 Asbestos Air Fibre Monitoring

No airborne fibres were detected above or at the control limit of 0.01f/cm3 during works and monitoring events.

5.7 Groundwater Monitoring

Groundwater was to be monitored by the Clients consultants.

6.0 WASTE

6.1 Disposal

Full duty of care and audit trail will be in place for all disposals. The Duty of Care Regulations (The Environmental Protection (Duty of Care) Regulations 1991) are set out in section 34 of the Environmental Protection Act 1990 and associated regulations. Waste transfer notes were completed to include the name of the waste producer, a description of the waste material, an EWC (European Waste Catalogue) code, the volume of waste and details of the disposal facility. The disposal facilities will be licensed with the local authority and Environment Agency to accept these waste materials. All waste was transported by licensed waste carriers using self-sheeting lorries. Toureen checked the licenses of any 3rd Party haulier's.

A summary of exported materials is summarised in the Table within Appendix F. A copy of all of supporting information, WTNs, WCLs and disposal permits is available on request.

7.0 RESIDUAL RISKS TO SUBSEQUENT CONTRACTORS

The Client and future contractor are to adhere to the limitations of the Pile mat design (Appendix D). This includes but not limited to:

'If the pile mat has not been used for a period of 6 weeks or longer, additional plate bearing tests must be undertaken and the results must be reviewed by the design engineer to confirm it.'

Toureen has placed and validated all subsoil in landscape areas. This has subsequently been further validated by an independent consultant. Care should be taken not to interfere, traffic or cross contaminate this area. Any future arisings, post Toureen works that is placed on this area must be fully validation in accordance with the remediation strategy, and, where required, validated with the Client Consultants (Ashfield Solutions). Damage due to traffic or further works, and/or cross contamination may result in required remedial measures to be undertaken to remove any non-conformant materials.

8.0 SUMMARY AND CONCLUSION

Toureen have completed the remediation and earthworks as per the Client scope and expectations. All verification testing, by Toureen and independent has demonstrated full compliance with reuse criteria.

APPENDIX A:

DRAWINGS

N

TP01
Lead and Zinc
0.2m NAD
0.7m NAD

TP02
0.2m NAD
0.7m Asbestos <0.1%

TP102
0.3m NAD

TP03
0.2m NAD
0.6m NAD

TP04
0.3m Asbestos <0.1%
0.6m Asbestos <0.1%

Cellular Attenuation Tank Base

TP101
0.2m NAD
0.8m NAD

TP104
0.4m NAD

Cellular Attenuation Tank Base under MUGA

Cellular Attenuation Tank Base

TP05
0.2m NAD
0.8m NAD

Cellular Attenuation Tank Base

TP07
0.3m NAD
0.7m NAD

TP08
Lead
0.6m NAD
1.2m NAD

TP09
0.5m NAD
1.2m NAD

TP10
0.6m NAD
1.2m NAD

TP11
pH
0.6m NAD

TP12
Zinc & TPH (C6 to C40)
1.2m Asbestos >0.1%

TP13
Lead
1.2m NAD

TP14
0.8m NAD

TP15
0.6m NAD
1.4m NAD

Site Boundary

Height Range

- > 1.0m Fill
- 08. - 1.0m Fill
- 0.6 - 0.8m Fill
- 0.4 - 0.6m Fill
- 0.2 - 0.4m Fill
- 0 - 0.2m Fill
- 0 - 0.2m Cut
- 0.2 - 0.4m Cut
- 0.4 - 0.6m Cut
- 0.6 - 0.8m Cut
- 0.8 - 1.0m Cut
- >1.0m Cut

Waste Classification

- Hazardous (with exceedance)
- Non-Hazardous
- NAD No Asbestos Detected
- Pile likely through Hazardous
- Pile likely through Non-Hazardous

This drawing is provided for indicative purposes only and is based on the following information:

Topographical Survey undertaken by Survey Solutions in January 2020

Ares' Landscape Architect's:
General Arrangement Plan
FS0949-ALA-XX-ZZ-DR-0002 S3 P15.
Kerbs & Edges Plans
FS0949-ALA-XX-ZZ-DR-L-0030 S3 P02 &
FS0949-ALA-XX-ZZ-DR-L-0031 S3 P02

Ashfield's:
Existing Ground Levels drawing
FS0949-ASO-XX-XX-DR-Y-1100 S3 P02
Proposed Ground Levels drawing
FS0949-ASO-XX-XX-DR-Y-1101 S3 P03
Waste Classification Report

Hexa Consulting's:
External Works Layout drawing
FS0949-HEX-XX-XX-DR-C-9400 P03
External Construction Details
FS0949-HEX-XX-XX-DR-C-9401 P04
Surface Water Drainage Layout drawings
FS0949-HEX-XX-XX-DR-C-9200_P07 &
FS0949-HEX-XX-XX-DR-C-9201 P06.
Foundation Layout drawing
FS0949-HEX-01-FN-DR-S-1601 P03.

South West Geotechnical's:
Factual Geotechnical Report Dec 2021 (13495)

i2 Analytical's:
Analytical Report Number 21-17311

and the following assumed construction thicknesses:

Bituminous Road and Car Park:	950mm
Car Park Block Paving:	830mm
Concrete Slab:	375mm
Bituminous Footway:	480mm
Block Paved Heavy:	500mm
Block Paved Light:	410mm
Ground Beams:	900mm
Concrete blinding between beams:	50mm
MUGA to base of tank:	1000mm
Pitches and Running Track:	500mm
Grass Seeded areas:	450mm
Amenity Planting:	600mm
Rain Garden:	900mm
Habitat - Brownfield	300mm

344 piles 600mm dia x 15m deep

Cut (m^3)	24,050m^3
Additional Cut for:	
Piles	1,460m^3
Drainage Runs	2,140m^3
Rising Main (Opt 1)	200m^3
Utilities Trenches	350m^3
Total Cut (m^3)	28,200m^3
Fill (m^3)	900m^3
Net Cut	27,300m^3

Waste Classification

A simple proximity-based method has been used (voronoi polygons) within LSS earthworks modelling software, which divides the site into a number of regions, each assigned a value consistent with the preliminary HazWasteOnline™ Assessment (worst-case) for the nearest sample location. From this, the proposed volumes have been calculated to inform the likely volume of waste (and associated classification) being generated.

The waste classification voronoi polygons are based on Ashfield's HazWasteOnline assessment of i2 Analytical's laboratory testing (report number 21-17311 of by i2 Analytical of South West Geotechinical's Oct. 2021 ground investigation (Report No. 13495) and Asbestos in Soils assessment Jan 2022.

Based on interpolation of South West Geotechnical's Oct 2021 ground investigation logs, it is estimated that 2600m^3 of the cut material will be landfill waste material.

Of the estimated 2600m^3 of landfill waste material, approximately 2000m^3 will be excavated from the identified Hazardous polygons (excavation depths of in excess of 600mm).

183 piles are also within the idenitified Hazardous polygons. It is anticipated that the top 4m of these piles will be classified as hazardous, approximately 200m^3.

Below is a breakdown of the 'Total Cut' based on our Hazardous Waste assessment of the 'potentially' Hazardous and Non-Hazardous polygons and Asbestos in Soils assessment.

This table is an estimate of the potentially hazardous/non-hazardous material and asbestos. It is provided for indicative purposes only.

Non Hazardous and NAD*	24,300 m^3
Non-Hazardous. Low Asbestos <0.1%	1,900 m^3
Hazardous due to TPH or Metals. NAD*	1,100 m^3
Hazardous due to pH. NAD*	500 m^3
Hazardous with visible Asbestos >0.1%	400 m^3

*NAD = No Asbestos Detected

Revision Details	By	Date	Rev.
Pitches and track increased to 500mm, estimate volumes for utilities added drainage trenches updated, breakdown of vols. estimates based on HazWaste analysis and asbestos	KG	29/03/2022	P03
Revised levels and volumes	KG	18/02/2022	P02
First issue for comments	KG	14/01/2022	P01

Client

Bowmer & Kirkland

Project

River Academy Secondary School
Richfield Avenue, Reading
RG1 8EQ

Dwg Title

Cut and Fill to Formation Level

Project No.	Dwg No.	Revision
130321	See BIM Ref.	-
Scale: 1:500	Date: 07/01/2022	Frame Size: (A1)
Prepared by: KG	Drawn by KG	Approved by PW

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BIM Ref:	Status	Rev.
FS0949-ASO-XX-XX-DR-Y-1102	S3	P03



Ref	What3Words	Eastings	Northings
ASMW5	baking.baking.output	470351	174661
ASMW4	jukebox.pens.sound	470442	174679
ASMW2	piles.early.palace	470478	174534
ASMW1	composers.tools.shares	470413	174421
ASMW3	relax.cried.chats	470401	174537
SW2	saves.class.rotate	470320	174582
SW1	shout.remedy.topic	470433	174413
RECBH01	drape.year.hung	470343	174523
RECBH06	packet.port.escape	470433	174449

Legend

- Indicative Site Boundary
- REC Monitoring Well 2018
- Ashfield Solutions Monitoring Well 2022
- Surface Water Sample Locations

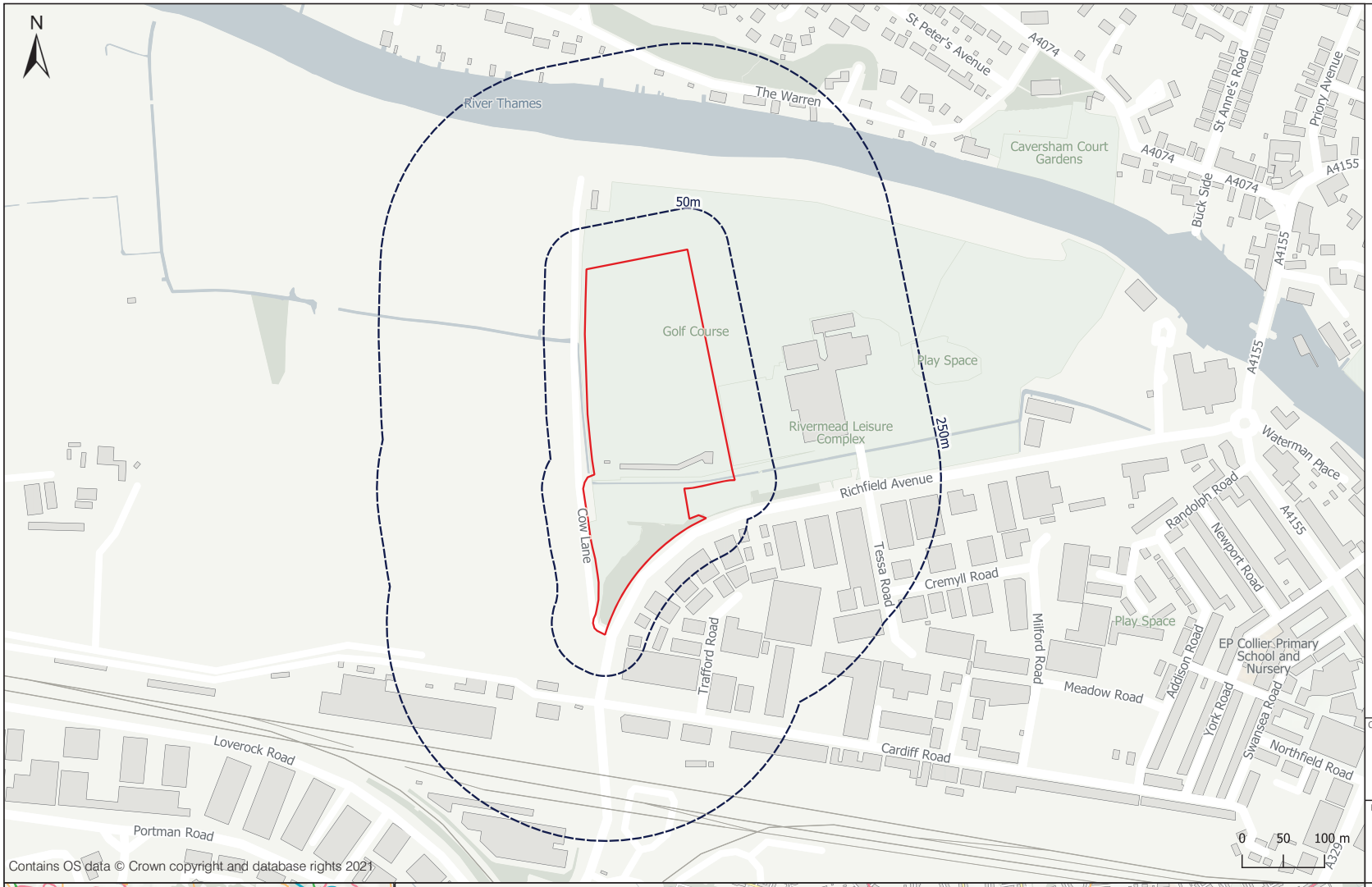
Client: Bowmer and Kirkland

Project: River Academy

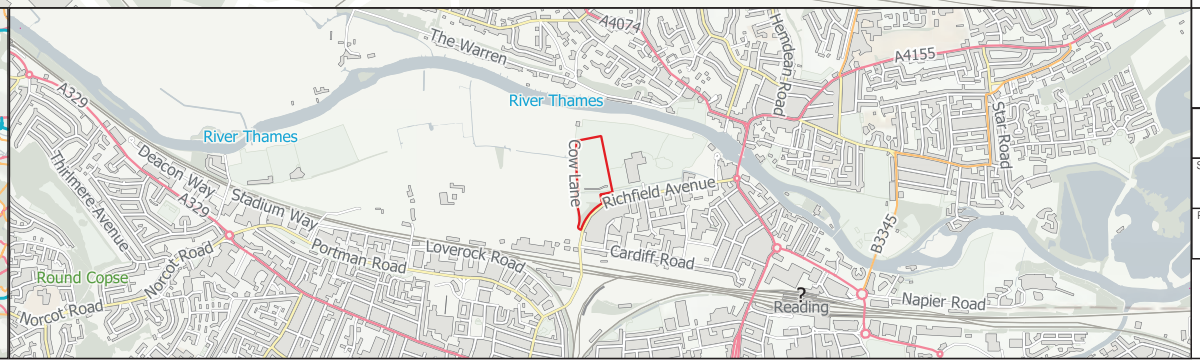
Title: Monitoring Well Locations

Report No.	Drawing No.	Revision
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Scale	**Date**	**Frame Size**
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Produced by	**Drawn by**	**Approved by**
LC	LC	SR

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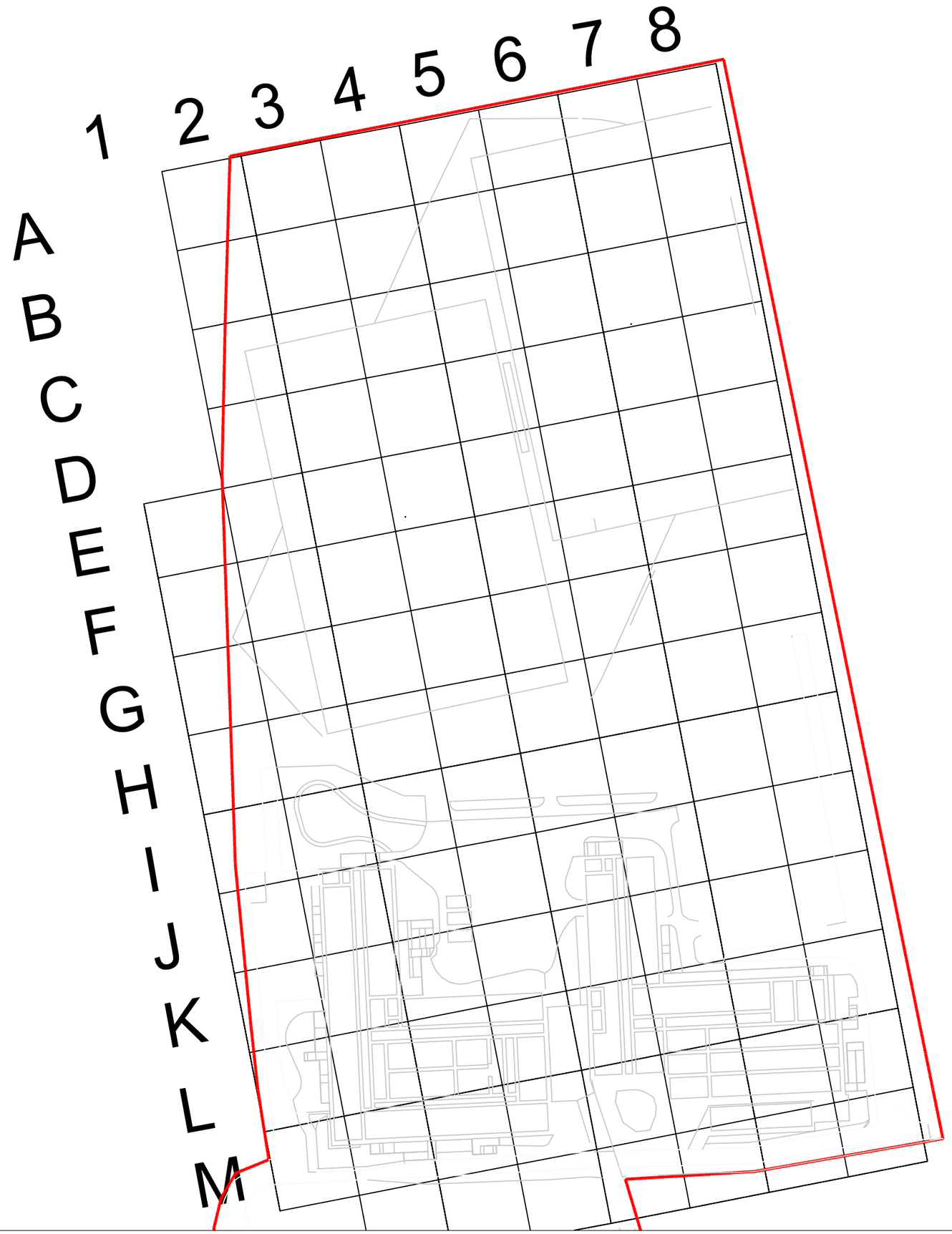
Legend

- Indicative Site Boundary
- Buffer

Client	Bowmer and Kirkland
Project	River Academy
Title	Site Location Plan

Report No.	Drawing No.	Revision
130321-S03	01	-
Scale	**Date**	**Frame Size**
1:5,000	07/03/2022	A3
Produced by	**Drawn by**	**Approved by**
LC	LC	CM

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General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Contour (1m)		Concrete
	Building line		Gate
	Fence		Hedge
	Wall		Tree

Site Boundary Extent

Rev	Date	Description	Drawn	Chkd
A	13.10.22	SITE BOUNDARY	BH	DS
B	16.10.22	SITE GRID	BH	DS

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Client
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Title
SITE GRID OVERLAY
16th OCTOBER 2022

Drawing no.
TCL6728_EN001_B_L1

Issued 16.10.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision B

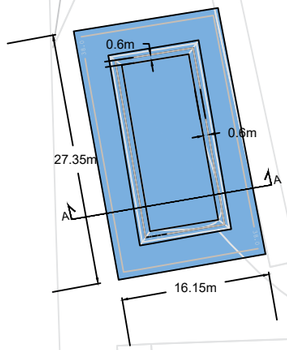
Tank Description	Cut area (m^2)	Cut volume (m^3)	Fill area (m^2)	Fill volume (m^3)	Total area (m^2)	Net volume (m^3)
Attenuation Tank 1	435.937	-381.223	0.000	0.000	435.937	-381.223m3
Attenuation Tank 2	429.806	-217.212	0.000	0.000	429.806	-217.212m3
Attenuation Tank 3	583.102	-386.018	0.000	0.000	583.102	-386.018m3
Grand total :	576.971	-984.453	0.000	0.000	576.971	-984.453m3

General notes
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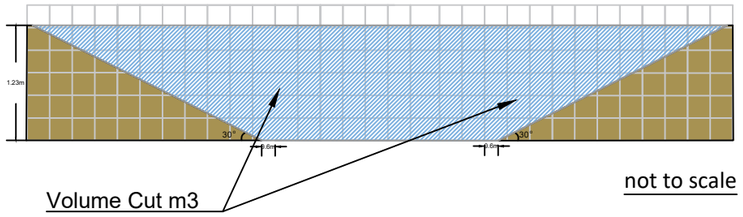
Key

Bottom of bank		Water line	
Top of bank		Road	
Contour (1m)		Concrete	
Building line		Gate	
Fence		Hedge	
Wall		Tree	

Attenuation tank 1



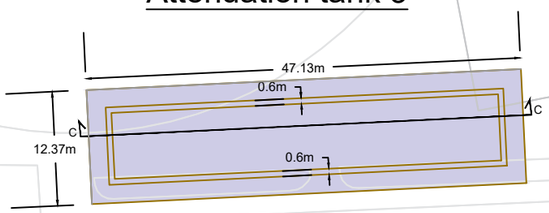
Cross Section tank 1 (A)



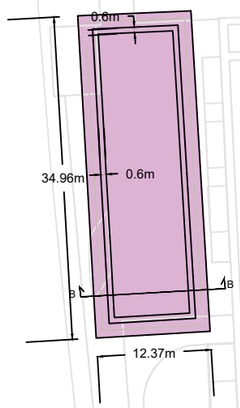
Volume Cut m3

not to scale

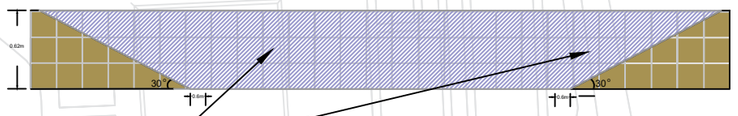
Attenuation tank 3



Attenuation tank 2



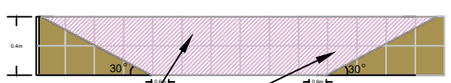
Cross Section tank 3 (C)



Volume Cut m3

not to scale

Cross Section tank 2 (B)



Volume Cut m3

not to scale

Rev	Date	Description	Drawn	Chkd
A	28.11.22	CUT/FILL TANK VOLUME m3	BH	DS

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Issued 28.11.22
Scale NTS
Drawn BH
Checked DS

Title
ATTENUATION TANKS CUT VOLUME OCTOBER 2022

Project no.
TCL6728

Drawing no.
TCL6728_EN006_B_L1

Revision
B

General notes
1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Primary Contour (1m)		Secondary Contour (0.2m)
	Building line		Gate
	Fence		Hedge
	Wall		Tree

Excavation Volumes

Extraction of Material Within Red Line Boundary to Cut/Fill Formation Levels Cut -1,636m3

Height Ranges Meters

1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1.0

Cut Material

Rev	Date	Description	Drawn	Chkd
A	03.02.23	Excavation to Formation Levels Volumes	BH	DS

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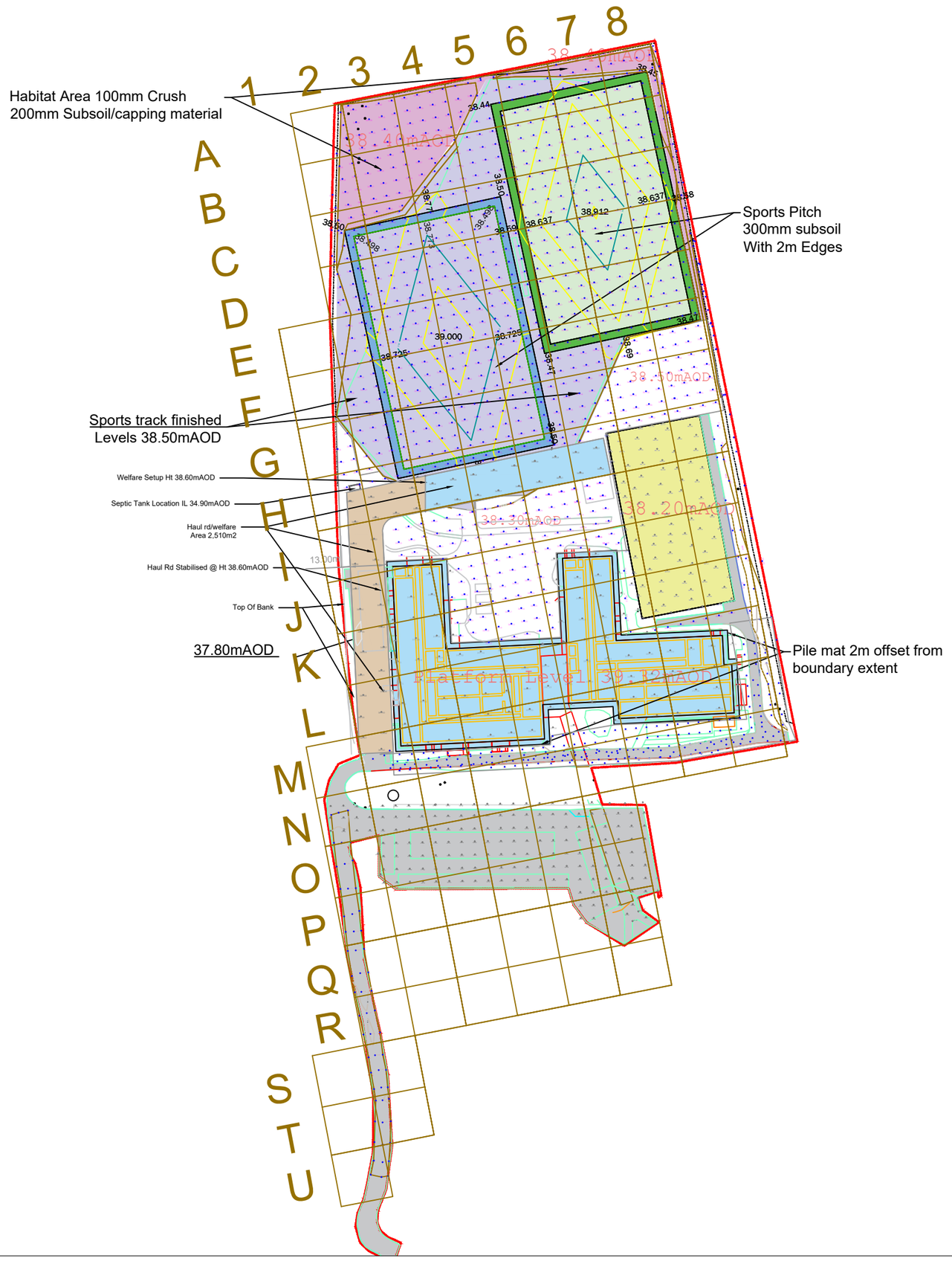
Client
BOWMER & KIRKLAND

Project
River Academy Secondary School
Richfield Avenue
Reading
RG1 8EQ

Title
CUT TO FORMATION LEVELS

Drawing no.
TCL6728_EN014_BH_C_L1

Issued 14.03.23
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision A



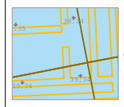
General notes

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2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
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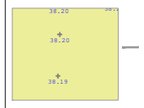
Key

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	Top of bank		Road
	Contour (1m)		Concrete
	Building line		Gate
	Fence		Hedge
	Wall		Tree

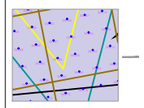
38.19 — Surveyed levels mAOD



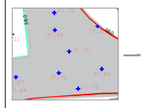
Checked Handover Levels Pile mat Area (mAOD)



Checked Handover Levels Muga Pitch Area (mAOD)



Checked Handover As-Built Finished Subsoil Levels Sports Pitches and Habitat Area (mAOD)



Checked Handover Levels Building front Road (mAOD)

Rev	Date	Description	Drawn	Chkd
A	10.11.22	REMEDIATION IMPLEMENTATION PLAN	BH	DS
B	28.11.22	REMEDIATION IMPLEMENTATION PLAN	BH	DS
C	06.12.22	REMEDIATION IMPLEMENTATION PLAN	BH	DS
D	20.12.22	REMEDIATION IMPLEMENTATION PLAN	BH	DS

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Client
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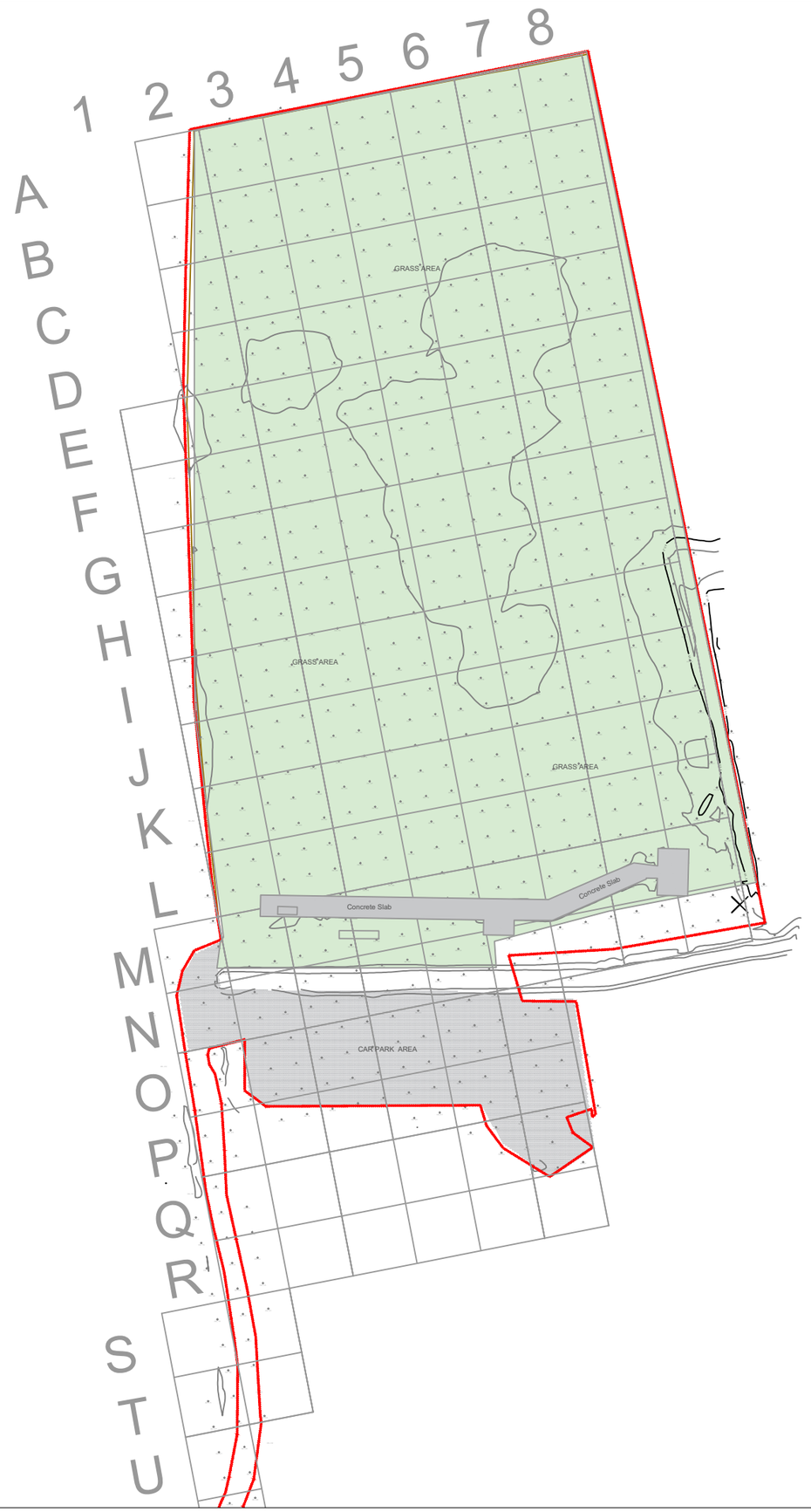
Issued 20.12.22
Scale NTS
Drawn BH
Checked DS

Title
TOP OF SUBSOIL REMEDIATION LEVELS 20th DECEMBER 2022

Project no.
TCL6728

Drawing no.
TCL6728_EN005_BH_D_L1

Revision
D



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key

Bottom of bank		Water line	
Top of bank		Road	
Contour (1m)		Concrete	
Building line		Gate	
Fence		Hedge	
Wall		Tree	

Rev	Date	Description	Drawn	Chkd
A	21.10.22	SITE SURVEY	BH	DS

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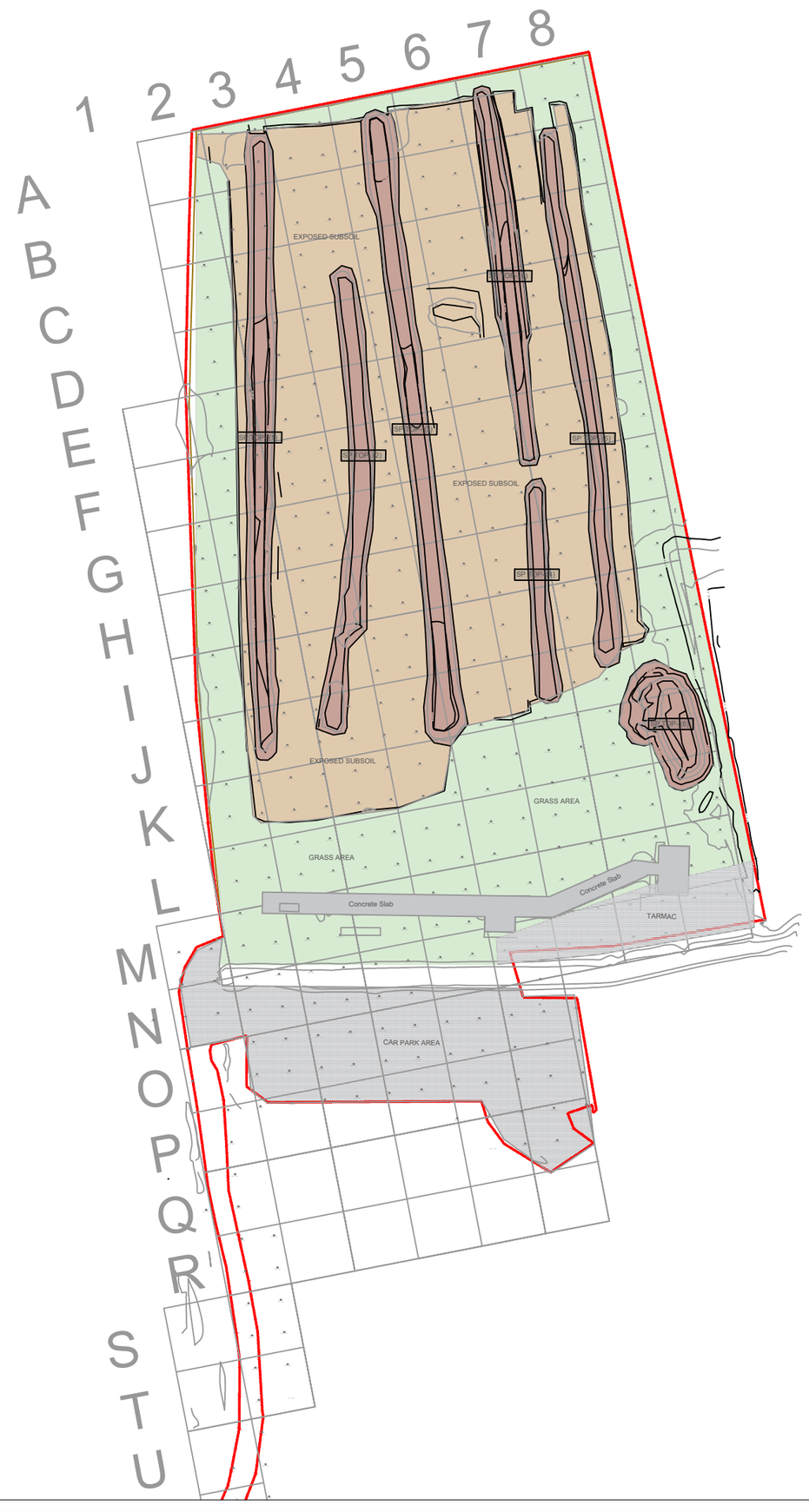
Client
BOWMER & KIRKLAND

Project
River Academy Secondary School
Richfield Avenue
Reading
RG1 8EQ

Title
SITE SURVEY
21ST OCT 2022

Drawing no.
TCL6728_EN007_BH_A_L1

Issued 21.10.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision A



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
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5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Contour (1m)		Concrete
	Building line		Gate
	Fence		Hedge
	Wall		Tree

STOCKPILE VOLUMES

SPTOP- (1) — Stockpile Topsoil 1,889m3

SPTOP- (2) — Stockpile Topsoil 831m3

SPTOP- (3) — Stockpile Topsoil 1,984m3

SPTOP- (4) — Stockpile Topsoil 1,020m3

SPTOP- (5) — Stockpile Topsoil 884m3

SPTOP- (6) — Stockpile Topsoil 1,565m3

Rev	Date	Description	Drawn	Chkd
A	21.10.22	SITE SURVEY	BH	DS
B	25.10.22	UPDATE SITE SURVEY	BH	DS

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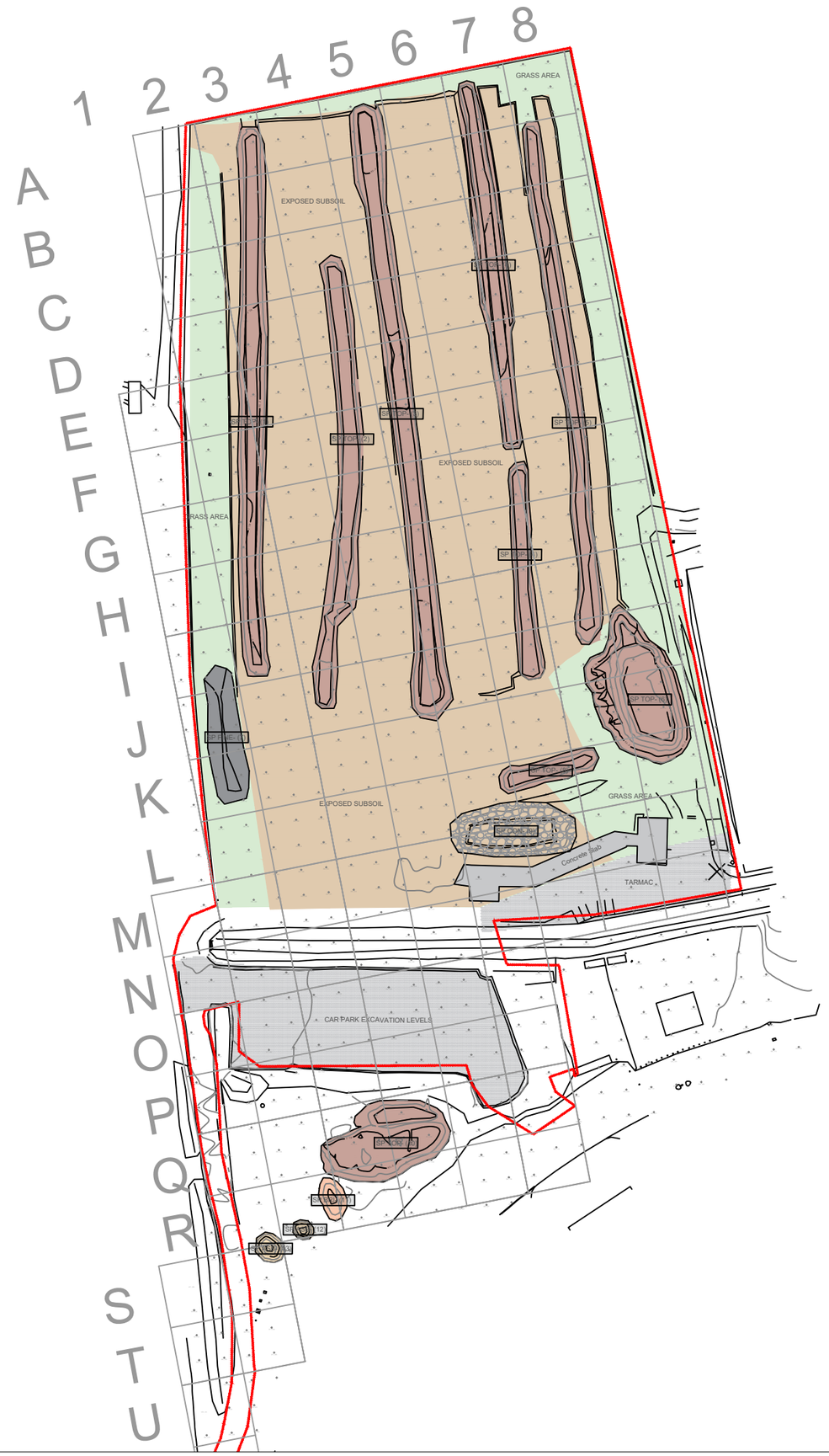
Client
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Project
River Academy Secondary School
Richfield Avenue
Reading
RG1 8EQ

Title
UPDATE SITE SURVEY
25th OCTOBER 2022

Drawing no.
TCL6728_EN007_BH_B_L1

Issued 25.10.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision B



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Primary Contour 1m)		Secondary Contour (0.2m)
	Building line		Gate
	Fence		Hedge
	Wall		Tree

STOCKPILE VOLUMES

- SPTOP- (1) — Stockpile Topsoil 1,728m3
- SPTOP- (2) — Stockpile Topsoil 996m3
- SPTOP- (3) — Stockpile Topsoil 2,156m3
- SPTOP- (4) — Stockpile Topsoil 1,589m3
- SPTOP- (5) — Stockpile Topsoil 884m3
- SPTOP- (6) — Stockpile Topsoil 2,714m3
- SPFINE- (7) — Stockpile Fines 577m3
- SPTOP- (8) — Stockpile Topsoil 262m3
- SPCON- (9) — Stockpile Concrete 782m3
- SPTOP- (10) — Stockpile Topsoil 1,242m3
- SPBRI - (11) — Stockpile Brick 156m3
- SPASB- (12) — Stockpile Asbestos 59m3
- SPASB- (13) — Stockpile Asbestos 77m3

Rev	Date	Description	Drawn	Chkd
A	21.10.22	SITE SURVEY	BH	DS
B	25.10.22	UPDATE SITE SURVEY	BH	DS
C	02.11.22	UPDATE SITE SURVEY	BH	DS

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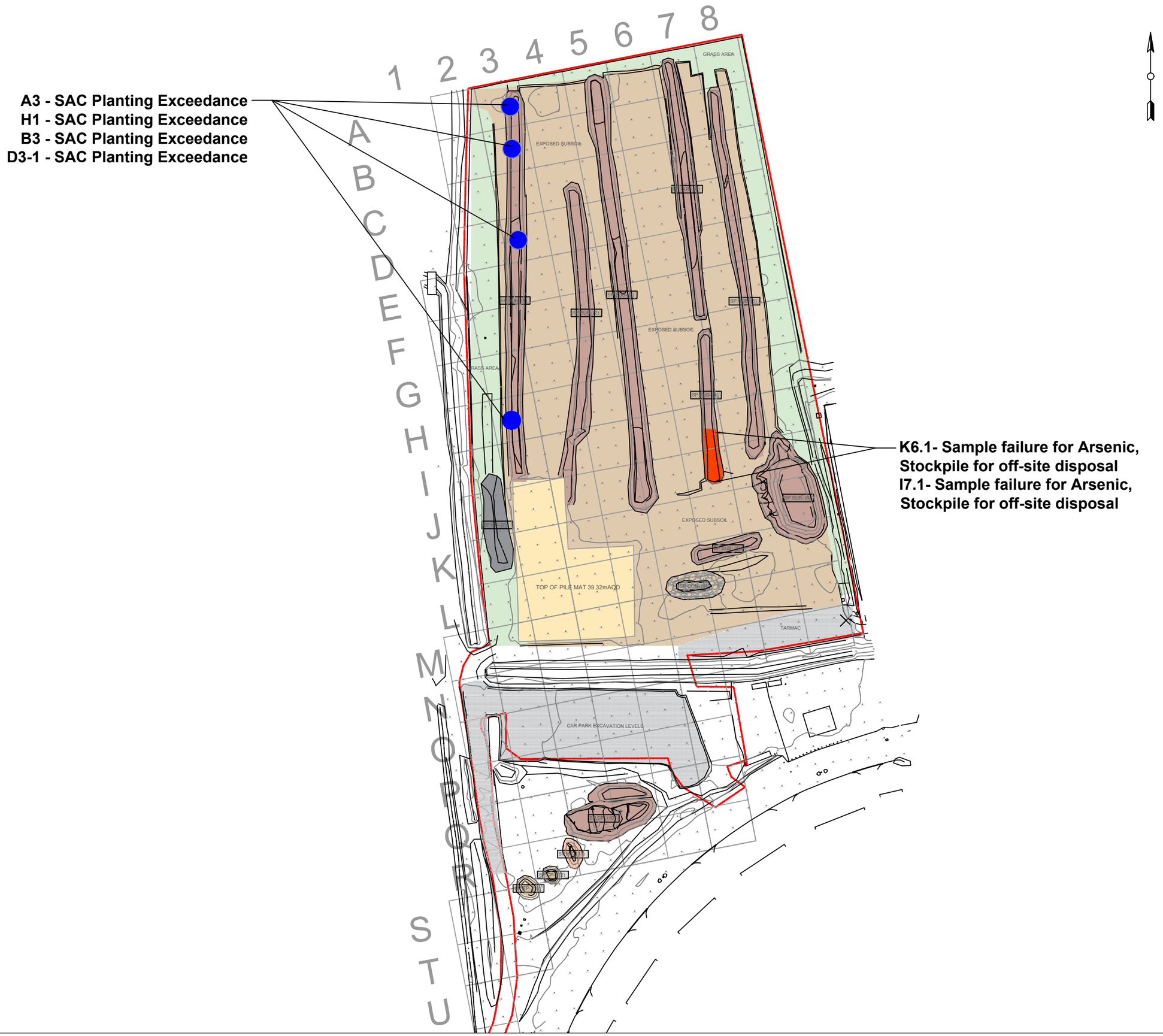
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Richfield Avenue
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Title
UPDATE SITE SURVEY
2nd NOVEMBER 2022

Drawing no.
TCL6728_EN007_BH_C_L1

Issued 02.11.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision C



General notes
1. This drawing should be read in conjunction with all other relevant drawings and specifications.
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4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Primary Contour (1m)		Secondary Contour (0.2m)
	Building line		Gate
	Fence		Hedge
	Wall		Tree

SAC Planting Exceedance

Exceedance Of Reuse Criteria

STOCKPILE VOLUMES

SPSUB- (1)	Stockpile	Subsoil	1,728m3
SPSUB- (2)	Stockpile	Subsoil	996m3
SPSUB- (3)	Stockpile	Subsoil	2,192m3
SPSUB- (4)	Stockpile	Subsoil	1,406m3
SPSUB- (5)	Stockpile	Subsoil	1,039m3
SPSUB- (6)	Stockpile	Subsoil	2,726m3
SPHC- (7)	Stockpile	Hardcore	575m3
SPSUB- (8)	Stockpile	Subsoil	210m3
SPCON- (9)	Stockpile	Concrete	257m3
SPCP- (10)	Stockpile	Subsoil	1,242m3
SPHC - (11)	Stockpile	Hardcore	156m3
SPCP- (12)	Stockpile	Asbestos	82m3
SPCP- (13)	Stockpile	Asbestos	92m3

Rev	Date	Description	Drawn	Chkd
A	21.10.22	SITE SURVEY	BH	DS
B	25.10.22	UPDATE SITE SURVEY	BH	DS
C	02.11.22	UPDATE SITE SURVEY	BH	DS
D	11.11.22	UPDATE SITE SURVEY	BH	DS

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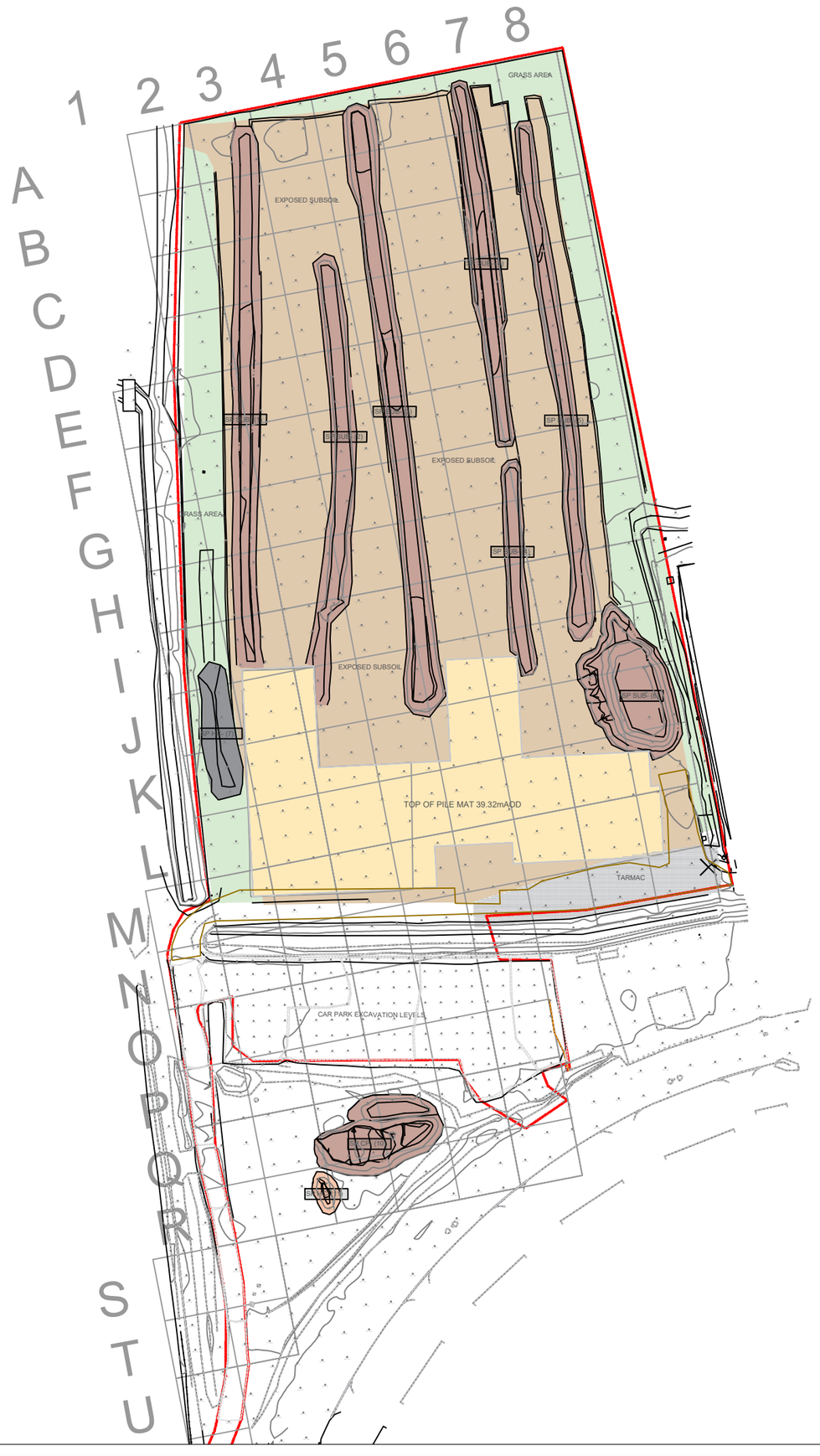
Issued 11.11.22
Scale NTS
Drawn BH
Checked RW

Title
UPDATE SITE SURVEY
11th NOVEMBER 2022

Project no.
TCL6728

Drawing no.
TCL6728_EN007_BH_D_L1

Revision
D



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
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4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Primary Contour (1m)		Secondary Contour (0.2m)
	Building line		Gate
	Fence		Hedge
	Wall		Tree

STOCKPILE VOLUMES

SPSUB- (1)	Stockpile	Subsoil	1,728m3
SPSUB- (2)	Stockpile	Subsoil	996m3
SPSUB- (3)	Stockpile	Subsoil	2,192m3
SPSUB- (4)	Stockpile	Subsoil	1,406m3
SPSUB- (5)	Stockpile	Subsoil	1,039m3
SPSUB- (6)	Stockpile	Subsoil	2,666m3
SPHC- (7)	Stockpile	Hardcore	575m3
SPCP- (10)	Stockpile	Subsoil	1,242m3
SPHC - (11)	Stockpile	Hardcore	156m3

Rev	Date	Description	Drawn	Chkd
A	21.10.22	SITE SURVEY	BH	DS
B	25.10.22	UPDATE SITE SURVEY	BH	DS
C	02.11.22	UPDATE SITE SURVEY	BH	DS
D	11.11.22	UPDATE SITE SURVEY	BH	DS
E	26.11.22	UPDATE SITE SURVEY	BH	DS

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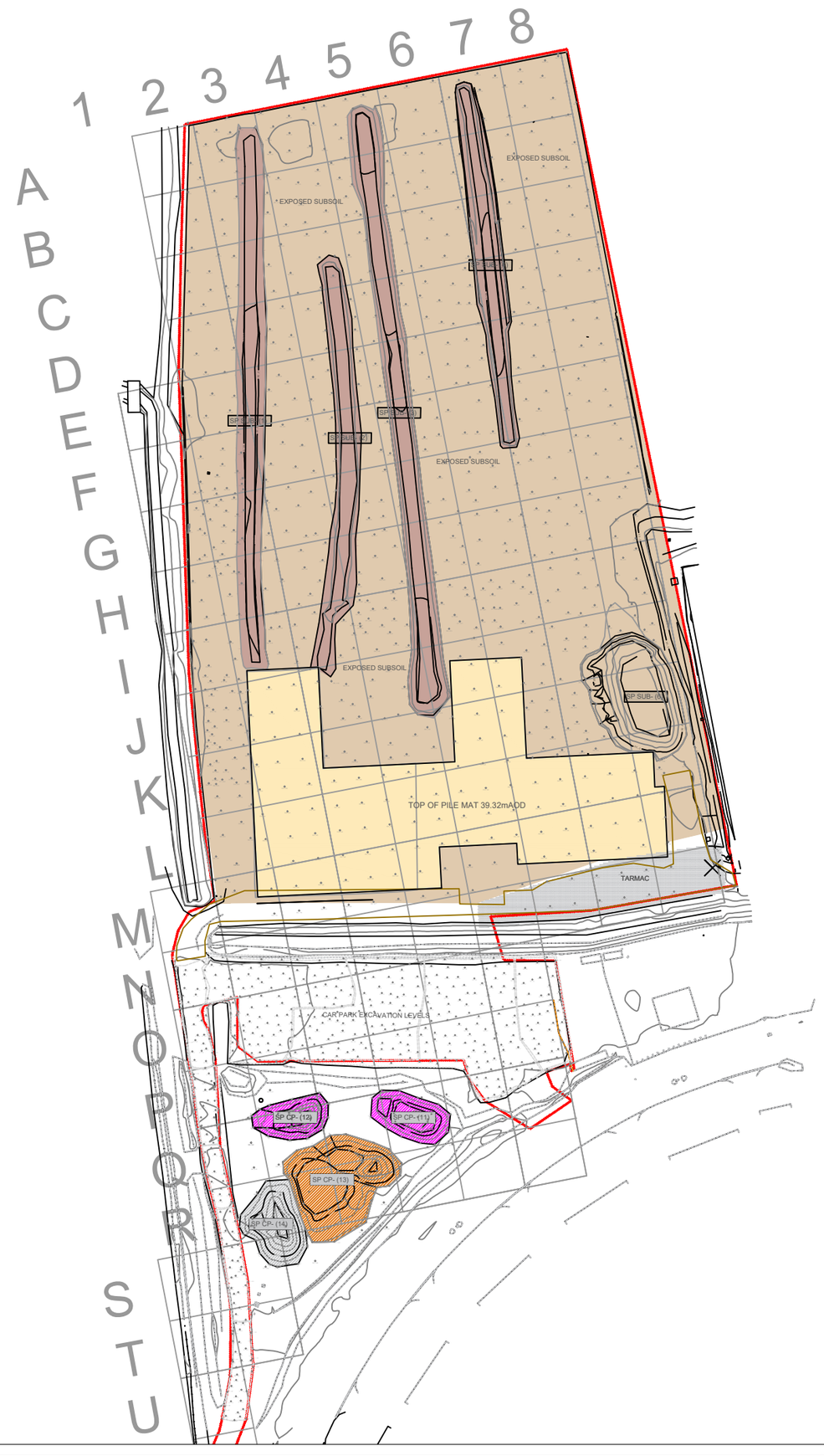
Client
BOWMER & KIRKLAND

Project
River Academy Secondary School
Richfield Avenue
Reading
RG1 8EQ

Title
UPDATE SITE SURVEY
26th NOVEMBER 2022

Drawing no.
TCL6728_EN007_BH_E_L1

Issued 26.11.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision E



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Primary Contour (1m)		Secondary Contour (0.2m)
	Building line		Gate
	Fence		Hedge
	Wall		Tree

STOCKPILE VOLUMES

SPSUB- (1)	Stockpile Subsoil	1,728m3
SPSUB- (2)	Stockpile Subsoil	955m3
SPSUB- (3)	Stockpile Subsoil	2,192m3
SPSUB- (4)	Stockpile Subsoil	1,103m3
SPSUB- (6)	Stockpile Subsoil	2,366m3
SPHC- (7)	Stockpile Hardcore	575m3
SPCP- (10)	Stockpile Subsoil	1,242m3
SPCP- (11)	Material for Processing	536m3
SPCP- (12)	Material for Processing	493m3
SPCP- (13)	Stockpile Subsoil	1,503m3
SPCP- (14)	Stockpile Pile Arisings	869m3

Rev	Date	Description	Drawn	Chkd
A	21.10.22	SITE SURVEY	BH	DS
B	25.10.22	UPDATE SITE SURVEY	BH	DS
C	02.11.22	UPDATE SITE SURVEY	BH	DS
D	11.11.22	UPDATE SITE SURVEY	BH	DS
E	26.11.22	UPDATE SITE SURVEY	BH	DS
F	07.12.22	UPDATE SITE SURVEY	BH	DS

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Title
UPDATE SITE SURVEY
7th DECEMBER 2022

Drawing no.
TCL6728_EN007_BH_F_L1

Issued 07.12.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision F



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key

Bottom of bank		Water line	
Top of bank		Road	
Contour (1m)		Concrete	
Building line		Gate	
Fence		Hedge	
Wall		Tree	

38.19 — Surveyed levels

Rev	Date	Description	Drawn	Chkd
A	11.11.22	HANDOVER CHECK LEVELS	ME	JG

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Client
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Project
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Reading
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Title
HANDOVER CAR PARK CHECKED LEVELS 11th NOVEMBER 2022

Drawing no.
TCL6728_EN008_BH_A-L1

Issued 11.11.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision A



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
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3. All surveys are orientated to OSGB36(15).
4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Contour (1m)		Concrete
	Building line		Gate
	Fence		Hedge
	Wall		Tree

38.19 — Surveyed levels

Checked Handover Levels Pile mat Area (mAOD)

Checked Handover Levels Car Park Area (mAOD)

Rev	Date	Description	Drawn	Chkd
A	11.11.22	HANDOVER CHECK LEVELS	ME	JG
B	20.11.22	HANDOVER CHECK LEVELS	ME	JG

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Title
HANDOVER CHECKED LEVELS (mAOD) 20th NOVEMBER 2022

Drawing no.
TCL6728_EN008_BH_B-L1

Issued 20.11.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision B

Handover Levels 20th Dec 2022

Muga Pitch Handover Levels (mAOD)

Haul rd/welfare
Area 2,510m2

General notes
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5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Contour (1m)		Concrete
	Building line		Gate
	Fence		Hedge
	Wall		Tree

38.19 — Surveyed levels

— Checked Handover Levels Pile mat Area (mAOD)

— Checked Handover Levels Car Park Area (mAOD)

— Checked Handover Levels Muga Pitch Area (mAOD)

— Checked Handover Levels Sports Pitches and Habitat Area (mAOD)

Rev	Date	Description	Drawn	Chkd
A	11.11.22	HANDOVER CHECK LEVELS	BH	DS
B	20.11.22	HANDOVER CHECK LEVELS	BH	DS
C	20.12.22	HANDOVER CHECK LEVELS	BH	DS

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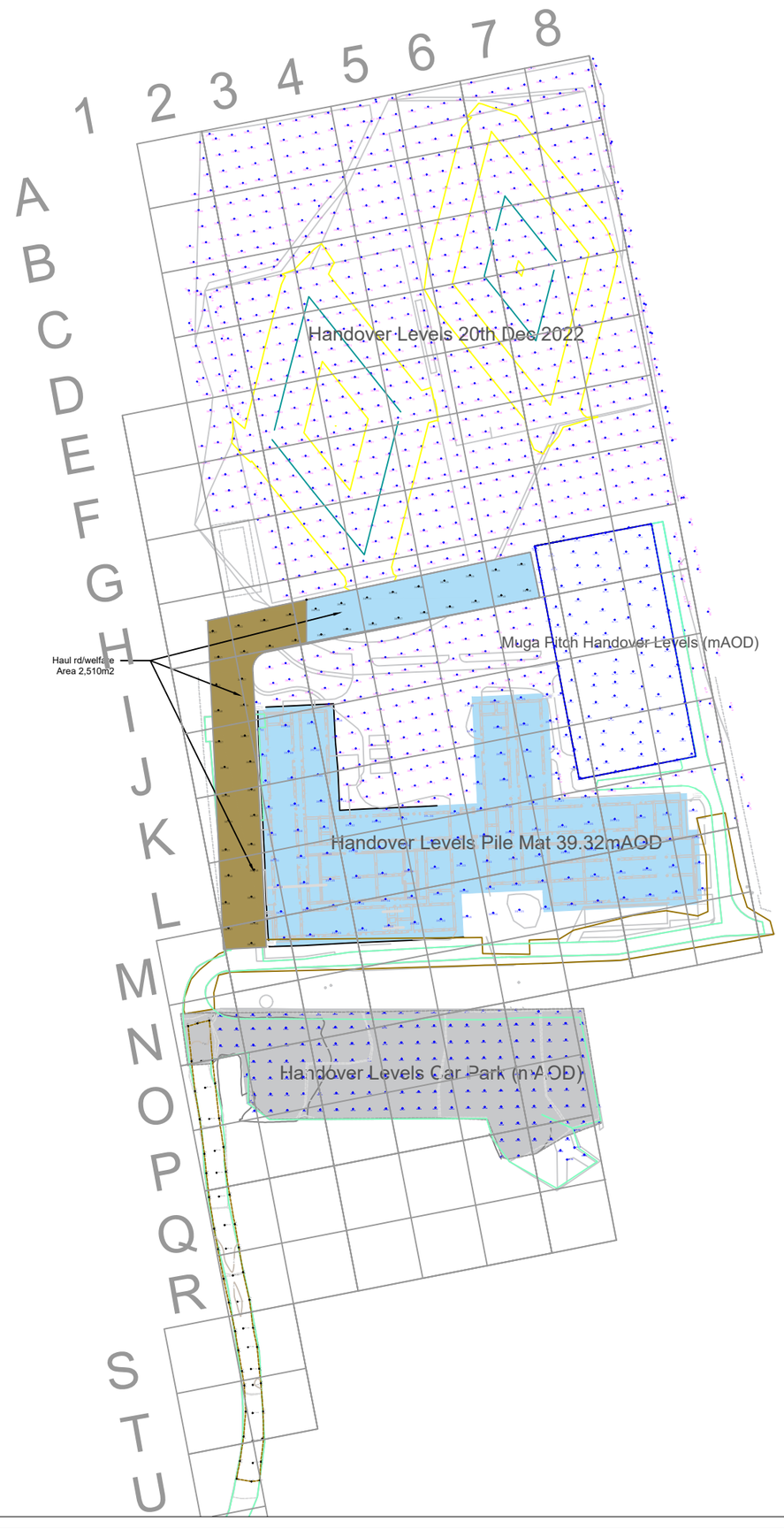
Client
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Project
River Academy Secondary School
Richfield Avenue
Reading
RG1 8EQ

Title
HANDOVER CHECKED LEVELS (mAOD) 20th DECEMBER 2022

Drawing no.
TCL6728_EN008_BH_C-L1

Issued 20.12.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision C



General notes

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5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Contour (1m)		Concrete
	Building line		Gate
	Fence		Hedge
	Wall		Tree

38.19 — Surveyed levels

— Checked Handover Levels Pile mat Area (mAOD)

— Checked Handover Levels Car Park Area (mAOD)

— Checked Handover Levels Muga Pitch Area (mAOD)

— Checked Handover Levels Sports Pitches and Habitat Area (mAOD)

Rev	Date	Description	Drawn	Chkd
A	11.11.22	HANDOVER CHECK LEVELS	BH	DS
B	20.11.22	HANDOVER CHECK LEVELS	BH	DS
C	20.12.22	HANDOVER CHECK LEVELS	BH	DS
D	20.12.22	ROAD AREAS CHECK LEVELS INCLUDED	BH	DS

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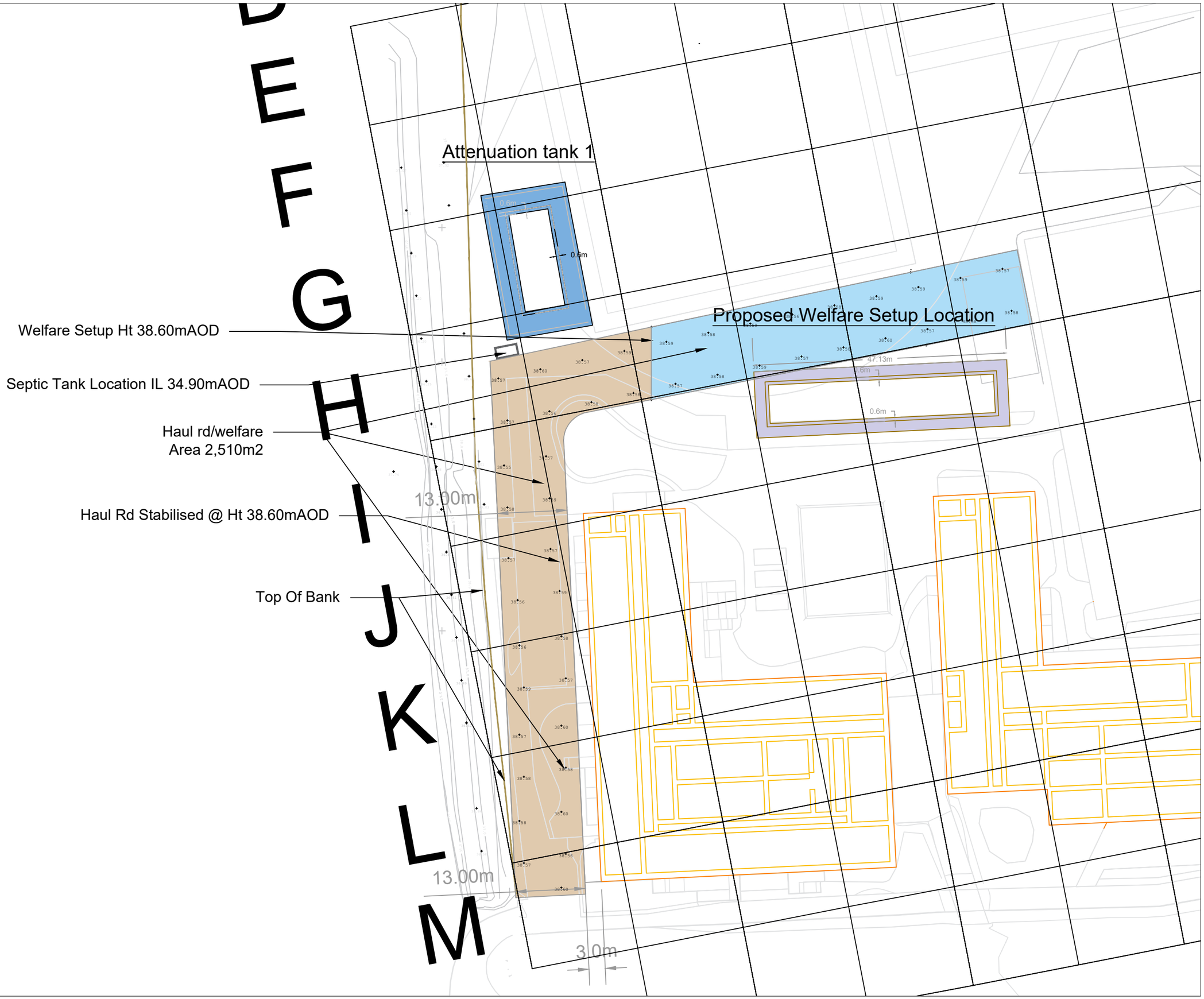
Issued 20.12.22
Scale NTS
Drawn BH
Checked RW

Title
HANDOVER CHECKED LEVELS (mAOD) 20th DECEMBER 2022

Project no.
TCL6728

Drawing no.
TCL6728_EN008_BH_D-L1

Revision
D



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
3. All surveys are orientated to OSGB36(15).
4. Dimensions and levels must be confirmed on site prior to starting works.
5. All units are in metres unless stated otherwise.

Key

Bottom of bank		Water line	
Top of bank		Road	
Contour (1m)		Concrete	
Building line		Gate	
Fence		Hedge	
Wall		Tree	

Rev	Date	Description	Drawn	Chkd
A	21.11.22	HAUL RD LOCATION & AREA	BH	DS
B	22.11.22	SEPTIC TANK LOCATION & HAUL RD AMENDED	BH	DS
C	02.12.22	SEPTIC TANK LOCATION & WELFARE AMENDMENT	BH	DS

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Client
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Reading
RG1 8EQ

Title
SEPTIC TANK & WELFARE LOCATION 2ND DECEMBER 2022

Drawing no.
TCL6728_EN011_C_L1

Issued 02.12.22
Scale NTS
Drawn BH
Checked DS
Project no. TCL6728
Revision C

Proposed Welfare Setup Location

47.13m

0.6m

0.6m

Excavation Area

38.10mAOD

Crane Pad Area 2,039m2
Volume of extra soil excavated
754m3

Cross Section Crane Area Excavation



not to scale

New Formation Level 38.10

Volume of Cut Material From Original Formation Levels 754m3

General notes
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5. All units are in metres unless stated otherwise.

Key

Bottom of bank		Water line	
Top of bank		Road	
Contour (1m)		Concrete	
Building line		Gate	
Fence		Hedge	
Wall		Tree	

Rev	Date	Description	Drawn	Chkd
A	21.11.22	HAUL RD LOCATION & AREA	BH	DS
B	22.11.22	SEPTIC TANK LOCATION & HAUL RD AMENDED	BH	DS
C	02.12.22	SEPTIC TANK LOCATION & WELFARE AMENDMENT	BH	DS
D	22.12.22	CRANE AREA EXCAVATION	BH	DS

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Reading
RG1 8EQ

Title
CRANE AREA LOCATION
22ND DECEMBER 2022

Drawing no.
TCL6728_EN011_D_L1

Issued 22.12.22
Scale NTS
Drawn BH
Checked DS
Project no. TCL6728
Revision D



General notes

1. This drawing should be read in conjunction with all other relevant drawings and specifications.
2. Do not scale from this drawing.
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5. All units are in metres unless stated otherwise.

Key			
	Bottom of bank		Water line
	Top of bank		Road
	Primary Contour (1m)		Secondary Contour (0.2m)
	Building line		Gate
	Fence		Hedge
	Wall		Tree

CBR ES4469-4 — CBR TEST LOCATIONS

Rev	Date	Description	Drawn	Chkd
A	02.12.22	CBR CAR PARK ROAD TEST LOCATIONS	BH	DS

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Client
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Title
CBR TEST LOCATIONS CAR PARK ROAD 2nd DECEMBER 2022

Drawing no.
TCL6728_EN012_BH_A_L1

Issued 11.12.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision A

Location	Cover System Required	Base of Fill
Sports pitches/ running track	200mm topsoil 300mm subsoil	500mm below finished design levels.
Grassed outfields	150mm topsoil 300mm subsoil	450mm below finished design levels.
Planted/landscape areas	150mm topsoil 300mm subsoil	450mm below finished design levels.
Habitat area	100 crush material 200 subsoil/capping material	300mm below finished design levels.
Reuse of existing capping as cover material	Subsoil/capping material	
Reuse of capping generated from groundworks arisings	-	Backfilled at source location
Location	**Cover System Required**	**Below FFL**
Road/car parking stabilised subbase construction	450mm site won subsoil	Access road to 450mm below FFL and block paving 480mm below FFL
Pile mat construction	600mm stabilised site won material	TBC

1 2 3 4 5 6 7 8

A B C D E F G H I J K L M N O

38.40mAOD

38.40mAOD

Formation levels 38.20mAOD

Muga Pitch Formation Levels 38.20mAOD

Excavate to Formation Levels

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Client
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Project
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Title
EXCAVATE TO FORMATION LEVELS 13th DECEMBER 2022

Drawing no.
TCL6728_EN0013_BH_E_L1

Issued 13.12.22
Scale NTS
Drawn BH
Checked RW
Project no. TCL6728
Revision E

Key

Edge of Excavation		Water line	
Top of bank		Road	
Primary Contour (1m)		Secondary Contour (0.2m)	
Building line		Gate	
Fence		Hedge	
Wall		Tree	

General notes
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5. All units are in metres unless stated otherwise.

Rev	Date	Description	Drawn	Chkd
A	21.10.22	EXCAVATE TO FORMATION	BH	DS
B	25.10.22	EXCAVATE TO FORMATION	BH	DS
C	02.11.22	EXCAVATE TO FORMATION	BH	DS
D	11.19.22	EXCAVATE TO FORMATION	BH	DS
E	12.08.22	EXCAVATE TO FORMATION	BH	DS

EXCAVATE TO FORMATION LEVELS CHECK

Required base levels to achieve subsoil thickness according to land use areas (mAOD) in accordance with the Remediation Strategy.

- Car Park Excavation Formation Levels Check
- Attenuation Tanks Excavation Formation Levels Check
- Muga Pitch Formation Levels (Bellow 38.20mAOD) Excavation Check
- Site Excavation Formation Levels Check
- Concrete Slab Excavation Levels
- Sports Pitches & Running Track Area Defined Formation Levels (Bellow 38.20mAOD)
- Habitat Area Defined Formation Levels (Bellow 38.16mAOD)
- Building Pile Mat Area Defined Formation Levels (Bellow 38.30mAOD)

Appendix B:

PERMITTING

The Company Secretary and/or Director
Soil And Water Solutions Limited
25 Cecil Road
Harrow
HA3 5QY

Our ref: FB3501TZ/W0002

Date: 06/09/2022

Dear Sir or Madam

Environmental Permitting (England and Wales) Regulations 2016

Deployment ref: FB3501TZ/W0002
Permit holder: Soil And Water Solutions Limited
Location of the deployment: River Academy development, Richfield Avenue, Reading, RG1 8EQ,

Following assessment of your deployment notification reference number FB3501TZ/W0002 I can confirm that we have agreed your deployment form and you may now start to operate.

You have up to 12 months to notify us that your deployment activities are commencing. Once notified your deployment lasts for 25 weeks if you wish to continue beyond this period you can request an extension up to a maximum of 12 months or submit a new deployment application for a further 12 month extension. Please see section 4.1 of the Land and groundwater remediation deployment form guidance.

You must comply with your permit and carry out the activities in accordance with the requirements of the agreed deployment form and

- Additional information including security arrangements, stockpile confirmation, location of contamination, impermeable surface, technology confirmation, drainage system, WAMITAB, noise, dust and asbestos monitoring details and surface water details provided by Rick Willemse on 01/09/2022
- Additional information including landfill arisings confirmation, impermeable surface, stockpile confirmation provided by Rick Willemse on 02/09/2022
- Additional information including WAMITAB certificates and impermeable surface confirmation provided by Rick Willemse on 05/09/2022

You must seek written permission from us if any of the details provided in the deployment form change.

This approval letter is associated with the mobile plant permitting regime only. As the operator, it is your responsibility to agree other authorisations, for example, planning permission, remedial strategy, abstraction or discharge consents with the relevant regulatory authority.

Please note that operating under your Mobile Plant Permit / Mobile Treatment Licence does not imply that the remediation processes used will be suitable for meeting any remediation objectives specified. These issues must be considered separately by the developer/consultant and our local area Groundwater and Contaminated Land team. These must be defined in the site remedial strategy which sets out the remediation options to reduce or control the risks from pollution linkages associated with the site as a whole. You may need to carry out further remediation if an unacceptable risk to the environment remains at the site.

Please notify us at least seven days prior to starting the remediation activities, at psc@environment-agency.gov.uk & wtwq@environment-agency.gov.uk

If you have any queries about this matter please contact us by telephone on 03708 506 506 or email us at enquiries@environment-agency.gov.uk quoting your deployment application reference FB3501TZ/W0002.

Yours faithfully

Grant Wilson
Team Leader,
National Permitting Service

HARROW COUNCIL
POLLUTION PREVENTION AND CONTROL ACT 1999
Environmental Permitting Regulations 2010 (as amended)

Permit ref. no: PPC/EP/Permit/WK/684415

Name and address of person (A) authorised to operate the mobile plant ('the operator') Toureen Plant **Registered number and office of company** (if appropriate) 25 Cecil Road, Harrow, HA3 5QY Company registration Number 05898339

Activity description

Mobile crushing and screening – crushing, grinding or size reduction, with machinery designed for that purpose of: bricks, tile or concrete or any designated mineral: Screening the product

Serial numbers	Plant type
76539	Mc Closkey Crusher - J45 Crusher -
76540	Mc Closkey Screener – S190 Screener -

The operator (**A**) is authorised to operate the activity[1] in England and Wales, subject to the following conditions.

Conditions

Asbestos

1. Asbestos shall not be crushed or screened.

Notifications

2. The operator shall, before the mobile plant is operated, notify the regulator of the site where the mobile plant is to be operated, and the regulator who issued the permit:
    a. where and when the mobile plant is expected to start operating, and
    b. the serial numbers of the mobile plant involved.

Emissions and monitoring

3. No visible particulate matter shall be emitted beyond the boundary of the site on which the mobile plant is sited.

4. The emission requirements and methods and frequency of monitoring set out in Table 1 shall be complied with.

5. All plant and equipment capable of causing, or preventing, emissions shall be maintained in accordance with the manufacturer's instructions. Records shall be kept of such maintenance.

[1] listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations

Aggregates delivery and storage

6. Dusty materials (including dusty wastes) shall only be stored in the available sheltered areas of the site and shall be subject to suppression and management techniques to minimise dust emissions.

Crushers and screening units

7. Crushers shall be totally contained or fitted with a water suppression system over the crusher aperture

8. Where the use of water as a method of dust suppression is necessary in order to meet the emission limits, it shall be used. In such circumstances, if water of the required pressure is not available for use on the suppression system, then the process shall not operate.

9. Deposits of dust on external parts of the plant shall be cleaned off at the end of each working day in order to minimise the potential for wind entrainment.

10. Processed materials likely to generate dust shall be conditioned with water prior to internal transfer.

Belt conveying

11. All dusty materials, including wastes, shall be conveyed using conveyors fitted with water suppression unless they are totally enclosed.

Loading, unloading and transport

12. No potentially dusty materials (including wastes) or finished products shall arrive on or leave the site other than by use of suitably sheeted or otherwise contained vehicles.

Roadways and transportation

13. All areas where there is regular movement of vehicles shall have a consolidated surface capable of being cleaned, and these surfaces shall be kept clean and in good repair, or shall be kept wet. Quarry haul roads are excluded from this provision.

14. Vehicles shall not track material from the site onto the highway.

Records and training

15. Written or computer records of all tests and monitoring shall be kept by the operator for at least 18 months. They and a copy of all manufacturer's instructions referred to in this permit shall be made available for examination by the Council. Records shall be kept of operator inspections, including those for visible emissions.

16. Staff at all levels shall receive the necessary training and instruction to enable them to comply with the conditions of this permit. Records shall be kept of relevant training undertaken.

Best available techniques

17. The best available techniques shall be used to prevent or, where that is not practicable, reduce emissions from the installation in relation to any aspect of the operation of the installation which is not regulated by any other condition of this permit.

18. If the operator proposes to make a change in operation of the installation, he must, at least 14 days before making the change, notify the regulator in writing. The notification must contain a description of the proposed change in operation. It is not necessary to make such a notification if an application to vary this permit has been made and the application contains a description of the proposed change. In this condition 'change in operation' means a change in the nature or functioning, or an extension, of the installation, which may have consequences for the environment.

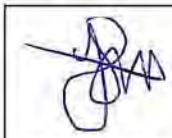
Table 1 - Emission limits, monitoring and other provisions

Substance	Source	Emission limit/ provisions	Type of monitoring	Monitoring frequency
Particulate matter	Whole process	Avoidance of visible emissions crossing the (construction) site boundary	Recorded operator observations	On start up and on at least two more occasions each day
smoke	engines	No visible smoke during normal operation	Recorded operator observations	On start up and on at least two more occasions each day

Right to Appeal

You have the right of appeal against this permit within 6 months of the date of the decision. The Council can tell you how to appeal. You will normally be expected to pay your own expenses during an appeal.
You will be liable for prosecution if you fail to comply with the conditions of this permit. If found guilty, the maximum penalty for each offence if prosecuted in a Magistrates Court is £50,000 and/or 6 months imprisonment. In a Crown Court it is an unlimited fine and/or 5 years imprisonment. Our enforcement of your permit will be in accordance with the Regulators' Compliance Code.

Signed



Miss Jo Smith – Environmental Health Manager - Community and Public Protection
Date: 24/07/2020

DoW CoP
Sustainable Reuse of Soils
A CL:AIRE Initiative

2022-08-19 07:47:22

Definition of Waste Code of Practice Declaration Receipt

This Declaration has been submitted to the Environment Agency under the Definition of Waste Code of Practice (DoW CoP).

You are reminded that if materials are not used in accordance with the Materials Management Plan or risk assessment, or if it is discovered that materials were not suitable for use, were used in excessive quantity or in such a manner as to harm human health or pollute the environment, the Environment Agency may conclude that those materials were discarded and were waste.

You are also reminded that a Verification Report must be prepared on completion of the work as set out in the Remediation Strategy / Design Statement covering the site. This Verification Report must be provided to the Environment Agency upon request.

This receipt relates to the following Declaration -

1. References	
Your Reference for this Declaration	Toureen - River Academy READING
Related declaration references	
3. Site of Origin	Checked
4. Direct Transfer	N/A
5. Cluster Project (including use of a fixed Soil Treatment Facility as a Hub site)	N/A

2. Proposed Volumes	
Proposed Volumes in m^3	17014
Additional comments on Proposed Volumes	

3. Site of Origin	
3a. Route A: Land affected by contamination or suspected of being affected by contamination	Checked
3b. Route B: Land not suspected of being affected by contamination.	N/A
Site Address	River Academy (former Golf Driving Range) Richfield Ave, Reading
Postcode for Site of Origin	RG1 8JS

CL:AIRE Initiatives Ltd
Chiltern House, Haddenham Business Centre, Thame Road,
Haddenham, Buckinghamshire, HP17 8BY
Company Registration No. 13628954
dowcop.declarations@claireinitiatives.com

Grid Reference for Site of Origin	470413 174483
3d. Site Owner(s)	
Site Owner #1	
Name	Reading Borough Council
Address	Bridge St, Reading, RG1 2LU
Email	t.spencer@nexusplanning.co.uk
Telephone	07856529771
3e. Developer	
Developer #1	
Company	Dept of Education / Reading Borough Council
Address	Bridge St, Reading, RG1 2LU
Contact Name	Tim Spencer - Nexus Planning
Job Title	Director
Email	t.spencer@nexusplanning.co.uk
Telephone	07856529771

6. Local Authorities / Regulators	
6a. Local Authorities	
Local Authority #1	
Receiver Site Local Authority	Reading Borough Council
Local Authority Address	Civic Centre, Bridge Street , READING , RG1 2LU
Lead Contact Name	Julie.Williams@reading.gov.uk & Rebecca Moon
Lead Contact Role	Planning officer & Contaminated land officer
Lead Contact Address (if different from above)	
Lead Contact Email	Julie.Williams@reading.gov.uk
Lead Contact Telephone	0118 9372325
Receiver Site Agency	Wallingford

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Agency Address	Red Kite House, Howbery Business Park, Benson Ln, Crowmarsh Gifford, Wallingford OX10 8BD
Contact Telephone	01491 828696
Contact Email	Mr Alex Swann - a.swann@environment-agency.gov.uk

7. Lines of Evidence	
Reference for the Materials Management Plan	Toureen MMp and zip folder - 26/7/2022
Reference for the Risk Assessment	Appendices GI Phase 2 site investigation and risk assessment REC Ltd 1 C0106158/P2/R0 The site was used as a golf range and occasional camping for Reading festival. The site consists of a soil capping layer (a gravelly sand - 1.2m thick) data indicates the soil is suitable for re-use. The capping layer overlies historically placed material pre 1974 which overlies the natural gravels.

Reference for either Remediation Strategy or Design Statement	Appendix - Remedial strategy - Ashfield solutions Group remedial strategy 130321-SO3 23/3/20222 - FS0949-ASo-XX-XX-RP-Y-0005. REC Remedial strategy 1-CO108720. The EA have been involved in pre application dialogue e.g. Dec 2021 groundwater and contaminated land specialist Craig Hampton re: a Groundwater Monitoring Strategy . Due to flood levels the levels of the site can not be raised and in order accommodate the clean cover capping layer, which is to be formed from the re-use of the existing soil capping layer, only minor excavation into the underlying made ground will occur to achieve formation levels. There will be minor fill to achieve formation level (900 cubic metres). stabilisation of the formation layer will take place for geotechnical reasons. The overlying soil capping layer will be removed to achieve formation (remaining declared volume) and re-used as capping to reach design levels minus any top soil requirement. Imported top soil is anticipated to be required to achieve final design levels in parts of the site e.g. pitch areas The Ashdown remedial strategy has been discussed with the EA & CLO. The REC remedial strategy submitted with planning has been approved by the EA and CLO and the resulting condition - condition 5 of 212061 requires verification of the agreed remediation. Both remedial strategies mention the re-use of the capping soils under DoWCoP (section 4.9 of REC RS & 4.2 of Ashfield RS).
Reference for the Verification Plan	Section 8 of Ashfield solutions Group remedial strategy 130321-SO3 23/3/20222 - FS0949-ASo-XX-XX-RP-Y-0005. and detailed box 26 of MMP.
Company	Toureen
Address	Toureen Contractors, 25 Cecil Road, Wealdstone, Middx HA3 5QY
Name	Rick Willemse

Email	Rick.Willemse@toureen.co.uk
Telephone	07501 555457
Expected production date for the Verification Report.	2023-08-31 00:00:00
7gi. Location plans	appendix 1 - drawings. Ashfield drawing 130321-SO3 01 7/3/2022 site location Landscape masterplan ARES FS0949 ALA XX ZZ.
7gii. Schematics	Cut and fill Ashfield FS0949-ASO-XX-XX-DR-X-1102 S3 PO3 Toureen email re-use summary to JP 15th and 6th August 2022 Toureen Remediation implementation plan - TCL-T1121 REv 1 15/6/2022
7giii. Desk Top Study	Appendix SI - Terrafirma Phase 1 6147/2 May 2018
7giv. Mass balance calculations	Cut and fill Ashfield FS0949-ASO-XX-XX-DR-X-1102 S3 PO3
7gv. Contingency arrangements	Reading Borough Council are responsible for disposal of unsuitable made ground and excess soils.
7gvi. Tracking system	Ashfield solutions Group remedial strategy 130321-SO3 23/3/20222 - FS0949-ASo-XX-XX-RP-Y-0005 Toureen Remediation implementation plan - TCL-T1121 REv 1 15/6/2022
a) The Local Authority	Checked
b) Environment Agency	Checked
c) Natural Resources Wales	N/A
d) Other relevant environmental regulatory bodies	N/A
Reference the correspondence with the Local Authority	Rebecca Moon email to planners and Nexus planning = 5/5/2022 @ 11:44. no further queries on the remediation strategy.

Reference the correspondence with the Environment Agency	Email to EA 3/5/2022 12:32 inviting any further comments to those already provided by Craig Hampton and via planning on the re-use. No objections received . EA letter WA/2022/129576/01-LO1 25/2/2022 - acknowledging the EA has proved pre -app advice and been involved in the site. acknowledging the site is historical fill and not raising any objections to the re-use proposals in the remedial strategy. EA asks for Condition requesting the verification report confirming remedial strategy has been followed. Declarations and evidence indicate the existing capping soils are suitable for re-use on the site as capping soils to achieve final design after stabilisation at formation level has taken place.
I have reviewed the planning consent including planning conditions	Checked
Planning Reference (State either the reference or Not Applicable.)	READING BC - 212061.
a) The Local Authority	Checked
b) Environment Agency	Checked
c) Natural Resources Wales	N/A
d) Other relevant environmental regulatory bodies	N/A
Please list correspondence reviewed above	EA letter WA/2022/129576/01-LO1 25/2/2022 - no objections. request flood condition and verification report on agreed remedial strategy. Rebecca Moon email to planners and Nexus planning = 5/5/2022 @ 11:44 - no further comments on remedial strategy. committee report no objections from EA / CLO.
Planning consent not required	N/A

8. QP Declaration	
8a. QP Name	James Potter
8b. QP Number	QP048

8c. I satisfy the Qualified Person requirements set out in Appendix 6 of the Definition of Waste: Development Industry Code of Practice to complete this Declaration.	Checked
8d. I have reviewed the Materials Management Plan for the above project.	Checked
8e. I have reviewed the Risk Assessment.	Checked
8f. I have reviewed the Remediation Strategy/Design Statement covering the above site.	Checked
8g. I have requested correspondence / documentation relating to the development and how that relates to the use of materials.	Checked
8h. The risk assessment assesses human health and environmental risks in relation to the proposed uses of all the materials in the MMP. The risk assessment concludes that the objectives of preventing harm to human health and pollution of the environment will be met if materials are used in the proposed manner	Checked
8i. The Local Authority, the Environment Agency / Natural Resources Wales and other relevant environmental regulatory bodies have not objected to the proposed development / land remediation on the basis that the use of any material is likely to cause harm to human health or pollution of the environment. [This confirmation should be given regardless of whether planning consent is required for the activity. Also see paragraph 3.37 of the CoP.].	Checked
8j. The EA/NRW have not objected to the reuse of materials on the grounds that it a.) constitutes a waste management operation or b.) has had a previous application for an environmental permit for waste recovery refused (on the grounds that the project represents waste disposal).	Checked
8k. The project does not involve land-spreading / agricultural re-profiling.	Checked

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8l. The project has not yet commenced; this is not a retrospective application of the DoW CoP.	Checked

APPENDIX C:

TOUREEN CHEMICAL-GEOTECHNICAL RESULTS

Toureen Group

SAMPLE TRACKER

Sample Key

Soil Suite
Asbestos ID & Quant
WAC



Toureen Group

CHEMICAL RESULTS SUMMARY CAPPING VALIDATION

				Lab Reference	299388	299390	299391	299393	299394	299395	299396	299397	299398	299399	299379	299380	299381	299382	299383	299384	299385	299386	299350	299354	299356	299358	299670	299672	299674	299676	299678	299680	299682	299684	299686	299688	299690	299692	299694	299696	299698	299700	299723	299726	299728	299730	299732	299702	299704
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A3	B2	B3	C2	C3	C3	D2	D3	E1	E2	F1	F2	G1	G2	H1	H2	I1	J1	B3	D3-1	E3-1	F3-1	E4. 1	F4. 1	G4. 1	H4. 1	I4. 1	J4. 1	K4. 1	L4. 1	A5. 1	B5. 1	C5. 1	D5. 1	E5. 1	F5. 1	G5. 1	H5. 1	H6. 1	I6. 1	J6. 1	K6. 1	L6. 1	I5. 1	J5. 1
				Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	21/10/2022	21/10/2022	21/10/2022	21/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	25/10/2022	25/10/2022
Determinand	**Units**	**LOD**	**SAC Cover Reuse Criteria**	**Phytotoxic SAC Planting**																																													
Soil sample preparation parameters																																																	
Moisture Content	%	0.1			8.5	0.2	12.1	6.9	12.1	12.6	5.8	10.0	10.6	10.3	11.7	10.5	13.4	11.6	13.4	9.7	9.8	6.1	12.4	7.7	15.0	9.1	19.9	15.5	17.7	13.4	15.5	16.9	9.6	10.4	14.8	15.1	17.5	14.1	15.3	14.1	14.9	11.2	10.9	11.7	10.7	10.6	9.7	11.4	21.9
Material removed	%	0.1			19.0	24.5	19.2	21.3	7.6	22.7	27.3	15.6	21.1	18.8	27.3	17.7	< 0.1	14.5	< 0.1	23.8	21.2	15.5	18.9	20.1	18.9	20.8	22.9	28.0	28.0	24.7	23.9	20.9	28.1	23.4	< 0.1	16.9	16.9	22.0	16.3	14.2	22.6	29.3	23.8	17.3	17.7	23.7	19.7	23.3	22.9
Description of Inert material removed		0			Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	None	Stones	None	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	None	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Metals																																																	
Arsenic	mg/kg	0.5	40	50	35.0	32.4	35.0	39.1	30.5	26.6	38.7	26.9	29.7	22.0	28.7	27.5	22.5	24.7	22.5	30.0	29.6	23.3	36.2	32.2	23.8	21.9	25.4	20.2	17.7	25.2	21.2	23.8	27.6	34.0	32.8	29.3	26.3	28.7	30.4	25.3	28.0	24.0	32.4	26.5	25.9	44.0	34.9	23.2	22.5
Cadmium	mg/kg	0.2	11	3	0.7	0.5	0.7	0.6	0.6	0.5	0.6	0.3	0.5	0.4	0.6	0.6	0.5	0.6	0.9	0.5	0.3	0.3	0.6	0.7	0.5	0.6	0.4	0.6	0.4	0.4	0.4	0.5	0.3	0.3	0.5	0.4	0.4	0.3	0.3	0.4	0.6	0.5	0.4	0.6	0.5	0.5	0.3	0.5	0.5
Chromium	mg/kg	1	910	400	44.8	41.4	46.0	51.1	45.5	37.9	48.6	36.1	35.9	27.7	45.5	41.2	34.9	36.9	35.8	42.4	40.6	31.5	47.0	42.2	30.6	33.5	38.8	36.0	36.3	40.2	33.5	34.1	35.3	47.6	41.9	40.7	36.7	41.3	44.6	36.2	46.0	39.2	41.6	43.0	42.2	57.5	45.1	36.8	37.6
Copper	mg/kg	4	1000	200	46.8	36.2	62.7	48.6	52.8	37.3	67.7	33.3	53.3	37.1	44.8	49.3	40.4	47.3	75.2	42.6	29.3	28.9	54.0	79.8	47.7	72.1	37.2	61.6	43.2	28.6	27.6	35.6	24.5	23.6	41.1	35.0	30.1	23.6	31.9	35.0	52.8	44.2	30.0	52.7	50.5	44.0	24.4	43.8	52.6
Lead	mg/kg	1	310		109	91.9	122	123	139	81.8	87.2	92.8	141	72.0	127	123	141	126	189	105	63.2	78.2	160	210	116	184	99.2	131	95.3	308	70.8	85.9	46.3	53.0	92.0	81.3	73.7	54.2	72.1	114	122	104	56.8	107	106	111	50.2	111	146
Mercury	mg/kg	0.1	10	1	1.2	0.3	0.3	0.4	0.8	0.3	0.3	0.2	0.4	0.3	0.3	0.5	0.5	0.5	0.7	0.5	0.4	0.3	0.3	0.7	0.3	0.6	0.3	0.5	0.4	0.5	0.3	0.3	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3
Nickel	mg/kg	1	180	110	36.1	32.3	35.8	40.1	34.1	29.2	38.7	27.3	30.7	24.4	34.3	31.7	27.4	29.4	32.2	34.8	34.2	25.6	33.3	34.2	26.4	30.7	29.7	29.1	24.8	30.6	27.1	26.5	30.0	37.0	35.4	35.0	29.4	33.2	34.3	29.9	35.5	31.8	33.4	31.4	30.5	47.6	41.8	28.8	28.4
Selenium	mg/kg	1	430		< 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	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.6	1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	mg/kg	0.5	500		69.6	63.5	67.0	77.9	64.8	66.6	75.8	56.4	55.9	44.1	67.3	59.1	51.3	53.7	49.9	61.6	59.4	50.4	61.4	57.7	44.9	44.2	57.6	46.9	42.3	55.3	49.4	52.5	51.9	71.3	64.9	65.1	56.7	61.7	69.2	53.8	63.2	53.7	62.1	55.4	52.5	81.8	70.8	47.3	48.5
Zinc	mg/kg	4.5	1000	300	158	127	219	180	185	124	170	112	183	94.8	156	182	143	181	314	174	109	86.2	322	349	207	275	157	228	154	105	104	110	110	108	132	136	119	89.1	129	125	191	187	120	205	206	180	101	165	211
Inorganics																																																	
Total Cyanide	mg/kg	1	24		< 1.0	< 1.0	1.6	< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous																																																	
Acid Neutralisation Capacity	mol/kg	0.1			n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	< 0.1	< 0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Loss on Ignition	%	0.01			n/t	n/t	7.54	5.54	n/t	n/t	n/t	5.27	7.11	n/t	n/t	6.86	8.36	n/t	n/t	5.18	4.60	n/t	n/t	n/t	8.09	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
pH	pH units	0.1	Ideally 5 to 9		6.7	6.9	6.7	6.8	7.0	7.6	6.9	7.2	7.2	7.3	7.5	7.5	7.0	7.0	7.2	7.5	7.2	7.1	7.8	7.9	7.8	7.7	8.0	8.2	8.2	8.5	8.3	8.2	8.2	8.2	8.1	8.2	8.0	8.1	7.3	7.8	7.9	8.0	8.0	8.0	8.0	8.1	8.1	8.0	8.0
Total Organic Carbon	%	0.01			n/t	n/t	2.4	1.4	n/t	n/t	n/t	1.5	2.5	n/t	n/t	2.1	2.7	n/t	n/t	1.5	1.4	n/t	n/t	n/t	1.9	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenols																																																	
Phenol	mg/kg	1	10		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	mg/kg	5	10		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons																																																	
Naphthalene	mg/kg	0.1	2.3		< 0.01	0.02	< 0.1	< 0.1	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	0.02	< 0.1	< 0.1	< 0.1	< 0.1	0.08	0.03	0.02	0.01	0.04	0.03	< 0.01	< 0.01	< 0.01	0.02	< 0.1	0.01	0.01	0.01	< 0.1	0	< 0.01	0.01	0.01	0.01	0.02	0.01	0.06
Acenaphthylene	mg/kg	0.1			< 0.01	0.04	< 0.1	< 0.1	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	0.1	< 0.1	0.04	< 0.1	< 0.1	< 0.1	< 0.1	0.01	0.06	0.04	0.02	0.11	0.07	< 0.01	< 0.01	0.01	0.08	< 0.1	0.02	0.04	0.02	< 0.1	0	< 0.01	0.02	0.02	0.01	0.02	0.02	0.19
Acenaphthene	mg/kg	0.1			< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	0.01	< 0.01	0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	0.05	< 0.1	< 0.01	< 0.01	< 0.01	< 0.1	0	< 0.01	< 0.01	< 0.01	0.02	0.01	< 0.01	0.05
Fluorene	mg/kg	0.1			< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	0.01	< 0.01	0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01	0.11	< 0.1	< 0.01	< 0.01	< 0.01	< 0.1	0	< 0.01	< 0.01	< 0.01	0.01	0.02	< 0.01	0.04
Phenanthrene	mg/kg	0.1			0.01	0.02	< 0.1	< 0.1	0.02	< 0.01	< 0.01	0.1	0.2	< 0.01	0.04	0.1	< 0.1	0.04	0.04	0.4	0.3	0.24	< 0.1	< 0.1	0.1	< 0.1	0.05	0.24	0.13	0.16	0.96	0.21	0.01	0.03	0.03	1.60	< 0.1	0.04	0.09	0.07	0.1	0	0.02	0.03	0.04	0.06	0.11	0.10	0.77
Anthracene	mg/kg	0.1			< 0.01	0.03	< 0.1	< 0.1	< 0.01	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	0.01	0.1	0.1	0.06	< 0.1	< 0.1	< 0.1	< 0.1	0.01	0.06	0.04	0.04	0.16	0.06	< 0.01	< 0.01	< 0.01	0.38	< 0.1	0.01	0.03	0.02	< 0.1	0	< 0.01	0.02	0.01	0.01	0.03	0.03	0.32
Fluoranthene	mg/kg	0.1			0.03	0.67	0.3	0.2	0.05	0.03	< 0.01	0.4	0.5	0.03	0.11	0.6	0.4	0.12	0.13	1.5	0.9	0.78	0.2	0.2	0.5	0.2	0.15	0.74	0.59	0.48	1.76	0.96	0.03	0.08	0.13	2.58	0.2	0.16	0.55	0.20	0.6	0	0.07	0.23	0.16	0.17	0.37	0.41	6.06
Pyrene	mg/kg	0.1			0.03	0.69	0.2	0.2	0.05	0.03	< 0.01	0.3	0.5	0.03	0.10	0.5	0.3	0.11	0.12	1.4	0.8	0.71	0.1	0.1	0.4	0.1	0.14	0.69	0.55	0.44	1.57	0.88	0.03	0.08	0.12	1.90	0.1	0.16	0.55	0.18	0.5	0	0.07	0.26	0.15	0.16	0.33	0.38	6.37
Benzo(a)anthracene	mg/kg	0.1			0.02	0.54	0.1	< 0.1	0.03	0.01	< 0.01	0.2	0.2	0.02	0.05	0.3	0.2	0.06	0.07	0.8	0.4	0.42	< 0.1	< 0.1	0.2	< 0.1	0.06	0.36	0.33	0.24	0.73	0.48	0.02	0.04	0.07	0.95	< 0.1	0.11	0.33	0.08	0.2	0	0.03	0.24	0.12	0.09	0.21	0.20	3.53
Chrysene	mg/kg	0.1			0.02	0.43	0.1	< 0.1	0.03	0.02	< 0.01	0.2	0.3	0.02	0.04	0.4	0.2	0.07	0.08	0.9	0.5	0.40	< 0.1	< 0.1	0.3	< 0.1	0.09	0.39	0.34	0.22	0.70	0.50	0.02	0.04	0.06	0.84	< 0.1	0.11	0.34	0.12	0.2	0	0.04	0.22	0.09	0.10	0.19	0.20	3.18
Benzo(b)fluoranthene	mg/kg	0.1			0.02	0.50	0.3	< 0.1	0.04	0.02	< 0.01	0.3	0.4	0.02	0.05	0.5	0.3	0.08	0.09	1.2	0.5	0.50	< 0.1	< 0.1	0.4	< 0.1	0.10	0.42	0.45	0.16	0.63	0.45	0.02	0.05	0.06	0.71	< 0.1	0.11	0.28	0.13	0.7	0	0.04	0.14	0.12	0.09	0.17	0.18	3.53
Benzo(k)fluoranthene	mg/kg	0.1			0.02	0.56	0.3	< 0.1	0.04	0.02	< 0.01	0.3	0.5	0.02	0.06	0.6	0.4	0.08	0.09	1.4	0.6	0.45	< 0.1	< 0.1	0.4	< 0.1	0.09	0.34	0.38	0.23	0.55	0.55	0.02	0.04	0.07	0.59	< 0.1	0.09	0.33	0.10	0.4	0	0.04	0.13	0.08	0.08	0.17	0.22	3.18
Benzo(a)pyrene	mg/kg	0.1	5.3		0.02	0.61	0.3	< 0.1	0.03	0.02	< 0.01	0.3	0.4	0.02	0.05	0.6	0.4	0.07	0.08	1.5	0.7	0.48	< 0.1	< 0.1	0.4	< 0.1	0.10	0.40	0.38	0.22	0.66	0.46	0.02	0.05	0.07	0.64	< 0.1	0.10	0.36	0.12	0.5	0	0.04	0.15	0.11	0.08	0.21	0.21	4.03
Indeno(1,2,3-cd)pyrene	mg/kg	0.1			0.01	0.28	0.2	< 0.1	0.02	0.01	< 0.01	0.2	0.3	0.01	0.04	0.5	0.3	0.04	0.05	1.2	0.4	0.28	< 0.1	< 0.1	0.4	< 0.1	0.06	0.24	0.25	0.15	0.45	0.34	0.01	0.03	0.05	0.34	< 0.1	0.07	0.22	0.08	0.3	0	0.03	0.06	0.08	0.06	0.14	0.12	2.41
Dibenzo(a,h)anthracene	mg/kg	0.1			< 0.01	0.12	< 0.1	< 0.1	< 0.01	< 0.01	< 0.01	0.1	0.1	< 0.01	0.02	0.1	< 0.1	0.02	0.02	0.3	0.1	0.10	< 0.1	< 0.1	< 0.1	< 0.1	0.02	0.09	0.10	0.05	0.16	0.13	< 0.01	< 0.01	0.02	0.14	< 0.1	0.03	0.08	0.03	< 0.1	0	0.01	0.03	0.04	0.04	0.07	0.06	0.94
Benzo[g,h,i]perylene	mg/kg	0.1			0.02	0.32	0.2	< 0.1	0.03	0.01	< 0.01	0.2	0.3	0.01	0.05	0.4	0.3	0.05	0.06	1.0	0.4	0.33	< 0.1	< 0.1	0.4	< 0.1	0.07	0.30	0.29	0.15	0.47	0.38	0.02	0.04	0.06	0.36	< 0.1	0.08	0.25	0.10	0.3	0	0.04	0.07	0.10	0.08	0.15	0.14	2.69
Total PAH(16)	mg/kg	0.4	250		n/t	n/t	2.3	0.5	n/t	n/t	n/t	2.7	3.8	n/t	n/t	4.8	3.0	n/t	n/t	12.0	5.9	n/t	n/t	n/t	3.6	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	0.5	n/t	n/t	n/t	3.9	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Total (of 17) PAHs	mg/kg	2	250		n/t	n/t	2	< 2	n/t	n/t	n/t	3	4	n/t	n/t	5	3	n/t	n/t	12	6	n/t	n/t	n/t	4	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	< 2	n/t	n/t	n/t	4	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
BTEX																																																	
Benzene	ug/kg	10	100		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	ug/kg	10			< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	ug/kg	10			< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	ug/kg	10	1000		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	ug/kg	10			< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	mg/kg	0.01			n/t	n/t	< 0.01	< 0.01	n/t	n/t	n/t	< 0.01	< 0.01	n/t	n/t	< 0.01	< 0.01	n/t	n/t	< 0.01	< 0.01	n/t	n/t	n/t	< 0.01	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	< 0.01	n/t	n/t	n/t	< 0.01	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
TPH CWG																																																	
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01	50		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30		< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130		< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1			< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1			< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1			< 1.0	6.3	1.0	1.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.9	< 1.0	< 1.0	4.2	< 1.0	< 1.0	1.2	< 1.0	3.9	< 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	22.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	1			< 1.0	1.3	< 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	2.4	< 1.0	1.0	1.5	< 1.0	< 1.0	< 1.0	< 1.0	1.8	< 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	4.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	mg/kg	1			< 1.0	7.9	2.1	2.3	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.9	< 1.0	2.5	5.9	< 1.0	< 1.0	1.8	< 1.0	6.6	< 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	27.8	< 1.0	1.5	1.0	< 1.0	2.1
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01	50		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30		< 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	1.7	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130		< 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	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1			< 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	2.8	< 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	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1			< 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	5.6	< 1.0	3.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 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	1.6	< 1.0	2.0
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1			< 1.0	4.0	6.8	5.2	< 1.0	< 1.0	< 1.0	5.2	2.4	< 1.0	< 1.0	3.3	3.2	2.5	4.3	79.4	2.5	27.8	3.7	< 1.0	< 1.0	9.2	< 1.0	12.7	3.2	< 1.0	1.2	5.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	6.2	1.9	4.8	8.2	3.6	12.5
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1			< 1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	9.0	< 1.0	2.8	1.2	< 1.0	< 1.0	2.8	< 1.0	4.6	< 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	2.2	< 1.0	< 1.0	1.1	< 1.0	1.4
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	mg/kg	1			< 1.0	5.8	9.7	8.5	< 1.0	< 1.0	2.3	7.7	3.7	< 1.0	< 1.0	5.0	5.0	3.4	5.7	99.1	4.1	35.6	5.8	< 1.0	< 1.0	13.7	< 1.0	19.8	4.8	1.3	1.8	7.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	< 1.0	1.7	< 1.0	9.6	2.8	6.8	11.5	5.1	17.2
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	mg/kg	1	500		< 1.0	13.7	11.8	10.8	< 1.0	< 1.0	2.4	8.7	4.4	< 1.0	< 1.0	5.4	5.4	3.5	5.7	106	4.4	38.1	11.7	< 1.0	< 1.0	15.5	< 1.0	26.4	5.6	1.6	1.9	8.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	1.3	2.0	< 1.0	37.4	2.8	8.4	12.6	5.5	19.3
Mineral Oil w Florisil (EH_CU_1D_Total)	mg/kg	5			n/t	n/t	7	5	n/t	n/t	n/t	6	< 5	n/t	n/t	< 5	< 5	n/t	n/t	5	7	n/t	n/t	n/t	< 5	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	7	n/t	n/t	n/t	9	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)																																																	
Total PCBs (7 congeners)	mg/kg	0.03			n/t	n/t	< 0.03	< 0.03	n/t	n/t	n/t	< 0.03	< 0.03	n/t	n/t	< 0.03	< 0.03	n/t	n/t	< 0.03	< 0.03	n/t	n/t	n/t	< 0.03	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	< 0.03	n/t	n/t	n/t	< 0.03	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Organics																																																	
Coal tar	%	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC																																																	
Phenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01
Aniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01
N-Nitrosodi-n-propylamine	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	mg/kg	0.01			< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.02	0.02	0.01	0.04	0.08	0.03	0.02	0.01	0.04	0.03	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.01	0.01	0.01	0.03	< 0.01	0.01	0.01	0.01	0.02	0.01	0.06
3-Chloroaniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.02	0.02	0.02	0.01	< 0.01	0.02	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
1-Methylnaphthalene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Hexachlorocyclopentadiene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01
1-Chloronaphthalene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	mg/kg	0.01			< 0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04	0.03	0.03	0.03	0.08	0.01	0.06	0.04	0.02	0.11	0.07	< 0.01	< 0.01	0.01	0.01	0.08	< 0.01	0.02	0.04	0.02	0.03	< 0.01	0.02	0.02	0.01	0.02	0.02	0.19
1,2-Dinitrobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.01	< 0.01	0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.02	0.01	< 0.01	0.05
4-nitrophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
2,3,5,6-Tetrachlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01
Diethyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.11	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	< 0.01	0.04
4-Nitroaniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01			0.01	0.02	< 0.01	0.02	0.02	< 0.01	< 0.01	0.01	0.02	< 0.01	0.04	0.05	< 0.01	0.04	0.04	0.03	0.02	0.24	0.04	0.09	0.05	0.20	0.05	0.24	0.13	0.16	0.96	0.21	0.01	0.03	0.06	0.03	1.60	0.02	0.04	0.09	0.07	0.18	0.02	0.03	0.04	0.06	0.11	0.10	0.77
Anthracene	mg/kg	0.01			< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.06	0.03	0.04	0.08	0.11	0.01	0.06	0.04	0.04	0.16	0.06	< 0.01	< 0.01	0.02	< 0.01	0.38	< 0.01	0.01	0.03	0.02	0.04	< 0.01	0.02	0.01	0.01	0.03	0.03	0.32
Carbazole	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.01	0.02	< 0.01	0.02	0.01	< 0.01	0.06	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.25	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.05
Dibutyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	mg/kg	0.01			0.03	0.67	0.03	0.05	0.05	0.03	< 0.01	0.04	0.11	0.03	0.11	0.14	0.03	0.12	0.13	0.11	0.07	0.78	0.25	0.42	0.26	0.95	0.15	0.74	0.59	0.48	1.76	0.96	0.03	0.08	0.26	0.13	2.58	0.07	0.16	0.55	0.20	0.69	0.07	0.23	0.16	0.17	0.37	0.41	6.06
Pyrene	mg/kg	0.01			0.03	0.69	0.03	0.04	0.05	0.03	< 0.01	0.04	0.11	0.03	0.10	0.12	0.03	0.11	0.12	0.10	0.07	0.71	0.25	0.40	0.26	0.95	0.14	0.69	0.55	0.44	1.57	0.88	0.03	0.08	0.22	0.12	1.90	0.06	0.16	0.55	0.18	0.62	0.07	0.26	0.15	0.16	0.33	0.38	6.37
Butyl benzyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	mg/kg	0.01			0.02	0.54	0.02	0.03	0.03	0.01	< 0.01	0.02	0.09	0.02	0.05	0.14	0.02	0.06	0.07	0.06	0.04	0.42	0.17	0.30	0.17	0.63	0.06	0.36	0.33	0.24	0.73	0.48	0.02	0.04	0.15	0.07	0.95	0.02	0.11	0.33	0.08	0.31	0.03	0.24	0.12	0.09	0.21	0.20	3.53
Chrysene	mg/kg	0.01			0.02	0.43	0.02	0.03	0.03	0.02	< 0.01	0.02	0.09	0.02	0.04	0.13	0.02	0.07	0.08	0.06	0.04	0.40	0.18	0.28	0.20	0.62	0.09	0.39	0.34	0.22	0.70	0.50	0.02	0.04	0.16	0.06	0.84	0.05	0.11	0.34	0.12	0.34	0.04	0.22	0.09	0.10	0.19	0.20	3.18
Bis(2-ethylhexyl)phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	mg/kg	0.01			0.02	0.50	0.03	0.04	0.04	0.02	< 0.01	0.03	0.13	0.02	0.05	0.16	0.03	0.08	0.09	0.08	0.05	0.50	0.25	0.28	0.21	0.77	0.10	0.42	0.45	0.16	0.63	0.45	0.02	0.05	0.13	0.06	0.71	0.05	0.11	0.28	0.13	0.34	0.04	0.14	0.12	0.09	0.17	0.18	3.53
Benzo(k)fluoranthene	mg/kg	0.01			0.02	0.56	0.03	0.03	0.04	0.02	< 0.01	0.03	0.11	0.02	0.06	0.15	0.03	0.08	0.09	0.08	0.04	0.45	0.18	0.31	0.20	0.62	0.09	0.34	0.38	0.23	0.55	0.55	0.02	0.04	0.14	0.07	0.59	0.04	0.09	0.33	0.10	0.29	0.04	0.13	0.08	0.08	0.17	0.22	3.18
Benzo(a)pyrene	mg/kg	0.01			0.02	0.61	0.03	0.03	0.03	0.02	< 0.01	0.02	0.10	0.02	0.05	0.14	0.02	0.07	0.08	0.07	0.04	0.48	0.23	0.32	0.25	0.82	0.10	0.40	0.38	0.22	0.66	0.46	0.02	0.05	0.15	0.07	0.64	0.05	0.10	0.36	0.12	0.34	0.04	0.15	0.11	0.08	0.21	0.21	4.03
Indeno(1,2,3-cd)pyrene	mg/kg	0.01			0.01	0.28	0.02	0.02	0.02	0.01	< 0.01	0.01	0.06	0.01	0.04	0.06	0.01	0.04	0.05	0.04	0.02	0.28	0.20	0.27	0.21	0.69	0.06	0.24	0.25	0.15	0.45	0.34	0.01	0.03	0.10	0.05	0.34	0.02	0.07	0.22	0.08	0.22	0.03	0.06	0.08	0.06	0.14	0.12	2.41
Dibenzo(a,h)anthracene	mg/kg	0.01			< 0.01	0.12	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.02	0.03	< 0.01	0.02	0.02	0.02	< 0.01	0.10	0.08	0.11	0.08	0.27	0.02	0.09	0.10	0.05	0.16	0.13	< 0.01	< 0.01	0.04	0.02	0.14	0.01	0.03	0.08	0.03	0.09	0.01	0.03	0.04	0.04	0.07	0.06	0.94
Benzo[g,h,i]perylene	mg/kg	0.01			0.02	0.32	0.02	0.02	0.03	0.01	< 0.01	0.02	0.07	0.01	0.05	0.08	0.02	0.05	0.06	0.05	0.03	0.33	0.24	0.32	0.25	0.82	0.07	0.30	0.29	0.15	0.47	0.38	0.02	0.04	0.10	0.06	0.36	0.03	0.08	0.25	0.10	0.27	0.04	0.07	0.10	0.08	0.15	0.14	2.69

Toureen Group

CHEMICAL RESULTS SUMMARY CAPPING VALIDATION

Lab Reference					299706	299708	299963	299965	299967	299969	299971	299973	299975
Sample Type					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location					K5. 1	L5. 1	A7.1	B7.1	C7.1	D7.1	E7.1	F7.1	G7.1
Sampling Date					25/10/2022	25/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Units**	**LOD**	**SAC Cover Reuse Criteria**	**Phytotoxic SAC Planting**									
Soil sample preparation parameters													
Moisture Content	%	0.1			0.2	10.7	9.9	11.8	10.8	12.8	10.6	11.2	12.5
Material removed	%	0.1			26.3	13.7	13.1	7.1	6.2	7.9	6.1	6.2	9.2
Description of Inert material removed		0			Stones	Stones	Stones	Stones	Stones	ones/Brick/Cli	Stones/Clinke	Stones/Clinke	Stones/Clinker
Metals													
Arsenic	mg/kg	0.5	40	50	30.7	34.9	29.6	25.0	27.0	24.0	21.2	20.4	24.9
Cadmium	mg/kg	0.2	11	3	0.3	0.4	0.4	0.4	0.4	0.5	0.3	0.3	0.4
Chromium	mg/kg	1	910	400	43.3	43.9	40.8	35.4	35.2	35.3	25.8	22.5	32.1
Copper	mg/kg	4	1000	200	25.4	28.2	30.6	27.5	31.4	30.9	35.7	34.6	48.5
Lead	mg/kg	1	310		52.6	59.4	63.3	58.7	80.9	103	117	180	200
Mercury	mg/kg	0.1	10	1	0.2	0.1	0.2	0.2	0.7	0.4	0.4	0.4	0.4
Nickel	mg/kg	1	180	110	33.5	35.2	33.5	29.0	27.6	26.8	21.8	20.8	28.4
Selenium	mg/kg	1	430		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1
Vanadium	mg/kg	0.5	500		65.0	65.0	63.3	53.5	56.3	52.1	43.0	35.1	46.0
Zinc	mg/kg	4.5	1000	300	119	117	103	93.8	103	115	86.2	109	118
Inorganics													
Total Cyanide	mg/kg	1	24		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous													
Acid Neutralisation Capacity	mol/kg	0.1			< 0.1	n/t	< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Loss on Ignition	%	0.01			4.15	n/t	5.78	n/t	n/t	n/t	6.54	n/t	n/t
pH	pH units	0.1	Ideally 5 to 9		8.0	8.0	8.3	8.1	8.0	8.0	8.1	7.9	8.0
Total Organic Carbon	%	0.01			0.65	n/t	1.2	n/t	n/t	n/t	1.9	n/t	n/t
Phenols													
Phenol	mg/kg	1	10		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	mg/kg	1			< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	mg/kg	5	10		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons													
Naphthalene	mg/kg	0.1	2.3		< 0.1	< 0.01	< 0.1	< 0.01	< 0.01	0.02	< 0.1	0.03	0.02
Acenaphthylene	mg/kg	0.1			< 0.1	< 0.01	< 0.1	< 0.01	< 0.01	0.04	< 0.1	0.05	0.05
Acenaphthene	mg/kg	0.1			< 0.1	< 0.01	< 0.1	< 0.01	< 0.01	0.04	< 0.1	< 0.01	< 0.01
Fluorene	mg/kg	0.1			< 0.1	< 0.01	< 0.1	< 0.01	< 0.01	0.02	< 0.1	0.02	< 0.01
Phenanthrene	mg/kg	0.1			< 0.1	0.02	< 0.1	0.02	0.01	0.19	< 0.1	0.24	0.09
Anthracene	mg/kg	0.1			< 0.1	< 0.01	< 0.1	0.01	< 0.01	0.20	< 0.1	0.11	0.05
Fluoranthene	mg/kg	0.1			< 0.1	0.09	0.2	0.07	0.06	1.21	0.2	0.77	0.72
Pyrene	mg/kg	0.1			< 0.1	0.08	0.2	0.07	0.06	1.27	0.2	0.80	0.77
Benzo(a)anthracene	mg/kg	0.1			< 0.1	0.03	< 0.1	0.02	0.03	0.67	0.1	0.40	0.46
Chrysene	mg/kg	0.1			< 0.1	0.05	< 0.1	0.06	0.07	0.79	0.1	0.46	0.54
Benzo(b)fluoranthene	mg/kg	0.1			< 0.1	0.05	< 0.1	0.05	0.06	0.77	0.2	0.54	0.48
Benzo(k)fluoranthene	mg/kg	0.1			< 0.1	0.04	< 0.1	0.04	0.06	0.76	0.2	0.38	0.49
Benzo(a)pyrene	mg/kg	0.1	5.3		< 0.1	0.05	< 0.1	0.04	0.05	0.93	0.2	0.51	0.58
Indeno(1,2,3-cd)pyrene	mg/kg	0.1			< 0.1	0.04	< 0.1	0.03	0.04	0.55	0.1	0.37	0.43
Dibenzo(a,h)anthracene	mg/kg	0.1			< 0.1	0.02	< 0.1	0.01	0.01	0.19	< 0.1	0.11	0.16
Benzo[g,h,i]perylene	mg/kg	0.1			< 0.1	0.05	< 0.1	0.05	0.05	0.72	0.1	0.47	0.53
Total PAH(16)	mg/kg	0.4	250		< 0.4	n/t	0.5	n/t	n/t	n/t	1.7	n/t	n/t
Total (of 17) PAHs	mg/kg	2	250		< 2	n/t	< 2	n/t	n/t	n/t	< 2	n/t	n/t
BTEX													
Benzene	ug/kg	10	100		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	ug/kg	10			< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	ug/kg	10			< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	ug/kg	10	1000		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	ug/kg	10			< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	mg/kg	0.01			< 0.01	n/t	< 0.01	n/t	n/t	n/t	< 0.01	n/t	n/t
TPH CWG													
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01	50		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1			< 1.0	< 1.0	< 1.0	2.6	< 1.0	< 1.0	< 1.0	1.6	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	mg/kg	1			< 1.0	< 1.0	< 1.0	3.3	< 1.0	< 1.0	< 1.0	2.7	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01	50		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.5	1.3
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1			< 1.0	< 1.0	< 1.0	1.8	< 1.0	< 1.0	1.0	24.2	5.7
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.8	1.4
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	mg/kg	1			1.3	< 1.0	< 1.0	2.7	< 1.0	< 1.0	1.5	33.6	8.7
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	mg/kg	1	500		1.8	< 1.0	< 1.0	6.0	< 1.0	< 1.0	1.5	36.2	9.1
Mineral Oil w Florisil (EH_CU_1D_Total)	mg/kg	5			5	n/t	< 5	n/t	n/t	n/t	< 5	n/t	n/t
PCB (ICES 7 congeners)													
Total PCBs (7 congeners)	mg/kg	0.03			< 0.03	n/t	< 0.03	n/t	n/t	n/t	< 0.03	n/t	n/t
Organics													
Coal tar	%	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC													
Phenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.03	0.02
3-Chloroaniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
1-Methylnaphthalene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01
Hexachlorocyclopentadiene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04	0.01	0.05	0.05
1,2-Dinitrobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.01
4-nitrophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	< 0.01
2,3,5,6-Tetrachlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.02	< 0.01
4-Nitroaniline	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01			< 0.01	0.02	0.01	0.02	0.01	0.19	0.03	0.24	0.09
Anthracene	mg/kg	0.01			< 0.01	< 0.01	0.01	0.01	< 0.01	0.20	0.02	0.11	0.05
Carbazole	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.03	< 0.01
Dibutyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	mg/kg	0.01			0.02	0.09	0.07	0.07	0.06	1.21	0.15	0.77	0.72
Pyrene	mg/kg	0.01			0.02	0.08	0.08	0.07	0.06	1.27	0.15	0.80	0.77
Butyl benzyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	mg/kg	0.01			0.02	0.03	0.05	0.02	0.03	0.67	0.09	0.40	0.46
Chrysene	mg/kg	0.01			0.02	0.05	0.08	0.06	0.07	0.79	0.13	0.46	0.54
Bis(2-ethylhexyl)phthalate	mg/kg	0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	mg/kg	0.01			0.02	0.05	0.07	0.05	0.06	0.77	0.11	0.54	0.48
Benzo(k)fluoranthene	mg/kg	0.01			0.01	0.04	0.06	0.04	0.06	0.76	0.10	0.38	0.49
Benzo(a)pyrene	mg/kg	0.01			0.02	0.05	0.06	0.04	0.05	0.93	0.11	0.51	0.58
Indeno(1,2,3-cd)pyrene	mg/kg	0.01			0.01	0.04	0.04	0.03	0.04	0.55	0.08	0.37	0.43
Dibenzo(a,h)anthracene	mg/kg	0.01			< 0.01	0.02	0.02	0.01	0.01	0.19	0.03	0.11	0.16
Benzo[g,h,i]perylene	mg/kg	0.01			0.02	0.05	0.06	0.05	0.05	0.72	0.12	0.47	0.53

Lab Reference	299977	299979	299981	299983	299985	299654	299656	299658	299660	299662	299664	299666	299668
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	H7.1	I7.1	J7.1	K7.1	L7.1	G3. 1	H3 .1	I3. 1	J3. 1	A4. 1	B4. 1	C4. 1	D4. 1
Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand													
Soil sample preparation parameters													
Moisture Content	10.4	8.9	8.7	10.5	11.0	15.7	13.0	13.9	12.0	17.2	17.6	17.1	17.6
Material removed	7.5	8.3	7.4	4.6	7.2	29.4	27.9	19.0	24.7	22.5	26.8	21.6	17.5
Description of Inert material removed	Stones	Stones/Clinke	Stones	Stones	Stones/Clinker	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Metals													
Arsenic	30.6	42.1	27.9	28.6	29.9	24.2	31.6	25.2	24.8	30.3	32.4	35.7	27.7
Cadmium	0.5	0.6	0.5	1.0	0.9	0.5	0.4	0.3	0.2	0.5	0.5	0.5	0.5
Chromium	38.7	44.3	41.3	45.4	40.4	39.5	42.3	35.5	32.3	38.8	42.0	42.3	40.4
Copper	52.5	54.0	42.3	116	111	42.2	42.7	26.2	29.6	37.0	36.2	42.9	40.0
Lead	130	119	121	238	222	89.3	74.8	63.9	82.2	82.4	89.1	109	101
Mercury	0.4	0.3	0.4	0.8	0.7	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Nickel	32.7	45.3	31.1	37.4	36.7	30.7	35.9	29.3	25.7	31.7	32.5	32.2	31.4
Selenium	< 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
Vanadium	60.7	73.4	57.3	61.3	53.3	52.5	63.0	54.8	49.4	59.9	66.9	64.7	60.9
Zinc	181	143	166	430	396	130	101	91.7	99.1	124	129	207	169
Inorganics													
Total Cyanide	< 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
Miscellaneous													
Acid Neutralisation Capacity	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Loss on Ignition	n/t	4.92	n/t	n/t	n/t	n/t	n/t	5.29	n/t	n/t	n/t	n/t	n/t
pH	8.1	8.1	8.1	8.0	8.0	9.0	8.7	8.5	8.4	8.0	8.0	7.9	7.9
Total Organic Carbon	n/t	1.1	n/t	n/t	n/t	n/t	n/t	1.0	n/t	n/t	n/t	n/t	n/t
Phenols													
Phenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons													
Naphthalene	< 0.01	< 0.1	0.02	0.01	< 0.01	0.03	< 0.01	< 0.1	< 0.01	0.01	< 0.01	0.03	0.02
Acenaphthylene	0.01	< 0.1	0.04	0.03	0.02	0.02	< 0.01	< 0.1	0.01	0.01	< 0.01	0.02	0.02
Acenaphthene	< 0.01	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	< 0.01	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	0.02	< 0.1	0.10	0.06	0.04	0.06	0.02	< 0.1	0.04	0.07	0.03	0.09	0.06
Anthracene	0.01	< 0.1	0.05	0.04	0.03	0.02	< 0.01	< 0.1	0.01	0.01	< 0.01	0.02	0.02
Fluoranthene	0.10	< 0.1	0.46	0.36	0.25	0.25	0.10	0.2	0.20	0.11	0.10	0.29	0.23
Pyrene	0.10	< 0.1	0.48	0.38	0.26	0.25	0.09	0.1	0.19	0.11	0.09	0.28	0.22
Benzo(a)anthracene	0.06	< 0.1	0.24	0.23	0.18	0.11	0.04	< 0.1	0.11	0.06	0.03	0.13	0.11
Chrysene	0.10	< 0.1	0.30	0.33	0.25	0.14	0.07	< 0.1	0.12	0.07	0.05	0.16	0.13
Benzo(b)fluoranthene	0.10	< 0.1	0.36	0.39	0.26	0.12	0.05	0.1	0.10	0.06	0.04	0.18	0.17
Benzo(k)fluoranthene	0.08	< 0.1	0.29	0.35	0.24	0.12	0.06	0.2	0.12	0.07	0.05	0.13	0.14
Benzo(a)pyrene	0.08	< 0.1	0.30	0.33	0.26	0.13	0.06	0.1	0.12	0.08	0.05	0.16	0.13
Indeno(1,2,3-cd)pyrene	0.07	< 0.1	0.23	0.29	0.21	0.08	0.04	< 0.1	0.07	0.04	0.03	0.11	0.07
Dibenzo(a,h)anthracene	0.03	< 0.1	0.07	0.09	0.07	0.03	0.01	< 0.1	0.03	0.02	0.01	0.03	0.03
Benzo[g,h,i]perylene	0.10	< 0.1	0.30	0.39	0.27	0.10	0.05	< 0.1	0.08	0.05	0.03	0.11	0.08
Total PAH(16)	n/t	< 0.4	n/t	n/t	n/t	n/t	n/t	1.0	n/t	n/t	n/t	n/t	n/t
Total (of 17) PAHs	n/t	< 2	n/t	n/t	n/t	n/t	n/t	< 2	n/t	n/t	n/t	n/t	n/t
BTEX													
Benzene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	n/t	< 0.01	n/t	n/t	n/t	n/t	n/t	< 0.01	n/t	n/t	n/t	n/t	n/t
TPH CWG													
>C5-C6 Aliphatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	< 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
>C10-C12 Aliphatic (EH_2D_AL)	< 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
>C12-C16 Aliphatic (EH_2D_AL)	< 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
>C16-C21 Aliphatic (EH_2D_AL)	< 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
>C21-C35 Aliphatic (EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	5.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	< 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
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.5	< 1.0	7.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	< 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
>C10-C12 Aromatic (EH_2D_AR)	< 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
>C12-C16 Aromatic (EH_2D_AR)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	< 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
>C21-C35 Aromatic (EH_2D_AR)	3.4	< 1.0	1.8	3.6	< 1.0	3.0	< 1.0	5.7	2.2	< 1.0	1.0	< 1.0	1.2
>C35-C40 Aromatic (EH_2D_AR)	< 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
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	6.1	< 1.0	3.5	6.0	< 1.0	4.1	< 1.0	9.2	3.1	< 1.0	1.8	< 1.0	2.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	6.9	< 1.0	4.0	7.0	< 1.0	5.6	< 1.0	16.7	3.1	< 1.0	1.8	< 1.0	2.8
Mineral Oil w Florisil (EH_CU_1D_Total)	n/t	< 5	n/t	n/t	n/t	n/t	n/t	< 5	n/t	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)													
Total PCBs (7 congeners)	n/t	< 0.03	n/t	n/t	n/t	n/t	n/t	< 0.03	n/t	n/t	n/t	n/t	n/t
Organics													
Coal tar	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC													
Phenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01
N-Nitrosodi-n-propylamine	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	< 0.01	< 0.01	0.02	0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.03	0.02
3-Chloroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.03	< 0.01	0.03	< 0.01
1-Methylnaphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.03	< 0.01	0.02	< 0.01
Hexachlorocyclopentadiene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	0.01	< 0.01	0.04	0.03	0.02	0.02	< 0.01	0.02	0.01	0.01	< 0.01	0.02	0.02
1,2-Dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-nitrophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	0.02	< 0.01	0.10	0.06	0.04	0.06	0.02	0.07	0.04	0.07	0.03	0.09	0.06
Anthracene	0.01	< 0.01	0.05	0.04	0.03	0.02	< 0.01	0.02	0.01	0.01	< 0.01	0.02	0.02
Carbazole	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	0.10	0.03	0.46	0.36	0.25	0.25	0.10	0.28	0.20	0.11	0.10	0.29	0.23
Pyrene	0.10	0.03	0.48	0.38	0.26	0.25	0.09	0.26	0.19	0.11	0.09	0.28	0.22
Butyl benzyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	0.06	0.03	0.24	0.23	0.18	0.11	0.04	0.13	0.11	0.06	0.03	0.13	0.11
Chrysene	0.10	0.03	0.30	0.33	0.25	0.14	0.07	0.14	0.12	0.07	0.05	0.16	0.13
Bis(2-ethylhexyl)phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	0.10	0.03	0.36	0.39	0.26	0.12	0.05	0.11	0.10	0.06	0.04	0.18	0.17
Benzo(k)fluoranthene	0.08	0.04	0.29	0.35	0.24	0.12	0.06	0.14	0.12	0.07	0.05	0.13	0.14
Benzo(a)pyrene	0.08	0.03	0.30	0.33	0.26	0.13	0.06	0.13	0.12	0.08	0.05	0.16	0.13
Indeno(1,2,3-cd)pyrene	0.07	0.03	0.23	0.29	0.21	0.08	0.04	0.08	0.07	0.04	0.03	0.11	0.07
Dibenzo(a,h)anthracene	0.03	< 0.01	0.07	0.09	0.07	0.03	0.01	0.03	0.03	0.02	0.01	0.03	0.03
Benzo[g,h,i]perylene	0.10	0.04	0.30	0.39	0.27	0.10	0.05	0.09	0.08	0.05	0.03	0.11	0.08

Lab Reference	299710	299712	299713	299715	299717	299719	299721
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	A6. 1	B6. 1	C6. 1	D6. 1	E6. 1	F6. 1	G6. 1
Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand							
Soil sample preparation parameters							
Moisture Content	16.3	13.3	13.9	12.3	17.4	12.5	11.1
Material removed	18.5	23.9	24.0	20.5	19.2	23.8	26.1
Description of Inert material removed	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Metals							
Arsenic	28.2	34.9	30.9	30.1	24.3	27.4	28.5
Cadmium	0.5	0.5	0.4	0.3	0.5	0.4	0.3
Chromium	42.0	46.4	41.7	44.0	36.4	37.9	32.0
Copper	31.3	36.4	26.8	27.7	28.9	31.0	20.5
Lead	77.9	95.5	65.4	72.8	84.3	82.5	40.8
Mercury	0.3	0.3	0.2	0.2	0.2	0.2	0.1
Nickel	34.4	39.0	32.6	30.9	27.5	29.5	29.0
Selenium	1.5	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0
Vanadium	63.4	70.1	60.8	57.2	54.4	54.2	51.5
Zinc	132	150	113	102	129	116	82.9
Inorganics							
Total Cyanide	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous							
Acid Neutralisation Capacity	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Loss on Ignition	n/t	n/t	n/t	n/t	n/t	n/t	n/t
pH	7.6	7.9	7.9	8.0	7.6	7.8	8.0
Total Organic Carbon	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenols							
Phenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons							
Naphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	0.02	0.03	0.01	0.01	0.10	0.10	0.02
Anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	0.07	0.12	0.04	0.05	0.37	0.34	0.08
Pyrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	0.05	0.06	0.02	0.03	0.18	0.18	0.04
Chrysene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	0.04	0.05	0.03	0.03	0.22	0.17	0.04
Benzo(k)fluoranthene	0.04	0.08	0.02	0.03	0.15	0.16	0.04
Benzo(a)pyrene	0.04	0.07	0.03	0.04	0.16	0.19	0.05
Indeno(1,2,3-cd)pyrene	0.03	0.04	0.01	0.02	0.10	0.11	0.03
Dibenzo(a,h)anthracene	0.01	0.02	< 0.01	< 0.01	0.04	0.04	0.01
Benzo[g,h,i]perylene	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Total PAH(16)	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Total (of 17) PAHs	n/t	n/t	n/t	n/t	n/t	n/t	n/t
BTEX							
Benzene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	n/t	n/t	n/t	n/t	n/t	n/t	n/t
TPH CWG							
>C5-C6 Aliphatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Mineral Oil w Florisil (EH_CU_1D_Total)	n/t	n/t	n/t	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)							
Total PCBs (7 congeners)	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Organics							
Coal tar	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC							
Phenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	< 0.01
3-Chloroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Methylnaphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	< 0.01	0.01	< 0.01	< 0.01	0.01	0.02	< 0.01
1,2-Dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-nitrophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	0.02	0.03	0.01	0.01	0.10	0.10	0.02
Anthracene	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.02	< 0.01
Carbazole	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01
Dibutyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	0.07	0.12	0.04	0.05	0.37	0.34	0.08
Pyrene	0.07	0.11	0.04	0.05	0.32	0.33	0.08
Butyl benzyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	0.05	0.06	0.02	0.03	0.18	0.18	0.04
Chrysene	0.04	0.06	0.03	0.03	0.19	0.22	0.05
Bis(2-ethylhexyl)phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	0.04	0.05	0.03	0.03	0.22	0.17	0.04
Benzo(k)fluoranthene	0.04	0.08	0.02	0.03	0.15	0.16	0.04
Benzo(a)pyrene	0.04	0.07	0.03	0.04	0.16	0.19	0.05
Indeno(1,2,3-cd)pyrene	0.03	0.04	0.01	0.02	0.10	0.11	0.03
Dibenzo(a,h)anthracene	0.01	0.02	< 0.01	< 0.01	0.04	0.04	0.01
Benzo[g,h,i]perylene	0.04	0.05	0.02	0.03	0.11	0.13	0.04

Lab Reference	302319	302321	302323	302325	302327	302329	302331	302333	302335	302337	302339	302341	302343	302345	302347	302313	302315	302317
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL		SOIL	SOIL	SOIL	SOIL
Sample Location	A8.1	B8.1	C8.1	D8.1	E8.1	F8.1	G8.1	H8.1	I8.1	J8.1	K8.1	L8.1	LN12.1	LN35.1	LN68.1	J1.1	K1.1	L1.1
Sampling Date	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand																		
Soil sample preparation parameters																		
Moisture Content	9.3	10.2	12.1	10.5	12.2	12.0	15.0	12.5	15.4	12.3	13.3	13.3	15.7	15.7	14.6	13.9	15.6	16.6
Material removed	6.8	10.0	9.3	8.9	7.9	8.0	5.3	5.9	9.3	11.2	6.6	9.8	13.7	7.4	6.1	4.8	8.2	9.3
Description of Inert material removed	Stones/Clinke	Stones/Bricl	ones/Brick/Cli	ones/Brick/Cli	Stones	Stones/Clinke	Stones/Brick	ones/Brick/Cli	Stones	ones/Brick/Cli	ones/Brick/Cli	ones/Brick/Cli	Stones	Stones	Stones	Stones	Stones/Clinke	Stones/Clinke
Metals																		
Arsenic	28.0	25.5	30.6	26.6	24.8	29.0	22.6	25.1	26.5	24.5	22.8	23.6	29.1	23.5	23.4	25.0	24.9	31.1
Cadmium	0.4	0.4	3.1	0.5	0.4	0.7	0.5	0.4	0.5	0.6	0.5	0.6	0.7	0.6	0.6	0.6	0.6	0.7
Chromium	41.4	34.3	44.5	40.6	38.2	45.8	36.5	38.2	40.2	37.7	34.4	35.4	46.0	40.0	36.2	42.5	42.9	50.7
Copper	45.3	41.9	59.5	45.6	48.6	103	47.8	45.7	60.6	71.5	57.9	61.7	81.2	64.5	63.8	54.6	63.6	76.9
Lead	126	117	131	122	129	1160	138	248	149	139	128	143	208	143	138	153	159	254
Mercury	0.4	0.4	0.6	0.4	0.4	0.6	0.4	0.3	0.4	0.6	0.4	0.5	0.5	0.4	0.5	0.4	0.5	0.5
Nickel	35.2	30.8	37.2	34.0	30.6	41.4	28.4	30.9	32.3	31.1	29.0	30.4	37.8	31.2	31.5	31.7	32.6	39.1
Selenium	< 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	< 1.0
Vanadium	61.5	53.8	68.9	61.9	54.5	64.9	52.1	57.5	57.1	55.2	51.0	50.5	63.9	54.1	51.6	59.1	58.3	69.8
Zinc	171	152	186	171	184	329	167	161	189	203	175	212	292	220	245	208	253	268
Inorganics																		
Total Cyanide	< 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	< 1.0
Miscellaneous																		
Acid Neutralisation Capacity	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Loss on Ignition	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
pH	7.3	7.4	7.5	7.7	7.7	7.8	7.9	7.9	8.0	7.9	8.0	8.0	7.9	8.0	8.0	6.5	6.9	7.1
Total Organic Carbon	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenols																		
Phenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons																		
Naphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	< 0.01	< 0.1	< 0.01	0.02	0.02	0.02
Acenaphthylene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.1	< 0.01	< 0.1	< 0.01	0.03	0.02	0.04
Acenaphthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.1	< 0.01	< 0.1	< 0.01	0.02	< 0.01	0.01
Fluorene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.1	< 0.01	< 0.1	< 0.01	0.02	< 0.01	0.01
Phenanthrene	0.11	1.04	0.18	0.08	0.53	0.28	0.40	0.12	0.07	0.16	0.09	1.5	0.10	< 0.1	0.23	0.16	0.08	0.12
Anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.4	< 0.01	< 0.1	< 0.01	0.04	0.02	0.03
Fluoranthene	0.35	4.34	0.71	0.28	1.35	0.96	0.83	0.65	0.27	0.60	0.27	3.5	0.47	0.3	0.89	0.38	0.28	0.45
Pyrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	2.9	< 0.01	0.3	< 0.01	0.37	0.28	0.45
Benzo(a)anthracene	0.18	2.59	0.39	0.16	0.69	0.53	0.43	0.41	0.19	0.31	0.15	1.6	0.26	0.2	0.44	0.18	0.13	0.25
Chrysene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	2.1	< 0.01	0.2	< 0.01	0.19	0.14	0.25
Benzo(b)fluoranthene	0.21	3.95	0.51	0.31	1.15	0.74	0.51	0.60	0.26	0.50	0.20	3.4	0.36	0.3	0.58	0.18	0.16	0.37
Benzo(k)fluoranthene	0.18	2.74	0.42	0.22	0.72	0.56	0.38	0.47	0.19	0.40	0.18	3.7	0.27	0.3	0.39	0.17	0.13	0.27
Benzo(a)pyrene	0.18	3.36	0.50	0.20	1.20	0.59	0.41	0.46	0.20	0.49	0.21	3.9	0.30	0.2	0.45	0.18	0.14	0.28
Indeno(1,2,3-cd)pyrene	0.11	2.12	0.31	0.16	0.92	0.45	0.28	0.30	0.13	0.35	0.12	3.2	0.23	0.2	0.32	0.11	0.09	0.17
Dibenzo(a,h)anthracene	0.05	0.68	0.11	0.06	0.29	0.16	0.11	0.12	0.06	0.12	0.05	0.6	0.09	< 0.1	0.13	0.05	0.04	0.07
Benzo[g,h,i]perylene	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	3.0	n/t	0.2	n/t	0.14	0.11	0.21
Total PAH(16)	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	30.5	n/t	2.5	n/t	n/t	n/t	n/t
Total (of 17) PAHs	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	31	n/t	2	n/t	n/t	n/t	n/t
BTEX																		
Benzene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
TPH CWG																		
>C5-C6 Aliphatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	< 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	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	< 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	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	< 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	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	< 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	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	< 1.0	< 1.0	2.6	2.2	< 1.0	< 1.0	2.9	4.2	3.2	4.3	2.4	2.2	1.1	3.3	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	< 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	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	< 1.0	< 1.0	3.5	2.8	< 1.0	< 1.0	3.8	5.8	4.8	5.7	3.2	3.4	1.4	4.8	< 1.0	< 1.0	< 1.0	1.2
>C5-C7 Aromatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	< 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	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	< 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	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	< 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	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	< 1.0	< 1.0	< 1.0	1.5	< 1.0	< 1.0	1.4	3.8	1.6	2.3	1.2	2.8	< 1.0	3.9	1.1	1.1	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	< 1.0	< 1.0	5.3	21.4	< 1.0	< 1.0	41.2	23.2	10.7	16.3	9.0	18.3	5.2	24.1	7.6	3.9	< 1.0	7.4
>C35-C40 Aromatic (EH_2D_AR)	< 1.0	< 1.0	1.4	7.2	< 1.0	< 1.0	13.5	3.4	1.2	2.4	< 1.0	2.4	< 1.0	5.0	1.3	< 1.0	< 1.0	5.4
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	< 1.0	< 1.0	8.0	30.8	< 1.0	< 1.0	57.2	31.7	14.7	22.1	11.9	24.5	6.6	34.2	10.6	5.6	< 1.0	13.6
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	< 1.0	< 1.0	11.5	33.6	< 1.0	< 1.0	61.0	37.6	19.5	27.8	15.1	28.0	8.0	39.1	11.6	6.2	< 1.0	14.8
Mineral Oil w Florisil (EH_CU_1D_Total)	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	< 5	n/t	< 5	n/t			
PCB (ICES 7 congeners)																		
Total PCBs (7 congeners)	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	< 0.03	n/t	< 0.03	n/t			
Organics																		
Coal tar	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01			
SVOC																		
Phenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	0.02	0.05	0.02	0.02	0.04	0.04	0.03	0.04	0.02	0.03	0.02	0.06	0.03	0.02	0.02	0.02	0.02	0.02
3-Chloroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	< 0.01	0.02	0.01	< 0.01	0.03	0.02	0.01	0.01	0.01	0.01	< 0.01	0.03	0.01	< 0.01	0.01	0.01	< 0.01	0.01
1-Methylnaphthalene	< 0.01	0.02	< 0.01	< 0.01	0.02	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	0.03	0.23	0.05	0.03	0.05	0.08	0.04	0.06	0.03	0.06	0.04	0.08	0.03	0.05	0.06	0.03	0.02	0.04
1,2-Dinitrobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	< 0.01	0.04	< 0.01	< 0.01	0.04	0.01	0.03	0.01	< 0.01	< 0.01	< 0.01	0.03	< 0.01	0.01	0.01	0.02	< 0.01	0.01
4-nitrophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	< 0.01	0.03	< 0.01	< 0.01	0.03	0.02	0.02	0.01	< 0.01	0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	< 0.01	0.03	< 0.01	< 0.01	0.03	0.02	0.05	< 0.01	< 0.01	< 0.01	< 0.01	0.03	< 0.01	0.01	< 0.01	0.02	< 0.01	0.01
4-Nitroaniline	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	0.11	1.04	0.18	0.08	0.53	0.28	0.40	0.12	0.07	0.16	0.09	0.40	0.10	0.20	0.23	0.16	0.08	0.12
Anthracene	0.05	0.40	0.05	0.02	0.14	0.08	0.13	0.05	0.03	0.05	0.03	0.13	0.03	0.06	0.07	0.04	0.02	0.03
Carbazole	0.01	0.05	0.01	0.01	0.05	0.02	0.04	0.01	< 0.01	0.01	< 0.01	0.03	< 0.01	0.01	0.02	0.01	< 0.01	< 0.01
Dibutyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	0.35	4.34	0.71	0.28	1.35	0.96	0.83	0.65	0.27	0.60	0.27	1.32	0.47	0.81	0.89	0.38	0.28	0.45
Pyrene	0.34	4.13	0.67	0.27	1.28	0.93	0.77	0.63	0.27	0.59	0.26	1.26	0.47	0.74	0.81	0.37	0.28	0.45
Butyl benzyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	0.18	2.59	0.39	0.16	0.69	0.53	0.43	0.41	0.19	0.31	0.15	0.76	0.26	0.37	0.44	0.18	0.13	0.25
Chrysene	0.22	2.80	0.43	0.19	0.71	0.56	0.42	0.37	0.17	0.34	0.16	0.77	0.27	0.40	0.44	0.19	0.14	0.25
Bis(2-ethylhexyl)phthalate	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	0.21	3.95	0.51	0.31	1.15	0.74	0.51	0.60	0.26	0.50	0.20	1.12	0.36	0.60	0.58	0.18	0.16	0.37
Benzo(k)fluoranthene	0.18	2.74	0.42	0.22	0.72	0.56	0.38	0.47	0.19	0.40	0.18	0.73	0.27	0.37	0.39	0.17	0.13	0.27
Benzo(a)pyrene	0.18	3.36	0.50	0.20	1.20	0.59	0.41	0.46	0.20	0.49	0.21	0.90	0.30	0.38	0.45	0.18	0.14	0.28
Indeno(1,2,3-cd)pyrene	0.11	2.12	0.31	0.16	0.92	0.45	0.28	0.30	0.13	0.35	0.12	0.67	0.23	0.22	0.32	0.11	0.09	0.17
Dibenzo(a,h)anthracene	0.05	0.68	0.11	0.06	0.29	0.16	0.11	0.12	0.06	0.12	0.05	0.25	0.09	0.10	0.13	0.05	0.04	0.07
Benzo[g,h,i]perylene	0.15	2.36	0.36	0.20	1.15	0.52	0.34	0.40	0.17	0.43	0.16	0.79	0.27	0.29	0.39	0.14	0.11	0.21

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ACM RESULTS SUMMARY CAPPING VALIDATION

Elab No.	Clients Reference	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299388	A3	No asbestos detected	n/t	n/t	n/t	n/t
299390	B2	No asbestos detected	n/t	n/t	n/t	n/t
299391	B3	No asbestos detected	n/t	n/t	n/t	n/t
299393	C2	No asbestos detected	n/t	n/t	n/t	n/t
299394	C3	No asbestos detected	n/t	n/t	n/t	n/t
299395	C3	No asbestos detected	n/t	n/t	n/t	n/t
299396	D2	No asbestos detected	n/t	n/t	n/t	n/t
299397	D3	No asbestos detected	n/t	n/t	n/t	n/t
299398	E1	No asbestos detected	n/t	n/t	n/t	n/t
299399	E2	No asbestos detected	n/t	n/t	n/t	n/t
299379	F1	No asbestos detected	n/t	n/t	n/t	n/t
299380	F2	No asbestos detected	n/t	n/t	n/t	n/t
299381	G1	No asbestos detected	n/t	n/t	n/t	n/t
299382	G2	No asbestos detected	n/t	n/t	n/t	n/t
299383	H1	No asbestos detected	n/t	n/t	n/t	n/t
299384	H2	No asbestos detected	n/t	n/t	n/t	n/t
299385	I1	No asbestos detected	n/t	n/t	n/t	n/t
299386	J1	No asbestos detected	n/t	n/t	n/t	n/t
299349	A3-1-2	No asbestos detected	n/t	n/t	n/t	n/t
299350	B3	No asbestos detected	n/t	n/t	n/t	n/t
299351	B3-1-2	No asbestos detected	n/t	n/t	n/t	n/t
299353	C3-1-2	No asbestos detected	n/t	n/t	n/t	n/t
299354	D3-1	No asbestos detected	n/t	n/t	n/t	n/t
299355	D3-1-2	No asbestos detected	n/t	n/t	n/t	n/t
299356	E3-1	No asbestos detected	n/t	n/t	n/t	n/t
299357	E3-1-2	No asbestos detected	n/t	n/t	n/t	n/t
299358	F3-1	No asbestos detected	n/t	n/t	n/t	n/t
299359	F3-1-2	No asbestos detected	n/t	n/t	n/t	n/t
299670	E4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299671	E4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299672	F4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299673	F4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299674	G4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299675	G4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299676	H4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299677	H4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299678	I4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299679	I4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299680	J4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299681	J4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299682	K4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299683	K4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299684	L4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299685	L4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299686	A5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299687	A5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299688	B5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299689	B5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299690	C5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299691	C5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299692	D5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299693	D5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299694	E5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299695	E5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299696	F5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299697	F5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299698	G5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299699	G5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299700	H5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299701	H5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299723	H6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299724	H6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299726	I6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299727	I6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299728	J6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299729	J6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299730	K6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299731	K6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299732	L6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299733	L6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299723	H6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299724	H6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299726	I6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299727	I6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299728	J6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299729	J6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299730	K6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299731	K6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t

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ACM RESULTS SUMMARY CAPPING VALIDATION

Elab No.	Clients Reference	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299732	L6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299733	L6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299702	I5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299703	I5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299704	J5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299705	J5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299706	K5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299707	K5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299708	L5. 1	No asbestos detected	n/t	n/t	n/t	n/t
299709	L5. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299963	A7.1	No asbestos detected	n/t	n/t	n/t	n/t
299964	A7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299965	B7.1	No asbestos detected	n/t	n/t	n/t	n/t
299966	B7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299967	C7.1	No asbestos detected	n/t	n/t	n/t	n/t
299968	C7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299969	D7.1	No asbestos detected	n/t	n/t	n/t	n/t
299970	D7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299971	E7.1	No asbestos detected	n/t	n/t	n/t	n/t
299972	E7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299973	F7.1	No asbestos detected	n/t	n/t	n/t	n/t
299974	F7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299975	G7.1	No asbestos detected	n/t	n/t	n/t	n/t
299976	G7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299977	H7.1	No asbestos detected	n/t	n/t	n/t	n/t
299978	H7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299979	I7.1	No asbestos detected	n/t	n/t	n/t	n/t
299980	I7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299981	J7.1	No asbestos detected	n/t	n/t	n/t	n/t
299982	J7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299983	K7.1	No asbestos detected	n/t	n/t	n/t	n/t
299984	K7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299985	L7.1	No asbestos detected	n/t	n/t	n/t	n/t
299986	L7.1.2	No asbestos detected	n/t	n/t	n/t	n/t
299654	G3. 1	No asbestos detected	n/t	n/t	n/t	n/t
299655	G3. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299656	H3 .1	No asbestos detected	n/t	n/t	n/t	n/t
299657	H3. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299658	I3. 1	No asbestos detected	n/t	n/t	n/t	n/t
299659	I3. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299660	J3. 1	No asbestos detected	n/t	n/t	n/t	n/t
299661	J3. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299662	A4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299663	A4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299664	B4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299665	B4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299666	C4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299667	C4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299668	D4. 1	No asbestos detected	n/t	n/t	n/t	n/t
299669	D4. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299710	A6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299711	A6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299712	B6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299713	C6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299714	C6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299715	D6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299716	D6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299717	E6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299718	E6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299719	F6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299720	F6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
299721	G6. 1	No asbestos detected	n/t	n/t	n/t	n/t
299722	G6. 1.2	No asbestos detected	n/t	n/t	n/t	n/t
302319	A8.1	No asbestos detected	n/t	n/t	n/t	n/t
302320	A8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302321	B8.1	No asbestos detected	n/t	n/t	n/t	n/t
302322	B8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302323	C8.1	No asbestos detected	n/t	n/t	n/t	n/t
302324	C8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302325	D8.1	No asbestos detected	n/t	n/t	n/t	n/t
302326	D8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302327	E8.1	No asbestos detected	n/t	n/t	n/t	n/t
302328	E8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302329	F8.1	No asbestos detected	n/t	n/t	n/t	n/t
302330	F8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302331	G8.1	No asbestos detected	n/t	n/t	n/t	n/t
302332	G8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302333	H8.1	No asbestos detected	n/t	n/t	n/t	n/t

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ACM RESULTS SUMMARY CAPPING VALIDATION

Elab No.	Clients Reference	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
302334	H8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302335	I8.1	No asbestos detected	n/t	n/t	n/t	n/t
302336	I8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302337	J8.1	No asbestos detected	n/t	n/t	n/t	n/t
302338	J8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302339	K8.1	No asbestos detected	n/t	n/t	n/t	n/t
302340	K8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302341	L8.1	No asbestos detected	n/t	n/t	n/t	n/t
302342	L8.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302343	LN12.1	No asbestos detected	n/t	n/t	n/t	n/t
302344	JN12.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302345	LN35.1	No asbestos detected	n/t	n/t	n/t	n/t
302346	LN35.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302347	LN68.1	No asbestos detected	n/t	n/t	n/t	n/t
302348	LN68.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302313	J1.1	No asbestos detected	n/t	n/t	n/t	n/t
302314	J1.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302315	K1.1	No asbestos detected	n/t	n/t	n/t	n/t
302316	K1.1.2	No asbestos detected	n/t	n/t	n/t	n/t
302317	L1.1	No asbestos detected	n/t	n/t	n/t	n/t
302318	L1.1.2	No asbestos detected	n/t	n/t	n/t	n/t

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CAPPING WAC RESULTS SUMMARY

Elab Ref:		Landfill Waste Acceptance Criteria Limits*																
Sample ID:		Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	299398	299397	299393	299392	299698	299690	299706	299971	299963	299979	299658	299356	302341	302345
Sample Date:					20/10/2022	20/10/2022	20/10/2022	20/10/2022	25/10/2022	25/10/2022	25/10/2022	26/10/2022	26/10/2022	26/10/2022	25/10/2022	21/10/2022	17/11/2022	17/11/2022
Sample Location:					E1 (E2)	D3	C2	B3	G5. 1	C5. 1	K5. 1	E7.1	A7.1	I7.1	I3. 1	E3-1	L8.1	LN35-1
Site:																		
Determinand	**Units**																	
Total Organic Carbon	%	3	5	6	2.50	1.50	1.40	2.40	1.90	2.20	0.65	1.90	1.20	1.10	1.00	1.90	1.50	1.60
Loss on Ignition	%	--	--	10	7.1	5.3	5.5	7.5	6.3	< 0.01	4.2	6.5	5.8	4.9	5.3	8.1	5.3	5.3
Total BTEX	mg/kg	6	--	--	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PCBs (7 congeners)	mg/kg	1	--	--	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
TPH Total WAC (EH_CU_1D_Total)	mg/kg	500	--	--	< 5	6	5	7	9	7	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Total (of 17) PAHs	mg/kg	100	--	--	4.0	3.0	< 2	2.0	4.0	< 2	< 2	< 2	< 2	< 2	< 2	4.0	31.0	2.0
pH		--	>6	--	7.2	7.2	6.8	6.7	7.9	8.0	8.0	8.1	8.3	8.1	8.5	7.8	8.0	8.0
Acid Neutralisation Capacity	mol/kg	--	To evaluate	To evaluate	< 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
Eluate Analysis	**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**			**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**	**10:1**
	mg/l				**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Arsenic	< 0.005	0.5	2	25	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Barium	< 0.005	20	100	300	0.09	0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05	0.06	< 0.05	0.07	< 0.05	< 0.05	0.09	0.09
Cadmium	< 0.001	0.04	1	5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chromium	< 0.005	0.5	10	70	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Copper	< 0.005	2	50	100	0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Mercury	< 0.005	0.01	0.2	2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Molybdenum	< 0.005	0.5	10	30	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	< 0.001	0.4	10	40	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Lead	< 0.001	0.5	10	50	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Antimony	< 0.005	0.06	0.7	5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Selenium	< 0.005	0.1	0.5	7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Zinc	0.011	4	50	200	< 0.05	< 0.05	0.09	0.17	< 0.05	< 0.05	0.11	0.11	0.06	< 0.05	< 0.05	< 0.05	0.07	0.09
Chloride	< 5	800	15000	25000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Fluoride	< 5	10	150	500	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate	< 1	1000	20000	50000	17.50	< 10.0	13.70	17.00	13.80	< 10.0	< 10.0	13.80	< 10.0	36.20	11.50	12.60	48.90	26.10
Total Dissolved Solids	35	4000	60000	100000	735.00	438.00	183.00	285.00	531.00	310.00	350.00	583.00	422.00	525.00	498.00	318.00	807.00	726.00
Phenol Index	< 0.01	1	-	-	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dissolved Organic Carbon	7.820	500	800	1000	88.00	71.00	81.00	106.00	83.00	93.00	78.00	82.00	72.00	63.00	77.00	150.00	106.00	115.00

Toureen Group

GEOTECHNICAL LAB SUMMARY

No./Ref	Description	Date of Sample	Date Received	Test Type	Results	Analytical report No.
IC1	Imported Crushed 6F5	20/11/2022	20/11/2022	Constituent Parts	Compliant <1% ClassX	EJ1552-L531
IC2	Imported Crushed 6F5	20/11/2022	20/11/2022	Constituent Parts	Compliant <1% ClassX	EJ1552-L5318
SW1	Site Won Crushed 6F5	20/11/2022	20/11/2022	Constituent Parts	Compliant <1% ClassX	EJ1552-L5319
SW2	Site Won Crushed 6F5	20/11/2022	20/11/2022	Constituent Parts	Compliant <1% ClassX	EJ1552-L5320
IC1	Imported Crushed 6F5	16/11/2022	17/11/2022	PSD	Compliant with 6F5 Grading	EJ1552-L5317
SW1	Site Won Crushed 6F5	16/11/2022	17/11/2022	PSD	Compliant with 6F5 Grading	EJ1552-L5319

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GEOTECHNICAL SITE SUMMARY

No./Ref	Description	Date	Location		Test Type	CBR (%)	Deformation (mm)	Report Ref	Notes
			Grid	Layer					
ES4422-1	CBR Validation	03/11/2022	Car Park	Final	CBR	18	1.58	ES4422-1	CBR validation test of car park
ES4422-2	CBR Validation	03/11/2022	Car Park	Final	CBR	19	1.55	ES4422-2	CBR validation test of car park
ES4422-3	CBR Validation	03/11/2022	Car Park	Final	CBR	39	1.68	ES4422-3	CBR validation test of car park
ES4422-4	CBR Validation	03/11/2022	Car Park	Final	CBR	65	1.56	ES4422-4	CBR validation test of car park
ES4428-1	CBR Validation	11/11/2022	Pile Mat	Final	CBR	n/a	3.96	ES4428-1	CBR validation test of pile mat
ES4431-1	CBR Validation	11/11/2022	Pile Mat	Final	CBR	n/a	4.19	ES4431-1	CBR validation test of pile mat
ES4431-2	CBR Validation	11/11/2022	Pile Mat	Final	CBR	n/a	6.31	ES4431-2	CBR validation test of pile mat
ES4431-3	CBR Validation	11/11/2022	Pile Mat	Final	CBR	n/a	3.05	ES4431-3	CBR validation test of pile mat
ES4431-4	CBR Validation	11/11/2022	Pile Mat	Final	CBR	n/a	5.22	ES4431-4	CBR validation test of pile mat
ES4431-5	CBR Validation	11/11/2022	Pile Mat	Final	CBR	n/a	3.75	ES4431-5	CBR validation test of pile mat
ES4431-6	CBR Validation	11/11/2022	Pile Mat	Final	CBR	n/a	4.32	ES4431-6	CBR validation test of pile mat
ES4438-1	CBR Validation	15/11/2022	Pile Mat	Final	CBR	n/a	2.17	ES4438-1	CBR validation test of pile mat
ES4438-2	CBR Validation	15/11/2022	Pile Mat	Final	CBR	n/a	3.58	ES4438-2	CBR validation test of pile mat
ES4438-3	CBR Validation	15/11/2022	Pile Mat	Final	CBR	n/a	4.74	ES4438-3	CBR validation test of pile mat
ES4469-1	CBR Validation	02/12/2022	Car Park and Road	Final	CBR	36	1.52	ES4469-1	CBR validation test of car park
ES4469-2	CBR Validation	02/12/2022	Car Park and Road	Final	CBR	>90	1.51	ES4469-2	CBR validation test of car park
ES4469-3	CBR Validation	02/12/2022	Car Park and Road	Final	CBR	>90	1.53	ES4469-3	CBR validation test of car park
ES4469-4	CBR Validation	02/12/2022	Car Park and Road	Final	CBR	74	1.52	ES4469-4	CBR validation test of car park

Toureen Group

LANDSCAPE CBR

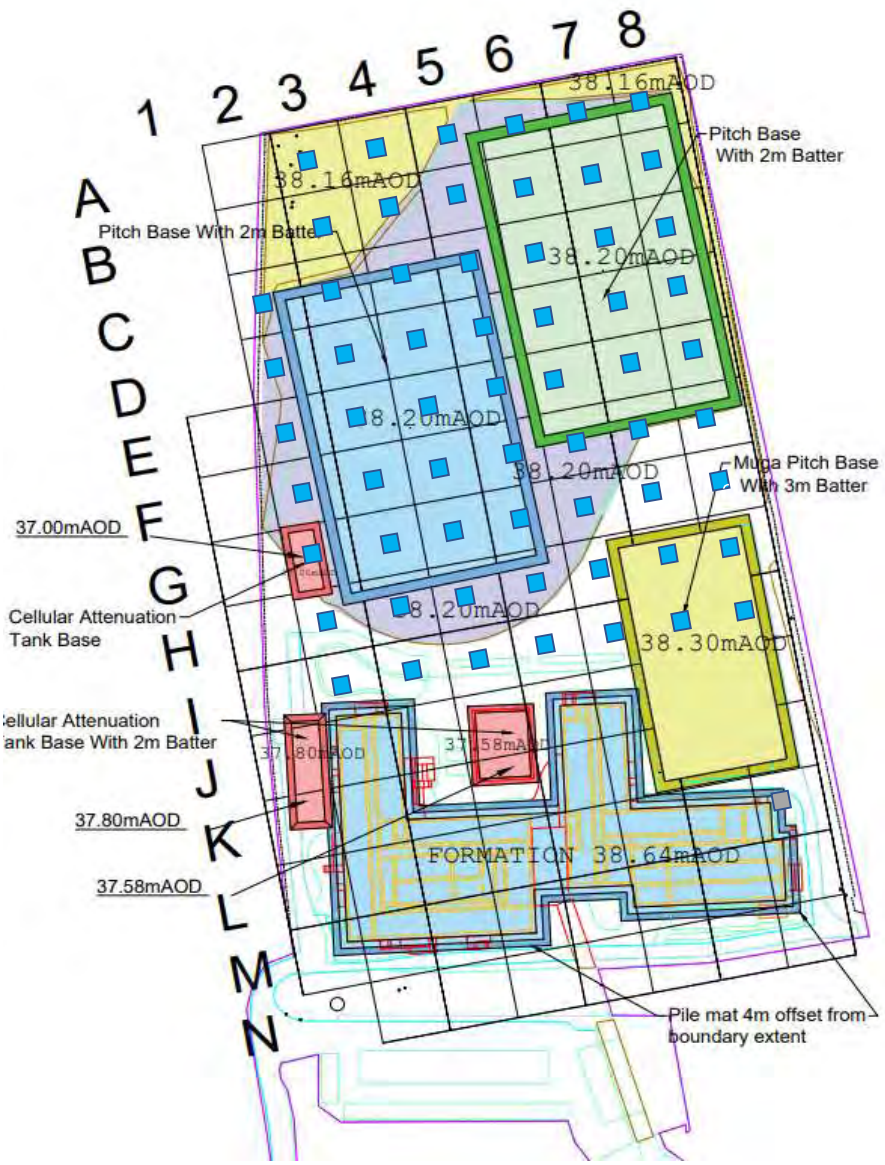
Description	Location		Test Type	CBR (%)
	Grid	Layer		
CBR	C2	Final	Mexe Cone Penetrometer	3.2
CBR	D2	Final	Mexe Cone Penetrometer	4.3
CBR	E2	Final	Mexe Cone Penetrometer	3.3
CBR	F2	Final	Mexe Cone Penetrometer	3.1
CBR	G2	Final	Mexe Cone Penetrometer	3.6
CBR	H2	Final	Mexe Cone Penetrometer	4.3
CBR	I2	Final	Mexe Cone Penetrometer	4.1
CBR	A3	Final	Mexe Cone Penetrometer	4.3
CBR	B3	Final	Mexe Cone Penetrometer	3.3
CBR	C3	Final	Mexe Cone Penetrometer	3.3
CBR	D3	Final	Mexe Cone Penetrometer	3.1
CBR	E3	Final	Mexe Cone Penetrometer	3.5
CBR	F3	Final	Mexe Cone Penetrometer	3.8
CBR	F3	Final	Mexe Cone Penetrometer	4.0
CBR	G3	Final	Mexe Cone Penetrometer	3.1
CBR	H3	Final	Mexe Cone Penetrometer	3.0
CBR	I3	Final	Mexe Cone Penetrometer	3.2
CBR	A4	Final	Mexe Cone Penetrometer	3.9
CBR	B4	Final	Mexe Cone Penetrometer	4.1
CBR	C4	Final	Mexe Cone Penetrometer	4.4
CBR	D4	Final	Mexe Cone Penetrometer	4.0
CBR	E4	Final	Mexe Cone Penetrometer	3.1
CBR	F4	Final	Mexe Cone Penetrometer	3.4
CBR	G4	Final	Mexe Cone Penetrometer	3.3
CBR	H4	Final	Mexe Cone Penetrometer	4.0
CBR	I4	Final	Mexe Cone Penetrometer	4.6
CBR	A5	Final	Mexe Cone Penetrometer	5.2
CBR	B5	Final	Mexe Cone Penetrometer	3.4
CBR	C5	Final	Mexe Cone Penetrometer	3.7
CBR	D5	Final	Mexe Cone Penetrometer	3.6
CBR	E5	Final	Mexe Cone Penetrometer	3.7
CBR	F5	Final	Mexe Cone Penetrometer	4.2
CBR	G5	Final	Mexe Cone Penetrometer	3.4
CBR	H5	Final	Mexe Cone Penetrometer	3.0
CBR	I5	Final	Mexe Cone Penetrometer	3.3
CBR	A6	Final	Mexe Cone Penetrometer	3.4
CBR	B6	Final	Mexe Cone Penetrometer	3.4
CBR	C6	Final	Mexe Cone Penetrometer	3.8
CBR	D6	Final	Mexe Cone Penetrometer	4.0
CBR	E6	Final	Mexe Cone Penetrometer	4.1
CBR	F6	Final	Mexe Cone Penetrometer	3.0
CBR	G6	Final	Mexe Cone Penetrometer	3.2
CBR	H6	Final	Mexe Cone Penetrometer	3.1
CBR	I6	Final	Mexe Cone Penetrometer	4.5
CBR	A7	Final	Mexe Cone Penetrometer	3.9
CBR	B7	Final	Mexe Cone Penetrometer	4.1
CBR	C7	Final	Mexe Cone Penetrometer	4.2
CBR	D7	Final	Mexe Cone Penetrometer	3.4
CBR	E7	Final	Mexe Cone Penetrometer	3.6
CBR	F7	Final	Mexe Cone Penetrometer	3.9
CBR	G7	Final	Mexe Cone Penetrometer	3.5
CBR	H7	Final	Mexe Cone Penetrometer	3.7
CBR	I7	Final	Mexe Cone Penetrometer	3.3
CBR	A8	Final	Mexe Cone Penetrometer	3.2
CBR	B8	Final	Mexe Cone Penetrometer	3.6
CBR	C8	Final	Mexe Cone Penetrometer	3.5
CBR	D8	Final	Mexe Cone Penetrometer	4.8
CBR	E8	Final	Mexe Cone Penetrometer	3.2
CBR	F8	Final	Mexe Cone Penetrometer	3.7
CBR	G8	Final	Mexe Cone Penetrometer	3.3
CBR	H8	Final	Mexe Cone Penetrometer	4.1
CBR	I8	Final	Mexe Cone Penetrometer	3.4

Toureen Group

LANDSCAPE CBR TRACKER

Sample Key

Approximate Location of
Mexi cone penetrometer test



Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
Telephone: (01424) 718618

cs@elab-uk.co.uk
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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44232
Issue:	2a. Replaces Analytical Report number 22-44232; issue no.1
Date of Issue:	07/11/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	TCL1121
Date Received:	25/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44232, issue number 2a

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299349	A3-1-2	21/10/2022	26/10/2022		
299350	B3	21/10/2022	26/10/2022	Silty loam	
299351	B3-1-2	21/10/2022	26/10/2022		
299353	C3-1-2	21/10/2022	26/10/2022		
299354	D3-1	21/10/2022	26/10/2022	Silty loam	
299355	D3-1-2	21/10/2022	26/10/2022		
299356	E3-1	21/10/2022	26/10/2022	Silty loam	
299357	E3-1-2	21/10/2022	26/10/2022		
299358	F3-1	21/10/2022	26/10/2022	Silty loam	
299359	F3-1-2	21/10/2022	26/10/2022		

Results Summary

Report No.: 22-44232, issue number 2a

	ELAB Reference	299350	299354	299356	299358
	Customer Reference				
	Sample ID				
	Sample Type	SOIL	SOIL	SOIL	SOIL
	Sample Location	B3	D3-1	E3-1	F3-1
	Sample Depth (m)				
	Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Determinand	**Codes**	**Units**	**LOD**				
Soil sample preparation parameters							
Moisture Content	N	%	0.1	12.4	7.7	15.0	9.1
Material removed	N	%	0.1	18.9	20.1	18.9	20.8
Description of Inert material removed	N		0	Stones	Stones	Stones	Stones
Metals							
Arsenic	M	mg/kg	0.5	36.2	32.2	23.8	21.9
Cadmium	M	mg/kg	0.2	0.6	0.7	0.5	0.6
Chromium	M	mg/kg	1	47.0	42.2	30.6	33.5
Copper	M	mg/kg	4	54.0	79.8	47.7	72.1
Lead	M	mg/kg	1	160	210	116	184
Mercury	M	mg/kg	0.1	0.3	0.7	0.3	0.6
Nickel	M	mg/kg	1	33.3	34.2	26.4	30.7
Selenium	M	mg/kg	1	< 1.0	1.4	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5	61.4	57.7	44.9	44.2
Zinc	M	mg/kg	4.5	322	349	207	275
Inorganics							
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous							
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	< 0.1	n/t
Loss on Ignition	M	%	0.01	n/t	n/t	8.09	n/t
pH	M	pH units	0.1	7.8	7.9	7.8	7.7
Total Organic Carbon	N	%	0.01	n/t	n/t	1.9	n/t

Results Summary

Report No.: 22-44232, issue number 2a

ELAB Reference			299350	299354	299356	299358
Customer Reference						
Sample ID						
Sample Type			SOIL	SOIL	SOIL	SOIL
Sample Location			B3	D3-1	E3-1	F3-1
Sample Depth (m)						
Sampling Date			21/10/2022	21/10/2022	21/10/2022	21/10/2022
Determinand	**Codes**	**Units**	**LOD**				
Phenols							
Phenol	M	mg/kg	1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons							
Naphthalene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	0.1	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	0.5	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	0.4	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	0.2	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	0.3	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	0.4	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	0.4	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	0.4	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	0.4	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	0.4	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	3.6	n/t
Total (of 17) PAHs	N	mg/kg	2	n/t	n/t	4	n/t

Results Summary

Report No.: 22-44232, issue number 2a

	ELAB Reference	299350	299354	299356	299358
	Customer Reference				
	Sample ID				
	Sample Type	SOIL	SOIL	SOIL	SOIL
	Sample Location	B3	D3-1	E3-1	F3-1
	Sample Depth (m)				
	Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Determinand	**Codes**	**Units**	**LOD**				
BTEX							
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t
TPH CWG							
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	4.2	< 1.0	< 1.0	1.2
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	1.5	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	5.9	< 1.0	< 1.0	1.8
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	3.7	< 1.0	< 1.0	9.2
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	1.2	< 1.0	< 1.0	2.8
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	5.8	< 1.0	< 1.0	13.7
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	11.7	< 1.0	< 1.0	15.5
Total Petroleum Hydrocarbons							
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5	n/t	n/t	< 5	n/t
PCB (ICES 7 congeners)							
Total PCBs (7 congeners)	M	mg/kg	0.03	n/t	n/t	< 0.03	n/t

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44232, issue number 2a

	ELAB Reference	299350	299354	299356	299358
	Customer Reference				
	Sample ID				
	Sample Type	SOIL	SOIL	SOIL	SOIL
	Sample Location	B3	D3-1	E3-1	F3-1
	Sample Depth (m)				
	Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Determinand	**Codes** / **Units** / **LOD**				
Organics					
Coal tar	N / % / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC					
Phenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N / mg/kg / 0.01	0.02	0.02	0.01	0.04
3-Chloroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N / mg/kg / 0.01	< 0.01	0.01	< 0.01	0.02
1-Methylnaphthalene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	0.01
Hexachlorocyclopentadiene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N / mg/kg / 0.01	0.03	0.03	0.03	0.08
1,2-Dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	0.02
4-nitrophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	0.01
2,3,5,6-Tetrachlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	0.01
4-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44232, issue number 2a

			ELAB Reference	299350	299354	299356	299358
			Customer Reference				
			Sample ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sample Location	B3	D3-1	E3-1	F3-1
			Sample Depth (m)				
			Sampling Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Determinand	**Codes**	**Units**	**LOD**				
Organics							
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.04	0.09	0.05	0.20
Anthracene	N	mg/kg	0.01	0.03	0.04	0.08	0.11
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	0.01	0.02
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.25	0.42	0.26	0.95
Pyrene	N	mg/kg	0.01	0.25	0.40	0.26	0.95
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.17	0.30	0.17	0.63
Chrysene	N	mg/kg	0.01	0.18	0.28	0.20	0.62
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.25	0.28	0.21	0.77
Benzo(k)fluoranthene	N	mg/kg	0.01	0.18	0.31	0.20	0.62
Benzo(a)pyrene	N	mg/kg	0.01	0.23	0.32	0.25	0.82
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.20	0.27	0.21	0.69
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.08	0.11	0.08	0.27
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.24	0.32	0.25	0.82

Results Summary

Report No.: 22-44232, issue number 2a

WAC Analysis								
Elab Ref:	299356					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	21/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	E3-1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.90	3	5	6
Loss on Ignition		M	%		8.1	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		4.0	100	--	--
pH		M			7.8	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	1		12.60	1000	20000	50000
Total Dissolved Solids		N	32		318.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	15.000		150.00	500	800	1000
Leach Test Information								
pH		N	7.7					
Conductivity (uS/cm)		N	< 50					
Dry mass of test portion (g)			101.000					
Dry Matter (%)			85					
Moisture (%)			17					
Eluent Volume (ml)			980					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards on Sea, East Sussex, TN38 9BY
Tel: +44 (0)1424 718618, Email: info@elab-uk.co.uk, Web: www.elab-uk.co.uk

Results Summary

Report No.: 22-44232, issue number 2a

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299349		A3-1-2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299350		B3	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299351		B3-1-2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299353		C3-1-2	Brown Sandy Soil, Stones, Clinker, Organics, Brick, Glass	No asbestos detected	n/t	n/t	n/t	n/t
299354		D3-1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299355		D3-1-2	Brown Sandy Soil, Stones, Clinker, Organics, Glass, Brick	No asbestos detected	n/t	n/t	n/t	n/t
299356		E3-1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299357		E3-1-2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299358		F3-1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299359		F3-1-2	Brown Sandy Soil, Stones, Clinker, Concrete, Organics, Glass, Brick	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44232, issue number 2a

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	27/10/2022		GC-MS
Phenols in solids	M	As submitted sample	27/10/2022	121	HPLC
SVOC in solids	N	As submitted sample	27/10/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	31/10/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	31/10/2022	181	GC-MS
Total cyanide	M	As submitted sample	28/10/2022	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	27/10/2022	218	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	27/10/2022	271	
Asbestos identification	U	Air dried sample	31/10/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	28/10/2022	300	ICPMS
Leachate					
Arsenic	N		31/10/2022	301	ICPMS
Cadmium	N		31/10/2022	301	ICPMS
Chromium	N		31/10/2022	301	ICPMS
Lead	N		31/10/2022	301	ICPMS
Nickel	N		31/10/2022	301	ICPMS
Copper	N		31/10/2022	301	ICPMS
Zinc	N		31/10/2022	301	ICPMS
Mercury	N		31/10/2022	301	ICPMS
Selenium	N		31/10/2022	301	ICPMS
Antimony	N		31/10/2022	301	ICPMS
Barium	N		31/10/2022	301	ICPMS
Molybdenum	N		31/10/2022	301	ICPMS
pH Value	N		31/10/2022	113	Electrometric
Electrical Conductivity	N		31/10/2022	136	Probe
Dissolved Organic Carbon	N		31/10/2022	102	TOC analyser
Chloride	N		31/10/2022	131	Ion Chromatography
Fluoride	N		31/10/2022	131	Ion Chromatography
Sulphate	N		31/10/2022	131	Ion Chromatography
Total Dissolved Solids	N		31/10/2022	144	Gravimetric
Phenol index	N		31/10/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	01/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	28/10/2022	210	IR
Loss on Ignition	M	Air dried sample	27/10/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	01/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	31/10/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	27/10/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	28/10/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	31/10/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44232, issue number 2a

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44243
Issue:	2a. Replaces Analytical Report number 22-44243; issue no.1
Date of Issue:	07/11/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	Not Supplied
Date Received:	25/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44243, issue number 2a

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299390	A3	20/10/2022	26/10/2022	Silty loam	
299391	B2	20/10/2022	26/10/2022	Silty loam	
299392	B3	20/10/2022	26/10/2022	Silty loam	
299393	C2	20/10/2022	26/10/2022	Silty loam	
299394	C3	20/10/2022	26/10/2022	Silty loam	
299395	C3	20/10/2022	26/10/2022	Silty loam	
299396	D2	20/10/2022	26/10/2022	Silty loam	
299397	D3	20/10/2022	26/10/2022	Silty loam	
299398	E1	20/10/2022	26/10/2022	Silty loam	
299399	E2	20/10/2022	26/10/2022	Silty loam	

Results Summary

Report No.: 22-44243, issue number 2a

ELAB Reference				299390	299391	299392	299393	299394	299395	299396	299397	299398	299399
Customer Reference													
Sample ID													
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				A3	B2	B3	C2	C3	C3	D2	D3	E1	E2
Sample Depth (m)													
Sampling Date				20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Determinand	**Codes**	**Units**	**LOD**										
Soil sample preparation parameters													
Moisture Content	N	%	0.1	8.5	0.2	12.1	6.9	12.1	12.6	5.8	10.0	10.6	10.3
Material removed	N	%	0.1	19.0	24.5	19.2	21.3	7.6	22.7	27.3	15.6	21.1	18.8
Description of Inert material removed	N		0	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Metals													
Arsenic	M	mg/kg	0.5	35.0	32.4	35.0	39.1	30.5	26.6	38.7	26.9	29.7	22.0
Cadmium	M	mg/kg	0.2	0.7	0.5	0.7	0.6	0.6	0.5	0.6	0.3	0.5	0.4
Chromium	M	mg/kg	1	44.8	41.4	46.0	51.1	45.5	37.9	48.6	36.1	35.9	27.7
Copper	M	mg/kg	4	46.8	36.2	62.7	48.6	52.8	37.3	67.7	33.3	53.3	37.1
Lead	M	mg/kg	1	109	91.9	122	123	139	81.8	87.2	92.8	141	72.0
Mercury	M	mg/kg	0.1	1.2	0.3	0.3	0.4	0.8	0.3	0.3	0.2	0.4	0.3
Nickel	M	mg/kg	1	36.1	32.3	35.8	40.1	34.1	29.2	38.7	27.3	30.7	24.4
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5	69.6	63.5	67.0	77.9	64.8	66.6	75.8	56.4	55.9	44.1
Zinc	M	mg/kg	4.5	158	127	219	180	185	124	170	112	183	94.8
Inorganics													
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous													
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	< 0.1	< 0.1	n/t
Loss on Ignition	M	%	0.01	n/t	n/t	7.54	5.54	n/t	n/t	n/t	5.27	7.11	n/t
pH	M	pH units	0.1	6.7	6.9	6.7	6.8	7.0	7.6	6.9	7.2	7.2	7.3
Total Organic Carbon	N	%	0.01	n/t	n/t	2.4	1.4	n/t	n/t	n/t	1.5	2.5	n/t

Results Summary

Report No.: 22-44243, issue number 2a

			ELAB Reference	299390	299391	299392	299393	299394	299395	299396	299397	299398	299399
			Customer Reference										
			Sample ID										
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	A3	B2	B3	C2	C3	C3	D2	D3	E1	E2
			Sample Depth (m)										
			Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Determinand	**Codes**	**Units**	**LOD**										
Phenols													
Phenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons													
Naphthalene	M	mg/kg	0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	< 0.1	< 0.1	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	< 0.1	< 0.1	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	< 0.1	< 0.1	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	< 0.1	< 0.1	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	0.1	0.2	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	< 0.1	< 0.1	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	0.3	0.2	n/t	n/t	n/t	0.4	0.5	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	0.2	0.2	n/t	n/t	n/t	0.3	0.5	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	0.1	< 0.1	n/t	n/t	n/t	0.2	0.2	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	0.1	< 0.1	n/t	n/t	n/t	0.2	0.3	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	0.3	< 0.1	n/t	n/t	n/t	0.3	0.4	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	0.3	< 0.1	n/t	n/t	n/t	0.3	0.5	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	0.3	< 0.1	n/t	n/t	n/t	0.3	0.4	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	0.2	< 0.1	n/t	n/t	n/t	0.2	0.3	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	< 0.1	n/t	n/t	n/t	0.1	0.1	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	0.2	< 0.1	n/t	n/t	n/t	0.2	0.3	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	2.3	0.5	n/t	n/t	n/t	2.7	3.8	n/t
Total (of 17) PAHs	N	mg/kg	2	n/t	n/t	2	< 2	n/t	n/t	n/t	3	4	n/t

Results Summary

Report No.: 22-44243, issue number 2a

			ELAB Reference	299390	299391	299392	299393	299394	299395	299396	299397	299398	299399
			Customer Reference										
			Sample ID										
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	A3	B2	B3	C2	C3	C3	D2	D3	E1	E2
			Sample Depth (m)										
			Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Determinand	**Codes**	**Units**	**LOD**										
BTEX													
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	< 0.01	< 0.01	n/t	n/t	n/t	< 0.01	< 0.01	n/t
TPH CWG													
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	6.3	1.0	1.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	7.9	2.1	2.3	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	4.0	6.8	5.2	< 1.0	< 1.0	< 1.0	5.2	2.4	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	5.8	9.7	8.5	< 1.0	< 1.0	2.3	7.7	3.7	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	< 1.0	13.7	11.8	10.8	< 1.0	< 1.0	2.4	8.7	4.4	< 1.0
Total Petroleum Hydrocarbons													
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5	n/t	n/t	7	5	n/t	n/t	n/t	6	< 5	n/t
PCB (ICES 7 congeners)													
Total PCBs (7 congeners)	M	mg/kg	0.03	n/t	n/t	< 0.03	< 0.03	n/t	n/t	n/t	< 0.03	< 0.03	n/t

Tests marked N are not UKAS accredited.
The Environmental Laboratory Ltd. Reg. No. 3882193

Results Summary

Report No.: 22-44243, issue number 2a

	ELAB Reference	299390	299391	299392	299393	299394	299395	299396	299397	299398
	Customer Reference									
	Sample ID									
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sample Location	A3	B2	B3	C2	C3	C3	D2	D3	E1
	Sample Depth (m)									
	Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Determinand	**Codes**	**Units**	**LOD**								
Organics											
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC											
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44243, issue number 2a

				ELAB Reference	299390	299391	299392	299393	299394	299395	299396	299397	299398
				Customer Reference									
				Sample ID									
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A3	B2	B3	C2	C3	C3	D2	D3	E1
				Sample Depth (m)									
				Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Determinand	**Codes**	**Units**	**LOD**										
Organics													
1-Chloronaphthalene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01		< 0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dinitrobenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01		0.01	0.02	< 0.01	0.02	0.02	< 0.01	< 0.01	0.01	0.02
Anthracene	N	mg/kg	0.01		< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01		0.03	0.67	0.03	0.05	0.05	0.03	< 0.01	0.04	0.11
Pyrene	N	mg/kg	0.01		0.03	0.69	0.03	0.04	0.05	0.03	< 0.01	0.04	0.11
Butyl benzyl phthalate	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44243, issue number 2a

			ELAB Reference	299390	299391	299392	299393	299394	299395	299396	299397	299398
			Customer Reference									
			Sample ID									
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	A3	B2	B3	C2	C3	C3	D2	D3	E1
			Sample Depth (m)									
			Sampling Date	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022
Determinand	**Codes**	**Units**	**LOD**									
Organics												
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.02	0.54	0.02	0.03	0.03	0.01	< 0.01	0.02	0.09
Chrysene	N	mg/kg	0.01	0.02	0.43	0.02	0.03	0.03	0.02	< 0.01	0.02	0.09
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.02	0.50	0.03	0.04	0.04	0.02	< 0.01	0.03	0.13
Benzo(k)fluoranthene	N	mg/kg	0.01	0.02	0.56	0.03	0.03	0.04	0.02	< 0.01	0.03	0.11
Benzo(a)pyrene	N	mg/kg	0.01	0.02	0.61	0.03	0.03	0.03	0.02	< 0.01	0.02	0.10
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.01	0.28	0.02	0.02	0.02	0.01	< 0.01	0.01	0.06
Dibenzo(a,h)anthracene	N	mg/kg	0.01	< 0.01	0.12	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.02	0.32	0.02	0.02	0.03	0.01	< 0.01	0.02	0.07

Results Summary

Report No.: 22-44243, issue number 2a

ELAB Reference	299399
Customer Reference	
Sample ID	
Sample Type	SOIL
Sample Location	E2
Sample Depth (m)	
Sampling Date	20/10/2022

Determinand	Codes	Units	LOD	
Organics				
Coal tar	N	%	0.01	< 0.01
SVOC				
Phenol	N	mg/kg	0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01
Naphthalene	N	mg/kg	0.01	< 0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01

Results Summary

Report No.: 22-44243, issue number 2a

ELAB Reference	299399
Customer Reference	
Sample ID	
Sample Type	SOIL
Sample Location	E2
Sample Depth (m)	
Sampling Date	20/10/2022

Determinand	Codes	Units	LOD	
Organics				
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	< 0.01
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	< 0.01
Anthracene	N	mg/kg	0.01	< 0.01
Carbazole	N	mg/kg	0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.03
Pyrene	N	mg/kg	0.01	0.03
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01

Results Summary

Report No.: 22-44243, issue number 2a

ELAB Reference	299399
Customer Reference	
Sample ID	
Sample Type	SOIL
Sample Location	E2
Sample Depth (m)	
Sampling Date	20/10/2022

Determinand	Codes	Units	LOD	
Organics				
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.02
Chrysene	N	mg/kg	0.01	0.02
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.02
Benzo(k)fluoranthene	N	mg/kg	0.01	0.02
Benzo(a)pyrene	N	mg/kg	0.01	0.02
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.01
Dibenzo(a,h)anthracene	N	mg/kg	0.01	< 0.01
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.01

Results Summary

Report No.: 22-44243, issue number 2a

WAC Analysis								
Elab Ref:	299398					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	20/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	E1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		2.50	3	5	6
Loss on Ignition		M	%		7.1	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		4.0	100	--	--
pH		M			7.2	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.009		0.09	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.005		0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	2		17.50	1000	20000	50000
Total Dissolved Solids		N	73		735.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	8.820		88.00	500	800	1000
Leach Test Information								
pH		N	7.6					
Conductivity (uS/cm)		N	110					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			87					
Moisture (%)			15					
Eluent Volume (ml)			996					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 22-44243, issue number 2a

WAC Analysis								
Elab Ref:	299397					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	20/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	D3							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.50	3	5	6
Loss on Ignition		M	%		5.3	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		6	500	--	--
Total (of 17) PAHs		N	mg/kg		3.0	100	--	--
pH		M			7.2	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.005		0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	< 1		< 10.0	1000	20000	50000
Total Dissolved Solids		N	44		438.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	7.050		71.00	500	800	1000
Leach Test Information								
pH		N	7.5					
Conductivity (uS/cm)		N	65					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			88					
Moisture (%)			14					
Eluent Volume (ml)			993					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 22-44243, issue number 2a

WAC Analysis								
Elab Ref:	299393					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	20/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	C2							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.40	3	5	6
Loss on Ignition		M	%		5.5	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			6.8	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.009		0.09	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	1		13.70	1000	20000	50000
Total Dissolved Solids		N	18		183.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	8.150		81.00	500	800	1000
Leach Test Information								
pH		N	7.5					
Conductivity (uS/cm)		N	< 50					
Dry mass of test portion (g)			101.000					
Dry Matter (%)			91					
Moisture (%)			10					
Eluent Volume (ml)			980					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 22-44243, issue number 2a

WAC Analysis								
Elab Ref:	299392					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	20/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	B3							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		2.40	3	5	6
Loss on Ignition		M	%		7.5	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		7	500	--	--
Total (of 17) PAHs		N	mg/kg		2.0	100	--	--
pH		M			6.7	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.007		0.07	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.002		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.017		0.17	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	2		17.00	1000	20000	50000
Total Dissolved Solids		N	29		285.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	10.600		106.00	500	800	1000
Leach Test Information								
pH		N	7.5					
Conductivity (uS/cm)		N	< 50					
Dry mass of test portion (g)			103.000					
Dry Matter (%)			85					
Moisture (%)			18					
Eluent Volume (ml)			994					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

Report No.: 22-44243, issue number 2a

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299390		A3	Brown sandy soil, stones, clinker, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299391		B2	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299392		B3	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299393		C2	Brown sandy soil, stones, brick, clinker, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299394		C3	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299395		C3	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299396		D2	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299397		D3	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299398		E1	Brown sandy soil, stones, clinker, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299399		E2	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44243, issue number 2a

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	28/10/2022		GC-MS
Phenols in solids	M	As submitted sample	28/10/2022	121	HPLC
SVOC in solids	N	As submitted sample	28/10/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	31/10/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	31/10/2022	181	GC-MS
Total cyanide	M	As submitted sample	28/10/2022	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	28/10/2022	218	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	28/10/2022	271	
Asbestos identification	U	Air dried sample	01/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	28/10/2022	300	ICPMS
Leachate					
Arsenic	N		01/11/2022	301	ICPMS
Cadmium	N		01/11/2022	301	ICPMS
Chromium	N		01/11/2022	301	ICPMS
Lead	N		01/11/2022	301	ICPMS
Nickel	N		01/11/2022	301	ICPMS
Copper	N		01/11/2022	301	ICPMS
Zinc	N		01/11/2022	301	ICPMS
Mercury	N		01/11/2022	301	ICPMS
Selenium	N		01/11/2022	301	ICPMS
Antimony	N		01/11/2022	301	ICPMS
Barium	N		01/11/2022	301	ICPMS
Molybdenum	N		01/11/2022	301	ICPMS
pH Value	N		01/11/2022	113	Electrometric
Electrical Conductivity	N		01/11/2022	136	Probe
Dissolved Organic Carbon	N		01/11/2022	102	TOC analyser
Chloride	N		01/11/2022	131	Ion Chromatography
Fluoride	N		01/11/2022	131	Ion Chromatography
Sulphate	N		01/11/2022	131	Ion Chromatography
Total Dissolved Solids	N		01/11/2022	144	Gravimetric
Phenol index	N		01/11/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	02/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	31/10/2022	210	IR
Loss on Ignition	M	Air dried sample	01/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	02/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	31/10/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	28/10/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	31/10/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	01/11/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44243, issue number 2a

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44274
Issue:	1
Date of Issue:	07/11/2022
Contact:	Rick Willemse
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	Not Supplied
Date Received:	27/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44274, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299654	G3. 1	25/10/2022	27/10/2022	Sandy silty loam	
299655	G3. 1.2	25/10/2022	27/10/2022		
299656	H3 .1	25/10/2022	27/10/2022	Sandy silty loam	
299657	H3. 1.2	25/10/2022	27/10/2022		
299658	I3. 1	25/10/2022	27/10/2022	Sandy silty loam	
299659	I3. 1.2	25/10/2022	27/10/2022		
299660	J3. 1	25/10/2022	27/10/2022	Sandy silty loam	
299661	J3. 1.2	25/10/2022	27/10/2022		
299662	A4. 1	25/10/2022	27/10/2022	Silty loam	
299663	A4. 1.2	25/10/2022	27/10/2022		
299664	B4. 1	25/10/2022	27/10/2022	Silty loam	
299665	B4. 1.2	25/10/2022	27/10/2022		
299666	C4. 1	25/10/2022	27/10/2022	Silty loam	
299667	C4. 1.2	25/10/2022	27/10/2022		
299668	D4. 1	25/10/2022	27/10/2022	Silty loam	
299669	D4. 1.2	25/10/2022	27/10/2022		

Results Summary

Report No.: 22-44274, issue number 1

			ELAB Reference	299654	299656	299658	299660	299662	299664	299666	299668
			Customer Reference								
			Sample ID								
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	G3. 1	H3 .1	I3. 1	J3. 1	A4. 1	B4. 1	C4. 1	D4. 1
			Sample Depth (m)								
			Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**								
Soil sample preparation parameters											
Moisture Content	N	%	0.1	15.7	13.0	13.9	12.0	17.2	17.6	17.1	17.6
Material removed	N	%	0.1	29.4	27.9	19.0	24.7	22.5	26.8	21.6	17.5
Description of Inert material removed	N		0	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Metals											
Arsenic	M	mg/kg	0.5	24.2	31.6	25.2	24.8	30.3	32.4	35.7	27.7
Cadmium	M	mg/kg	0.2	0.5	0.4	0.3	0.2	0.5	0.5	0.5	0.5
Chromium	M	mg/kg	1	39.5	42.3	35.5	32.3	38.8	42.0	42.3	40.4
Copper	M	mg/kg	4	42.2	42.7	26.2	29.6	37.0	36.2	42.9	40.0
Lead	M	mg/kg	1	89.3	74.8	63.9	82.2	82.4	89.1	109	101
Mercury	M	mg/kg	0.1	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Nickel	M	mg/kg	1	30.7	35.9	29.3	25.7	31.7	32.5	32.2	31.4
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5	52.5	63.0	54.8	49.4	59.9	66.9	64.7	60.9
Zinc	M	mg/kg	4.5	130	101	91.7	99.1	124	129	207	169
Inorganics											
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous											
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Loss on Ignition	M	%	0.01	n/t	n/t	5.29	n/t	n/t	n/t	n/t	n/t
pH	M	pH units	0.1	9.0	8.7	8.5	8.4	8.0	8.0	7.9	7.9
Total Organic Carbon	N	%	0.01	n/t	n/t	1.0	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 22-44274, issue number 1

				ELAB Reference	299654	299656	299658	299660	299662	299664	299666	299668
				Customer Reference								
				Sample ID								
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	G3. 1	H3 .1	I3. 1	J3. 1	A4. 1	B4. 1	C4. 1	D4. 1
				Sample Depth (m)								
				Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**									
Phenols												
Phenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons												
Naphthalene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	0.2	n/t	n/t	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	0.1	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	0.1	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	0.2	n/t	n/t	n/t	n/t	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	0.1	n/t	n/t	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	1.0	n/t	n/t	n/t	n/t	n/t
Total (of 17) PAHs	N	mg/kg	2	n/t	n/t	< 2	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 22-44274, issue number 1

	ELAB Reference	299654	299656	299658	299660	299662	299664	299666	299668
	Customer Reference								
	Sample ID								
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sample Location	G3. 1	H3 .1	I3. 1	J3. 1	A4. 1	B4. 1	C4. 1	D4. 1
	Sample Depth (m)								
	Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**						
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t	n/t	n/t	n/t	n/t
TPH CWG									
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	1.3	< 1.0	5.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	1.5	< 1.0	7.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	3.0	< 1.0	5.7	2.2	< 1.0	1.0	< 1.0	1.2
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	4.1	< 1.0	9.2	3.1	< 1.0	1.8	< 1.0	2.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	5.6	< 1.0	16.7	3.1	< 1.0	1.8	< 1.0	2.8
Total Petroleum Hydrocarbons									
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5	n/t	n/t	< 5	n/t	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)									
Total PCBs (7 congeners)	M	mg/kg	0.03	n/t	n/t	< 0.03	n/t	n/t	n/t	n/t	n/t

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44274, issue number 1

			ELAB Reference	299654	299656	299658	299660	299662
			Customer Reference					
			Sample ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	G3. 1	H3 .1	I3. 1	J3. 1	A4. 1
			Sample Depth (m)					
			Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**					
Organics								
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC								
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.03	< 0.01	< 0.01	< 0.01	0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.02	< 0.01	< 0.01	< 0.01	0.03
1-Methylnaphthalene	N	mg/kg	0.01	0.02	< 0.01	< 0.01	< 0.01	0.03
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.02	< 0.01	0.02	0.01	0.01
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44274, issue number 1

			ELAB Reference	299654	299656	299658	299660	299662
			Customer Reference					
			Sample ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	G3. 1	H3 .1	I3. 1	J3. 1	A4. 1
			Sample Depth (m)					
			Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**					
Organics								
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.06	0.02	0.07	0.04	0.07
Anthracene	N	mg/kg	0.01	0.02	< 0.01	0.02	0.01	0.01
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.25	0.10	0.28	0.20	0.11
Pyrene	N	mg/kg	0.01	0.25	0.09	0.26	0.19	0.11
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.11	0.04	0.13	0.11	0.06
Chrysene	N	mg/kg	0.01	0.14	0.07	0.14	0.12	0.07
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.12	0.05	0.11	0.10	0.06
Benzo(k)fluoranthene	N	mg/kg	0.01	0.12	0.06	0.14	0.12	0.07
Benzo(a)pyrene	N	mg/kg	0.01	0.13	0.06	0.13	0.12	0.08
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.08	0.04	0.08	0.07	0.04
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.03	0.01	0.03	0.03	0.02
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.10	0.05	0.09	0.08	0.05

Results Summary

Report No.: 22-44274, issue number 1

		ELAB Reference	299664	299666	299668
		Customer Reference			
		Sample ID			
		Sample Type	SOIL	SOIL	SOIL
		Sample Location	B4. 1	C4. 1	D4. 1
		Sample Depth (m)			
		Sampling Date	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**		
Organics					
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01
SVOC					
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	0.01	0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	< 0.01	0.03	0.02
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01	0.03	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	0.02	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	< 0.01	0.02	0.02
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44274, issue number 1

			ELAB Reference	299664	299666	299668
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	B4. 1	C4. 1	D4. 1
			Sample Depth (m)			
			Sampling Date	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**			
Organics						
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.03	0.09	0.06
Anthracene	N	mg/kg	0.01	< 0.01	0.02	0.02
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.10	0.29	0.23
Pyrene	N	mg/kg	0.01	0.09	0.28	0.22
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.03	0.13	0.11
Chrysene	N	mg/kg	0.01	0.05	0.16	0.13
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.04	0.18	0.17
Benzo(k)fluoranthene	N	mg/kg	0.01	0.05	0.13	0.14
Benzo(a)pyrene	N	mg/kg	0.01	0.05	0.16	0.13
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.03	0.11	0.07
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.01	0.03	0.03
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.03	0.11	0.08

Results Summary

Report No.: 22-44274, issue number 1

WAC Analysis								
Elab Ref:	299658					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	25/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	I3. 1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.00	3	5	6
Loss on Ignition		M	%		5.3	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.5	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	1		11.50	1000	20000	50000
Total Dissolved Solids		N	50		498.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	7.660		77.00	500	800	1000
Leach Test Information								
pH		N	8.6					
Conductivity (uS/cm)		N	74					
Dry mass of test portion (g)			103.000					
Dry Matter (%)			85					
Moisture (%)			17					
Eluent Volume (ml)			992					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

Report No.: 22-44274, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299654		G3. 1	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299655		G3. 1.2	Brown sandy soil, stones, ceramics, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299656		H3 .1	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299657		H3. 1.2	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
299658		I3. 1	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299659		I3. 1.2	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
299660		J3. 1	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299661		J3. 1.2	Brown sandy soil, stones, brick, organics	No asbestos detected	n/t	n/t	n/t	n/t
299662		A4. 1	Brown sandy soil, stones, clinker, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299663		A4. 1.2	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299664		B4. 1	Brown sandy soil, stones, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299665		B4. 1.2	Brown sandy soil, stones, organics	No asbestos detected	n/t	n/t	n/t	n/t
299666		C4. 1	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299667		C4. 1.2	Brown sandy soil, stones, glass, plastic, organics	No asbestos detected	n/t	n/t	n/t	n/t
299668		D4. 1	Brown sandy soil, stones, brick, clinker, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299669		D4. 1.2	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44274, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	31/10/2022		GC-MS
Phenols in solids	M	As submitted sample	31/10/2022	121	HPLC
SVOC in solids	N	As submitted sample	31/10/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	01/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	01/11/2022	181	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	31/10/2022	218	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	31/10/2022	271	
Asbestos identification	U	Air dried sample	02/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	01/11/2022	300	ICPMS
Leachate					
Arsenic	N		02/11/2022	301	ICPMS
Cadmium	N		02/11/2022	301	ICPMS
Chromium	N		02/11/2022	301	ICPMS
Lead	N		02/11/2022	301	ICPMS
Nickel	N		02/11/2022	301	ICPMS
Copper	N		02/11/2022	301	ICPMS
Zinc	N		02/11/2022	301	ICPMS
Mercury	N		02/11/2022	301	ICPMS
Selenium	N		02/11/2022	301	ICPMS
Antimony	N		02/11/2022	301	ICPMS
Barium	N		02/11/2022	301	ICPMS
Molybdenum	N		02/11/2022	301	ICPMS
pH Value	N		02/11/2022	113	Electrometric
Electrical Conductivity	N		02/11/2022	136	Probe
Dissolved Organic Carbon	N		02/11/2022	102	TOC analyser
Chloride	N		02/11/2022	131	Ion Chromatography
Fluoride	N		02/11/2022	131	Ion Chromatography
Sulphate	N		02/11/2022	131	Ion Chromatography
Total Dissolved Solids	N		02/11/2022	144	Gravimetric
Phenol index	N		02/11/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	02/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	01/11/2022	210	IR
Loss on Ignition	M	Air dried sample	02/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	02/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	01/11/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	01/11/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	01/11/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	03/11/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44274, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44275
Issue:	2. Replaces Analytical Report number 22-44275; issue no.1
Date of Issue:	07/11/2022
Contact:	Rick Willemse
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	Not Supplied
Date Received:	27/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44275, issue number 2

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299670	E4. 1	25/10/2022	27/10/2022	Silty loam	
299671	E4. 1.2	25/10/2022	27/10/2022		
299672	F4. 1	25/10/2022	27/10/2022	Silty loam	
299673	F4. 1.2	25/10/2022	27/10/2022		
299674	G4. 1	25/10/2022	27/10/2022	Silty loam	
299675	G4. 1.2	25/10/2022	27/10/2022		
299676	H4. 1	25/10/2022	27/10/2022	Sandy silty loam	
299677	H4. 1.2	25/10/2022	27/10/2022		
299678	I4. 1	25/10/2022	27/10/2022	Sandy silty loam	
299679	I4. 1.2	25/10/2022	27/10/2022		
299680	J4. 1	25/10/2022	27/10/2022	Silty loam	
299681	J4. 1.2	25/10/2022	27/10/2022		
299682	K4. 1	25/10/2022	27/10/2022	Sandy silty loam	
299683	K4. 1.2	25/10/2022	27/10/2022		
299684	L4. 1	25/10/2022	27/10/2022	Sandy silty loam	
299685	L4. 1.2	25/10/2022	27/10/2022		

Results Summary

Report No.: 22-44275, issue number 2

				ELAB Reference	299670	299672	299674	299676	299678	299680	299682	299684
				Customer Reference								
				Sample ID								
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	E4. 1	F4. 1	G4. 1	H4. 1	I4. 1	J4. 1	K4. 1	L4. 1
				Sample Depth (m)								
				Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**									
Soil sample preparation parameters												
Moisture Content	N	%	0.1		19.9	15.5	17.7	13.4	15.5	16.9	9.6	10.4
Material removed	N	%	0.1		22.9	28.0	28.0	24.7	23.9	20.9	28.1	23.4
Description of Inert material removed	N		0		Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Metals												
Arsenic	M	mg/kg	0.5		25.4	20.2	17.7	25.2	21.2	23.8	27.6	34.0
Cadmium	M	mg/kg	0.2		0.4	0.6	0.4	0.4	0.4	0.5	0.3	0.3
Chromium	M	mg/kg	1		38.8	36.0	36.3	40.2	33.5	34.1	35.3	47.6
Copper	M	mg/kg	4		37.2	61.6	43.2	28.6	27.6	35.6	24.5	23.6
Lead	M	mg/kg	1		99.2	131	95.3	308	70.8	85.9	46.3	53.0
Mercury	M	mg/kg	0.1		0.3	0.5	0.4	0.5	0.3	0.3	0.1	0.1
Nickel	M	mg/kg	1		29.7	29.1	24.8	30.6	27.1	26.5	30.0	37.0
Selenium	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.6
Vanadium	M	mg/kg	0.5		57.6	46.9	42.3	55.3	49.4	52.5	51.9	71.3
Zinc	M	mg/kg	4.5		157	228	154	105	104	110	110	108

Results Summary

Report No.: 22-44275, issue number 2

				ELAB Reference	299670	299672	299674	299676	299678	299680	299682	299684
				Customer Reference								
				Sample ID								
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	E4. 1	F4. 1	G4. 1	H4. 1	I4. 1	J4. 1	K4. 1	L4. 1
				Sample Depth (m)								
				Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**									
Inorganics												
Total Cyanide	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous												
pH	M	pH units	0.1		8.0	8.2	8.2	8.5	8.3	8.2	8.2	8.2
Phenols												
Phenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5

Results Summary

Report No.: 22-44275, issue number 2

				ELAB Reference	299670	299672	299674	299676	299678	299680	299682	299684
				Customer Reference								
				Sample ID								
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	E4. 1	F4. 1	G4. 1	H4. 1	I4. 1	J4. 1	K4. 1	L4. 1
				Sample Depth (m)								
				Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**									
BTEX												
Benzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG												
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	3.9	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	6.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	12.7	3.2	< 1.0	1.2	5.3	< 1.0	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	4.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	19.8	4.8	1.3	1.8	7.7	< 1.0	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1		< 1.0	26.4	5.6	1.6	1.9	8.6	< 1.0	< 1.0

Results Summary

Report No.: 22-44275, issue number 2

	ELAB Reference	299670	299672	299674	299676	299678	299680
	Customer Reference						
	Sample ID						
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sample Location	E4. 1	F4. 1	G4. 1	H4. 1	I4. 1	J4. 1
	Sample Depth (m)						
	Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Organics									
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC									
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.08	0.03	0.02	0.01	0.04	0.03
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.02	0.02	0.01	< 0.01	0.02	0.01
1-Methylnaphthalene	N	mg/kg	0.01	0.02	0.01	< 0.01	< 0.01	0.02	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.01	0.06	0.04	0.02	0.11	0.07
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	0.01	< 0.01	0.01	0.04	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	0.01	< 0.01	< 0.01	0.04	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	0.01	< 0.01	0.01	0.07	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44275, issue number 2

ELAB Reference				299670	299672	299674	299676	299678	299680
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				E4. 1	F4. 1	G4. 1	H4. 1	I4. 1	J4. 1
Sample Depth (m)									
Sampling Date				25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Organics									
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.05	0.24	0.13	0.16	0.96	0.21
Anthracene	N	mg/kg	0.01	0.01	0.06	0.04	0.04	0.16	0.06
Carbazole	N	mg/kg	0.01	< 0.01	0.02	0.01	< 0.01	0.06	0.02
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.15	0.74	0.59	0.48	1.76	0.96
Pyrene	N	mg/kg	0.01	0.14	0.69	0.55	0.44	1.57	0.88
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.06	0.36	0.33	0.24	0.73	0.48
Chrysene	N	mg/kg	0.01	0.09	0.39	0.34	0.22	0.70	0.50
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.10	0.42	0.45	0.16	0.63	0.45
Benzo(k)fluoranthene	N	mg/kg	0.01	0.09	0.34	0.38	0.23	0.55	0.55
Benzo(a)pyrene	N	mg/kg	0.01	0.10	0.40	0.38	0.22	0.66	0.46
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.06	0.24	0.25	0.15	0.45	0.34
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.02	0.09	0.10	0.05	0.16	0.13
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.07	0.30	0.29	0.15	0.47	0.38

Results Summary

Report No.: 22-44275, issue number 2

ELAB Reference	299682	299684
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	K4. 1	L4. 1
Sample Depth (m)		
Sampling Date	25/10/2022	25/10/2022

Determinand	Codes	Units	LOD		
Organics					
Coal tar	N	%	0.01	< 0.01	< 0.01
SVOC					
Phenol	N	mg/kg	0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	< 0.01	< 0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	< 0.01	< 0.01
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44275, issue number 2

ELAB Reference	299682	299684
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	K4. 1	L4. 1
Sample Depth (m)		
Sampling Date	25/10/2022	25/10/2022

Determinand	Codes	Units	LOD		
Organics					
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.01	0.03
Anthracene	N	mg/kg	0.01	< 0.01	< 0.01
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.03	0.08
Pyrene	N	mg/kg	0.01	0.03	0.08
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.02	0.04
Chrysene	N	mg/kg	0.01	0.02	0.04
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.02	0.05
Benzo(k)fluoranthene	N	mg/kg	0.01	0.02	0.04
Benzo(a)pyrene	N	mg/kg	0.01	0.02	0.05
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.01	0.03
Dibenzo(a,h)anthracene	N	mg/kg	0.01	< 0.01	< 0.01
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.02	0.04

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Results Summary

Report No.: 22-44275, issue number 2

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299670		E4. 1	Brown Sandy Soil,Stones,Synthetic Fibres,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299671		E4. 1.2	Brown Sandy oil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299672		F4. 1	Brown sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299673		F4. 1.2	Brown Sandy soil,Stones,Organiic,Glass,Clinker	No asbestos detected	n/t	n/t	n/t	n/t
299674		G4. 1	Brown sandy Soil,Stones,Brick,Clinker	No asbestos detected	n/t	n/t	n/t	n/t
299675		G4. 1.2	Brown sandy Soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299676		H4. 1	Brown sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299677		H4. 1.2	Brown sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299678		I4. 1	Brown sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299679		I4. 1.2	Brown sandy Soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299680		J4. 1	Brown Sandy Soil,Stones,Clinker	No asbestos detected	n/t	n/t	n/t	n/t
299681		J4. 1.2	Brown sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299682		K4. 1	Brown sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299683		K4. 1.2	Brown sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299684		L4. 1	Brown sandy Soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299685		L4. 1.2	Brown sandy Soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44275, issue number 2

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	31/10/2022		GC-MS
pH	M	Air dried sample	02/11/2022	113	Electromeric
Phenols in solids	M	As submitted sample	31/10/2022	121	HPLC
SVOC in solids	N	As submitted sample	31/10/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	04/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	03/11/2022	181	GC-MS
BTEX in solids	M	As submitted sample	01/11/2022	181A	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	31/10/2022	218	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	04/11/2022	271	
Asbestos identification	U	Air dried sample	02/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	01/11/2022	300	ICPMS

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44275, issue number 2

Key	
U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44276
Issue:	2. Replaces Analytical Report number 22-44276; issue no.1
Date of Issue:	07/11/2022
Contact:	Rick Willemse
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	Not Supplied
Date Received:	27/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

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Sample Summary

Report No.: 22-44276, issue number 2

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299686	A5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299687	A5. 1.2	25/10/2022	27/10/2022		
299688	B5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299689	B5. 1.2	25/10/2022	27/10/2022		
299690	C5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299691	C5. 1.2	25/10/2022	27/10/2022		
299692	D5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299693	D5. 1.2	25/10/2022	27/10/2022		
299694	E5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299695	E5. 1.2	25/10/2022	27/10/2022		
299696	F5. 1	25/10/2022	27/10/2022	Silty loam	
299697	F5. 1.2	25/10/2022	27/10/2022		
299698	G5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299699	G5. 1.2	25/10/2022	27/10/2022		
299700	H5. 1	25/10/2022	27/10/2022	Silty loam	
299701	H5. 1.2	25/10/2022	27/10/2022		

Results Summary

Report No.: 22-44276, issue number 2

				ELAB Reference	299686	299688	299690	299692	299694	299696	299698	299700
				Customer Reference								
				Sample ID								
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A5. 1	B5. 1	C5. 1	D5. 1	E5. 1	F5. 1	G5. 1	H5. 1
				Sample Depth (m)								
				Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**									
Soil sample preparation parameters												
Moisture Content	N	%	0.1		14.8	15.1	17.5	14.1	15.3	14.1	14.9	11.2
Material removed	N	%	0.1		< 0.1	16.9	16.9	22.0	16.3	14.2	22.6	29.3
Description of Inert material removed	N		0		None	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Metals												
Arsenic	M	mg/kg	0.5		32.8	29.3	26.3	28.7	30.4	25.3	28.0	24.0
Cadmium	M	mg/kg	0.2		0.5	0.4	0.4	0.3	0.3	0.4	0.6	0.5
Chromium	M	mg/kg	1		41.9	40.7	36.7	41.3	44.6	36.2	46.0	39.2
Copper	M	mg/kg	4		41.1	35.0	30.1	23.6	31.9	35.0	52.8	44.2
Lead	M	mg/kg	1		92.0	81.3	73.7	54.2	72.1	114	122	104
Mercury	M	mg/kg	0.1		0.3	0.3	0.3	0.2	0.2	0.4	0.3	0.3
Nickel	M	mg/kg	1		35.4	35.0	29.4	33.2	34.3	29.9	35.5	31.8
Selenium	M	mg/kg	1		1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0
Vanadium	M	mg/kg	0.5		64.9	65.1	56.7	61.7	69.2	53.8	63.2	53.7
Zinc	M	mg/kg	4.5		132	136	119	89.1	129	125	191	187
Inorganics												
Total Cyanide	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous												
Acid Neutralisation Capacity	N	mol/kg	0.1		n/t	n/t	< 0.1	n/t	n/t	n/t	< 0.1	n/t
Loss on Ignition	M	%	0.01		n/t	n/t	< 0.01	n/t	n/t	n/t	6.34	n/t
pH	M	pH units	0.1		8.1	8.2	8.0	8.1	7.3	7.8	7.9	8.0
Total Organic Carbon	N	%	0.01		n/t	n/t	2.2	n/t	n/t	n/t	1.9	n/t

Results Summary

Report No.: 22-44276, issue number 2

				ELAB Reference	299686	299688	299690	299692	299694	299696	299698	299700
				Customer Reference								
				Sample ID								
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A5. 1	B5. 1	C5. 1	D5. 1	E5. 1	F5. 1	G5. 1	H5. 1
				Sample Depth (m)								
				Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**									
Phenols												
Phenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons												
Naphthalene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	< 0.1	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	< 0.1	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	< 0.1	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	< 0.1	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	0.1	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	< 0.1	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	0.2	n/t	n/t	n/t	0.6	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	0.1	n/t	n/t	n/t	0.5	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	0.2	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	0.2	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	0.7	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	0.4	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	0.5	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	0.3	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	< 0.1	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t	n/t	n/t	0.3	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	0.5	n/t	n/t	n/t	3.9	n/t
Total (of 17) PAHs	N	mg/kg	2	n/t	n/t	< 2	n/t	n/t	n/t	4	n/t

Results Summary

Report No.: 22-44276, issue number 2

	ELAB Reference	299686	299688	299690	299692	299694	299696	299698	299700
	Customer Reference								
	Sample ID								
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sample Location	A5. 1	B5. 1	C5. 1	D5. 1	E5. 1	F5. 1	G5. 1	H5. 1
	Sample Depth (m)								
	Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**						
BTEX									
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t	n/t	n/t	< 0.01	n/t
TPH CWG									
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	< 1.0	1.7
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	1.3	2.0
Total Petroleum Hydrocarbons									
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5	n/t	n/t	7	n/t	n/t	n/t	9	n/t
PCB (ICES 7 congeners)									
Total PCBs (7 congeners)	M	mg/kg	0.03	n/t	n/t	< 0.03	n/t	n/t	n/t	< 0.03	n/t

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Results Summary

Report No.: 22-44276, issue number 2

	ELAB Reference	299686	299688	299690	299692	299694	299696
	Customer Reference						
	Sample ID						
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sample Location	A5. 1	B5. 1	C5. 1	D5. 1	E5. 1	F5. 1
	Sample Depth (m)						
	Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Organics									
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC									
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	< 0.01	< 0.01	0.02	< 0.01	0.01	0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.01	0.01	0.08	< 0.01	0.02	0.04
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	< 0.01	0.05	< 0.01	< 0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01	0.06	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	< 0.01	0.11	< 0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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Results Summary

Report No.: 22-44276, issue number 2

			ELAB Reference	299686	299688	299690	299692	299694	299696
			Customer Reference						
			Sample ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	A5. 1	B5. 1	C5. 1	D5. 1	E5. 1	F5. 1
			Sample Depth (m)						
			Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Organics									
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.06	0.03	1.60	0.02	0.04	0.09
Anthracene	N	mg/kg	0.01	0.02	< 0.01	0.38	< 0.01	0.01	0.03
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	0.25	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.26	0.13	2.58	0.07	0.16	0.55
Pyrene	N	mg/kg	0.01	0.22	0.12	1.90	0.06	0.16	0.55
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.15	0.07	0.95	0.02	0.11	0.33
Chrysene	N	mg/kg	0.01	0.16	0.06	0.84	0.05	0.11	0.34
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.13	0.06	0.71	0.05	0.11	0.28
Benzo(k)fluoranthene	N	mg/kg	0.01	0.14	0.07	0.59	0.04	0.09	0.33
Benzo(a)pyrene	N	mg/kg	0.01	0.15	0.07	0.64	0.05	0.10	0.36
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.10	0.05	0.34	0.02	0.07	0.22
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.04	0.02	0.14	0.01	0.03	0.08
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.10	0.06	0.36	0.03	0.08	0.25

Results Summary

Report No.: 22-44276, issue number 2

			ELAB Reference	299698	299700
			Customer Reference		
			Sample ID		
			Sample Type	SOIL	SOIL
			Sample Location	G5. 1	H5. 1
			Sample Depth (m)		
			Sampling Date	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**		
Organics					
Coal tar	N	%	0.01	< 0.01	< 0.01
SVOC					
Phenol	N	mg/kg	0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.01	0.03
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01	0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.02	0.03
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44276, issue number 2

ELAB Reference	299698	299700
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	G5. 1	H5. 1
Sample Depth (m)		
Sampling Date	25/10/2022	25/10/2022

Determinand	Codes	Units	LOD		
Organics					
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.07	0.18
Anthracene	N	mg/kg	0.01	0.02	0.04
Carbazole	N	mg/kg	0.01	< 0.01	0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.20	0.69
Pyrene	N	mg/kg	0.01	0.18	0.62
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.08	0.31
Chrysene	N	mg/kg	0.01	0.12	0.34
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.13	0.34
Benzo(k)fluoranthene	N	mg/kg	0.01	0.10	0.29
Benzo(a)pyrene	N	mg/kg	0.01	0.12	0.34
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.08	0.22
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.03	0.09
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.10	0.27

Results Summary

Report No.: 22-44276, issue number 2

WAC Analysis								
Elab Ref:	299698					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	25/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	G5. 1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.90	3	5	6
Loss on Ignition		M	%		6.3	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		9	500	--	--
Total (of 17) PAHs		N	mg/kg		4.0	100	--	--
pH		M			7.9	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.007		0.07	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	1		13.80	1000	20000	50000
Total Dissolved Solids		N	53		531.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	8.320		83.00	500	800	1000
Leach Test Information								
pH		N	7.9					
Conductivity (uS/cm)		N	79					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			86					
Moisture (%)			16					
Eluent Volume (ml)			984					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 22-44276, issue number 2

WAC Analysis								
Elab Ref:	299690					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	25/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	C5. 1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		2.20	3	5	6
Loss on Ignition		M	%		< 0.01	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		7	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.0	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	< 1		< 10.0	1000	20000	50000
Total Dissolved Solids		N	31		310.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	9.280		93.00	500	800	1000
Leach Test Information								
pH		N	8.2					
Conductivity (uS/cm)		N	< 50					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			83					
Moisture (%)			20					
Eluent Volume (ml)			979					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

Report No.: 22-44276, issue number 2

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299686		A5. 1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299687		A5. 1.2	Brown Sandy soil,Stones,organic	No asbestos detected	n/t	n/t	n/t	n/t
299688		B5. 1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299689		B5. 1.2	Brown Sandy soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299690		C5. 1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299691		C5. 1.2	Brown Sandy soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299692		D5. 1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299693		D5. 1.2	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299694		E5. 1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299695		E5. 1.2	Brown Sandy soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299696		F5. 1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299697		F5. 1.2	Brown Sandy soil,Stones,brick,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299698		G5. 1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299699		G5. 1.2	Brown Sandy soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t
299700		H5. 1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
299701		H5. 1.2	Brown Sandy soil,Stones,Organic	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44276, issue number 2

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	31/10/2022		GC-MS
Phenols in solids	M	As submitted sample	31/10/2022	121	HPLC
SVOC in solids	N	As submitted sample	31/10/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	01/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	01/11/2022	181	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	31/10/2022	218	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	31/10/2022	271	
Asbestos identification	U	Air dried sample	03/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	01/11/2022	300	ICPMS
Leachate					
Arsenic	N		02/11/2022	301	ICPMS
Cadmium	N		02/11/2022	301	ICPMS
Chromium	N		02/11/2022	301	ICPMS
Lead	N		02/11/2022	301	ICPMS
Nickel	N		02/11/2022	301	ICPMS
Copper	N		02/11/2022	301	ICPMS
Zinc	N		02/11/2022	301	ICPMS
Mercury	N		02/11/2022	301	ICPMS
Selenium	N		02/11/2022	301	ICPMS
Antimony	N		02/11/2022	301	ICPMS
Barium	N		02/11/2022	301	ICPMS
Molybdenum	N		02/11/2022	301	ICPMS
pH Value	N		02/11/2022	113	Electrometric
Electrical Conductivity	N		02/11/2022	136	Probe
Dissolved Organic Carbon	N		02/11/2022	102	TOC analyser
Chloride	N		02/11/2022	131	Ion Chromatography
Fluoride	N		02/11/2022	131	Ion Chromatography
Sulphate	N		02/11/2022	131	Ion Chromatography
Total Dissolved Solids	N		02/11/2022	144	Gravimetric
Phenol index	N		02/11/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	02/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	01/11/2022	210	IR
Loss on Ignition	M	Air dried sample	02/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	02/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	01/11/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	01/11/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	01/11/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	01/11/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44276, issue number 2

Key	
U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44277
Issue:	1
Date of Issue:	07/11/2022
Contact:	Rick Willemse
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	Not Supplied
Date Received:	27/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44277, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299702	I5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299703	I5. 1.2	25/10/2022	27/10/2022		
299704	J5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299705	J5. 1.2	25/10/2022	27/10/2022		
299706	K5. 1	25/10/2022	27/10/2022	Silty loam	
299707	K5. 1.2	25/10/2022	27/10/2022		
299708	L5. 1	25/10/2022	27/10/2022	Sandy silty loam	
299709	L5. 1.2	25/10/2022	27/10/2022		

Results Summary

Report No.: 22-44277, issue number 1

	ELAB Reference	299702	299704	299706	299708
	Customer Reference				
	Sample ID				
	Sample Type	SOIL	SOIL	SOIL	SOIL
	Sample Location	I5. 1	J5. 1	K5. 1	L5. 1
	Sample Depth (m)				
	Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**				
Soil sample preparation parameters							
Moisture Content	N	%	0.1	11.4	21.9	0.2	10.7
Material removed	N	%	0.1	23.3	22.9	26.3	13.7
Description of Inert material removed	N		0	Stones	Stones	Stones	Stones
Metals							
Arsenic	M	mg/kg	0.5	23.2	22.5	30.7	34.9
Cadmium	M	mg/kg	0.2	0.5	0.5	0.3	0.4
Chromium	M	mg/kg	1	36.8	37.6	43.3	43.9
Copper	M	mg/kg	4	43.8	52.6	25.4	28.2
Lead	M	mg/kg	1	111	146	52.6	59.4
Mercury	M	mg/kg	0.1	0.3	0.3	0.2	0.1
Nickel	M	mg/kg	1	28.8	28.4	33.5	35.2
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5	47.3	48.5	65.0	65.0
Zinc	M	mg/kg	4.5	165	211	119	117
Inorganics							
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous							
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	n/t	< 0.1	n/t
Loss on Ignition	M	%	0.01	n/t	n/t	4.15	n/t
pH	M	pH units	0.1	8.0	8.0	8.0	8.0
Total Organic Carbon	N	%	0.01	n/t	n/t	0.65	n/t

Results Summary

Report No.: 22-44277, issue number 1

ELAB Reference				299702	299704	299706	299708
Customer Reference							
Sample ID							
Sample Type				SOIL	SOIL	SOIL	SOIL
Sample Location				I5. 1	J5. 1	K5. 1	L5. 1
Sample Depth (m)							
Sampling Date				25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**				
Phenols							
Phenol	M	mg/kg	1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons							
Naphthalene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	< 0.1	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	< 0.4	n/t
Total (of 17) PAHs	N	mg/kg	2	n/t	n/t	< 2	n/t

Results Summary

Report No.: 22-44277, issue number 1

			ELAB Reference	299702	299704	299706	299708
			Customer Reference				
			Sample ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sample Location	I5. 1	J5. 1	K5. 1	L5. 1
			Sample Depth (m)				
			Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**				
BTEX							
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	n/t	< 0.01	n/t
TPH CWG							
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	2.1	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	2.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	3.6	12.5	< 1.0	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	1.4	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	5.1	17.2	1.3	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	5.5	19.3	1.8	< 1.0
Total Petroleum Hydrocarbons							
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5	n/t	n/t	5	n/t
PCB (ICES 7 congeners)							
Total PCBs (7 congeners)	M	mg/kg	0.03	n/t	n/t	< 0.03	n/t

Results Summary

Report No.: 22-44277, issue number 1

	ELAB Reference	299702	299704	299706	299708
	Customer Reference				
	Sample ID				
	Sample Type	SOIL	SOIL	SOIL	SOIL
	Sample Location	I5. 1	J5. 1	K5. 1	L5. 1
	Sample Depth (m)				
	Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes** / **Units** / **LOD**				
Organics					
Coal tar	N / % / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC					
Phenol	N / mg/kg / 0.01	< 0.01	0.01	< 0.01	< 0.01
Aniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N / mg/kg / 0.01	< 0.01	0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N / mg/kg / 0.01	0.01	0.06	< 0.01	< 0.01
3-Chloroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N / mg/kg / 0.01	< 0.01	0.02	< 0.01	< 0.01
1-Methylnaphthalene	N / mg/kg / 0.01	< 0.01	0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N / mg/kg / 0.01	0.02	0.19	< 0.01	< 0.01
1,2-Dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N / mg/kg / 0.01	< 0.01	0.05	< 0.01	< 0.01
4-nitrophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N / mg/kg / 0.01	< 0.01	0.02	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N / mg/kg / 0.01	< 0.01	0.04	< 0.01	< 0.01
4-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44277, issue number 1

			ELAB Reference	299702	299704	299706	299708
			Customer Reference				
			Sample ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sample Location	I5. 1	J5. 1	K5. 1	L5. 1
			Sample Depth (m)				
			Sampling Date	25/10/2022	25/10/2022	25/10/2022	25/10/2022
Determinand	**Codes**	**Units**	**LOD**				
Organics							
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.10	0.77	< 0.01	0.02
Anthracene	N	mg/kg	0.01	0.03	0.32	< 0.01	< 0.01
Carbazole	N	mg/kg	0.01	< 0.01	0.05	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.41	6.06	0.02	0.09
Pyrene	N	mg/kg	0.01	0.38	6.37	0.02	0.08
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.20	3.53	0.02	0.03
Chrysene	N	mg/kg	0.01	0.20	3.18	0.02	0.05
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.18	3.53	0.02	0.05
Benzo(k)fluoranthene	N	mg/kg	0.01	0.22	3.18	0.01	0.04
Benzo(a)pyrene	N	mg/kg	0.01	0.21	4.03	0.02	0.05
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.12	2.41	0.01	0.04
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.06	0.94	< 0.01	0.02
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.14	2.69	0.02	0.05

Results Summary

Report No.: 22-44277, issue number 1

WAC Analysis								
Elab Ref:	299706					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	25/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	K5. 1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		0.65	3	5	6
Loss on Ignition		M	%		4.2	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.0	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.011		0.11	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	< 1		< 10.0	1000	20000	50000
Total Dissolved Solids		N	35		350.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	7.820		78.00	500	800	1000
Leach Test Information								
pH		N	7.9					
Conductivity (uS/cm)		N	52					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			90					
Moisture (%)			11					
Eluent Volume (ml)			983					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

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Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299702		I5. 1	Brown Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t
299703		I5. 1.2	Brown Sandy Soil, Stones, Clinker, Brick, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299704		J5. 1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299705		J5. 1.2	Brown Sandy Soil, Stones, Clinker, Organics, Concrete	No asbestos detected	n/t	n/t	n/t	n/t
299706		K5. 1	Brown Sandy Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t
299707		K5. 1.2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299708		L5. 1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299709		L5. 1.2	Brown Sandy Soil, Stones, Clinker, Organics, Brick	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44277, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	31/10/2022		GC-MS
Phenols in solids	M	As submitted sample	31/10/2022	121	HPLC
SVOC in solids	N	As submitted sample	31/10/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	01/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	01/11/2022	181	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	31/10/2022	218	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	31/10/2022	271	
Asbestos identification	U	Air dried sample	03/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	01/11/2022	300	ICPMS
Leachate					
Arsenic	N		02/11/2022	301	ICPMS
Cadmium	N		02/11/2022	301	ICPMS
Chromium	N		02/11/2022	301	ICPMS
Lead	N		02/11/2022	301	ICPMS
Nickel	N		02/11/2022	301	ICPMS
Copper	N		02/11/2022	301	ICPMS
Zinc	N		02/11/2022	301	ICPMS
Mercury	N		02/11/2022	301	ICPMS
Selenium	N		02/11/2022	301	ICPMS
Antimony	N		02/11/2022	301	ICPMS
Barium	N		02/11/2022	301	ICPMS
Molybdenum	N		02/11/2022	301	ICPMS
pH Value	N		02/11/2022	113	Electrometric
Electrical Conductivity	N		02/11/2022	136	Probe
Dissolved Organic Carbon	N		02/11/2022	102	TOC analyser
Chloride	N		02/11/2022	131	Ion Chromatography
Fluoride	N		02/11/2022	131	Ion Chromatography
Sulphate	N		02/11/2022	131	Ion Chromatography
Total Dissolved Solids	N		02/11/2022	144	Gravimetric
Phenol index	N		02/11/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	02/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	01/11/2022	210	IR
Loss on Ignition	M	Air dried sample	02/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	02/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	01/11/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	01/11/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	01/11/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	01/11/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44277, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44278
Issue:	1
Date of Issue:	07/11/2022
Contact:	Rick Willemse
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	Not Supplied
Date Received:	27/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44278, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299710	A6. 1	26/10/2022	27/10/2022	Silty loam	
299711	A6. 1.2	26/10/2022	27/10/2022		
299712	B6. 1	26/10/2022	27/10/2022	Silty loam	
299713	C6. 1	26/10/2022	27/10/2022	Sandy silty loam	
299714	C6. 1.2	26/10/2022	27/10/2022		
299715	D6. 1	26/10/2022	27/10/2022	Sandy silty loam	
299716	D6. 1.2	26/10/2022	27/10/2022		
299717	E6. 1	26/10/2022	27/10/2022	Sandy silty loam	
299718	E6. 1.2	26/10/2022	27/10/2022		
299719	F6. 1	26/10/2022	27/10/2022	Sandy silty loam	
299720	F6. 1.2	26/10/2022	27/10/2022		
299721	G6. 1	26/10/2022	27/10/2022	Sandy silty loam	
299722	G6. 1.2	26/10/2022	27/10/2022		

Results Summary

Report No.: 22-44278, issue number 1

				ELAB Reference	299710	299712	299713	299715	299717	299719	299721
				Customer Reference							
				Sample ID							
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A6. 1	B6. 1	C6. 1	D6. 1	E6. 1	F6. 1	G6. 1
				Sample Depth (m)							
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**								
Soil sample preparation parameters											
Moisture Content	N	%	0.1		16.3	13.3	13.9	12.3	17.4	12.5	11.1
Material removed	N	%	0.1		18.5	23.9	24.0	20.5	19.2	23.8	26.1
Description of Inert material removed	N		0		Stones	Stones	Stones	Stones	Stones	Stones	Stones
Metals											
Arsenic	M	mg/kg	0.5		28.2	34.9	30.9	30.1	24.3	27.4	28.5
Cadmium	M	mg/kg	0.2		0.5	0.5	0.4	0.3	0.5	0.4	0.3
Chromium	M	mg/kg	1		42.0	46.4	41.7	44.0	36.4	37.9	32.0
Copper	M	mg/kg	4		31.3	36.4	26.8	27.7	28.9	31.0	20.5
Lead	M	mg/kg	1		77.9	95.5	65.4	72.8	84.3	82.5	40.8
Mercury	M	mg/kg	0.1		0.3	0.3	0.2	0.2	0.2	0.2	0.1
Nickel	M	mg/kg	1		34.4	39.0	32.6	30.9	27.5	29.5	29.0
Selenium	M	mg/kg	1		1.5	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5		63.4	70.1	60.8	57.2	54.4	54.2	51.5
Zinc	M	mg/kg	4.5		132	150	113	102	129	116	82.9
Inorganics											
Total Cyanide	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous											
pH	M	pH units	0.1		7.6	7.9	7.9	8.0	7.6	7.8	8.0
Phenols											
Phenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5		< 5	< 5	< 5	< 5	< 5	< 5	< 5

Results Summary

Report No.: 22-44278, issue number 1

				ELAB Reference	299710	299712	299713	299715	299717	299719	299721
				Customer Reference							
				Sample ID							
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A6. 1	B6. 1	C6. 1	D6. 1	E6. 1	F6. 1	G6. 1
				Sample Depth (m)							
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**								
BTEX											
Benzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG											
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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The Environmental Laboratory Ltd. Reg. No. 3882193

Results Summary

Report No.: 22-44278, issue number 1

			ELAB Reference	299710	299712	299713	299715	299717	299719
			Customer Reference						
			Sample ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	A6. 1	B6. 1	C6. 1	D6. 1	E6. 1	F6. 1
			Sample Depth (m)						
			Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Organics									
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC									
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	0.02
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44278, issue number 1

ELAB Reference				299710	299712	299713	299715	299717	299719
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				A6. 1	B6. 1	C6. 1	D6. 1	E6. 1	F6. 1
Sample Depth (m)									
Sampling Date				26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Organics									
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.02	0.03	0.01	0.01	0.10	0.10
Anthracene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.02
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.07	0.12	0.04	0.05	0.37	0.34
Pyrene	N	mg/kg	0.01	0.07	0.11	0.04	0.05	0.32	0.33
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.05	0.06	0.02	0.03	0.18	0.18
Chrysene	N	mg/kg	0.01	0.04	0.06	0.03	0.03	0.19	0.22
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.04	0.05	0.03	0.03	0.22	0.17
Benzo(k)fluoranthene	N	mg/kg	0.01	0.04	0.08	0.02	0.03	0.15	0.16
Benzo(a)pyrene	N	mg/kg	0.01	0.04	0.07	0.03	0.04	0.16	0.19
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.03	0.04	0.01	0.02	0.10	0.11
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.01	0.02	< 0.01	< 0.01	0.04	0.04
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.04	0.05	0.02	0.03	0.11	0.13

Results Summary

Report No.: 22-44278, issue number 1

ELAB Reference	299721
Customer Reference	
Sample ID	
Sample Type	SOIL
Sample Location	G6. 1
Sample Depth (m)	
Sampling Date	26/10/2022

Determinand	Codes	Units	LOD	
Organics				
Coal tar	N	%	0.01	< 0.01
SVOC				
Phenol	N	mg/kg	0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01
Naphthalene	N	mg/kg	0.01	< 0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	< 0.01
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01

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Results Summary

Report No.: 22-44278, issue number 1

ELAB Reference	299721
Customer Reference	
Sample ID	
Sample Type	SOIL
Sample Location	G6. 1
Sample Depth (m)	
Sampling Date	26/10/2022

Determinand	Codes	Units	LOD	
Organics				
Hexachlorobenzene	N	mg/kg	0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.02
Anthracene	N	mg/kg	0.01	< 0.01
Carbazole	N	mg/kg	0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.08
Pyrene	N	mg/kg	0.01	0.08
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.04
Chrysene	N	mg/kg	0.01	0.05
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.04
Benzo(k)fluoranthene	N	mg/kg	0.01	0.04
Benzo(a)pyrene	N	mg/kg	0.01	0.05
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.03
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.01
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.04

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Results Summary

Report No.: 22-44278, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299710		A6. 1	Brown Sandy Soil, Stones	No asbestos detected	n/t	n/t	n/t	n/t
299711		A6. 1.2	Brown Sandy Soil, Stones, Clinker, Organics, Glass	No asbestos detected	n/t	n/t	n/t	n/t
299712		B6. 1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299713		C6. 1	Brown Sandy Soil, Stones, Clinker, Brick, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299714		C6. 1.2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299715		D6. 1	Brown Sandy Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t
299716		D6. 1.2	Brown Sandy Soil, Stones, Clinker,, Brick, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299717		E6. 1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299718		E6. 1.2	Brown Soil, Stones, Clinker, Brick, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299719		F6. 1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299720		F6. 1.2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299721		G6. 1	Brown Sandy Soil, Stones, Clinker	No asbestos detected	n/t	n/t	n/t	n/t
299722		G6. 1.2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44278, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	31/10/2022		GC-MS
pH	M	Air dried sample	02/11/2022	113	Electromeric
Phenols in solids	M	As submitted sample	31/10/2022	121	HPLC
SVOC in solids	N	As submitted sample	31/10/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	04/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	03/11/2022	181	GC-MS
BTEX in solids	M	As submitted sample	01/11/2022	181A	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	31/10/2022	218	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	04/11/2022	271	
Asbestos identification	U	Air dried sample	03/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	01/11/2022	300	ICPMS

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44278, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44279
Issue:	1
Date of Issue:	07/11/2022
Contact:	Rick Willemse
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	Not Supplied
Date Received:	27/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44279, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299723	H6. 1	26/10/2022	27/10/2022	Sandy silty loam	
299724	H6. 1.2	26/10/2022	27/10/2022		
299725	H6. 1	26/10/2022	27/10/2022		
299726	I6. 1	26/10/2022	27/10/2022	Silty loam	
299727	I6. 1.2	26/10/2022	27/10/2022		
299728	J6. 1	26/10/2022	27/10/2022	Silty loam	
299729	J6. 1.2	26/10/2022	27/10/2022		
299730	K6. 1	26/10/2022	27/10/2022	Sandy silty loam	
299731	K6. 1.2	26/10/2022	27/10/2022		
299732	L6. 1	26/10/2022	27/10/2022	Sandy silty loam	
299733	L6. 1.2	26/10/2022	27/10/2022		

Results Summary

Report No.: 22-44279, issue number 1

				ELAB Reference	299723	299726	299728	299730	299732
				Customer Reference					
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	H6. 1	I6. 1	J6. 1	K6. 1	L6. 1
				Sample Depth (m)					
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Soil sample preparation parameters									
Moisture Content	N	%	0.1		10.9	11.7	10.7	10.6	9.7
Material removed	N	%	0.1		23.8	17.3	17.7	23.7	19.7
Description of Inert material removed	N		0		Stones	Stones	Stones	Stones	Stones
Metals									
Arsenic	M	mg/kg	0.5		32.4	26.5	25.9	44.0	34.9
Cadmium	M	mg/kg	0.2		0.4	0.6	0.5	0.5	0.3
Chromium	M	mg/kg	1		41.6	43.0	42.2	57.5	45.1
Copper	M	mg/kg	4		30.0	52.7	50.5	44.0	24.4
Lead	M	mg/kg	1		56.8	107	106	111	50.2
Mercury	M	mg/kg	0.1		0.2	0.3	0.3	0.3	0.2
Nickel	M	mg/kg	1		33.4	31.4	30.5	47.6	41.8
Selenium	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5		62.1	55.4	52.5	81.8	70.8
Zinc	M	mg/kg	4.5		120	205	206	180	101
Inorganics									
Total Cyanide	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous									
pH	M	pH units	0.1		8.0	8.0	8.0	8.1	8.1
Phenols									
Phenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5		< 5	< 5	< 5	< 5	< 5

Results Summary

Report No.: 22-44279, issue number 1

				ELAB Reference	299723	299726	299728	299730	299732
				Customer Reference					
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	H6. 1	I6. 1	J6. 1	K6. 1	L6. 1
				Sample Depth (m)					
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**						
BTEX									
Benzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG									
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	22.5	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	4.3	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	27.8	< 1.0	1.5	1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	1.6
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	6.2	1.9	4.8	8.2
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	2.2	< 1.0	< 1.0	1.1
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	9.6	2.8	6.8	11.5
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Tota	N	mg/kg	1		< 1.0	37.4	2.8	8.4	12.6

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Results Summary

Report No.: 22-44279, issue number 1

	ELAB Reference	299723	299726	299728	299730	299732
	Customer Reference					
	Sample ID					
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
	Sample Location	H6. 1	I6. 1	J6. 1	K6. 1	L6. 1
	Sample Depth (m)					
	Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes** / **Units** / **LOD**					
Organics						
Coal tar	N / % / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC						
Phenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Aniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
N-Nitrosodi-n-propylamine	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N / mg/kg / 0.01	< 0.01	0.01	0.01	0.01	0.02
3-Chloroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Methylnaphthalene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
1-Chloronaphthalene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N / mg/kg / 0.01	< 0.01	0.02	0.02	0.01	0.02
1,2-Dinitrobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	0.02	0.01
4-nitrophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
2,3,4,6-Tetrachlorophenol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Diethyl phthalate	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02
4-Nitroaniline	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N / mg/kg / 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44279, issue number 1

			ELAB Reference	299723	299726	299728	299730	299732
			Customer Reference					
			Sample ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	H6. 1	I6. 1	J6. 1	K6. 1	L6. 1
			Sample Depth (m)					
			Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**					
Organics								
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.02	0.03	0.04	0.06	0.11
Anthracene	N	mg/kg	0.01	< 0.01	0.02	0.01	0.01	0.03
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.07	0.23	0.16	0.17	0.37
Pyrene	N	mg/kg	0.01	0.07	0.26	0.15	0.16	0.33
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.03	0.24	0.12	0.09	0.21
Chrysene	N	mg/kg	0.01	0.04	0.22	0.09	0.10	0.19
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.04	0.14	0.12	0.09	0.17
Benzo(k)fluoranthene	N	mg/kg	0.01	0.04	0.13	0.08	0.08	0.17
Benzo(a)pyrene	N	mg/kg	0.01	0.04	0.15	0.11	0.08	0.21
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.03	0.06	0.08	0.06	0.14
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.01	0.03	0.04	0.04	0.07
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.04	0.07	0.10	0.08	0.15

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Results Summary

Report No.: 22-44279, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299723		H6. 1	Brown sandy soil, stones, clinker	No asbestos detected	n/t	n/t	n/t	n/t
299724		H6. 1.2	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299726		I6. 1	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299727		I6. 1.2	Brown sandy soil, stones, concrete, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299728		J6. 1	Brown sandy soil, stones, concrete, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299729		J6. 1.2	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299730		K6. 1	Brown sandy soil, stones, concrete, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299731		K6. 1.2	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299732		L6. 1	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299733		L6. 1.2	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44279, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	31/10/2022		GC-MS
pH	M	Air dried sample	02/11/2022	113	Electromeric
Phenols in solids	M	As submitted sample	31/10/2022	121	HPLC
SVOC in solids	N	As submitted sample	31/10/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	04/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	03/11/2022	181	GC-MS
BTEX in solids	M	As submitted sample	01/11/2022	181A	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
Basic carbon banding in soil	N	As submitted sample	31/10/2022	218	GC-FID
TPH CWG soil by gc-gc	M	As submitted sample	04/11/2022	271	
Asbestos identification	U	Air dried sample	03/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	01/11/2022	300	ICPMS

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44279, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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TN38 9BY
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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44334
Issue:	1
Date of Issue:	07/11/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	Not Supplied
Customer Reference:	TCL1121
Date Received:	31/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44334, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299963	A7.1	26/10/2022	31/10/2022	Sandy silty loam	
299964	A7.1.2	26/10/2022	31/10/2022		
299965	B7.1	26/10/2022	31/10/2022	Sandy loam	
299966	B7.1.2	26/10/2022	31/10/2022		
299967	C7.1	26/10/2022	31/10/2022	Sandy loam	
299968	C7.1.2	26/10/2022	31/10/2022		
299969	D7.1	26/10/2022	31/10/2022	Sandy silty loam	
299970	D7.1.2	26/10/2022	31/10/2022		
299971	E7.1	26/10/2022	31/10/2022	Sandy silty loam	
299972	E7.1.2	26/10/2022	31/10/2022		
299973	F7.1	26/10/2022	31/10/2022	Sandy loam	
299974	F7.1.2	26/10/2022	31/10/2022		
299975	G7.1	26/10/2022	31/10/2022	Sandy loam	
299976	G7.1.2	26/10/2022	31/10/2022		

Results Summary

Report No.: 22-44334, issue number 1

			ELAB Reference	299963	299965	299967	299969	299971	299973	299975
			Customer Reference							
			Sample ID							
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	A7.1	B7.1	C7.1	D7.1	E7.1	F7.1	G7.1
			Sample Depth (m)							
			Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**							
Soil sample preparation parameters										
Moisture Content	N	%	0.1	9.9	11.8	10.8	12.8	10.6	11.2	12.5
Material removed	N	%	0.1	13.1	7.1	6.2	7.9	6.1	6.2	9.2
Description of Inert material removed	N		0	Stones	Stones	Stones	Stones/Brick/Clinker	Stones/Clinker	Stones/Clinker	Stones/Clinker
Metals										
Arsenic	M	mg/kg	0.5	29.6	25.0	27.0	24.0	21.2	20.4	24.9
Cadmium	M	mg/kg	0.2	0.4	0.4	0.4	0.5	0.3	0.3	0.4
Chromium	M	mg/kg	1	40.8	35.4	35.2	35.3	25.8	22.5	32.1
Copper	M	mg/kg	4	30.6	27.5	31.4	30.9	35.7	34.6	48.5
Lead	M	mg/kg	1	63.3	58.7	80.9	103	117	180	200
Mercury	M	mg/kg	0.1	0.2	0.2	0.7	0.4	0.4	0.4	0.4
Nickel	M	mg/kg	1	33.5	29.0	27.6	26.8	21.8	20.8	28.4
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1
Vanadium	M	mg/kg	0.5	63.3	53.5	56.3	52.1	43.0	35.1	46.0
Zinc	M	mg/kg	4.5	103	93.8	103	115	86.2	109	118
Inorganics										
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous										
Acid Neutralisation Capacity	N	mol/kg	0.1	< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Loss on Ignition	M	%	0.01	5.78	n/t	n/t	n/t	6.54	n/t	n/t
pH	M	pH units	0.1	8.3	8.1	8.0	8.0	8.1	7.9	8.0
Total Organic Carbon	N	%	0.01	1.2	n/t	n/t	n/t	1.9	n/t	n/t

Results Summary

Report No.: 22-44334, issue number 1

				ELAB Reference	299963	299965	299967	299969	299971	299973	299975
				Customer Reference							
				Sample ID							
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A7.1	B7.1	C7.1	D7.1	E7.1	F7.1	G7.1
				Sample Depth (m)							
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**								
Phenols											
Phenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1		< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5		< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons											
Naphthalene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Acenaphthylene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Acenaphthene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Fluorene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Phenanthrene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Anthracene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Fluoranthene	M	mg/kg	0.1		0.2	n/t	n/t	n/t	0.2	n/t	n/t
Pyrene	M	mg/kg	0.1		0.2	n/t	n/t	n/t	0.2	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	0.1	n/t	n/t
Chrysene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	0.1	n/t	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	0.2	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	0.2	n/t	n/t
Benzo(a)pyrene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	0.2	n/t	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	0.1	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	< 0.1	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1		< 0.1	n/t	n/t	n/t	0.1	n/t	n/t
Total PAH(16)	M	mg/kg	0.4		0.5	n/t	n/t	n/t	1.7	n/t	n/t
Total (of 17) PAHs	N	mg/kg	2		< 2	n/t	n/t	n/t	< 2	n/t	n/t

Results Summary

Report No.: 22-44334, issue number 1

				ELAB Reference	299963	299965	299967	299969	299971	299973	299975
				Customer Reference							
				Sample ID							
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A7.1	B7.1	C7.1	D7.1	E7.1	F7.1	G7.1
				Sample Depth (m)							
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**								
BTEX											
Benzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01		< 0.01	n/t	n/t	n/t	< 0.01	n/t	n/t
TPH CWG											
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	2.6	< 1.0	< 1.0	< 1.0	1.6	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	3.3	< 1.0	< 1.0	< 1.0	2.7	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.5	1.3
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	1.8	< 1.0	< 1.0	1.0	24.2	5.7
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.8	1.4
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	2.7	< 1.0	< 1.0	1.5	33.6	8.7
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1		< 1.0	6.0	< 1.0	< 1.0	1.5	36.2	9.1
Total Petroleum Hydrocarbons											
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5		< 5	n/t	n/t	n/t	< 5	n/t	n/t
PCB (ICES 7 congeners)											
Total PCBs (7 congeners)	M	mg/kg	0.03		< 0.03	n/t	n/t	n/t	< 0.03	n/t	n/t

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Results Summary

Report No.: 22-44334, issue number 1

	ELAB Reference	299963	299965	299967	299969	299971	299973	299975
	Customer Reference							
	Sample ID							
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sample Location	A7.1	B7.1	C7.1	D7.1	E7.1	F7.1	G7.1
	Sample Depth (m)							
	Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes** / **Units** / **LOD**							
Organics								
Coal tar	N % 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC								
Phenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.03	0.02
3-Chloroaniline	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
1-Methylnaphthalene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01
Hexachlorocyclopentadiene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	0.04	0.01	0.05	0.05
1,2-Dinitrobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	< 0.01
4-nitrophenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.02	< 0.01
4-Nitroaniline	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N mg/kg 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44334, issue number 1

				ELAB Reference	299963	299965	299967	299969	299971	299973	299975
				Customer Reference							
				Sample ID							
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A7.1	B7.1	C7.1	D7.1	E7.1	F7.1	G7.1
				Sample Depth (m)							
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**								
Organics											
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.01	0.02	0.01	0.19	0.03	0.24	0.09
Anthracene	N	mg/kg	0.01	0.01	0.01	< 0.01	0.20	0.02	0.11	0.05
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.03	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.07	0.07	0.06	1.21	0.15	0.77	0.72
Pyrene	N	mg/kg	0.01	0.08	0.07	0.06	1.27	0.15	0.80	0.77
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.05	0.02	0.03	0.67	0.09	0.40	0.46
Chrysene	N	mg/kg	0.01	0.08	0.06	0.07	0.79	0.13	0.46	0.54
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.07	0.05	0.06	0.77	0.11	0.54	0.48
Benzo(k)fluoranthene	N	mg/kg	0.01	0.06	0.04	0.06	0.76	0.10	0.38	0.49
Benzo(a)pyrene	N	mg/kg	0.01	0.06	0.04	0.05	0.93	0.11	0.51	0.58
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.04	0.03	0.04	0.55	0.08	0.37	0.43
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.02	0.01	0.01	0.19	0.03	0.11	0.16
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.06	0.05	0.05	0.72	0.12	0.47	0.53

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44334, issue number 1

WAC Analysis								
Elab Ref:	299971					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	26/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	E7.1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.90	3	5	6
Loss on Ignition		M	%		6.5	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.1	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.006		0.06	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.006		0.06	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.011		0.11	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	1		13.80	1000	20000	50000
Total Dissolved Solids		N	58		583.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	8.150		82.00	500	800	1000
Leach Test Information								
pH		N	7.3					
Conductivity (uS/cm)		N	87					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			85					
Moisture (%)			18					
Eluent Volume (ml)			976					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 22-44334, issue number 1

WAC Analysis								
Elab Ref:	299963					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	26/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	A7.1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.20	3	5	6
Loss on Ignition		M	%		5.8	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.3	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	< 0.005		< 0.05	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.006		0.06	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	< 1		< 10.0	1000	20000	50000
Total Dissolved Solids		N	42		422.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	7.190		72.00	500	800	1000
Leach Test Information								
pH		N	7.2					
Conductivity (uS/cm)		N	63					
Dry mass of test portion (g)			104.000					
Dry Matter (%)			86					
Moisture (%)			16					
Eluent Volume (ml)			995					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

Report No.: 22-44334, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299963		A7.1	Brown Sandy Soil, Stones, Clinker, Glass, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299964		A7.1.2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299965		B7.1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299966		B7.1.2	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299967		C7.1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299968		C7.1.2	Brown Sandy Soil, Stones, Clinker, Brick, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299969		D7.1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299970		D7.1.2	Brown Sandy Soil, Stones, Clinker, Brick, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299971		E7.1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299972		E7.1.2	Brown Sandy Soil, Stones, Clinker, Brick, Glass, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299973		F7.1	Brown Sandy Soil, Stones, Clinker, Brick, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299974		F7.1.2	Brown Sandy Soil, Stones, Clinker, Brick, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299975		G7.1	Brown Sandy Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299976		G7.1.2	Brown Sandy Soil, Stones, Clinker, Chalk, Organics	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44334, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	01/11/2022		GC-MS
Phenols in solids	M	As submitted sample	01/11/2022	121	HPLC
SVOC in solids	N	As submitted sample	01/11/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	03/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	03/11/2022	181	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
TPH CWG soil by gc-gc	M	As submitted sample	01/11/2022	271	
Asbestos identification	U	Air dried sample	07/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	02/11/2022	300	ICPMS
Leachate					
Arsenic	N		03/11/2022	301	ICPMS
Cadmium	N		03/11/2022	301	ICPMS
Chromium	N		03/11/2022	301	ICPMS
Lead	N		03/11/2022	301	ICPMS
Nickel	N		03/11/2022	301	ICPMS
Copper	N		03/11/2022	301	ICPMS
Zinc	N		03/11/2022	301	ICPMS
Mercury	N		03/11/2022	301	ICPMS
Selenium	N		03/11/2022	301	ICPMS
Antimony	N		03/11/2022	301	ICPMS
Barium	N		03/11/2022	301	ICPMS
Molybdenum	N		03/11/2022	301	ICPMS
pH Value	N		03/11/2022	113	Electrometric
Electrical Conductivity	N		03/11/2022	136	Probe
Dissolved Organic Carbon	N		03/11/2022	102	TOC analyser
Chloride	N		03/11/2022	131	Ion Chromatography
Fluoride	N		03/11/2022	131	Ion Chromatography
Sulphate	N		03/11/2022	131	Ion Chromatography
Total Dissolved Solids	N		03/11/2022	144	Gravimetric
Phenol index	N		03/11/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	02/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	02/11/2022	210	IR
Loss on Ignition	M	Air dried sample	02/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	02/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	03/11/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	07/11/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	01/11/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	02/11/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44334, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44335
Issue:	1
Date of Issue:	07/11/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	Not Supplied
Customer Reference:	TCL1121
Date Received:	31/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44335, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299977	H7.1	26/10/2022	31/10/2022	Sandy loam	
299978	H7.1.2	26/10/2022	31/10/2022		
299979	I7.1	26/10/2022	31/10/2022	Sandy loam	
299980	I7.1.2	26/10/2022	31/10/2022		
299981	J7.1	26/10/2022	31/10/2022	Sandy silty loam	
299982	J7.1.2	26/10/2022	31/10/2022		
299983	K7.1	26/10/2022	31/10/2022	Sandy silty loam	
299984	K7.1.2	26/10/2022	31/10/2022		
299985	L7.1	26/10/2022	31/10/2022	Sandy silty loam	
299986	L7.1.2	26/10/2022	31/10/2022		

Results Summary

Report No.: 22-44335, issue number 1

				ELAB Reference	299977	299979	299981	299983	299985
				Customer Reference					
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	H7.1	I7.1	J7.1	K7.1	L7.1
				Sample Depth (m)					
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Soil sample preparation parameters									
Moisture Content	N	%	0.1		10.4	8.9	8.7	10.5	11.0
Material removed	N	%	0.1		7.5	8.3	7.4	4.6	7.2
Description of Inert material removed	N		0		Stones	Stones/Clinker	Stones	Stones	Stones/Clinker
Metals									
Arsenic	M	mg/kg	0.5		30.6	42.1	27.9	28.6	29.9
Cadmium	M	mg/kg	0.2		0.5	0.6	0.5	1.0	0.9
Chromium	M	mg/kg	1		38.7	44.3	41.3	45.4	40.4
Copper	M	mg/kg	4		52.5	54.0	42.3	116	111
Lead	M	mg/kg	1		130	119	121	238	222
Mercury	M	mg/kg	0.1		0.4	0.3	0.4	0.8	0.7
Nickel	M	mg/kg	1		32.7	45.3	31.1	37.4	36.7
Selenium	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5		60.7	73.4	57.3	61.3	53.3
Zinc	M	mg/kg	4.5		181	143	166	430	396
Inorganics									
Total Cyanide	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1		n/t	< 0.1	n/t	n/t	n/t
Loss on Ignition	M	%	0.01		n/t	4.92	n/t	n/t	n/t
pH	M	pH units	0.1		8.1	8.1	8.1	8.0	8.0
Total Organic Carbon	N	%	0.01		n/t	1.1	n/t	n/t	n/t

Results Summary

Report No.: 22-44335, issue number 1

				ELAB Reference	299977	299979	299981	299983	299985
				Customer Reference					
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	H7.1	I7.1	J7.1	K7.1	L7.1
				Sample Depth (m)					
				Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**						
Phenols									
Phenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	< 0.1	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	< 0.4	n/t	n/t	n/t
Total (of 17) PAHs	N	mg/kg	2	n/t	< 2	n/t	n/t	n/t

Results Summary

Report No.: 22-44335, issue number 1

ELAB Reference				299977	299979	299981	299983	299985
Customer Reference								
Sample ID								
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				H7.1	I7.1	J7.1	K7.1	L7.1
Sample Depth (m)								
Sampling Date				26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**					
BTEX								
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	n/t	< 0.01	n/t	n/t	n/t
TPH CWG								
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	3.4	< 1.0	1.8	3.6	< 1.0
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	6.1	< 1.0	3.5	6.0	< 1.0
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	6.9	< 1.0	4.0	7.0	< 1.0
Total Petroleum Hydrocarbons								
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5	n/t	< 5	n/t	n/t	n/t
PCB (ICES 7 congeners)								
Total PCBs (7 congeners)	M	mg/kg	0.03	n/t	< 0.03	n/t	n/t	n/t

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44335, issue number 1

	ELAB Reference	299977	299979	299981	299983	299985
	Customer Reference					
	Sample ID					
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
	Sample Location	H7.1	I7.1	J7.1	K7.1	L7.1
	Sample Depth (m)					
	Sampling Date	26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**					
Organics								
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC								
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	< 0.01	< 0.01	0.02	0.01	< 0.01
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.01	< 0.01	0.04	0.03	0.02
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44335, issue number 1

ELAB Reference			299977	299979	299981	299983	299985
Customer Reference							
Sample ID							
Sample Type			SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location			H7.1	I7.1	J7.1	K7.1	L7.1
Sample Depth (m)							
Sampling Date			26/10/2022	26/10/2022	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**				
Organics							
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.02	< 0.01	0.10	0.06	0.04
Anthracene	N	mg/kg	0.01	0.01	< 0.01	0.05	0.04	0.03
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.10	0.03	0.46	0.36	0.25
Pyrene	N	mg/kg	0.01	0.10	0.03	0.48	0.38	0.26
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.06	0.03	0.24	0.23	0.18
Chrysene	N	mg/kg	0.01	0.10	0.03	0.30	0.33	0.25
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.10	0.03	0.36	0.39	0.26
Benzo(k)fluoranthene	N	mg/kg	0.01	0.08	0.04	0.29	0.35	0.24
Benzo(a)pyrene	N	mg/kg	0.01	0.08	0.03	0.30	0.33	0.26
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.07	0.03	0.23	0.29	0.21
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.03	< 0.01	0.07	0.09	0.07
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.10	0.04	0.30	0.39	0.27

Results Summary

Report No.: 22-44335, issue number 1

WAC Analysis								
Elab Ref:	299979					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	26/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	I7.1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.10	3	5	6
Loss on Ignition		M	%		4.9	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.1	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.007		0.07	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	4		36.20	1000	20000	50000
Total Dissolved Solids		N	53		525.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	6.280		63.00	500	800	1000
Leach Test Information								
pH		N	7.4					
Conductivity (uS/cm)		N	78					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			90					
Moisture (%)			12					
Eluent Volume (ml)			977					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

Report No.: 22-44335, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299977		H7.1	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299978		H7.1.2	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299979		I7.1	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299980		I7.1.2	Brown sandy soil, stones, clinker, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299981		J7.1	Brown sandy soil, stones, brick, clinker, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299982		J7.1.2	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299983		K7.1	Brown sandy soil, stones, clinker, chalk, organics	No asbestos detected	n/t	n/t	n/t	n/t
299984		K7.1.2	Brown sandy soil, stones, brick, clinker, glass, organics	No asbestos detected	n/t	n/t	n/t	n/t
299985		L7.1	Brown sandy soil, stones, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t
299986		L7.1.2	Brown sandy soil, stones, brick, clinker, organics	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44335, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	01/11/2022		GC-MS
Phenols in solids	M	As submitted sample	01/11/2022	121	HPLC
SVOC in solids	N	As submitted sample	01/11/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	03/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	03/11/2022	181	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
TPH CWG soil by gc-gc	M	As submitted sample	01/11/2022	271	
Asbestos identification	U	Air dried sample	04/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	02/11/2022	300	ICPMS
Leachate					
Arsenic	N		03/11/2022	301	ICPMS
Cadmium	N		03/11/2022	301	ICPMS
Chromium	N		03/11/2022	301	ICPMS
Lead	N		03/11/2022	301	ICPMS
Nickel	N		03/11/2022	301	ICPMS
Copper	N		03/11/2022	301	ICPMS
Zinc	N		03/11/2022	301	ICPMS
Mercury	N		03/11/2022	301	ICPMS
Selenium	N		03/11/2022	301	ICPMS
Antimony	N		03/11/2022	301	ICPMS
Barium	N		03/11/2022	301	ICPMS
Molybdenum	N		03/11/2022	301	ICPMS
pH Value	N		03/11/2022	113	Electrometric
Electrical Conductivity	N		03/11/2022	136	Probe
Dissolved Organic Carbon	N		03/11/2022	102	TOC analyser
Chloride	N		03/11/2022	131	Ion Chromatography
Fluoride	N		03/11/2022	131	Ion Chromatography
Sulphate	N		03/11/2022	131	Ion Chromatography
Total Dissolved Solids	N		03/11/2022	144	Gravimetric
Phenol index	N		03/11/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	02/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	02/11/2022	210	IR
Loss on Ignition	M	Air dried sample	02/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	02/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	03/11/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	07/11/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	01/11/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	02/11/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44335, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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UKAS TESTING 2683

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44812
Issue:	1
Date of Issue:	25/11/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	Not Supplied
Customer Reference:	TCL1121
Date Received:	18/11/2022
Date Approved:	25/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44812, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
302319	A8.1	17/11/2022	18/11/2022	Silty loam	
302320	A8.1.2	17/11/2022	18/11/2022		
302321	B8.1	17/11/2022	18/11/2022	Sandy silty loam	
302322	B8.1.2	17/11/2022	18/11/2022		
302323	C8.1	17/11/2022	18/11/2022	Sandy silty loam	
302324	C8.1.2	17/11/2022	18/11/2022		
302325	D8.1	17/11/2022	18/11/2022	Silty loam	
302326	D8.1.2	17/11/2022	18/11/2022		
302327	E8.1	17/11/2022	18/11/2022	Sandy silty loam	
302328	E8.1.2	17/11/2022	18/11/2022		
302329	F8.1	17/11/2022	18/11/2022	Silty loam	
302330	F8.1.2	17/11/2022	18/11/2022		
302331	G8.1	17/11/2022	18/11/2022	Silty loam	
302332	G8.1.2	17/11/2022	18/11/2022		
302333	H8.1	17/11/2022	18/11/2022	Sandy silty loam	
302334	H8.1.2	17/11/2022	18/11/2022		
302335	I8.1	17/11/2022	18/11/2022	Silty loam	
302336	I8.1.2	17/11/2022	18/11/2022		
302337	J8.1	17/11/2022	18/11/2022	Silty loam	
302338	J8.1.2	17/11/2022	18/11/2022		
302339	K8.1	17/11/2022	18/11/2022	Silty loam	
302340	K8.1.2	17/11/2022	18/11/2022		
302341	L8.1	17/11/2022	18/11/2022	Silty loam	
302342	L8.1.2	17/11/2022	18/11/2022		
302343	LN12.1	17/11/2022	18/11/2022	Sandy silty loam	
302344	JN12.1.2	17/11/2022	18/11/2022		
302345	LN35.1	17/11/2022	18/11/2022	Silty loam	
302346	LN35.1.2	17/11/2022	18/11/2022		
302347	LN68.1	17/11/2022	18/11/2022	Sandy silty loam	
302348	LN68.1.2	17/11/2022	18/11/2022		

Results Summary

Report No.: 22-44812, issue number 1

				ELAB Reference	302319	302321	302323	302325	302327	302329	302331	302333
				Customer Reference								
				Sample ID								
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A8.1	B8.1	C8.1	D8.1	E8.1	F8.1	G8.1	H8.1
				Sample Depth (m)								
				Sampling Date	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**									
Soil sample preparation parameters												
Moisture Content	N	%	0.1		9.3	10.2	12.1	10.5	12.2	12.0	15.0	12.5
Material removed	N	%	0.1		6.8	10.0	9.3	8.9	7.9	8.0	5.3	5.9
Description of Inert material removed	N		0		Stones/Clinker	Stones/Brick	Stones/Brick/Clinker	Stones/Brick/Clinker	Stones	Stones/Clinker	Stones/Brick	Stones/Brick/Clinker
Metals												
Arsenic	M	mg/kg	0.5		28.0	25.5	30.6	26.6	24.8	29.0	22.6	25.1
Cadmium	M	mg/kg	0.2		0.4	0.4	3.1	0.5	0.4	0.7	0.5	0.4
Chromium	M	mg/kg	1		41.4	34.3	44.5	40.6	38.2	45.8	36.5	38.2
Copper	M	mg/kg	4		45.3	41.9	59.5	45.6	48.6	103	47.8	45.7
Lead	M	mg/kg	1		126	117	131	122	129	1160	138	248
Mercury	M	mg/kg	0.1		0.4	0.4	0.6	0.4	0.4	0.6	0.4	0.3
Nickel	M	mg/kg	1		35.2	30.8	37.2	34.0	30.6	41.4	28.4	30.9
Selenium	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5		61.5	53.8	68.9	61.9	54.5	64.9	52.1	57.5
Zinc	M	mg/kg	4.5		171	152	186	171	184	329	167	161
Inorganics												
Total Cyanide	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous												
Acid Neutralisation Capacity	N	mol/kg	0.1		n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Loss on Ignition	M	%	0.01		n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
pH	M	pH units	0.1		7.3	7.4	7.5	7.7	7.7	7.8	7.9	7.9
Total Organic Carbon	N	%	0.01		n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 22-44812, issue number 1

			ELAB Reference	302319	302321	302323	302325	302327	302329	302331	302333
			Customer Reference								
			Sample ID								
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	A8.1	B8.1	C8.1	D8.1	E8.1	F8.1	G8.1	H8.1
			Sample Depth (m)								
			Sampling Date	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**								
Phenols											
Phenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons											
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Total (of 17) PAHs	N	mg/kg	2	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 22-44812, issue number 1

				ELAB Reference	302319	302321	302323	302325	302327	302329	302331	302333
				Customer Reference								
				Sample ID								
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	A8.1	B8.1	C8.1	D8.1	E8.1	F8.1	G8.1	H8.1
				Sample Depth (m)								
				Sampling Date	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**									
BTEX												
Benzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	U	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01		n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
TPH CWG												
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	2.6	2.2	< 1.0	< 1.0	2.9	4.2
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	< 1.0	3.5	2.8	< 1.0	< 1.0	3.8	5.8
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	1.5	< 1.0	< 1.0	1.4	3.8
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	5.3	21.4	< 1.0	< 1.0	41.2	23.2
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	1.4	7.2	< 1.0	< 1.0	13.5	3.4
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	< 1.0	8.0	30.8	< 1.0	< 1.0	57.2	31.7
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1		< 1.0	< 1.0	11.5	33.6	< 1.0	< 1.0	61.0	37.6
Total Petroleum Hydrocarbons												
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5		n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
PCB (ICES 7 congeners)												
Total PCBs (7 congeners)	M	mg/kg	0.03		n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 22-44812, issue number 1

				ELAB Reference	302335	302337	302339	302341	302343	302345	302347
				Customer Reference							
				Sample ID							
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	I8.1	J8.1	K8.1	L8.1	LN12.1	LN35.1	LN68.1
				Sample Depth (m)							
				Sampling Date	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**								
Soil sample preparation parameters											
Moisture Content	N	%	0.1		15.4	12.3	13.3	13.3	15.7	15.7	14.6
Material removed	N	%	0.1		9.3	11.2	6.6	9.8	13.7	7.4	6.1
Description of Inert material removed	N		0		Stones	Stones/Brick/Clinker	Stones/Brick/Clinker	Stones/Brick/Clinker	Stones	Stones	Stones
Metals											
Arsenic	M	mg/kg	0.5		26.5	24.5	22.8	23.6	29.1	23.5	23.4
Cadmium	M	mg/kg	0.2		0.5	0.6	0.5	0.6	0.7	0.6	0.6
Chromium	M	mg/kg	1		40.2	37.7	34.4	35.4	46.0	40.0	36.2
Copper	M	mg/kg	4		60.6	71.5	57.9	61.7	81.2	64.5	63.8
Lead	M	mg/kg	1		149	139	128	143	208	143	138
Mercury	M	mg/kg	0.1		0.4	0.6	0.4	0.5	0.5	0.4	0.5
Nickel	M	mg/kg	1		32.3	31.1	29.0	30.4	37.8	31.2	31.5
Selenium	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5		57.1	55.2	51.0	50.5	63.9	54.1	51.6
Zinc	M	mg/kg	4.5		189	203	175	212	292	220	245
Inorganics											
Total Cyanide	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous											
Acid Neutralisation Capacity	N	mol/kg	0.1		n/t	n/t	n/t	< 0.1	n/t	< 0.1	n/t
Loss on Ignition	M	%	0.01		n/t	n/t	n/t	5.26	n/t	5.25	n/t
pH	M	pH units	0.1		8.0	7.9	8.0	8.0	7.9	8.0	8.0
Total Organic Carbon	N	%	0.01		n/t	n/t	n/t	1.5	n/t	1.6	n/t

Results Summary

Report No.: 22-44812, issue number 1

			ELAB Reference	302335	302337	302339	302341	302343	302345	302347
			Customer Reference							
			Sample ID							
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	I8.1	J8.1	K8.1	L8.1	LN12.1	LN35.1	LN68.1
			Sample Depth (m)							
			Sampling Date	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**							
Phenols										
Phenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Polyaromatic hydrocarbons										
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t	< 0.1	n/t	< 0.1	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t	0.1	n/t	< 0.1	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t	0.1	n/t	< 0.1	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t	0.1	n/t	< 0.1	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t	1.5	n/t	< 0.1	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t	0.4	n/t	< 0.1	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	3.5	n/t	0.3	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t	2.9	n/t	0.3	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	1.6	n/t	0.2	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t	2.1	n/t	0.2	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	3.4	n/t	0.3	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t	3.7	n/t	0.3	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	n/t	3.9	n/t	0.2	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	n/t	3.2	n/t	0.2	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t	0.6	n/t	< 0.1	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t	3.0	n/t	0.2	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t	30.5	n/t	2.5	n/t
Total (of 17) PAHs	N	mg/kg	2	n/t	n/t	n/t	31	n/t	2	n/t

Results Summary

Report No.: 22-44812, issue number 1

				ELAB Reference	302335	302337	302339	302341	302343	302345	302347
				Customer Reference							
				Sample ID							
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	I8.1	J8.1	K8.1	L8.1	LN12.1	LN35.1	LN68.1
				Sample Depth (m)							
				Sampling Date	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**								
BTEX											
Benzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	M	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
MTBE	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	U	ug/kg	10		< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01		n/t	n/t	n/t	< 0.01	n/t	< 0.01	n/t
TPH CWG											
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1		3.2	4.3	2.4	2.2	1.1	3.3	< 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1		4.8	5.7	3.2	3.4	1.4	4.8	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1		1.6	2.3	1.2	2.8	< 1.0	3.9	1.1
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1		10.7	16.3	9.0	18.3	5.2	24.1	7.6
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1		1.2	2.4	< 1.0	2.4	< 1.0	5.0	1.3
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1		14.7	22.1	11.9	24.5	6.6	34.2	10.6
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1		19.5	27.8	15.1	28.0	8.0	39.1	11.6
Total Petroleum Hydrocarbons											
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5		n/t	n/t	n/t	< 5	n/t	< 5	n/t
PCB (ICES 7 congeners)											
Total PCBs (7 congeners)	M	mg/kg	0.03		n/t	n/t	n/t	< 0.03	n/t	< 0.03	n/t

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44812, issue number 1

ELAB Reference				302319	302321	302323	302325	302327	302329	302331
Customer Reference										
Sample ID										
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				A8.1	B8.1	C8.1	D8.1	E8.1	F8.1	G8.1
Sample Depth (m)										
Sampling Date				17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**							
Organics										
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC										
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.02	0.05	0.02	0.02	0.04	0.04	0.03
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	< 0.01	0.02	0.01	< 0.01	0.03	0.02	0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	0.02	< 0.01	< 0.01	0.02	0.01	0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.03	0.23	0.05	0.03	0.05	0.08	0.04
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	0.04	< 0.01	< 0.01	0.04	0.01	0.03
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	0.03	< 0.01	< 0.01	0.03	0.02	0.02
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	0.03	< 0.01	< 0.01	0.03	0.02	0.05
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.11	1.04	0.18	0.08	0.53	0.28	0.40

Results Summary

Report No.: 22-44812, issue number 1

ELAB Reference				302319	302321	302323	302325	302327	302329	302331
Customer Reference										
Sample ID										
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				A8.1	B8.1	C8.1	D8.1	E8.1	F8.1	G8.1
Sample Depth (m)										
Sampling Date				17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**							
Organics										
Anthracene	N	mg/kg	0.01	0.05	0.40	0.05	0.02	0.14	0.08	0.13
Carbazole	N	mg/kg	0.01	0.01	0.05	0.01	0.01	0.05	0.02	0.04
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.35	4.34	0.71	0.28	1.35	0.96	0.83
Pyrene	N	mg/kg	0.01	0.34	4.13	0.67	0.27	1.28	0.93	0.77
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.18	2.59	0.39	0.16	0.69	0.53	0.43
Chrysene	N	mg/kg	0.01	0.22	2.80	0.43	0.19	0.71	0.56	0.42
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.21	3.95	0.51	0.31	1.15	0.74	0.51
Benzo(k)fluoranthene	N	mg/kg	0.01	0.18	2.74	0.42	0.22	0.72	0.56	0.38
Benzo(a)pyrene	N	mg/kg	0.01	0.18	3.36	0.50	0.20	1.20	0.59	0.41
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.11	2.12	0.31	0.16	0.92	0.45	0.28
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.05	0.68	0.11	0.06	0.29	0.16	0.11
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.15	2.36	0.36	0.20	1.15	0.52	0.34

Results Summary

Report No.: 22-44812, issue number 1

ELAB Reference				302333	302335	302337	302339	302341	302343	302345
Customer Reference										
Sample ID										
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				H8.1	I8.1	J8.1	K8.1	L8.1	LN12.1	LN35.1
Sample Depth (m)										
Sampling Date				17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**							
Organics										
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOC										
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.04	0.02	0.03	0.02	0.06	0.03	0.02
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.01	0.01	0.01	< 0.01	0.03	0.01	< 0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.06	0.03	0.06	0.04	0.08	0.03	0.05
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	0.01	< 0.01	< 0.01	< 0.01	0.03	< 0.01	0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	0.01	< 0.01	0.01	< 0.01	0.03	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	< 0.01	0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.12	0.07	0.16	0.09	0.40	0.10	0.20

Results Summary

Report No.: 22-44812, issue number 1

ELAB Reference				302333	302335	302337	302339	302341	302343	302345
Customer Reference										
Sample ID										
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				H8.1	I8.1	J8.1	K8.1	L8.1	LN12.1	LN35.1
Sample Depth (m)										
Sampling Date				17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
Determinand	**Codes**	**Units**	**LOD**							
Organics										
Anthracene	N	mg/kg	0.01	0.05	0.03	0.05	0.03	0.13	0.03	0.06
Carbazole	N	mg/kg	0.01	0.01	< 0.01	0.01	< 0.01	0.03	< 0.01	0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.65	0.27	0.60	0.27	1.32	0.47	0.81
Pyrene	N	mg/kg	0.01	0.63	0.27	0.59	0.26	1.26	0.47	0.74
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.41	0.19	0.31	0.15	0.76	0.26	0.37
Chrysene	N	mg/kg	0.01	0.37	0.17	0.34	0.16	0.77	0.27	0.40
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.60	0.26	0.50	0.20	1.12	0.36	0.60
Benzo(k)fluoranthene	N	mg/kg	0.01	0.47	0.19	0.40	0.18	0.73	0.27	0.37
Benzo(a)pyrene	N	mg/kg	0.01	0.46	0.20	0.49	0.21	0.90	0.30	0.38
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.30	0.13	0.35	0.12	0.67	0.23	0.22
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.12	0.06	0.12	0.05	0.25	0.09	0.10
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.40	0.17	0.43	0.16	0.79	0.27	0.29

Results Summary

Report No.: 22-44812, issue number 1

ELAB Reference	302347
Customer Reference	
Sample ID	
Sample Type	SOIL
Sample Location	LN68.1
Sample Depth (m)	
Sampling Date	17/11/2022

Determinand	Codes	Units	LOD	
Organics				
Coal tar	N	%	0.01	< 0.01
SVOC				
Phenol	N	mg/kg	0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.02
3-Chloroaniline	N	mg/kg	0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.01
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.06
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.23

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 22-44812, issue number 1

ELAB Reference	302347
Customer Reference	
Sample ID	
Sample Type	SOIL
Sample Location	LN68.1
Sample Depth (m)	
Sampling Date	17/11/2022

Determinand	Codes	Units	LOD	
Organics				
Anthracene	N	mg/kg	0.01	0.07
Carbazole	N	mg/kg	0.01	0.02
Dibutyl phthalate	N	mg/kg	0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	0.89
Pyrene	N	mg/kg	0.01	0.81
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	0.44
Chrysene	N	mg/kg	0.01	0.44
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	0.58
Benzo(k)fluoranthene	N	mg/kg	0.01	0.39
Benzo(a)pyrene	N	mg/kg	0.01	0.45
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	0.32
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.13
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.39

Results Summary

Report No.: 22-44812, issue number 1

WAC Analysis								
Elab Ref:	302345					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	17/11/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	LN35.1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.60	3	5	6
Loss on Ignition		M	%		5.3	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		2.0	100	--	--
pH		M			8.0	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.009		0.09	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.009		0.09	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	3		26.10	1000	20000	50000
Total Dissolved Solids		N	73		726.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	11.500		115.00	500	800	1000
Leach Test Information								
pH		N	7.3					
Conductivity (uS/cm)		N	108					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			84					
Moisture (%)			19					
Eluent Volume (ml)			963					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 22-44812, issue number 1

WAC Analysis								
Elab Ref:	302341					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	17/11/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	L8.1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.50	3	5	6
Loss on Ignition		M	%		5.3	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		31.0	100	--	--
pH		M			8.0	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.009		0.09	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.007		0.07	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	5		48.90	1000	20000	50000
Total Dissolved Solids		N	81		807.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	10.600		106.00	500	800	1000
Leach Test Information								
pH		N	6.9					
Conductivity (uS/cm)		N	120					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			85					
Moisture (%)			18					
Eluent Volume (ml)			979					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

Report No.: 22-44812, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis	Total Asbestos (%)
302319		A8.1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
302320		A8.1.2	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302321		B8.1	Brown Sandy soil,Stones,Brick,Concrete	No asbestos detected	n/t	n/t	n/t	n/t
302322		B8.1.2	Brown Sandy soil,Stones,Glass,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302323		C8.1	Brown Sandy soil,Stones,Glass	No asbestos detected	n/t	n/t	n/t	n/t
302324		C8.1.2	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302325		D8.1	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302326		D8.1.2	Brown Sandy soil,Stones,Glass,Clinker,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302327		E8.1	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302328		E8.1.2	Brown Sandy soil,Stones,Brick,Concrete	No asbestos detected	n/t	n/t	n/t	n/t
302329		F8.1	Brown Sandy Soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302330		F8.1.2	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302331		G8.1	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302332		G8.1.2	Brown Sandy soil,Stones,Polythene,Organic	No asbestos detected	n/t	n/t	n/t	n/t
302333		H8.1	Brown Sandy soil,Stones,Brick,Organic	No asbestos detected	n/t	n/t	n/t	n/t
302334		H8.1.2	Brown Sandy soil,Stones,Brick,,Clinker	No asbestos detected	n/t	n/t	n/t	n/t
302335		I8.1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
302336		I8.1.2	Brown Sandy soil,Stones,organic,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302337		J8.1	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302338		J8.1.2	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302339		K8.1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
302340		K8.1.2	Brown Sandy soil,Stones,Brick	No asbestos detected	n/t	n/t	n/t	n/t
302341		L8.1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
302342		L8.1.2	Brown Sandy soil,Stones,Glass	No asbestos detected	n/t	n/t	n/t	n/t
302343		LN12.1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
302344		JN12.1.2	Brown Sandy soil,Stones,Glass	No asbestos detected	n/t	n/t	n/t	n/t
302345		LN35.1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
302346		LN35.1.2	Brown Sandy soil,Stones,Metal,Ceramic,Organic	No asbestos detected	n/t	n/t	n/t	n/t
302347		LN68.1	Brown Sandy soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t
302348		LN68.1.2	Brown Sandy soil,Stones,Brick,Glass,Oraganic	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44812, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	24/11/2022		GC-MS
Phenols in solids	M	As submitted sample	22/11/2022	121	HPLC
SVOC in solids	N	As submitted sample	24/11/2022	167	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	23/11/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	23/11/2022	181	GC-MS
Total cyanide	M	As submitted sample	24/11/2022	204	Colorimetry
TPH CWG soil by gc-gc	M	As submitted sample	21/11/2022	271	
Asbestos identification	U	Air dried sample	25/11/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	23/11/2022	300	ICPMS
Leachate					
Arsenic	N		24/11/2022	301	ICPMS
Cadmium	N		24/11/2022	301	ICPMS
Chromium	N		24/11/2022	301	ICPMS
Lead	N		24/11/2022	301	ICPMS
Nickel	N		24/11/2022	301	ICPMS
Copper	N		24/11/2022	301	ICPMS
Zinc	N		24/11/2022	301	ICPMS
Mercury	N		24/11/2022	301	ICPMS
Selenium	N		24/11/2022	301	ICPMS
Antimony	N		24/11/2022	301	ICPMS
Barium	N		24/11/2022	301	ICPMS
Molybdenum	N		24/11/2022	301	ICPMS
pH Value	N		24/11/2022	113	Electrometric
Electrical Conductivity	N		24/11/2022	136	Probe
Dissolved Organic Carbon	N		24/11/2022	102	TOC analyser
Chloride	N		24/11/2022	131	Ion Chromatography
Fluoride	N		24/11/2022	131	Ion Chromatography
Sulphate	N		24/11/2022	131	Ion Chromatography
Total Dissolved Solids	N		24/11/2022	144	Gravimetric
Phenol index	N		24/11/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	22/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	23/11/2022	210	IR
Loss on Ignition	M	Air dried sample	23/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	22/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	23/11/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	21/11/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	22/11/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	24/11/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44812, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44336
Issue:	1
Date of Issue:	07/11/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	Not Supplied
Customer Reference:	TCL1121
Date Received:	31/10/2022
Date Approved:	07/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44336, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
299987	CP.1	26/10/2022	31/10/2022	Sandy silty loam	
299988	CP1.1	26/10/2022	31/10/2022		
299989	CP2	26/10/2022	31/10/2022	Sandy silty loam	
299990	CP2.2	26/10/2022	31/10/2022		
299991	CP3	26/10/2022	31/10/2022	Sandy silty loam	
299992	CP3.3	26/10/2022	31/10/2022		

Results Summary

Report No.: 22-44336, issue number 1

			ELAB Reference	299987	299989	299991
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	CP.1	CP2	CP3
			Sample Depth (m)			
			Sampling Date	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**			
Soil sample preparation parameters						
Moisture Content	N	%	0.1	10.5	10.3	10.3
Material removed	N	%	0.1	8.4	14.0	9.0
Description of Inert material removed	N		0	Stones/Clinker	Stones/Clinker	Stones/Clinker
Metals						
Arsenic	M	mg/kg	0.5	23.3	27.5	18.5
Cadmium	M	mg/kg	0.2	1.2	1.2	1.3
Chromium	M	mg/kg	1	56.5	45.6	74.5
Copper	M	mg/kg	4	70.8	133	95.7
Lead	M	mg/kg	1	191	170	297
Mercury	M	mg/kg	0.1	0.5	0.6	0.7
Nickel	M	mg/kg	1	35.4	34.8	31.8
Selenium	M	mg/kg	1	1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	0.5	43.4	48.3	45.6
Zinc	M	mg/kg	4.5	242	448	278
Inorganics						
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0
Miscellaneous						
Acid Neutralisation Capacity	N	mol/kg	0.1	< 0.1	< 0.1	< 0.1
Loss on Ignition	M	%	0.01	8.28	5.63	7.18
pH	M	pH units	0.1	7.9	8.0	7.7
Total Organic Carbon	N	%	0.01	2.5	2.3	2.1

Results Summary

Report No.: 22-44336, issue number 1

			ELAB Reference	299987	299989	299991
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	CP.1	CP2	CP3
			Sample Depth (m)			
			Sampling Date	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**			
Phenols						
Phenol	M	mg/kg	1	< 1	< 1	< 1
M,P-Cresol	N	mg/kg	1	< 1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	< 1	< 1	< 1
2,3,5-trimethylphenol	M	mg/kg	1	< 1	< 1	< 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5	< 5
Polyaromatic hydrocarbons						
Naphthalene	M	mg/kg	0.1	0.6	0.1	0.1
Acenaphthylene	M	mg/kg	0.1	0.2	0.5	0.3
Acenaphthene	M	mg/kg	0.1	4.2	0.2	0.2
Fluorene	M	mg/kg	0.1	3.6	0.1	0.1
Phenanthrene	M	mg/kg	0.1	38.8	1.6	1.2
Anthracene	M	mg/kg	0.1	10.2	0.6	0.5
Fluoranthene	M	mg/kg	0.1	41.0	4.9	4.0
Pyrene	M	mg/kg	0.1	34.4	4.2	3.6
Benzo(a)anthracene	M	mg/kg	0.1	14.8	2.2	1.8
Chrysene	M	mg/kg	0.1	16.7	2.7	2.3
Benzo(b)fluoranthene	M	mg/kg	0.1	13.7	3.7	3.2
Benzo(k)fluoranthene	M	mg/kg	0.1	13.9	3.3	3.2
Benzo(a)pyrene	M	mg/kg	0.1	17.6	4.5	3.6
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	10.7	3.0	2.8
Dibenzo(a,h)anthracene	M	mg/kg	0.1	2.0	0.6	0.5
Benzo[g,h,i]perylene	M	mg/kg	0.1	9.8	2.8	2.5
Total PAH(16)	M	mg/kg	0.4	232	35.2	30.1
Total (of 17) PAHs	N	mg/kg	2	237	37	31

Results Summary

Report No.: 22-44336, issue number 1

			ELAB Reference	299987	299989	299991
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	CP.1	CP2	CP3
			Sample Depth (m)			
			Sampling Date	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**			
BTEX						
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0
MTBE	U	ug/kg	10	< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
TPH CWG						
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	5.1	1.7
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	2.0	6.7	5.9
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	31.5	19.1	111
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	4.2	5.5	15.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	38.9	37.1	135
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	1.1
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	3.6	4.4	6.2
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	9.6	11.0	47.7
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	98.0	109	311
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	20.0	34.9	42.5
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	133	160	409
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	171	197	543
Total Petroleum Hydrocarbons						
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5	61	80	183
PCB (ICES 7 congeners)						
Total PCBs (7 congeners)	M	mg/kg	0.03	0.04	< 0.03	< 0.03

Results Summary

Report No.: 22-44336, issue number 1

		ELAB Reference	299987	299989	299991
		Customer Reference			
		Sample ID			
		Sample Type	SOIL	SOIL	SOIL
		Sample Location	CP.1	CP2	CP3
		Sample Depth (m)			
		Sampling Date	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**		
Organics					
Coal tar	N	%	0.01	< 0.01	< 0.01	< 0.01
SVOC					
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.03	0.04	0.06
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.02	0.03	0.03
1-Methylnaphthalene	N	mg/kg	0.01	0.01	0.03	0.03
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.13	0.16	0.21
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	0.05	0.14	0.06
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	0.02	0.05	0.04
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	0.04	0.08	0.07
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01

Results Summary

Report No.: 22-44336, issue number 1

			ELAB Reference	299987	299989	299991
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	CP.1	CP2	CP3
			Sample Depth (m)			
			Sampling Date	26/10/2022	26/10/2022	26/10/2022
Determinand	**Codes**	**Units**	**LOD**			
Organics						
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	N	mg/kg	0.01	0.48	0.55	0.79
Anthracene	N	mg/kg	0.01	0.32	0.34	0.30
Carbazole	N	mg/kg	0.01	0.07	0.06	0.08
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	N	mg/kg	0.01	2.23	2.48	2.84
Pyrene	N	mg/kg	0.01	2.11	2.43	2.79
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Diisooctyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	N	mg/kg	0.01	1.32	1.44	1.36
Chrysene	N	mg/kg	0.01	1.48	1.56	1.67
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	1.90	2.04	2.07
Benzo(k)fluoranthene	N	mg/kg	0.01	1.60	1.81	1.68
Benzo(a)pyrene	N	mg/kg	0.01	1.92	2.18	2.32
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	1.62	1.60	1.99
Dibenzo(a,h)anthracene	N	mg/kg	0.01	0.58	0.67	0.80
Benzo[g,h,i]perylene	N	mg/kg	0.01	2.02	2.02	2.43

Results Summary

Report No.: 22-44336, issue number 1

WAC Analysis								
Elab Ref:	299991					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	26/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	CP3							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		2.10	3	5	6
Loss on Ignition		M	%		7.2	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		183	500	--	--
Total (of 17) PAHs		N	mg/kg		31.0	100	--	--
pH		M			7.7	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.031		0.31	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.002		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	51		507.00	1000	20000	50000
Total Dissolved Solids		N	145		1450.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	7.260		73.00	500	800	1000
Leach Test Information								
pH		N	7.7					
Conductivity (uS/cm)		N	216					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			88					
Moisture (%)			14					
Eluent Volume (ml)			991					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

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WAC Analysis								
Elab Ref:	299989					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	26/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	CP2							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		2.30	3	5	6
Loss on Ignition		M	%		5.6	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		80	500	--	--
Total (of 17) PAHs		N	mg/kg		37.0	100	--	--
pH		M			8.0	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.040		0.40	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.006		0.06	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.001		< 0.05	0.4	10	40
Lead		N	0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	10		100.00	1000	20000	50000
Total Dissolved Solids		N	82		823.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	7.530		75.00	500	800	1000
Leach Test Information								
pH		N	7.6					
Conductivity (uS/cm)		N	123					
Dry mass of test portion (g)			101.000					
Dry Matter (%)			88					
Moisture (%)			14					
Eluent Volume (ml)			973					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 22-44336, issue number 1

WAC Analysis								
Elab Ref:	299987					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	26/10/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	CP.1							
Depth (m)								
Site:	River Academy							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		2.50	3	5	6
Loss on Ignition		M	%		8.3	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		0.04	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		61	500	--	--
Total (of 17) PAHs		N	mg/kg		237.0	100	--	--
pH		M			7.9	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.030		0.30	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.005		0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	0.002		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	25		247.00	1000	20000	50000
Total Dissolved Solids		N	107		1070.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	8.750		87.00	500	800	1000
Leach Test Information								
pH		N	7.5					
Conductivity (uS/cm)		N	160					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			86					
Moisture (%)			17					
Eluent Volume (ml)			986					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

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Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
299987		CP.1	Brown Soil, Stones, Clinker, Brick	No asbestos detected	n/t	n/t	n/t	n/t
299988		CP1.1	Brown Soil, Stones, Clinker, Brick, Organics	Amosite (A.I.B Fragment)	< 0.001	<0.001 A.I.B Amosite	< 0.001	0.001
299989		CP2	Brown Soil, Stones, Clinker, Brick	No asbestos detected	n/t	n/t	n/t	n/t
299990		CP2.2	Brown Soil, Stones, Clinker, Organics	No asbestos detected	n/t	n/t	n/t	n/t
299991		CP3	Brown Soil, Stones, Clinker, Glass, Plastic	No asbestos detected	n/t	n/t	n/t	n/t
299992		CP3.3	Brown Soil, Stones, Clinker, Brick, Organics, Metal	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-44336, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
SVOC in solids	N	As submitted sample	01/11/2022		GC-MS
Phenols in solids	M	As submitted sample	01/11/2022	121	HPLC
SVOC in solids	N	As submitted sample	01/11/2022	167	GC-MS
Total cyanide	M	As submitted sample	01/11/2022	204	Colorimetry
Asbestos identification	U	Air dried sample	04/11/2022	260	Microscopy
Aqua regia extractable metals	M	Air dried sample	02/11/2022	300	ICPMS
Leachate					
Arsenic	N		03/11/2022	301	ICPMS
Cadmium	N		03/11/2022	301	ICPMS
Chromium	N		03/11/2022	301	ICPMS
Lead	N		03/11/2022	301	ICPMS
Nickel	N		03/11/2022	301	ICPMS
Copper	N		03/11/2022	301	ICPMS
Zinc	N		03/11/2022	301	ICPMS
Mercury	N		03/11/2022	301	ICPMS
Selenium	N		03/11/2022	301	ICPMS
Antimony	N		03/11/2022	301	ICPMS
Barium	N		03/11/2022	301	ICPMS
Molybdenum	N		03/11/2022	301	ICPMS
pH Value	N		03/11/2022	113	Electrometric
Electrical Conductivity	N		03/11/2022	136	Probe
Dissolved Organic Carbon	N		03/11/2022	102	TOC analyser
Chloride	N		03/11/2022	131	Ion Chromatography
Fluoride	N		03/11/2022	131	Ion Chromatography
Sulphate	N		03/11/2022	131	Ion Chromatography
Total Dissolved Solids	N		03/11/2022	144	Gravimetric
Phenol index	N		03/11/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	02/11/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	02/11/2022	210	IR
Loss on Ignition	M	Air dried sample	02/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	02/11/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	03/11/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	07/11/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	01/11/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	02/11/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-44336, issue number 1

Key	
U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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UKAS TESTING
2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-45026
Issue:	1
Date of Issue:	05/12/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	Not Supplied
Customer Reference:	TCL1121
Date Received:	28/11/2022
Date Approved:	05/12/2022
Details:	River Academy Reading
Approved by:	

Tim Reeve, Quality Officer

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-45026, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
303498	PA1.1	25/11/2022	28/11/2022	Chalk	
303499	PA1.1.2	25/11/2022	28/11/2022		
303500	PA2.1	25/11/2022	28/11/2022	Chalk	
303501	PA2.1.2	25/11/2022	28/11/2022		

Results Summary

2683

Report No.: 22-45026, issue number 1

			ELAB Reference	303498	303500
			Customer Reference		
			Sample ID		
			Sample Type	CHALK	CHALK
			Sample Location	#	PA2.1
			Sample Depth (m)		
			Sampling Date	25/11/2022	25/11/2022
Determinand	**Codes**	**Units**	**LOD**		
Soil sample preparation parameters					
Moisture Content	N	%	0.1	24.6	26.3
Material removed	N	%	0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None
Metals					
Arsenic	M	mg/kg	0.5	^ 2.3	^ 1.5
Cadmium	M	mg/kg	0.2	^ 0.2	^ < 0.2
Chromium	M	mg/kg	1	^ 8.2	^ 6.3
Copper	M	mg/kg	4	^ 10.0	^ 8.1
Lead	M	mg/kg	1	^ 15.4	^ 8.0
Mercury	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Nickel	M	mg/kg	1	^ 5.5	^ 5.1
Selenium	M	mg/kg	1	^ < 1.0	^ < 1.0
Vanadium	M	mg/kg	0.5	^ 6.1	^ 4.7
Zinc	M	mg/kg	4.5	^ 34.8	^ 21.0
Inorganics					
Total Cyanide	M	mg/kg	1	^ < 1.0	^ < 1.0
Miscellaneous					
Acid Neutralisation Capacity	N	mol/kg	0.1	< 0.1	< 0.1
Loss on Ignition	M	%	0.01	^ 0.84	^ 0.84
pH	M	pH units	0.1	^ 9.4	^ 9.4
Total Organic Carbon	N	%	0.01	0.14	0.90
Phenols					
Phenol	M	mg/kg	1	^ < 1	^ < 1
M,P-Cresol	N	mg/kg	1	< 1	< 1
O-Cresol	N	mg/kg	1	< 1	< 1
3,4-Dimethylphenol	N	mg/kg	1	< 1	< 1
2,3-Dimethylphenol	M	mg/kg	1	^ < 1	^ < 1
2,3,5-trimethylphenol	M	mg/kg	1	^ < 1	^ < 1
Total Monohydric Phenols	N	mg/kg	5	< 5	< 5
Polyaromatic hydrocarbons					
Naphthalene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Acenaphthylene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Acenaphthene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Fluorene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Phenanthrene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Anthracene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Fluoranthene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Pyrene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Benzo(a)anthracene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Chrysene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Benzo(a)pyrene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	^ < 0.1	^ < 0.1
Total PAH(16)	M	mg/kg	0.4	^ < 0.4	^ < 0.4
Total (of 17) PAHs	N	mg/kg	2	< 2	< 2

Results Summary

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Report No.: 22-45026, issue number 1

			ELAB Reference	303498	303500
			Customer Reference		
			Sample ID		
			Sample Type	CHALK	CHALK
			Sample Location	#	PA2.1
			Sample Depth (m)		
			Sampling Date	25/11/2022	25/11/2022
Determinand	**Codes**	**Units**	**LOD**		
BTEX					
Benzene	N	mg/kg	0.01	< 0.01	< 0.01
Benzene	M	ug/kg	10	^ < 10.0	^ < 10.0
Toluene	N	mg/kg	0.01	< 0.01	< 0.01
Toluene	M	ug/kg	10	^ < 10.0	^ < 10.0
Ethylbenzene	N	mg/kg	0.01	< 0.01	< 0.01
Ethylbenzene	M	ug/kg	10	^ < 10.0	^ < 10.0
Xylenes	N	mg/kg	0.01	< 0.01	< 0.01
Xylenes	M	ug/kg	10	^ < 10.0	^ < 10.0
MTBE	N	mg/kg	0.01	< 0.01	< 0.01
MTBE	U	ug/kg	10	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01	< 0.01	< 0.01
TPH CWG					
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	^ < 1.0	^ < 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	^ < 1.0	^ < 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	^ < 1.0	^ < 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	^ < 1.0	^ < 1.0
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	^ < 1.0	^ < 1.0
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	1.3	< 1.0
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	< 0.01	< 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	^ < 1.0	^ < 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	^ < 1.0	^ < 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	^ < 1.0	^ < 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	^ 2.6	^ 1.6
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	^ < 1.0	^ < 1.0
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	4.3	2.8
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	5.6	3.7
Total Petroleum Hydrocarbons					
Mineral Oil w Florisil (EH_CU_1D_Total)	N	mg/kg	5	< 5	< 5
PCB (ICES 7 congeners)					
Total PCBs (7 congeners)	M	mg/kg	0.03	^ < 0.03	^ < 0.03

Results Summary

Report No.: 22-45026, issue number 1

WAC Analysis								
Elab Ref:	303500					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	25/11/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	PA2.1							
Depth (m)								
Site:	River Academy Reading							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		0.90	3	5	6
Loss on Ignition		M	%		0.8	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			9.4	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.032		0.32	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	7		69.70	1000	20000	50000
Total Dissolved Solids		N	143		1430.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	5.430		54.00	500	800	1000
Leach Test Information								
pH		N	10.9					
Conductivity (uS/cm)		N	214					
Dry mass of test portion (g)			102.000					
Dry Matter (%)			72					
Moisture (%)			39					
Eluent Volume (ml)			969					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 22-45026, issue number 1

WAC Analysis								
Elab Ref:	303498					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	25/11/2022					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	PA1.1							
Depth (m)								
Site:	River Academy Reading							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		0.14	3	5	6
Loss on Ignition		M	%		0.8	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC (EH_CU_1D_Total)		N	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			9.4	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.062		0.62	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.028		0.28	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	12		119.00	1000	20000	50000
Total Dissolved Solids		N	279		2790.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	4.960		50.00	500	800	1000
Leach Test Information								
pH		N	11.3					
Conductivity (uS/cm)		N	417					
Dry mass of test portion (g)			103.000					
Dry Matter (%)			75					
Moisture (%)			33					
Eluent Volume (ml)			985					

Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards on Sea, East Sussex, TN38 9BY
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Results Summary

Report No.: 22-45026, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
303498		PA1.1	Chalk, stones	No asbestos detected	n/t	n/t	n/t	n/t
303499		PA1.1.2	Chalk, stones	No asbestos detected	n/t	n/t	n/t	n/t
303500		PA2.1	Chalk, stones	No asbestos detected	n/t	n/t	n/t	n/t
303501		PA2.1.2	Chalk, stones	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 22-45026, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Phenols in solids	M	As submitted sample	29/11/2022	121	HPLC
Low range Aliphatic hydrocarbons soil	N	As submitted sample	02/12/2022	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	02/12/2022	181	GC-MS
Total cyanide	M	As submitted sample	30/11/2022	204	Colorimetry
TPH CWG soil by gc-gc	M	As submitted sample	29/11/2022	271	
Asbestos identification	U	Air dried sample	05/12/2022	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	29/11/2022	300	ICPMS
Leachate					
Arsenic	N		02/12/2022	301	ICPMS
Cadmium	N		02/12/2022	301	ICPMS
Chromium	N		02/12/2022	301	ICPMS
Lead	N		02/12/2022	301	ICPMS
Nickel	N		02/12/2022	301	ICPMS
Copper	N		02/12/2022	301	ICPMS
Zinc	N		02/12/2022	301	ICPMS
Mercury	N		02/12/2022	301	ICPMS
Selenium	N		02/12/2022	301	ICPMS
Antimony	N		02/12/2022	301	ICPMS
Barium	N		02/12/2022	301	ICPMS
Molybdenum	N		02/12/2022	301	ICPMS
pH Value	N		02/12/2022	113	Electrometric
Electrical Conductivity	N		02/12/2022	136	Probe
Dissolved Organic Carbon	N		02/12/2022	102	TOC analyser
Chloride	N		02/12/2022	131	Ion Chromatography
Fluoride	N		02/12/2022	131	Ion Chromatography
Sulphate	N		02/12/2022	131	Ion Chromatography
Total Dissolved Solids	N		02/12/2022	144	Gravimetric
Phenol index	N		02/12/2022	121	HPLC
WAC Solids analysis	N				
pH	M	Air dried sample	01/12/2022	113	Electrometric
Total Organic Carbon	N	Air dried sample	30/11/2022	210	IR
Loss on Ignition	M	Air dried sample	30/11/2022	129	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	01/12/2022	NEN 737	Electrometric
Total BTEX	M	As submitted sample	02/12/2022	181	GCMS
Mineral Oil (EH_CU_1D_Total)	N	As submitted sample	29/11/2022	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	01/12/2022	120	GCMS
Total (of 17) PAHs	N	As submitted sample	02/12/2022	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 22-45026, issue number 1

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I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
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>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
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Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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Report on the Determination of the CBR By Vertical Deformation and Strength Characteristics by the Plate Loading Test to BS 1377 Part 9: 1990

Report Details

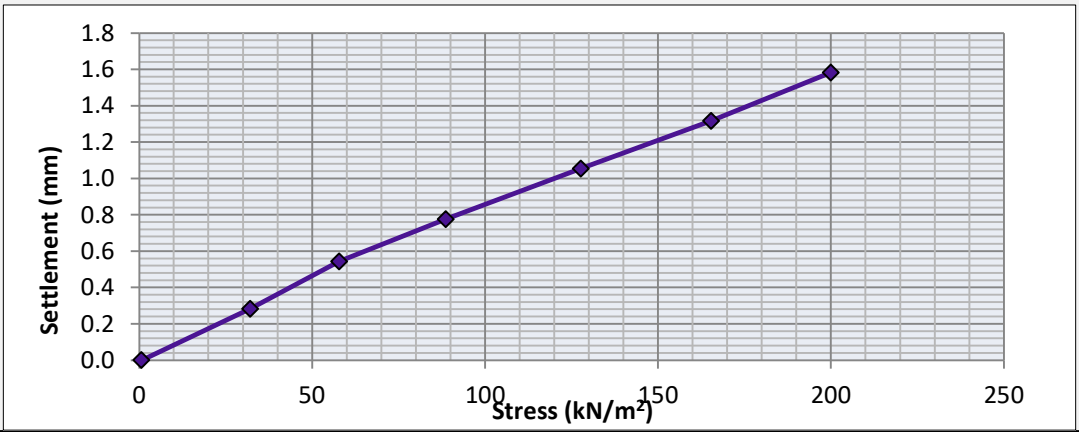
Client	**Toureen Contractors**	Report Number	**ES4422-1**
Address	**Wealstone, Middlesex**	Date of Report	**04-Nov-22**
		Date of Test	**03-Nov-22**
Project Name	**Wrexham Rd,Slough**		

Test Details

Test Location	**Test 1**
Material Description	**Stabalised Ground**
Reaction Load	**22T Excavator**
Weather	**Rain**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**1**
5.1	**12**	**42**	**31**	**28**	**0.28**	**32**
9.2	**28**	**78**	**57**	**54**	**0.54**	**58**
14.1	**41**	**111**	**81**	**78**	**0.78**	**89**
20.3	**61**	**148**	**107**	**105**	**1.05**	**128**
26.3	**83**	**183**	**129**	**132**	**1.32**	**165**
31.8	**105**	**217**	**153**	**158**	**1.58**	**200**



Maximum Applied Pressure (kPa)	**200**	Stress at 1.25mm settlement (kN/m^2)	**156**
Modulus of Subgrade Reaction	**77551**	Equivalent CBR value (%)	**18**
Maximum Deformation (mm)	**1.58**	Plate Diameter (mm)	**450**

Note:Equivalent CBR calculated in accordance with SHW IAN 73/06 Rev1:2009

Name **H Ghanchi**
Position **Laboratory Manager**

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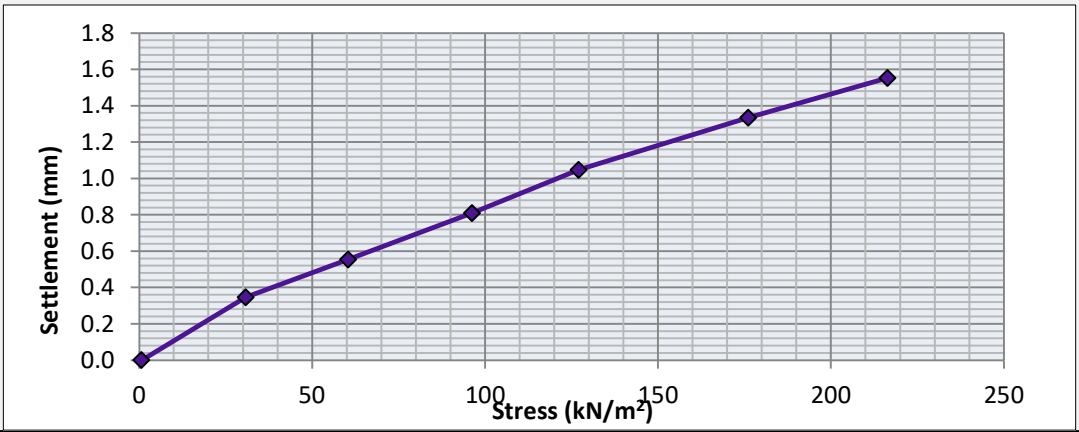
Client	**Toureen Contractors**	Report Number	**ES4422-2**
Address	**Wealstone, Middlesex**	Date of Report	**04-Nov-22**
		Date of Test	**03-Nov-22**
Project Name	**Wrexham Rd,Slough**		

Test Details

Test Location	**Test 2**
Material Description	**Stabalised Ground**
Reaction Load	**22T Excavator**
Weather	**Rain**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**1**
4.9	**46**	**38**	**20**	**35**	**0.35**	**31**
9.6	**80**	**55**	**31**	**55**	**0.55**	**60**
15.3	**115**	**81**	**47**	**81**	**0.81**	**96**
20.2	**146**	**102**	**66**	**105**	**1.05**	**127**
28.0	**181**	**134**	**85**	**133**	**1.33**	**176**
34.4	**209**	**159**	**98**	**155**	**1.55**	**216**



Maximum Applied Pressure (kPa)	**216**	Stress at 1.25mm settlement (kN/m^2)	**162**
Modulus of Subgrade Reaction	**80770**	Equivalent CBR value (%)	**19**
Maximum Deformation (mm)	**1.55**	Plate Diameter (mm)	**450**

Note:Equivalent CBR calculated in accordance with SHW IAN 73/06 Rev1:2009

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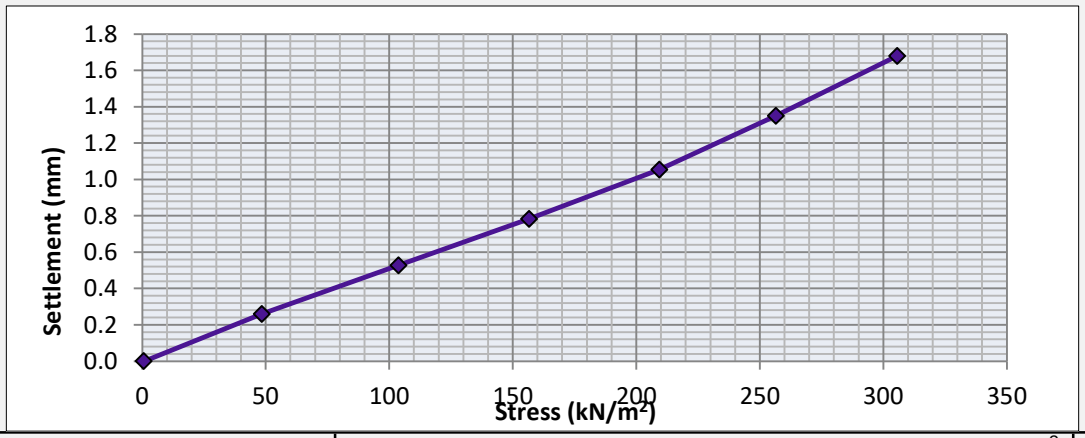
Client	**Toureen Contractors**	Report Number	**ES4422-3**
Address	**Wealstone, Middlesex**	Date of Report	**04-Nov-22**
		Date of Test	**03-Nov-22**
Project Name	**Wrexham Rd,Slough**		

Test Details

Test Location	**Test 3**
Material Description	**Stabalised Ground**
Reaction Load	**22T Excavator**
Weather	**Rain**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**1**
7.7	**26**	**37**	**15**	**26**	**0.26**	**48**
16.5	**50**	**75**	**33**	**53**	**0.53**	**104**
24.9	**73**	**110**	**52**	**78**	**0.78**	**157**
33.3	**93**	**147**	**76**	**105**	**1.05**	**209**
40.8	**122**	**183**	**100**	**135**	**1.35**	**257**
48.6	**152**	**226**	**126**	**168**	**1.68**	**306**



Maximum Applied Pressure (kPa)	**306**	Stress at 1.25mm settlement (kN/m^2)	**241**
Modulus of Subgrade Reaction	**120034**	Equivalent CBR value (%)	**39**
Maximum Deformation (mm)	**1.68**	Plate Diameter (mm)	**450**

Note:Equivalent CBR calculated in accordance with SHW IAN 73/06 Rev1:2009

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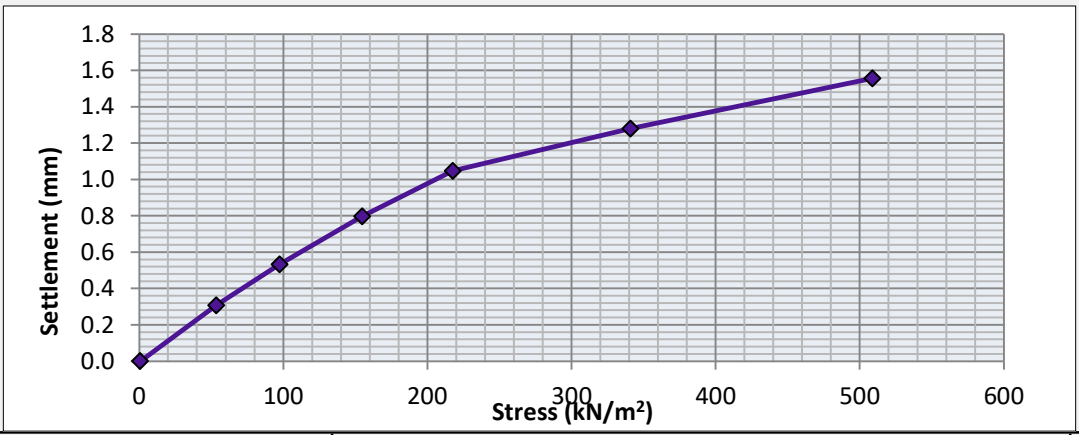
Client	**Toureen Contractors**	Report Number	**ES4422-4**
Address	**Wealstone, Middlesex**	Date of Report	**04-Nov-22**
		Date of Test	**03-Nov-22**
Project Name	**Wrexham Rd,Slough**		

Test Details

Test Location	**Test 4**
Material Description	**Stabalised Ground**
Reaction Load	**22T Excavator**
Weather	**Rain**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**1**
8.5	**36**	**18**	**38**	**31**	**0.31**	**53**
15.5	**53**	**43**	**64**	**53**	**0.53**	**97**
24.6	**74**	**75**	**90**	**80**	**0.80**	**155**
34.6	**91**	**109**	**114**	**105**	**1.05**	**218**
54.2	**99**	**161**	**124**	**128**	**1.28**	**341**
80.9	**112**	**221**	**134**	**156**	**1.56**	**509**



Maximum Applied Pressure (kPa)	**509**	Stress at 1.25mm settlement (kN/m^2)	**325**
Modulus of Subgrade Reaction	**161856**	Equivalent CBR value (%)	**65**
Maximum Deformation (mm)	**1.56**	Plate Diameter (mm)	**450**

Note:Equivalent CBR calculated in accordance with SHW IAN 73/06 Rev1:2009

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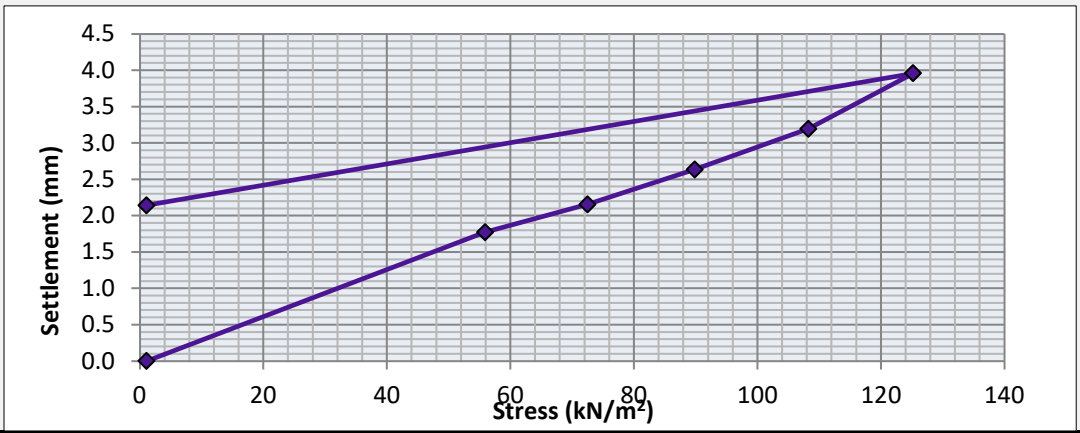
Client	**Toureen Contractors**	Report Number	**ES4428-1**
Address	**Wealstone, Middlesex**	Date of Report	**10-Nov-22**
		Date of Test	**09-Nov-22**
Project Name	**Wrexham Rd,Slough**		

Test Details

Test Location	**Test 1 Pile Mat Formation**
Material Description	**Brown Clay & Stone, Stabalised Ground**
Reaction Load	**22T Excavator**
Weather	**Dry**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.3	**0**	**0**	**0**	**0**	**0.00**	**1**
15.8	**117**	**277**	**137**	**177**	**1.77**	**56**
20.5	**148**	**357**	**141**	**215**	**2.15**	**73**
25.4	**186**	**458**	**147**	**264**	**2.64**	**90**
30.6	**234**	**560**	**164**	**319**	**3.19**	**108**
35.4	**301**	**695**	**192**	**396**	**3.96**	**125**
0.3	**230**	**316**	**96**	**214**	**2.14**	**1**



Maximum Applied Pressure (kPa)	**125**	Stress at 1.25mm settlement (kN/m^2)	**40**
Modulus of Subgrade Reaction	**25639**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**3.96**	Plate Diameter (mm)	**600**

Name **A Titcomb**
Position **Director**

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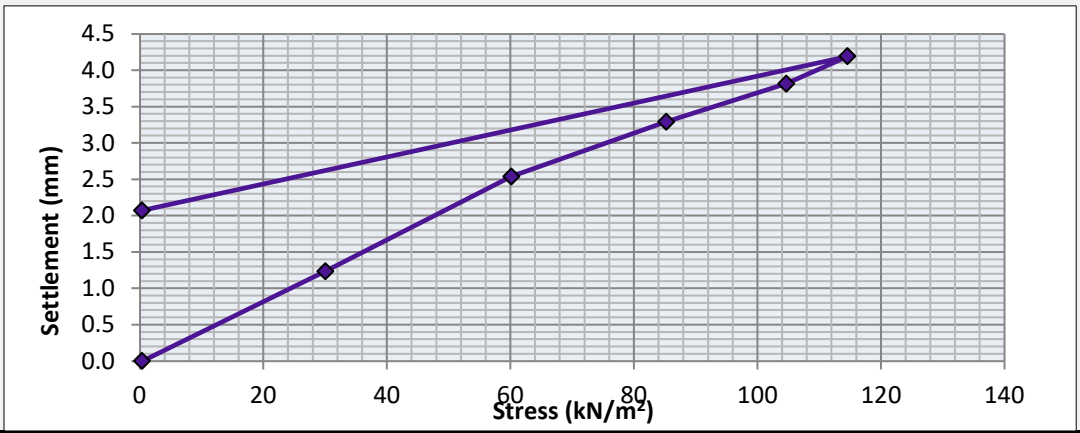
Client	**Toureen Contractors**	Report Number	**ES4431-1**
Address	**Wealstone, Middlesex**	Date of Report	**14-Nov-22**
		Date of Test	**11-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 1 Formation 550mm Depth**
Material Description	**Stabilised Base**
Reaction Load	**21T Excavator**
Weather	**Overcast & Dry**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**0**
8.5	**131**	**78**	**162**	**124**	**1.24**	**30**
17.0	**234**	**204**	**323**	**254**	**2.54**	**60**
24.1	**308**	**257**	**422**	**329**	**3.29**	**85**
29.6	**363**	**299**	**483**	**382**	**3.82**	**105**
32.4	**390**	**339**	**529**	**419**	**4.19**	**115**
0.1	**191**	**152**	**278**	**207**	**2.07**	**0**



Maximum Applied Pressure (kPa)	**115**	Stress at 1.25mm settlement (kN/m^2)	**30**
Modulus of Subgrade Reaction	**19454**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**4.19**	Plate Diameter (mm)	**600**

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Position **Director**

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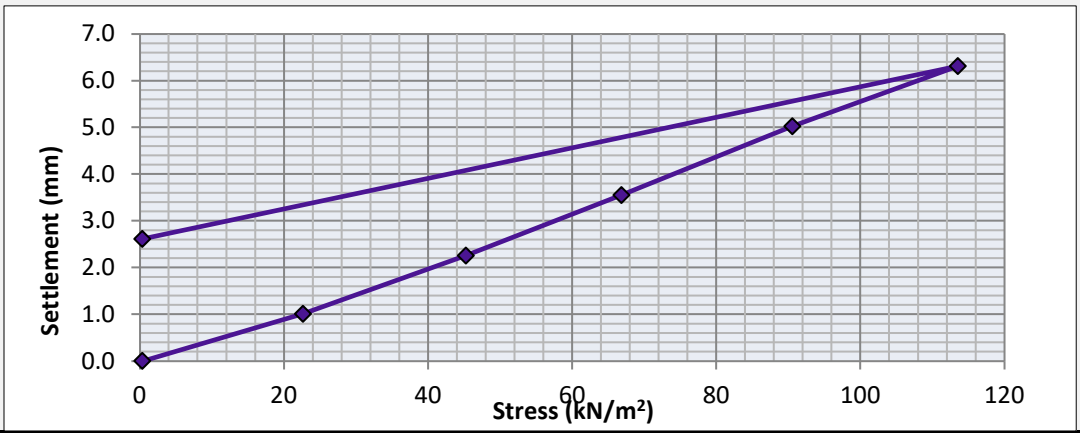
Client	**Toureen Contractors**	Report Number	**ES4431-2**
Address	**Wealstone, Middlesex**	Date of Report	**14-Nov-22**
		Date of Test	**11-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 2 Formation 550mm Depth**
Material Description	**Stabilised Base**
Reaction Load	**21T Excavator**
Weather	**Overcast & Dry**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**0**
6.4	**131**	**55**	**118**	**101**	**1.01**	**23**
12.8	**281**	**120**	**275**	**225**	**2.25**	**45**
18.9	**441**	**194**	**430**	**355**	**3.55**	**67**
25.6	**621**	**290**	**596**	**502**	**5.02**	**91**
32.1	**785**	**354**	**755**	**631**	**6.31**	**114**
0.1	**303**	**122**	**358**	**261**	**2.61**	**0**



Maximum Applied Pressure (kPa)	**114**	Stress at 1.25mm settlement (kN/m^2)	**27**
Modulus of Subgrade Reaction	**17541**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**6.31**	Plate Diameter (mm)	**600**

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Position **Director**

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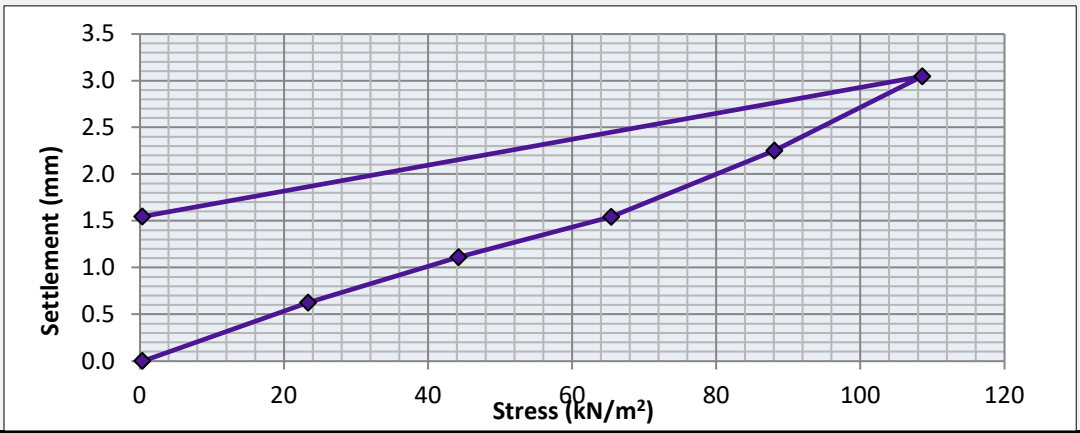
Client	**Toureen Contractors**	Report Number	**ES4431-3**
Address	**Wealstone, Middlesex**	Date of Report	**14-Nov-22**
		Date of Test	**11-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 3 Formation 550mm Depth**
Material Description	**Stabilised Base**
Reaction Load	**21T Excavator**
Weather	**Overcast & Dry**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**0**
6.6	**96**	**35**	**56**	**62**	**0.62**	**23**
12.5	**164**	**65**	**104**	**111**	**1.11**	**44**
18.5	**220**	**97**	**146**	**154**	**1.54**	**65**
24.9	**310**	**154**	**211**	**225**	**2.25**	**88**
30.7	**402**	**220**	**292**	**305**	**3.05**	**109**
0.1	**210**	**79**	**175**	**155**	**1.55**	**0**



Maximum Applied Pressure (kPa)	**109**	Stress at 1.25mm settlement (kN/m^2)	**51**
Modulus of Subgrade Reaction	**32715**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**3.05**	Plate Diameter (mm)	**600**

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Position **Director**

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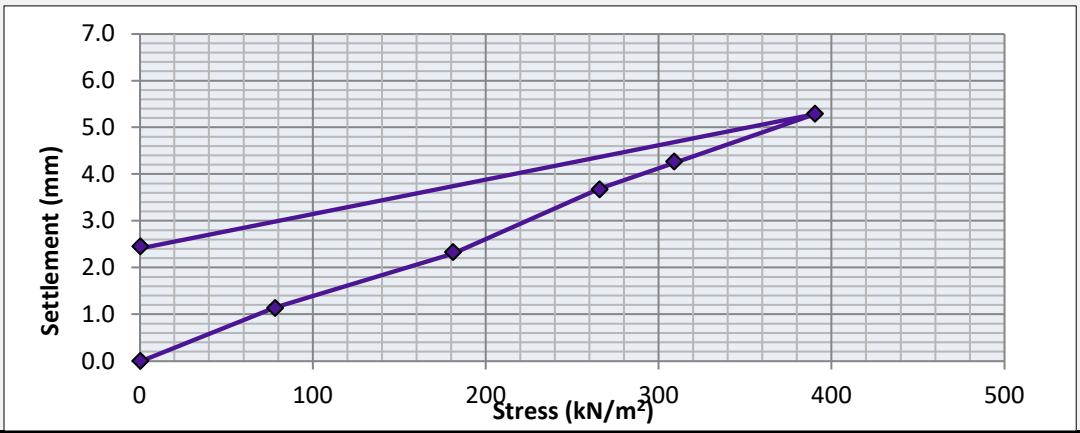
Client	**Toureen Contractors**	Report Number	**ES4431-4**
Address	**Wealstone, Middlesex**	Date of Report	**14-Nov-22**
		Date of Test	**11-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 1 Formation 550mm Depth (Piling Mat)**
Material Description	**6F5 Crush Mix**
Reaction Load	**21T Excavator**
Weather	**Overcast & Dry**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**0**
22.1	**89**	**96**	**189**	**125**	**1.25**	**78**
51.2	**173**	**203**	**375**	**250**	**2.50**	**181**
75.2	**272**	**330**	**603**	**402**	**4.02**	**266**
87.4	**310**	**382**	**692**	**461**	**4.61**	**309**
110.4	**385**	**485**	**695**	**522**	**5.22**	**390**
0.1	**190**	**187**	**410**	**262**	**2.62**	**0**



Maximum Applied Pressure (kPa)	**390**	Stress at 1.25mm settlement (kN/m^2)	**78**
Modulus of Subgrade Reaction	**50195**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**5.22**	Plate Diameter (mm)	**600**

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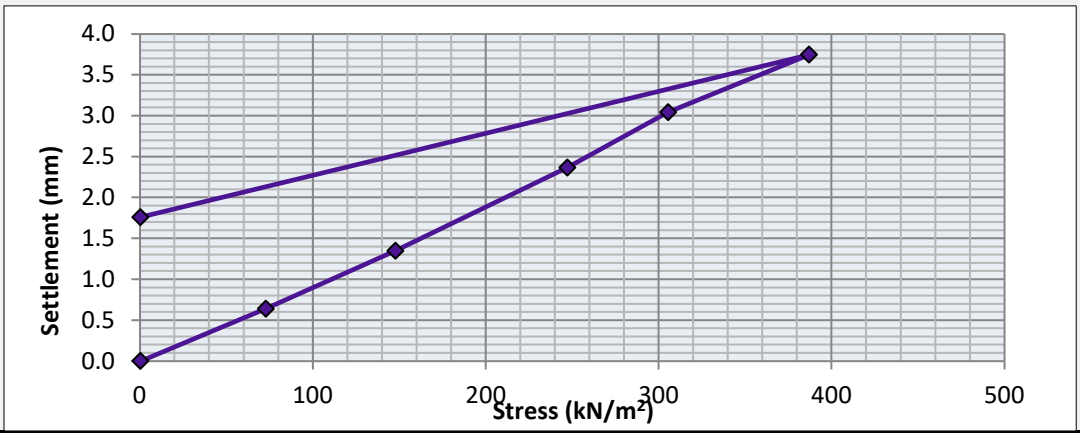
Client	**Toureen Contractors**	Report Number	**ES4431-5**
Address	**Wealstone, Middlesex**	Date of Report	**14-Nov-22**
		Date of Test	**11-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 2 Formation 550mm Depth (Piling Mat)**
Material Description	**6F5 Crush Mix**
Reaction Load	**21T Excavator**
Weather	**Overcast & Dry**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**0**
20.6	**45**	**47**	**100**	**64**	**0.64**	**73**
41.8	**95**	**97**	**213**	**135**	**1.35**	**148**
69.9	**172**	**178**	**360**	**237**	**2.37**	**247**
86.4	**218**	**229**	**466**	**304**	**3.04**	**306**
109.4	**264**	**285**	**575**	**375**	**3.75**	**387**
0.1	**134**	**134**	**260**	**176**	**1.76**	**0**



Maximum Applied Pressure (kPa)	**387**	Stress at 1.25mm settlement (kN/m^2)	**137**
Modulus of Subgrade Reaction	**88443**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**3.75**	Plate Diameter (mm)	**600**

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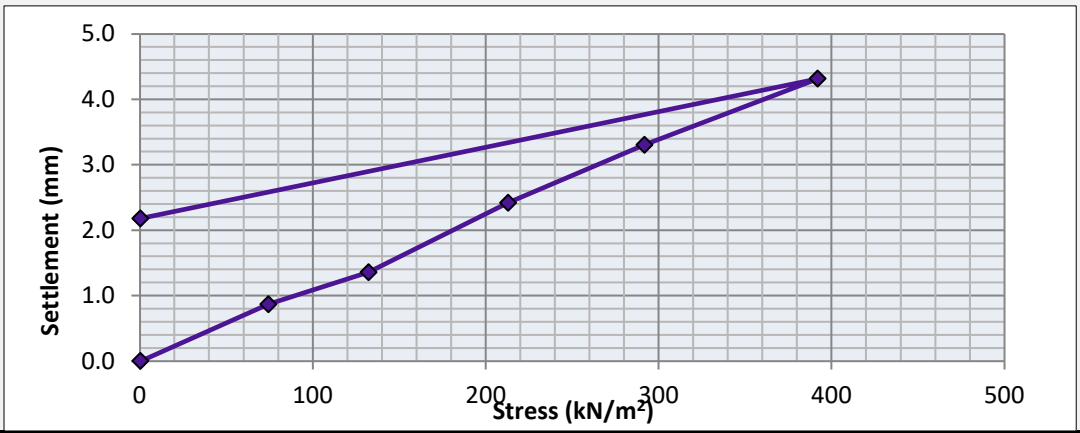
Client	**Toureen Contractors**	Report Number	**ES4431-6**
Address	**Wealstone, Middlesex**	Date of Report	**14-Nov-22**
		Date of Test	**11-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 3 Formation 550mm Depth (Piling Mat)**
Material Description	**65F Crush Mix**
Reaction Load	**21T Excavator**
Weather	**Overcast & Dry**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.1	**0**	**0**	**0**	**0**	**0.00**	**0**
21.0	**95**	**63**	**103**	**87**	**0.87**	**74**
37.4	**148**	**98**	**161**	**136**	**1.36**	**132**
60.2	**268**	**165**	**293**	**242**	**2.42**	**213**
82.5	**369**	**220**	**402**	**330**	**3.30**	**292**
110.8	**476**	**297**	**522**	**432**	**4.32**	**392**
0.1	**271**	**120**	**263**	**218**	**2.18**	**0**



Maximum Applied Pressure (kPa)	**392**	Stress at 1.25mm settlement (kN/m^2)	**119**
Modulus of Subgrade Reaction	**76566**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**4.32**	Plate Diameter (mm)	**600**

Name **A Titcomb**
Position **Director**

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Report on the Determination of the CBR By Vertical Deformation and Strength Characteristics by the Plate Loading Test to BS 1377 Part 9: 1990

Report Details

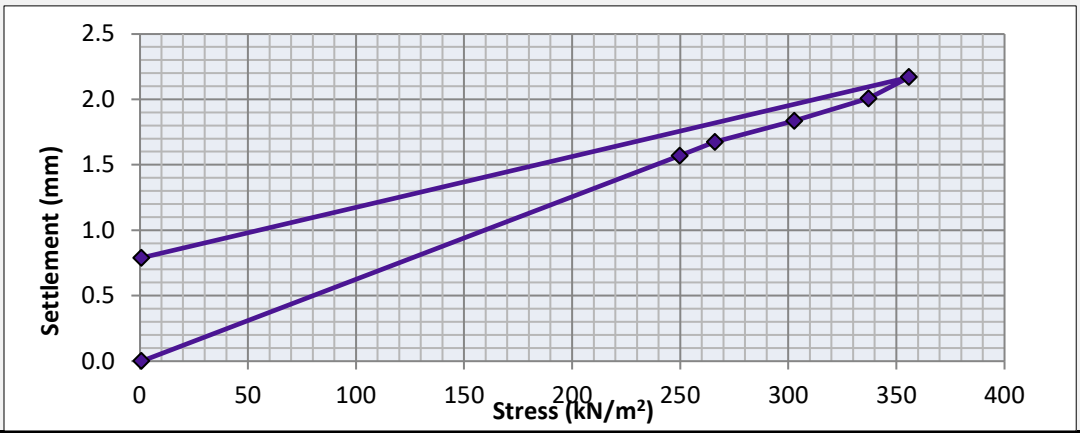
Client	**Toureen Contractors**	Report Number	**ES4438-1**
Address	**Wealstone, Middlesex**	Date of Report	**16-Nov-22**
		Date of Test	**15-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 1**
Material Description	**Crushed Concrete**
Reaction Load	**26T Excavator**
Weather	**Heavy Rain**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.2	**0**	**0**	**0**	**0**	**0.00**	**1**
70.6	**168**	**167**	**136**	**157**	**1.57**	**250**
75.2	**176**	**181**	**145**	**167**	**1.67**	**266**
85.6	**195**	**199**	**157**	**184**	**1.84**	**303**
95.3	**208**	**219**	**175**	**201**	**2.01**	**337**
100.6	**226**	**235**	**190**	**217**	**2.17**	**356**
0.2	**82**	**63**	**92**	**79**	**0.79**	**1**



Maximum Applied Pressure (kPa)	**356**	Stress at 1.25mm settlement (kN/m^2)	**199**
Modulus of Subgrade Reaction	**128220**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**2.17**	Plate Diameter (mm)	**600**

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Position **Director**

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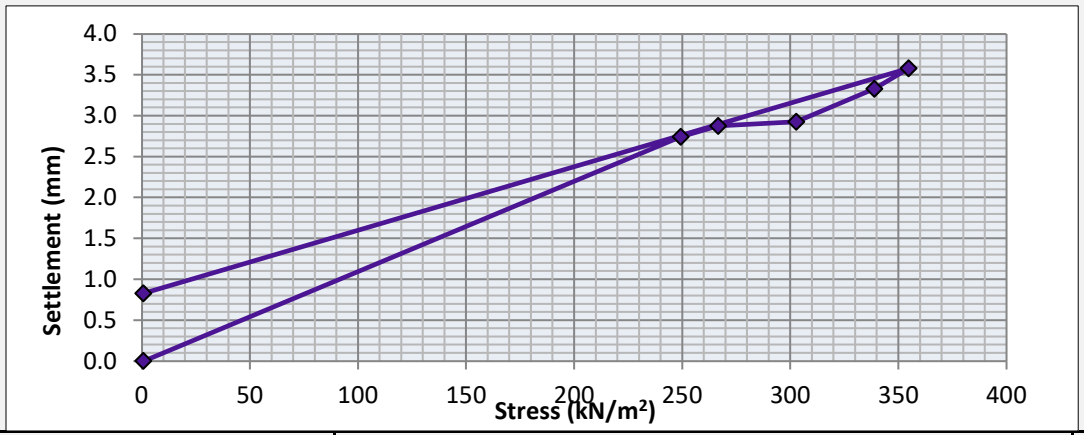
Client	**Toureen Contractors**	Report Number	**ES4438-2**
Address	**Wealstone, Middlesex**	Date of Report	**16-Nov-22**
		Date of Test	**15-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 2**
Material Description	**Crushed Concrete**
Reaction Load	**26T Excavator**
Weather	**Heavy Rain**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.2	**0**	**0**	**0**	**0**	**0.00**	**1**
70.5	**237**	**316**	**269**	**274**	**2.74**	**249**
75.4	**251**	**332**	**280**	**288**	**2.88**	**267**
85.6	**252**	**341**	**285**	**293**	**2.93**	**303**
95.8	**280**	**393**	**326**	**333**	**3.33**	**339**
100.3	**303**	**422**	**349**	**358**	**3.58**	**355**
0.2	**100**	**73**	**75**	**83**	**0.83**	**1**



Maximum Applied Pressure (kPa)	**355**	Stress at 1.25mm settlement (kN/m^2)	**114**
Modulus of Subgrade Reaction	**73451**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**3.58**	Plate Diameter (mm)	**600**

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Position **Director**

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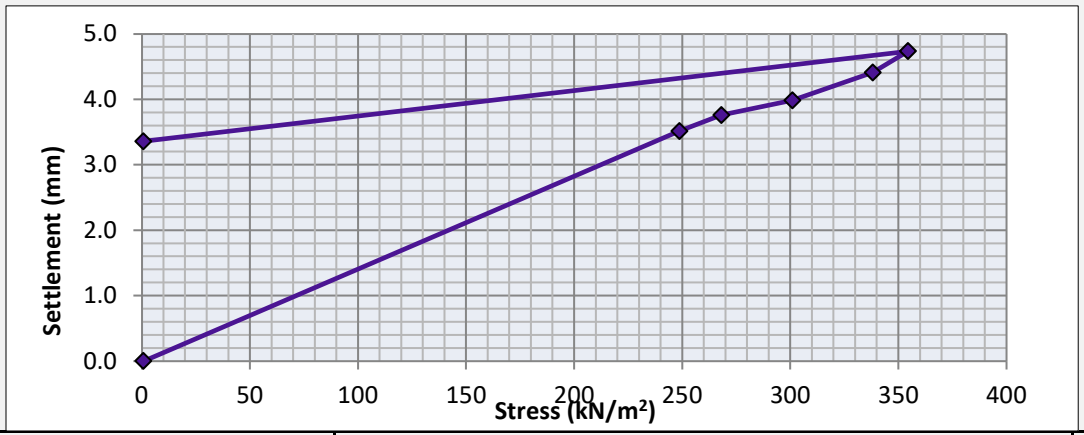
Client	**Toureen Contractors**	Report Number	**ES4438-3**
Address	**Wealstone, Middlesex**	Date of Report	**16-Nov-22**
		Date of Test	**15-Nov-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Test 3**
Material Description	**Crushed Concrete**
Reaction Load	**26T Excavator**
Weather	**Heavy Rain**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.2	**0**	**0**	**0**	**0**	**0.00**	**1**
70.3	**396**	**334**	**325**	**352**	**3.52**	**249**
75.8	**422**	**370**	**336**	**376**	**3.76**	**268**
85.1	**435**	**409**	**352**	**399**	**3.99**	**301**
95.6	**476**	**450**	**397**	**441**	**4.41**	**338**
100.2	**505**	**486**	**430**	**474**	**4.74**	**354**
0.2	**354**	**319**	**334**	**336**	**3.36**	**1**



Maximum Applied Pressure (kPa)	**354**	Stress at 1.25mm settlement (kN/m^2)	**114**
Modulus of Subgrade Reaction	**73451**	Equivalent CBR value (%)	**N/A**
Maximum Deformation (mm)	**4.74**	Plate Diameter (mm)	**600**

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Position **Director**

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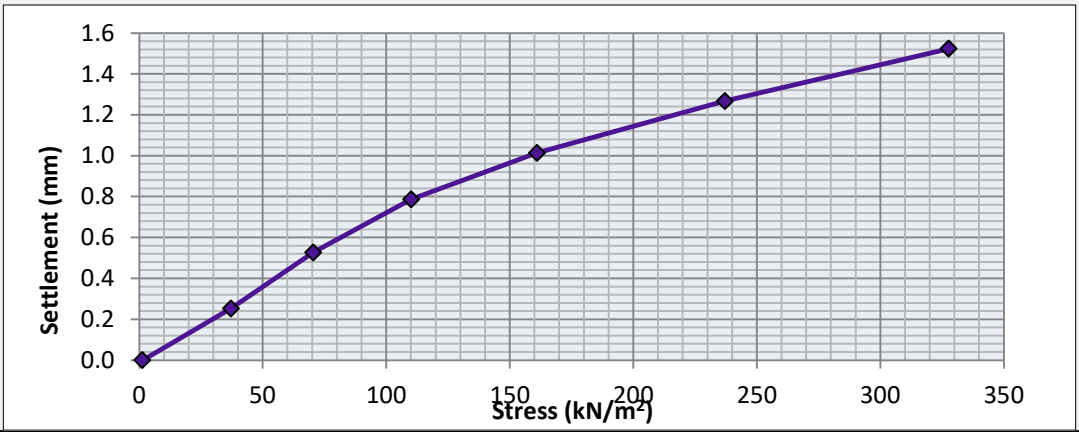
Client	**Toureen Contractors**	Report Number	**ES4469-1**
Address	**Wealstone, Middlesex**	Date of Report	**05-Dec-22**
		Date of Test	**02-Dec-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Car Park Road Test 1**
Material Description	**Crushed Concrete & Gravel**
Reaction Load	**22T Excavator**
Weather	**Overcast**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.2	**0**	**0**	**0**	**0**	**0.00**	**1**
5.9	**22**	**43**	**11**	**25**	**0.25**	**37**
11.2	**40**	**92**	**26**	**53**	**0.53**	**70**
17.5	**59**	**132**	**45**	**79**	**0.79**	**110**
25.6	**75**	**170**	**59**	**101**	**1.01**	**161**
37.7	**89**	**216**	**75**	**127**	**1.27**	**237**
52.1	**107**	**257**	**93**	**152**	**1.52**	**328**



Maximum Applied Pressure (kPa)	**328**	Stress at 1.25mm settlement (kN/m^2)	**231**
Modulus of Subgrade Reaction	**115238**	Equivalent CBR value (%)	**36**
Maximum Deformation (mm)	**1.52**	Plate Diameter (mm)	**450**

Note:Equivalent CBR calculated in accordance with SHW IAN 73/06 Rev1:2009

Name **H Ghanchi**
Position **Laboratory Manager**

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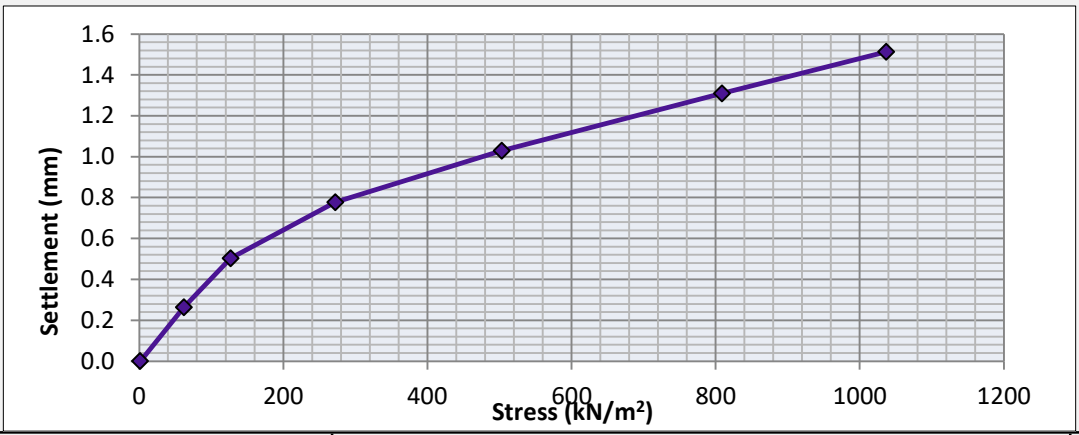
Client	**Toureen Contractors**	Report Number	**ES4469-2**
Address	**Wealstone, Middlesex**	Date of Report	**05-Dec-22**
		Date of Test	**02-Dec-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Car Park Road Test 2**
Material Description	**Crushed Concrete & Gravel**
Reaction Load	**22T Excavator**
Weather	**Overcast**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.2	**0**	**0**	**0**	**0**	**0.00**	**1**
9.9	**22**	**19**	**38**	**26**	**0.26**	**62**
20.2	**50**	**30**	**71**	**50**	**0.50**	**127**
43.3	**88**	**49**	**96**	**78**	**0.78**	**272**
80.0	**113**	**77**	**119**	**103**	**1.03**	**503**
128.6	**141**	**112**	**140**	**131**	**1.31**	**809**
164.9	**160**	**125**	**169**	**151**	**1.51**	**1037**



Maximum Applied Pressure (kPa)	**1037**	Stress at 1.25mm settlement (kN/m^2)	**743**
Modulus of Subgrade Reaction	**370404**	Equivalent CBR value (%)	**>90**
Maximum Deformation (mm)	**1.51**	Plate Diameter (mm)	**450**

Note:Equivalent CBR calculated in accordance with SHW IAN 73/06 Rev1:2009

Name **H Ghanchi**
Position **Laboratory Manager**

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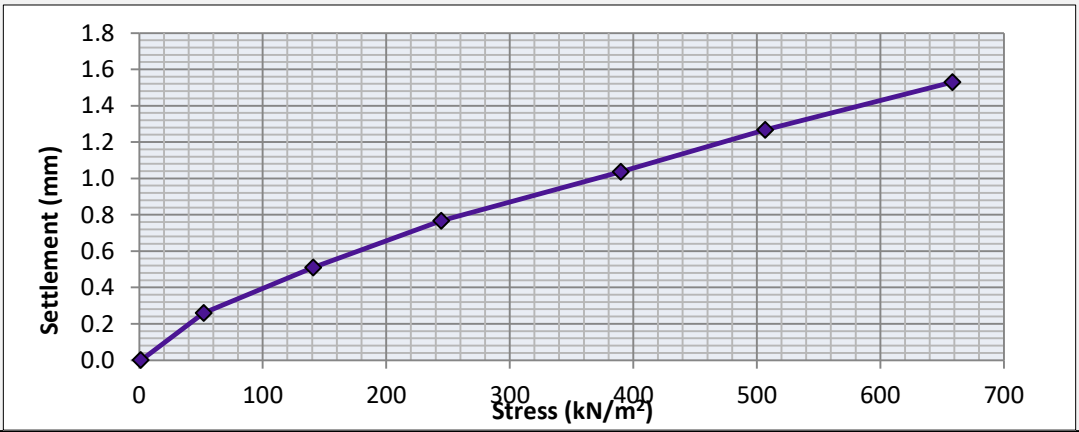
Client	**Toureen Contractors**	Report Number	**ES4469-3**
Address	**Wealstone, Middlesex**	Date of Report	**05-Dec-22**
		Date of Test	**02-Dec-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Car Park Road Test 3**
Material Description	**Crushed Concrete & Gravel**
Reaction Load	**22T Excavator**
Weather	**Overcast**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.2	**0**	**0**	**0**	**0**	**0.00**	**1**
8.3	**41**	**25**	**12**	**26**	**0.26**	**52**
22.4	**78**	**47**	**28**	**51**	**0.51**	**141**
38.9	**118**	**72**	**40**	**77**	**0.77**	**245**
62.0	**152**	**99**	**60**	**104**	**1.04**	**390**
80.6	**182**	**121**	**77**	**127**	**1.27**	**507**
104.7	**211**	**148**	**100**	**153**	**1.53**	**658**



Maximum Applied Pressure (kPa)	**658**	Stress at 1.25mm settlement (kN/m^2)	**497**
Modulus of Subgrade Reaction	**247540**	Equivalent CBR value (%)	**>90**
Maximum Deformation (mm)	**1.53**	Plate Diameter (mm)	**450**

Note:Equivalent CBR calculated in accordance with SHW IAN 73/06 Rev1:2009

Name **H Ghanchi**
Position **Laboratory Manager**

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Report Details

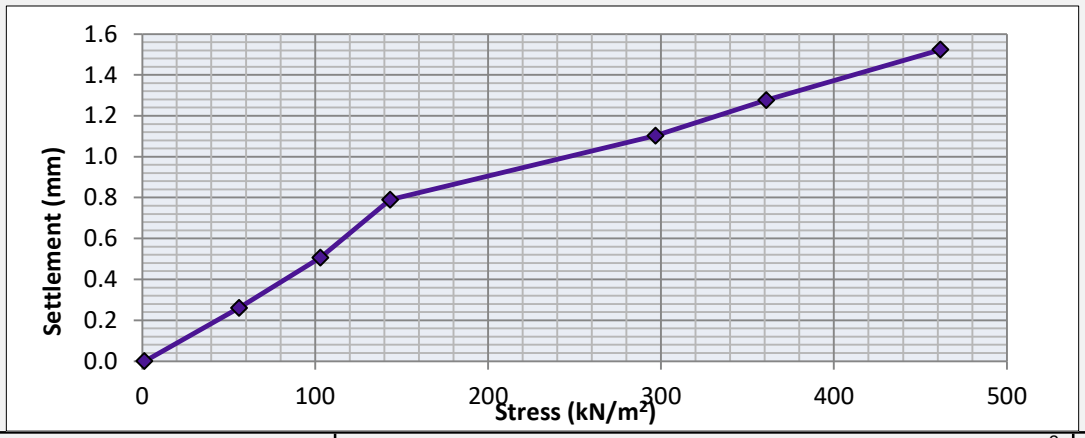
Client	**Toureen Contractors**	Report Number	**ES4469-4**
Address	**Wealstone, Middlesex**	Date of Report	**05-Dec-22**
		Date of Test	**02-Dec-22**
Project Name	**Richfield Avenue, Reading**		

Test Details

Test Location	**Car Park Road Test 4**
Material Description	**Crushed Concrete & Gravel**
Reaction Load	**22T Excavator**
Weather	**Overcast**

Test Results

Force (kN)	Settlement Gauge Reading 1	2	3	Avg.	Settlement (mm)	Stress (kN/m^2)
0.2	**0**	**0**	**0**	**0**	**0.00**	**1**
8.9	**22**	**23**	**33**	**26**	**0.26**	**56**
16.4	**40**	**42**	**70**	**51**	**0.51**	**103**
22.8	**55**	**68**	**114**	**79**	**0.79**	**143**
47.2	**96**	**85**	**150**	**110**	**1.10**	**297**
57.4	**110**	**102**	**171**	**128**	**1.28**	**361**
73.4	**128**	**129**	**200**	**152**	**1.52**	**462**



Maximum Applied Pressure (kPa)	**462**	Stress at 1.25mm settlement (kN/m^2)	**350**
Modulus of Subgrade Reaction	**174569**	Equivalent CBR value (%)	**74**
Maximum Deformation (mm)	**1.52**	Plate Diameter (mm)	**450**

Note:Equivalent CBR calculated in accordance with SHW IAN 73/06 Rev1:2009

Name **H Ghanchi**
Position **Laboratory Manager**

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Report on the Test for Classification for the Consituents of Coarse Recycled Aggregate 2009

Report Details

Client	**Toureen Contractors**	Report Number	**EJ1552-L5317**
Address	**Wealdstone Middlesex**	Date of Report	**22-Nov-22**
Project Name	**Reading**	Date of Test	**20-Nov-22**

Test Details

Client Identification	**IC1**
Aggregate Description	**Recycled Crushed Concrete & Stone**
Test Method	**BS EN 933-11**
Drying Temperature (°C)	**50±5**

Test Results

Constituent	BS EN 933-11 Code	Proportion (%)
Concrete, concrete products, mortar, concrete masonry units	**Rc**	**43.7**
Unbound aggregate, natural stone, hydraulically bound aggregate	**Ru**	**22.6**
Clay masonry unite (i.e. bricks and tiles), calcium silicate masonry units, aerated non-floating concrete	**Rb**	**32.5**
Bituminous materials	**Ra**	**0**
Glass	**Rg**	**0.3**
Other: Cohesive (i.e. clay and soil) Miscellaneous (ferrous and non ferrous), non floating wood, plastic and rubber, gypsum plaster	**X**	**0.9**

Name **Hamza Ghanchi**
Position **Laboratory Manager**

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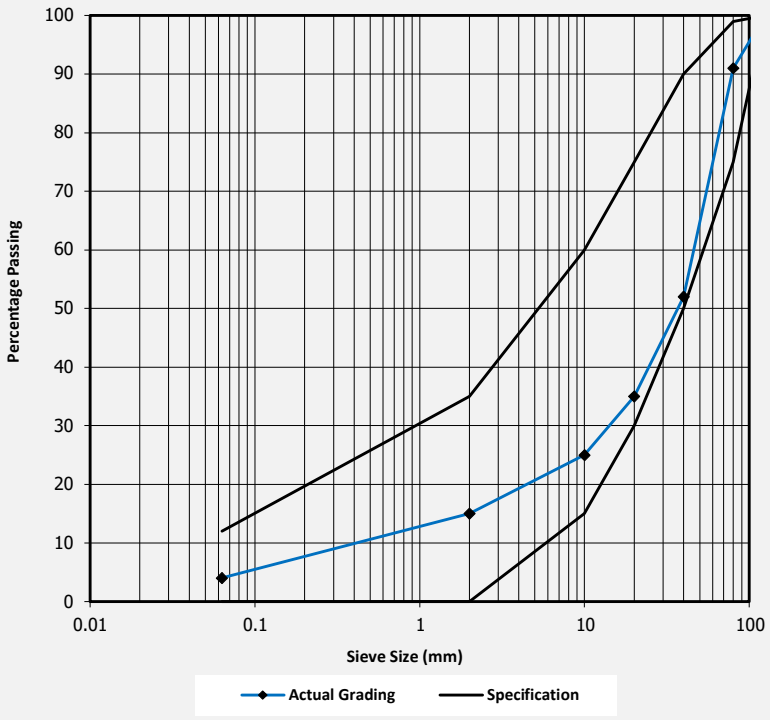
TEST REPORT FOR DETERMINATION OF AGGREGATE PARTICLE SIZE DISTRIBUTION

Report Details

Client	**Soil and Water Solutions**	Report Number	**EJ1552-L5317**
Address	**Wealdstone Middlesex**	Date of Report	**22-Nov-22**
Project Name	**Reading**		
Sample Identification	**IC1**	Laboratory Sample Number	**L5317**
Sample description	**SHW CI613 6F5 Capping**	Date Sample Received	**16-Nov-22**
Aggregate type	**Recycled Crushed Stone & Gravel**	Date Tested	**17-Nov-22**
Source	**N/A**	Water Content %	**7.40%**

Test Results

Sieve size (mm)	% Passing	Specification (%)	
		Lower	Upper
125	100	100	100
80	91	75	99
40	52	50	90
20	35	30	75
10	25	15	60
2	15	0	35
0.063	4	0	12



Test Method: BS EN 933 Part 1:1997 Cl 7.2 - Determination of particle size distribution by washing and dry sieving

Stated grading specification derived from SHW Table 6/5 (11/05).

Name **Hamza Ghanchi**

Position **Laboratory Manager**

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Report on the Test for Classification for the Consituents of Coarse Recycled Aggregate 2009

Report Details

Client	**Toureen Contractors**	Report Number	**EJ1552-L5318**
Address	**Wealdstone Middlesex**	Date of Report	**22-Nov-22**
Project Name	**Reading**	Date of Test	**20-Nov-22**

Test Details

Client Identification	**IC2**
Aggregate Description	**Recycled Crushed Concrete & Stone**
Test Method	**BS EN 933-11**
Drying Temperature (°C)	**50±5**

Test Results

Constituent	BS EN 933-11 Code	Proportion (%)
Concrete, concrete products, mortar, concrete masonry units	**Rc**	**52.6**
Unbound aggregate, natural stone, hydraulically bound aggregate	**Ru**	**10.8**
Clay masonry unite (i.e. bricks and tiles), calcium silicate masonry units, aerated non-floating concrete	**Rb**	**35.9**
Bituminous materials	**Ra**	**0**
Glass	**Rg**	**0.1**
Other: Cohesive (i.e. clay and soil) Miscellaneous (ferrous and non ferrous), non floating wood, plastic and rubber, gypsum plaster	**X**	**0.6**

Name	**Hamza Ghanchi**
Position	**Laboratory Manager**

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Report on the Test for Classification for the Consituents of Coarse Recycled Aggregate 2009

Report Details

Client	**Toureen Contractors**	Report Number	**EJ1552-L5319**
Address	**Wealdstone Middlesex**	Date of Report	**22-Nov-22**
Project Name	**Reading**	Date of Test	**20-Nov-22**

Test Details

Client Identification	**SW1**
Aggregate Description	**Recycled Crushed Concrete & Stone**
Test Method	**BS EN 933-11**
Drying Temperature (°C)	**50±5**

Test Results

Constituent	BS EN 933-11 Code	Proportion (%)
Concrete, concrete products, mortar, concrete masonry units	**Rc**	**90**
Unbound aggregate, natural stone, hydraulically bound aggregate	**Ru**	**7**
Clay masonry unite (i.e. bricks and tiles), calcium silicate masonry units, aerated non-floating concrete	**Rb**	**1.8**
Bituminous materials	**Ra**	**0**
Glass	**Rg**	**0.4**
Other: Cohesive (i.e. clay and soil) Miscellaneous (ferrous and non ferrous), non floating wood, plastic and rubber, gypsum plaster	**X**	**0**

Name	**Hamza Ghanchi**
Position	**Laboratory Manager**

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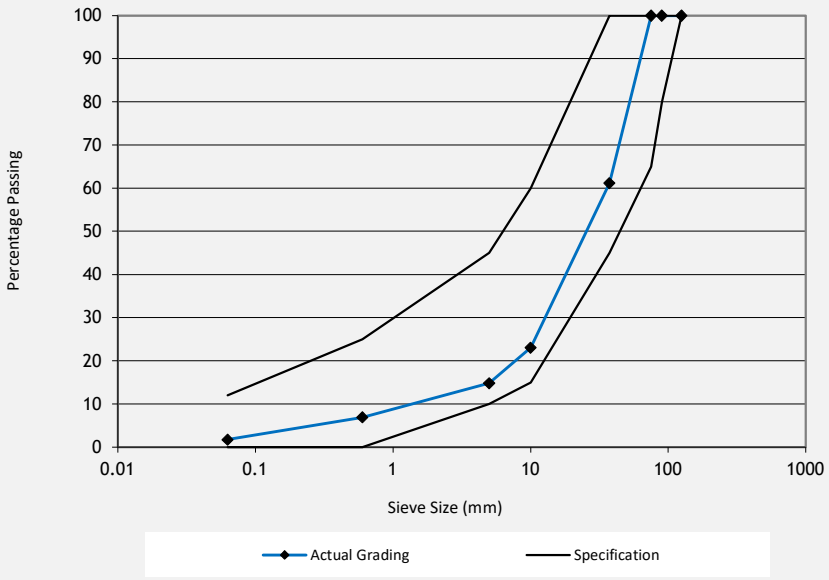
TEST REPORT FOR DETERMINATION OF PARTICLE SIZE DISTRIBUTION OF SOIL

Report Details

Client	**Toureen Contractors**	Report Number	**EJ1552-L5319**
Address	**Wealdstone Middlesex**	Date of Report	**22/11/2022**
Project Name	**Reading**	Request Number	**N/A**
Sample Identification	**CI 613 Selected Granular Material**	Lab. Sample Number	**L5319**
Location	**SW1**	Date Sample Received	**16/11/2022**
Type of Sample	**Bulk**	Date Tested	**17/11/2022**
Soil Description	**Coarse Graded 6F2 Capping**	Moisture Content	**6.3%**

Test Results

Apperture size (mm)	Percentage passing	Specification (%)	
		Min	Max
125	**100**	**100**	**100**
90	**100**	**80**	**100**
75	**100**	**65**	**100**
37.5	**61**	**45**	**100**
10	**23**	**15**	**60**
5	**15**	**10**	**45**
0.600	**7**	**0**	**25**
0.063	**2**	**0**	**12**



Test Method	**BS 1377 Part 2 Clause 9.2:1990 - Determination of particle size distribution - wet seiving method**
Test variation	**None**

Name	**Hamza Ghanchi**
Position	**Laboratory Manager**

For and on behalf of Eurotest Ltd

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Report on the Test for Classification for the Consituents of Coarse Recycled Aggregate 2009

Report Details

Client	**Toureen Contractors**	Report Number	**EJ1552-L5320**
Address	**Wealdstone Middlesex**	Date of Report	**22-Nov-22**
Project Name	**Reading**	Date of Test	**20-Nov-22**

Test Details

Client Identification	**SW2**
Aggregate Description	**Recycled Crushed Concrete & Stone**
Test Method	**BS EN 933-11**
Drying Temperature (°C)	**50±5**

Test Results

Constituent	BS EN 933-11 Code	Proportion (%)
Concrete, concrete products, mortar, concrete masonry units	**Rc**	**88.9**
Unbound aggregate, natural stone, hydraulically bound aggregate	**Ru**	**10.8**
Clay masonry unite (i.e. bricks and tiles), calcium silicate masonry units, aerated non-floating concrete	**Rb**	**0.1**
Bituminous materials	**Ra**	**0**
Glass	**Rg**	**0.1**
Other: Cohesive (i.e. clay and soil) Miscellaneous (ferrous and non ferrous), non floating wood, plastic and rubber, gypsum plaster	**X**	**0.1**

Name	**Hamza Ghanchi**
Position	**Laboratory Manager**

For and on behalf of Eurotest Ltd

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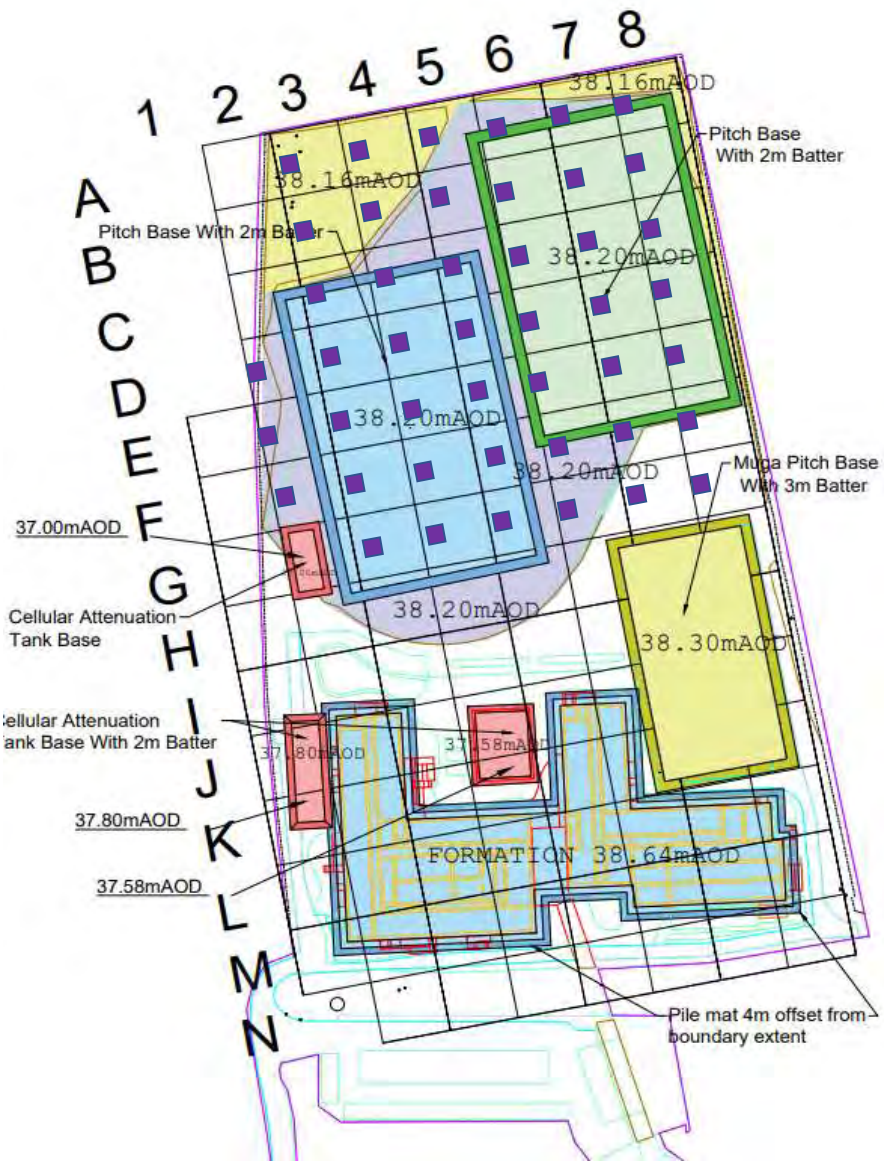
APPENDIX D:

ASHFIELD CHEMICAL RESULTS

ASHFIELD SAMPLE TRACKER

Sample Key

Soil Suite with ACM ID



ASHFIELD CHEMICAL RESULTS SUMMARY CAPPING VALIDATION

Determinand	Units	LOD	SAC Cover Reuse Criteria	Phytotoxic SAC Planting	Lab Reference	2524659	2524660	2524661	2524662	2529152	2529153	2529154	2529155	2531438	2531439	2531440	2531441	2531442	2531443	2531444	2531445	2531446	2531447
					Sample Location	A5	A6	A7	A8	B5	B6	B7	B8	C5	C6	C7	C8	D5	D6	D7	D8	E5	E6
					Sampling Date	07/12/2022	07/12/2022	07/12/2022	06/12/2022	07/12/2022	07/12/2022	07/12/2022	07/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Soil sample preparation parameters																							
Moisture Content	%	0.1				11	12	13	18	12	14	15	13	14	13	15	13	13	14	12	14	11	13
Metals																							
Arsenic	mg/kg	0.5	40	50		25	24	27	23	28	25	25	24	36	38	26	26	28	27	27	24	29	30
Cadmium	mg/kg	0.2	11	3		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	mg/kg	1	910	400		25	27	31	31	32	31	32	27	30	31	29	32	26	28	28	30	29	28
Copper	mg/kg	4	1000	200		18	32	35	51	28	25	38	37	29	48	39	42	22	27	27	40	20	22
Lead	mg/kg	1	310			38	60	76	130	64	64	110	88	70	78	110	110	48	73	120	110	43	54
Mercury	mg/kg	0.1	10	1		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	1	< 0.3	< 0.3	< 0.3	< 0.3
Nickel	mg/kg	1	180	110		24	24	27	28	29	28	27	26	28	29	27	29	28	26	27	28	28	27
Selenium	mg/kg	1	430			< 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	< 1.0
Vanadium	mg/kg	0.5	500			51	52	61	54	64	57	57	52	59	64	56	58	60	61	59	54	61	61
Zinc	mg/kg	4.5	1000	300		74	98	130	180	110	110	150	130	120	160	140	170	90	110	120	150	86	88
Inorganics																							
Total Cyanide	mg/kg	1	24			< 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	< 1.0
Miscellaneous																							
pH	pH units	0.1	Ideally 5 to 9			7.1	7.2	7.5	7.4	8	7.5	7.6	7.6	7.7	7.7	7.8	7.6	7.7	7.9	7.7	7.8	7.9	7.7
Phenols																							
Phenol	mg/kg	1	10			< 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	< 1.0
Polyaromatic hydrocarbons																							
Naphthalene	mg/kg	0.1	2.3			< 0.05*	< 0.05	< 0.05	0.16	0.19*	0.21	0.2	0.2	0.25	0.26	0.24	0.25	0.16	0.18	0.18	0.18	0.15	0.17
Acenaphthylene	mg/kg	0.1				< 0.05*	< 0.05	< 0.05	0.63	< 0.05	0.07	0.07	0.07	< 0.05	< 0.05	0.06	0.08	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.1				< 0.05*	< 0.05	< 0.05	0.17	< 0.05	0.06	0.11	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.1				< 0.05*	< 0.05	< 0.05	0.14	< 0.05	0.05	0.07	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.1				0.06*	0.13	0.21	4.9	0.22*	0.67	0.98	0.99	0.18	0.19	0.38	0.31	0.06	0.14	0.17	0.41	0.06	0.23
Anthracene	mg/kg	0.1				< 0.05*	< 0.05	0.08	1.2	0.07	0.26	0.32	0.31	0.06	0.05	0.12	0.11	< 0.05	0.05	0.05	0.16	< 0.05	0.07
Fluoranthene	mg/kg	0.1				0.17*	0.36	0.76	11	0.59*	1.9	1.9	2	0.56*	0.49*	0.93*	0.88*	0.22*	0.49*	0.6*	1.1*	0.18*	0.74*
Pyrene	mg/kg	0.1				0.18*	0.36	0.71	10	0.55*	1.9	1.8	1.7*	0.53*	0.42*	0.86*	0.88*	0.24*	0.45*	0.55*	1.1*	0.16*	0.73*
Benzo(a)anthracene	mg/kg	0.1				0.11*	0.23	0.55	5.1	0.33*	1.2	0.96	1.1	0.31*	0.31*	0.52*	0.54*	0.15*	0.28*	0.35*	0.69*	0.11*	0.42*
Chrysene	mg/kg	0.1				0.08*	0.2	0.43	4.1	0.3*	1	0.83	0.87*	0.28*	0.26*	0.48*	0.48*	0.14*	0.28*	0.3*	0.6*	0.1*	0.34*
Benzo(b)fluoranthene	mg/kg	0.1				0.16*	0.29	0.64	5.5	0.49	1.4	1.1	1.2	0.45	0.39	0.66	0.73	0.24	0.37	0.45	0.87	0.16	0.48
Benzo(k)fluoranthene	mg/kg	0.1				0.07*	0.15	0.27	2.5	0.26*	0.65	0.51	0.58*	0.24*	0.21*	0.35*	0.37*	0.14*	0.21*	0.22*	0.43*	0.08*	0.28*
Benzo(a)pyrene	mg/kg	0.1	5.3			0.13*	0.26	0.52	5.1	0.44*	1.1	1.1	0.99	0.42	0.36	0.61	0.66	0.22	0.33	0.39	0.81	0.15	0.46
Indeno(1,2,3-cd)pyrene	mg/kg	0.1				0.1*	0.16	0.31	2.8	0.21	0.61	0.53	0.53	0.25	0.19	0.32	0.38	0.12	0.18	0.21	0.43	0.08	0.22
Dibenzo(a,h)anthracene	mg/kg	0.1				< 0.05*	< 0.05	0.09	0.63	< 0.05	0.14	0.12	0.14	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05
Benzo[g,h,i]perylene	mg/kg	0.1				0.11*	0.16	0.38	3	0.23	0.71	0.61	0.58*	0.25	0.2	0.36	0.42	0.11	0.2	0.22	0.46	0.08	0.24
Total PAH(16)	mg/kg	0.4	250			1.17*	2.3	4.95	57.2	3.88*	12	11.2	11.4*	3.78*	3.33*	5.89*	6.15*	1.8*	3.16*	3.69*	7.34*	1.31*	4.38*
BTEX																							
Benzene	ug/kg	10	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0*	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0*	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes	ug/kg	10	1000			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total BTEX	mg/kg	0.01																					
TPH CWG																							
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01				< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01	50			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130			< 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	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1				< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1				< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1				< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Total aliphatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_	mg/kg	1				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01				< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01	50			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130			< 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	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1				< 2.0	< 2.0	< 2.0	7.5	< 2.0	2.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1				< 10	< 10	< 10	30	< 10	13	16	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1				< 10	< 10	< 10	46	< 10	27	33	15	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1				< 10	< 10	< 10	83	12	43	51	25	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total aromatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_	mg/kg	1				< 10	< 10	< 10	83	12	85.2	100	40	0	0	0	0	0	0	0	0	0	0
Total petroleum hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D	mg/kg	1	500			0	0	0	83	12	85.2	100	40	0	0	0	0	0	0	0	0	0	0
Organics																							
Coal tar	%	0.01				Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified

ASHFIELD CHEMICAL RESULTS SUMMARY CAPPING VALIDATION

Determinand	Units	LOD	SAC Cover Reuse Criteria	Phytotoxic SAC Planting	Lab Reference	2531448	2531449	2534222	2534223	2534224	2534225	2534226	2534227	2534228	2534229	2534230	2534231	2534232	2534233	2534351	2534352	2534353	2534354
					Sample Location	E7	E8	F5	F6	F7	F8	G5	G6	A3	A4	B3	B4	C3	C4	D2	D3	D4	E2
					Sampling Date	12/12/2022	12/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022
Soil sample preparation parameters																							
Moisture Content	%	0.1				15	14	9.8	14	14	15	9.7	11	12	9.6	87	10	11	9.9	14	12	14	13
Metals																							
Arsenic	mg/kg	0.5	40	50		25	23	33	22	27	27	32	28	39	33	29	26	29	24	36	26	30	24
Cadmium	mg/kg	0.2	11	3		1.1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	mg/kg	1	910	400		25	29	33	25	30	34	34	33	38	33	35	33	32	30	33	38	35	28
Copper	mg/kg	4	1000	200		34	41	46	29	43	72	44	27	26	37	37	36	31	36	51	42	33	27
Lead	mg/kg	1	310			110	110	80	70	220	180	140	63	62	83	71	90	99	87	96	100	87	70
Mercury	mg/kg	0.1	10	1		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel	mg/kg	1	180	110		23	26	31	22	26	29	32	28	31	30	30	27	28	26	30	30	29	24
Selenium	mg/kg	1	430			< 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	< 1.0
Vanadium	mg/kg	0.5	500			47	55	66	50	60	60	68	66	80	67	67	62	63	56	66	58	68	54
Zinc	mg/kg	4.5	1000	300		97	130	140	110	130	200	140	110	120	150	130	150	140	130	130	180	140	110
Inorganics																							
Total Cyanide	mg/kg	1	24			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0	2.4	< 1.0	< 1.0	1.2	< 1.0
Miscellaneous																							
pH	pH units	0.1	Ideally 5 to 9			7.7	7.6	8	8.1	8.1	8.7	7.9	8	6.5	7.7	7.6	7.8	8	7.9	7.6	7.7	7.6	7.5
Phenols																							
Phenol	mg/kg	1	10			< 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	< 1.0
Polyaromatic hydrocarbons																							
Naphthalene	mg/kg	0.1	2.3			0.18	0.23	< 0.05	< 0.05	0.13	0.18	0.15	0.16	0.15	0.16	0.16	< 0.05	0.11	0.11	0.15	0.13	0.14	0.14
Acenaphthylene	mg/kg	0.1				0.09	< 0.05	< 0.05	< 0.05	0.12	0.18	0.05	0.11	< 0.05	0.06	< 0.05	< 0.05	< 0.05	0.06	0.05	0.11	< 0.05	< 0.05
Acenaphthene	mg/kg	0.1				< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.12	0.17	< 0.05	< 0.05
Fluorene	mg/kg	0.1				< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.09	0.22	< 0.05	< 0.05
Phenanthrene	mg/kg	0.1				0.45	0.26	0.21*	0.31*	0.63*	0.59*	0.17*	0.72*	0.07*	0.13*	0.22*	0.14*	0.48*	1.1*	0.87	3.4	0.15	0.12
Anthracene	mg/kg	0.1				0.15	0.09	0.05*	0.1*	0.24*	0.2*	0.07*	0.25*	< 0.05	0.06*	0.08*	< 0.05	0.16*	0.31*	0.21	1.1	0.05	< 0.05
Fluoranthene	mg/kg	0.1				1.3*	0.9*	0.45	1.1	2.1*	1.7*	0.59*	2.3*	0.23*	0.36*	0.57*	0.44*	1.3*	1.4*	1.1	6.3	0.64	0.45
Pyrene	mg/kg	0.1				1.3*	0.84*	0.4*	1.1*	2*	1.7*	0.59*	2.2*	0.25*	0.38*	0.52*	0.42*	1.2*	1.2*	1	5.3	0.63	0.45
Benzo(a)anthracene	mg/kg	0.1				0.78*	0.5*	0.26	0.73	1.3	1.1	0.41	1.4	0.17	0.24	0.32	0.23	0.74	0.68	0.54	2.7	0.41	0.31
Chrysene	mg/kg	0.1				0.67*	0.41*	0.25*	0.5*4	0.95	0.84	0.29	1.1	0.12	0.16	0.22	0.27*	0.54	0.48	0.45	2.2	0.32	0.23
Benzo(b)fluoranthene	mg/kg	0.1				0.96	0.63	0.34	1.1	1.4*	1.3*	0.51*	1.5*	0.26*	0.29*	0.35*	0.43*	0.78*	0.65*	0.56	2.8	0.49	0.39
Benzo(k)fluoranthene	mg/kg	0.1				0.48*	0.28*	0.13*	0.35*	0.59	0.51	0.21	0.69	0.11	0.12	0.14	0.15*	0.33	0.25	0.23	0.93	0.22	0.14
Benzo(a)pyrene	mg/kg	0.1	5.3			0.86	0.56	0.26	0.81	1.2*	1.1*	0.42*	1.3*	0.21*	0.25*	0.28*	0.34*	0.65*	0.53*	0.5	1.9	0.4	0.31
Indeno(1,2,3-cd)pyrene	mg/kg	0.1				0.48	0.31	0.16	0.5	0.71	0.7	0.27	0.74	0.13	0.17	0.18	0.21	0.36	0.3	0.28	1.2	0.24	0.22
Dibenzo(a,h)anthracene	mg/kg	0.1				0.08	0.05	< 0.05	0.11	0.16	0.14	0.08	0.15	< 0.05	< 0.05	< 0.05	< 0.05	0.1	0.07	< 0.05	0.29	< 0.05	< 0.05
Benzo[g,h,i]perylene	mg/kg	0.1				0.52	0.32	0.19	0.58	0.82	0.74	0.34	0.79	0.16	0.19	0.2	0.21	0.43	0.35	0.31	1.3	0.29	0.24
Total PAH(16)	mg/kg	0.4	250			8.27*	5.38*	2.7*	7.35*	12.5*	11*	4.15*	13.3*	1.86*	2.57*	3.24*	2.84*	7.12*	7.7*	6.49	30	3.98	3
BTEX																							
Benzene	ug/kg	10	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes	ug/kg	10	1000			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total BTEX	mg/kg	0.01																					
TPH CWG																							
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01				< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01	50			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130			< 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	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1				< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1				< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1				< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Total aliphatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_	mg/kg	1				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01				< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01	50			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130			< 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	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1				< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.2	< 2.0	4.9	< 2.0	< 2.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1				< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	14	< 10	< 10
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1				< 10	14	< 10	11	25	11	< 10	19	< 10	< 10	< 10	< 10	14	11	< 10	24	11	< 10
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1				< 10	16	10	16	36	18	12	26	< 10	< 10	< 10	11	21	21	< 10	43	16	13
Total aromatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_	mg/kg	1				0	30	10	27	61	29	12	45	0	0	0	11	35	34.2	0	85.9	27	13
Total petroleum hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D	mg/kg	1	500			0	30	10	27	61	29	12	45	0	0	0	11	35	34.2	0	85.9	27	13
Organics																							
Coal tar	%	0.01				Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified

ASHFIELD CHEMICAL RESULTS SUMMARY CAPPING VALIDATION

Determinand	Units	LOD	SAC Cover Reuse Criteria	Phytotoxic SAC Planting	Lab Reference	2534355	2534356	2534357	2534358	2534359	2534360	2534361	2534362	2534363
					Sample Location	E3	E4	F2	F3	F4	G3	G4	G7	G8
					Sampling Date	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022
Soil sample preparation parameters														
Moisture Content	%	0.1				12	13	12	14	13	15	14	16	11
Metals														
Arsenic	mg/kg	0.5	40	50		27	29	29	28	23	24	25	22	23
Cadmium	mg/kg	0.2	11	3		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	mg/kg	1	910	400		32	33	30	32	28	28	28	27	28
Copper	mg/kg	4	1000	200		32	31	29	36	43	38	57	49	45
Lead	mg/kg	1	310			77	79	67	80	89	77	130	120	99
Mercury	mg/kg	0.1	10	1		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3	< 0.3	0.6	< 0.3
Nickel	mg/kg	1	180	110		28	27	26	29	25	25	28	23	25
Selenium	mg/kg	1	430			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	mg/kg	0.5	500			60	67	60	65	54	55	51	48	50
Zinc	mg/kg	4.5	1000	300		130	130	110	130	140	150	280	160	160
Inorganics														
Total Cyanide	mg/kg	1	24			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous														
pH	pH units	0.1	Ideally 5 to 9			7.6	7.5	7.9	7.7	7.6	7.7	7.7	7.9	7.9
Phenols														
Phenol	mg/kg	1	10			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Polyaromatic hydrocarbons														
Naphthalene	mg/kg	0.1	2.3			0.14	0.11	0.13	0.08	0.11	0.11	0.14	0.16	0.15
Acenaphthylene	mg/kg	0.1				0.05	0.06	< 0.05	0.07	0.06	0.08	0.07	0.12	0.12
Acenaphthene	mg/kg	0.1				< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05
Fluorene	mg/kg	0.1				< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05
Phenanthrene	mg/kg	0.1				0.38	0.32	0.15	0.21	0.3	0.35	0.35	0.56	0.37
Anthracene	mg/kg	0.1				0.15	0.15	0.05	0.09	0.1	0.13	0.14	0.21	0.18
Fluoranthene	mg/kg	0.1				0.91	0.81	0.47	0.84	0.83	0.99	1.9	1.6	1.8
Pyrene	mg/kg	0.1				0.88	0.81	0.46	0.87	0.78	0.97	1.8	1.5	1.8
Benzo(a)anthracene	mg/kg	0.1				0.54	0.5	0.3	0.66	0.51	0.6	1.4	0.95	1
Chrysene	mg/kg	0.1				0.4	0.41	0.21	0.5	0.38	0.46	0.94	0.71	0.72
Benzo(b)fluoranthene	mg/kg	0.1				0.61	0.57	0.37	0.78	0.58	0.68	1.4	1.1	1.1
Benzo(k)fluoranthene	mg/kg	0.1				0.24	0.23	0.16	0.3	0.25	0.26	0.57	0.39	0.46
Benzo(a)pyrene	mg/kg	0.1	5.3			0.51	0.45	0.29	0.67	0.49	0.58	1.1	0.93	0.99
Indeno(1,2,3-cd)pyrene	mg/kg	0.1				0.32	0.29	0.19	0.4	0.31	0.34	0.65	0.58	0.58
Dibenzo(a,h)anthracene	mg/kg	0.1				0.07	0.06	< 0.05	0.09	0.08	0.08	0.16	0.13	0.14
Benzo[g,h,i]perylene	mg/kg	0.1				0.32	0.32	0.22	0.41	0.35	0.38	0.73	0.63	0.66
Total PAH(16)	mg/kg	0.4	250			5.52	5.09	3	5.97	5.13	6.01	11.4	9.75	10.1
BTEX														
Benzene	ug/kg	10	100			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes	ug/kg	10	1000			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE	ug/kg	10				< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total BTEX	mg/kg	0.01												
TPH CWG														
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01				< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01	50			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1				< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1				< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1				< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Total aliphatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_	mg/kg	1				0	0	0	0	0	0	0	0	0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01				< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01	50			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130			< 1.0	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1				< 2.0	2.1	< 2.0	< 2.0	13	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1				< 10	< 10	< 10	< 10	15	< 10	< 10	< 10	< 10
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1				< 10	13	< 10	13	34	17	16	22	17
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1				< 10	19	< 10	21	62	25	24	32	26
Total aromatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_	mg/kg	1				0	35.9	0	34	124	42	40	54	43
Total petroleum hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D	mg/kg	1	500			0	35.9	0	34	124	42	40	54	43
Organics														
Coal tar	%	0.01				Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identifiec

ASHFIELD ACM RESULTS SUMMARY CAPPING VALIDATION

I2 No.	Clients Reference	Asbestos Identification	Asbestos in Soil Screen / Identification Name	Asbestos Quantification (Stage 2)	Asbestos Quantification Total
2524659	A5	Not-detected	-	-	-
2524660	A6	Not-detected	-	-	-
2524661	A7	Not-detected	-	-	-
2524662	A8	Not-detected	-	-	-
2529152	B5	Not-detected	-	-	-
2529153	B6	Not-detected	-	-	-
2529154	B7	Not-detected	-	-	-
2529155	B8	Not-detected	-	-	-
2531438	C5	Not-detected	-	-	-
2531439	C6	Not-detected	-	-	-
2531440	C7	Not-detected	-	-	-
2531441	C8	Not-detected	-	-	-
2531442	D5	Not-detected	-	-	-
2531443	D6	Not-detected	-	-	-
2531444	D7	Detected	Chrysotile	< 0.001	< 0.001
2531445	D8	Not-detected	-	-	-
2531446	E5	Not-detected	-	-	-
2531447	E6	Not-detected	-	-	-
2531448	E7	Not-detected	-	-	-
2531449	E8	Not-detected	-	-	-
2534222	F5	Not-detected	-	-	-
2534223	F6	Not-detected	-	-	-
2534224	F7	Not-detected	-	-	-
2534225	F8	Not-detected	-	-	-
2534226	G5	Not-detected	-	-	-
2534227	G6	Not-detected	-	-	-
2534228	A3	Not-detected	-	-	-
2534229	A4	Not-detected	-	-	-
2534230	B3	Not-detected	-	-	-
2534231	B4	Not-detected	-	-	-
2534232	C3	Not-detected	-	-	-
2534233	C4	Not-detected	-	-	-
2534351	D2	Not-detected	-	-	-
2534352	D3	Not-detected	-	-	-
2534353	D4	Not-detected	-	-	-
2534354	E2	Not-detected	-	-	-
2534355	E3	Not-detected	-	-	-
2534356	E4	Not-detected	-	-	-
2534357	F2	Not-detected	-	-	-
2534358	F3	Not-detected	-	-	-
2534359	F4	Not-detected	-	-	-
2534360	G3	Not-detected	-	-	-
2534361	G4	Not-detected	-	-	-
2534362	G7	Not-detected	-	-	-
2534363	G8	Not-detected	-	-	-

APPENDIX E:

PILE MAT-ROAD DESIGN

4th July 2022

Piling Platform Design Submission

River Academy, Reading

1.0 Proposal

To determine a suitable platform to cater for piling rig operations in general accordance with BRE470.

1.1 Information Used

- FPS data sheet:
  - Llamada P135/20
- Site Investigation:
  - 1CO106158/P2/R0 (November 2018)

1.2 Incoming Information – Testing Recommendations

There is little testing of the upper soils. The following is noted and will be used in the piling platform design:

- Soil descriptions

Due to the above, it is important that plate load testing is carried out on the proposed platform formation to verify our design assumptions.

1.3 Bearing Strata

The bearing strata has been taken to be a cohesive Made Ground. The material which the piling platform will be formed on appears to be a landfill material. Due to the nature of this material plate load testing is required both prior to installation and post installation.

Description – sand and gravel set within a CLAY matrix.

From the above description, a Cu value of 30kN/m^2 has been adopted. However, this assumption will be confirmed once plate load testing has been undertaken on the formation level prior to piling platform installation.

1.4 Piling Platform Thickness

The proposed piling platform thickness is 525mm with one layer of Geogrid 30/30S at the formation level of the platform.

1.5 Platform Material

Selected well graded granular material [Table 6/1] compacted in layers [Table 6/4, Method 6] to produce a minimum Ø' = 45° in general accordance with the Specification for Highway Works - Series 600.

1.6 Plate Load Testing

Multiple plate load tests are to be carried out to verify the formation assumptions made to calculate the maximum temporary bearing capacity. It is also necessary that multiple tests are undertaken to the finished surface of the piling platform.

Plate load testing on formation:

- The minimum plate size is 600mm ø
- Minimum 8 No. tests
- Testing regime:
    1. Applied stress of 80kN/m^2 for a minimum of 10 minutes
    2. Applied stress of 100kN/m^2 for a minimum of 10 minutes
    3. Applied stress of 120kN/m^2 for a minimum of 10 minutes

Plate load testing on installed piling platform:

- The minimum plate size is 600mm ø
- Minimum 8 No. tests
- Testing regime:
    1. Applied stress of 250kN/m^2 for a minimum of 5 minutes
    2. Applied stress of 275kN/m^2 for a minimum of 5 minutes
    3. Applied stress of 300kN/m^2 for a minimum of 5 minutes
    4. Applied stress of 325kN/m^2 for a minimum of 5 minutes
    5. Applied stress of 350kN/m^2 for a minimum of 5 minutes
- The maximum settlement criteria on the finished platform is 5mm at maximum working rig load.

All plate load testing specified within this submission must be undertaken, and all results must be approved by GMP before the design can be deemed fit for its intended purpose.

1.7 General

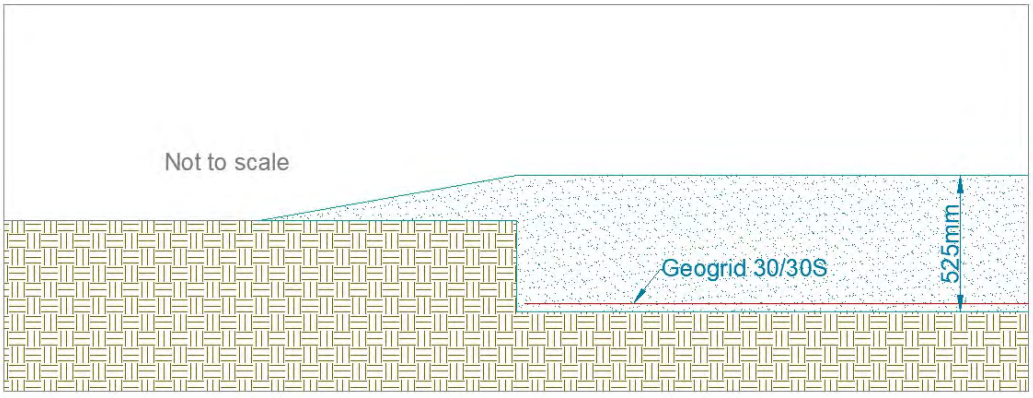
The proposed piling platform formation is expected to be located on or within the made ground, following the removal of the topsoil and any other unsuitable material.

The proposed formation is to be proof rolled using appropriate plant and method to suit soil and ground conditions and also to identify all potential soft and hard spots, which are to be removed.

The piling platform top level is to be located a minimum of 400mm above pile cut off level.

This platform design is for the use of GM Piling rigs only and is not suitable for the use of any other company.

1.8 Typical Section



Submission produced by

James Warne
Piling Design Manager
G M Piling Ltd

4th July 2022

Working Platform Certificate

Project Name	**River Academy, Reading**
Work area covered by this certificate	

(a sketch or marked up pile layout drawing may be attached to this certificate)

Part 1 - WORKING PLATFORM DESIGN

Equipment to be used on site.	Llamada P135/20 or similar
Maximum plant loading	272kN/m^2

(Note: BR470 'Working Platforms for Tracked Plant: Good practice guide to the design, installation, maintenance and repair of ground-supported platforms' is available from HIS BRE Press - Tel 01344 328 038)

Designer Name	James Warne
Designer Organisation	G M Piling Ltd

Part 2 - WORKING PLATFORM INSTALLATION

The working platform detailed above has been designed and installed to safely support the equipment detailed on this certificate and the limits of the platform have been clearly identified on site as
necessary. The working platform will be maintained, repaired and reinstated to the as installed condition after any excavation or damage, throughout the period when the equipment is on the site.

A complete copy of this certificate signed by an authorised person from the Principle Contractor must be given to each user of the working platform prior to commencement of any works on site in the area covered by this certificate.

Signature		Name	
Position held		Date	
Organisation		Address	

Working Platform Certificate

Guidance on piling platforms

1 Design

1.1 The stability of piling rigs and associated plant is primarily dependent upon the provision of a suitable and sufficient working platform. It must be properly designed and installed to a recognised standard. Guidance for this is provided by the BRE in a report commissioned by the FPS entitled " Working Platforms for Tracked plant - Good Practice guide to the design, installation, maintenance and repair of ground supported platforms"

1.2 Whilst the same type of rig may be operated by different companies the bearing pressures may differ due to the specific configuration of operation of the rig or modifications. The detailed bearing pressures will be provided by the piling contractor in advance of work commencing.

1.3 The design is extremely sensitive to the bearing pressure and type of fill used in the platform (For example changing the angle of friction of the fill from 35 degrees can halve the platform thickness. It is therefore advised that the designer may have to adopt conservative/cautious estimates of platform shear strength unless higher values provided by testing can be demonstrated.

1.4 The working platform must be free draining to prevent the build-up of water and slurry.

1.5 In the case of fine-grained subgrades, a separation/filter membrane should be installed beneath the platform material. This will inhibit 'pumping' and infiltration of fine-grained soils up into the platform material during wet weather (which can impair platform performance and increase maintenance costs).

1.6 Proof testing of the platform can be carried out with a suitably sized diameter plate subject to the maximum design loading. Coupled with a cautious design approach, such testing should highlight any gross inconsistencies in platform performance. Potentially significant savings in platform thickness and cost can be realised by adopting a more detailed testing strategy.

1.7 The working platform must have a specified design life which starts before delivery of the piling equipment and ends on completion of all piling works. This includes load testing, integrity testing, investigation of non-conformances and any remedial works.

1.8 The piling contractor is to advise the Principal Contractor should the piling contractor become aware of any circumstances relating to the working platform that renders it unsafe.

2 Installation

2.1 The platform certificate is mandatory for all sites where a piling rig or attendant plant operates. It must be signed by an authorised representative of the Principal Contractor. This merely confirms the legal duties required under CDM have been carried out.

2.2 If the working platform is to be constructed or removed in phases while piling works are on-going, then the extent of the platform must be clearly defined on the certificate and if necessary, physically on site. This is particularly important where the piling mat is removed from an area previously made available to the piling contractor.

2.3 The working platform provides for all piling plant, ancillary plant, deliveries, sub-contractors and personnel associated with the piling operations. Properly designed and installed the working platform could also provide suitable and safe access for following trades for the whole project.

2.4 One of the main causes of rig instability is a result of poor definition of the edge of the working platform. In general, the working platform should extend at least 2m beyond the pile position/edge of the building. This ensures sufficient safe working area for the piling personnel and attendant plant.

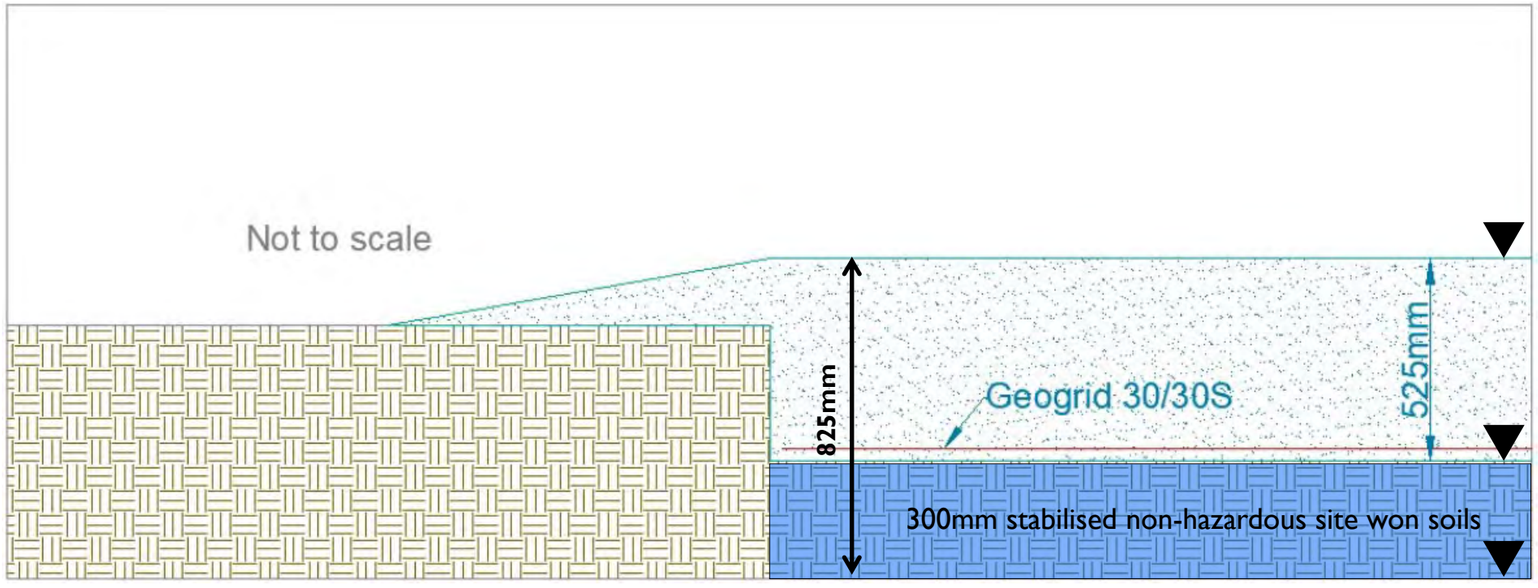
2.5 Where access ramps are used to move between working levels these must be of sufficient gradient and width to allow the piling plant to move safely with the stability constraints of the machine. Ramps must be in a straight line between working areas. Piling rigs and cranes cannot change direction on ramps. Where a change in direction is required, this must be on a flat level platform.

3 Maintenance, repair and reinstatement

3.1 The working platform must be kept free draining. Water and slurry which is allowed to build up on the working platform can hide recently constructed piles, trip hazards, unstable ground and excavations. Slurry can be transferred to work equipment which increases the risk of slips on steps as well as difficult handling of work tools.

3.2 Obstruction encountered during the piling process will generally require excavation to remove them. This can create a 'soft spot' which can result in the rig overturning. It is essential that any excavations made in the working platform are reinstated to the designed standard, including any reinforcement and separation filter / membrane.

3.3 Inspection of the platform should be an ongoing process throughout the design life of the platform. Any damaged areas must be reinstated to the designed standard.

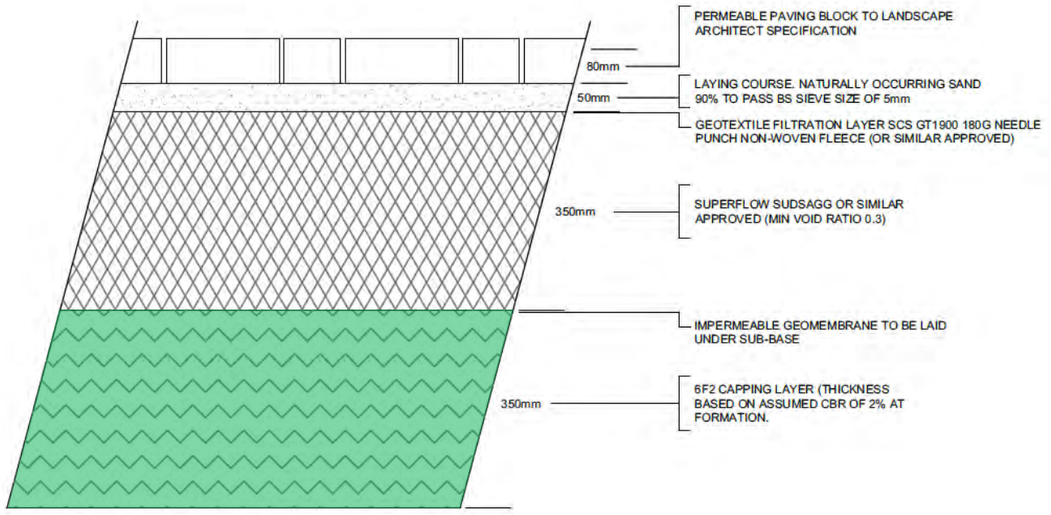


PLATFORM LEVEL: 39.32mOD

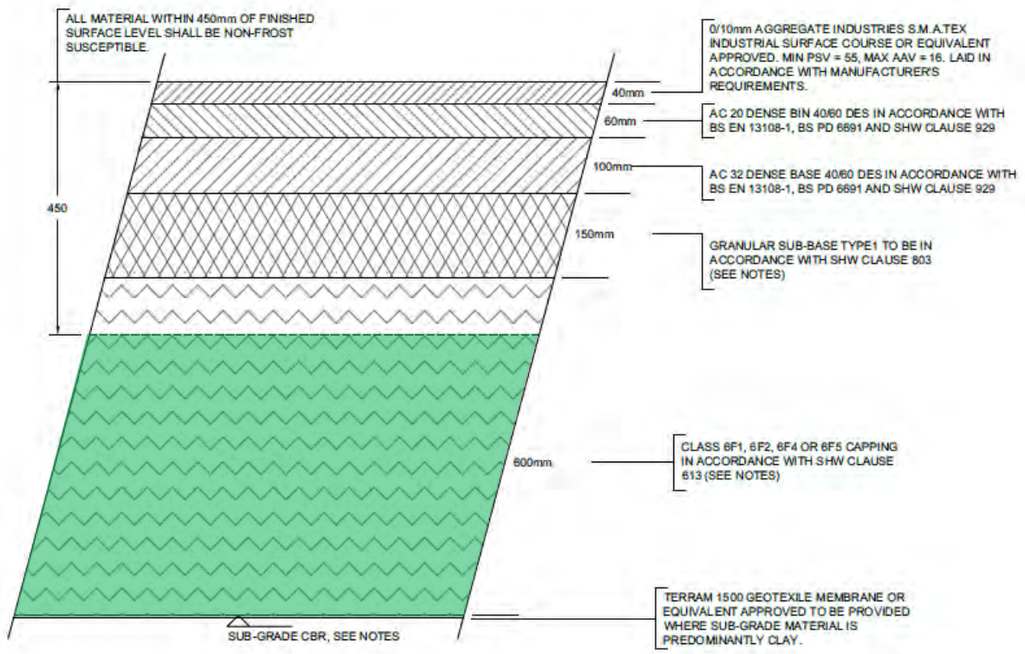
PREVIOUS FORMATION LEVEL: 38.79mOD

NEW FORMATION LEVEL: 38.49mOD

PERMEABLE CONCRETE BLOCK PAVED CAR PARK BAY CONSTRUCTION [CARS AND LIGHT VANS ONLY UP TO 3.5T GROSS VEHICLE MASS (SCALE 1:10)



BITUMINOUS ACCESS ROAD CONSTRUCTION (SCALE 1:10)



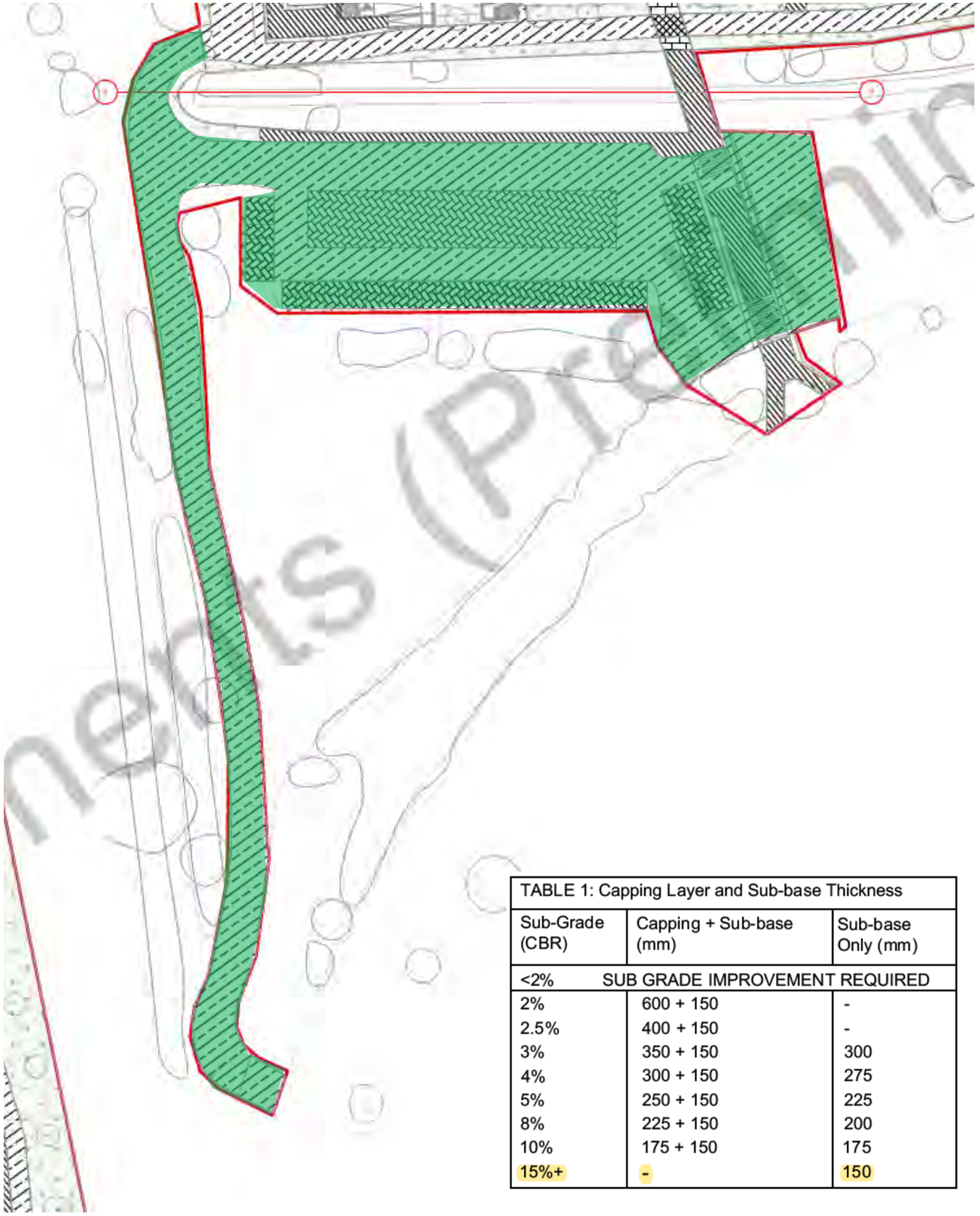
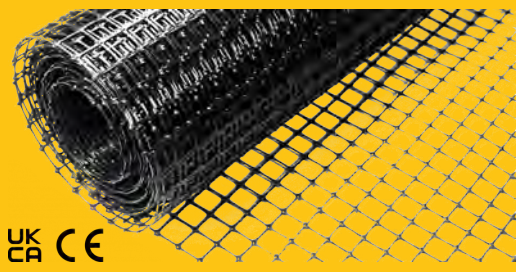


TABLE 1: Capping Layer and Sub-base Thickness		
Sub-Grade (CBR)	Capping + Sub-base (mm)	Sub-base Only (mm)
<2%	SUB GRADE IMPROVEMENT REQUIRED	
2%	600 + 150	-
2.5%	400 + 150	-
3%	350 + 150	300
4%	300 + 150	275
5%	250 + 150	225
8%	225 + 150	200
10%	175 + 150	175
15%+	-	150

SX Grid 3030

Biaxial Geogrid Polypropylene - 4m x 50m roll



PRODUCT NAME	DESCRIPTION
SX Grid 3030	Biaxial Geogrid Polypropylene - 4m x 50m roll

General information

Stock code	GGSXGRID/30
Range	SX Grid
Third party certified	CE UKCA

Details

Roll size		50 m
Tensile strength (MD)	EN ISO 10319	30kN/m²
Tensile strength (TD)	EN ISO 10319	30kN/m²
Tensile load (2% strain) (MD)	EN ISO 10319	10.5kN/m
Tensile load (2% strain) (TD)	EN ISO 10319	10.5kN/m
Tensile load (5% strain (MD)	EN ISO 10319	21kN/m
Tensile load (5% strain) (TD)	EN ISO 10319	21kN/m
Junction efficiency		95%
Aperture opening size length		40 mm

Aperture opening size width	40 mm

Notes

1) All strength and load figures are based on test results from manufacturer's laboratory, measured in accordance with ISO 10319 at the temperature of 21±1°C and calculated as a lowest 95% confidence limit in accordance with ISO 2602.
2) Measured by comparing the results of tests in accordance with test methods GRI/GG2 and GRI/GGI.
3) Carbon Black content 0.5%.
4) Other roll sizes are available to order.

1. Wrekin Products Ltd is continually seeking to improve our products and therefore reserves the right to alter product specifications without prior notice.
2. It is the responsibility of all users to satisfy themselves the above data is current.
3. Installation details are available on request.

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Mohamed.Jaffer@socotec.com

SOCOTEC

UKAS TESTING
0001

TEST REPORT

Determination of Frost Susceptibility

Report No:	**UXB0472856/193/M22**	**Report Date:**	**06 February 2023**
		Our Contract Ref:	50138005/M383
Client:	TOUREEN CONTRACTORS LTD	Sample No.	25745193
Address:	24 Cecil Road Harrow Middlesex HA3 5QY	Client Sample Ref:	1
		Date Sampled:	28 November 2022
		Date Received:	01 December 2022
		Date Tested:	27 Jan 2023 to 03 Feb 2023
Client Contact:	Rick Willemse	Tested By:	SOCOTEC Uxbridge
Site:	**River Academy, Reading**	Material Supplier:	Site
Location:	Stockpile	Material Source:	Site
		Sampling Certificate:	Received
Description:	Cement Stabilised Material Crushed to Type 1	Sampled by:	SOCOTEC Uxbridge
Material Specification:	SHW: 2009: Series 800: Clause 803 Table 8/5 Type 1		

Results :

Frost Susceptibility

Maximum Heave after 96 hrs (mm)				Classification
Individual Specimens			Mean	
5.0	7.0	7.0	6.3	NON-FROST SUSCEPTIBLE

Mean Maximum Heave after 96hrs to be <=15mm

Particle Size Distribution (BS EN 933-1: 2012 Washing and sieving method)

Sieve (mm)	% Passing		Specification
	Submitted Sample	Stable Specimen	
63	100	100	100 - 100
31.5	91	92	75 - 99
16	64	77	43 - 81
8	38	58	23 - 66
4	28	48	12 - 53
2	24	37	6 - 42
1	21	26	3 - 32
0.063	3.8	3.6	0 - 9

Validity of Test Run

Parameter	Result (mm)			Criteria
Heave of individual reference specimens	10.0	11.0	9.0	N/A
Mean Heave of Reference	10.0			13.6 ± 4.0mm
Maximum Range in any set of 3 No Test Specimens	2.0			Not to exceed 6mm

CONDITION REQUIREMENTS: SATISFACTORY

Laboratory Reference Density and Water Content (BSEN 13286-4:2003)

Optimum Water Content (%)	Maximum Dry Density (Mg/m³)
13	1.89

Certified that the testing was carried out in accordance with BS 812-124 : 2009

Signed:

Mohamed Jaffer - Section Manager
for and on behalf of SOCOTEC UK Limited

Form A23 v6 11/17

The results relate to the items tested only. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
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APPENDIX F:

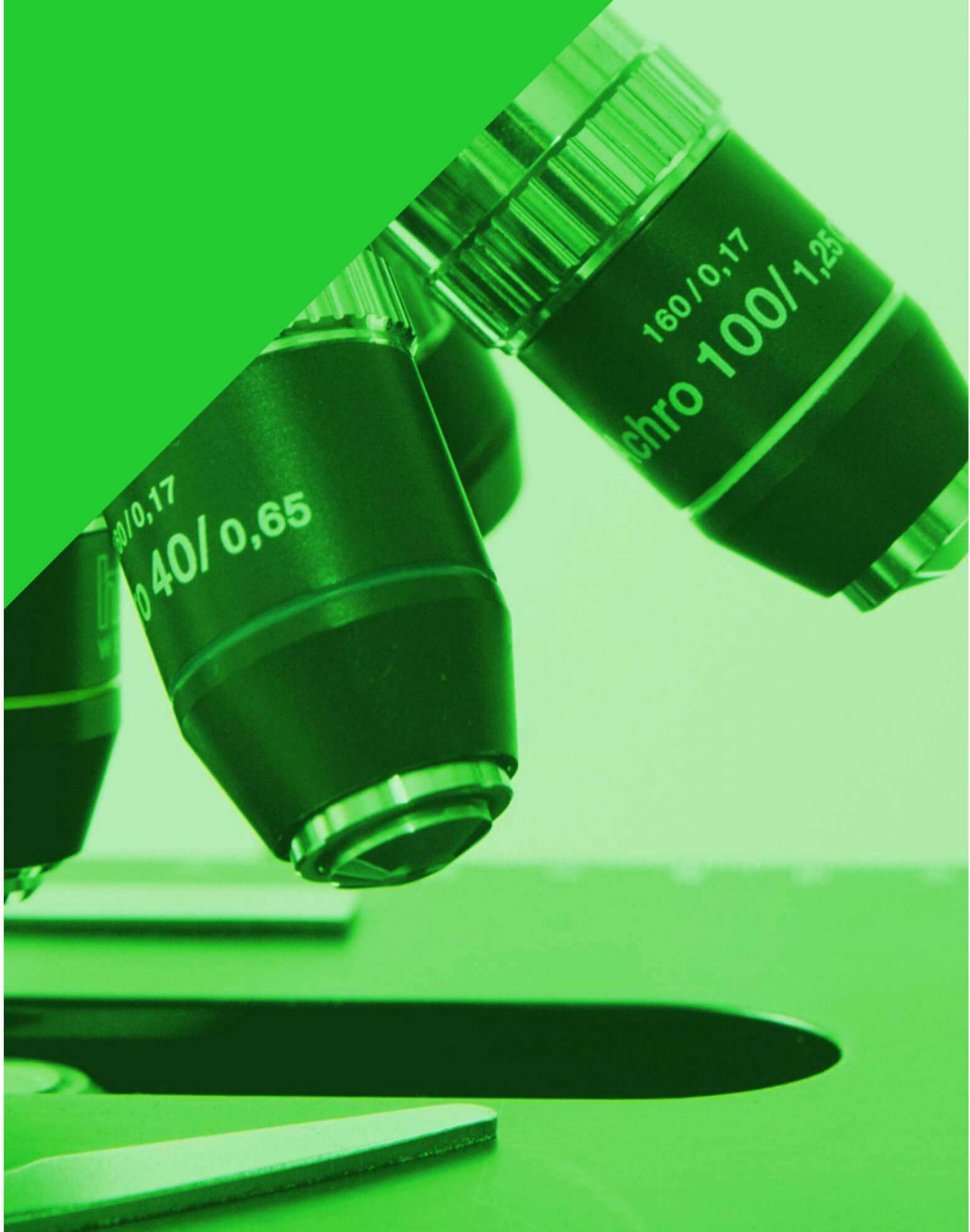
ENVIRONMENTAL MONITORING

HFS
environmental
ASBESTOS MANAGEMENT & TESTING

1 North Street,
Bromley,
Kent BR1 1RB

Tel: 020 8460 7760
Email: lab@hfsenvironmental.co.uk
Web: www.hfsenvironmental.co.uk





Job No	17081	Client Job No		Report No	A-17081-24-001 - Issue 1	Date	31/10/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	31/10/2022	HFS Environmental	

4026

Job Details

Certificate Type	Airborne Fibre Concentration	Date	31/10/2022
Client Details	Toureen Contractors Ltd	Job No	17081
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ	Report No	A-17081-24-001 - Issue 1
Contractors Details	Toureen Group	Client Job No	
Location of work area	Stock Pile area	Start time	12:30
Supervisors Name	Maurice o Connell	Asbestos Type	Chrysotile, Unknown
Description of works	Background air tests around the stock piles to assess airborne fibre level concentration under semi controlled conditions.		

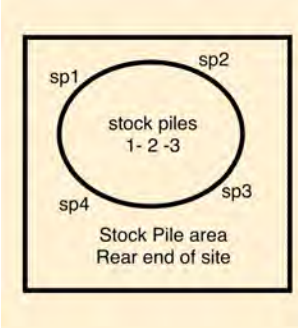
Summary
Air testing was carried out and the samples analysed under a microscope. A calculation was used to measure the airborne fibre levels (all respirable fibres were counted, not just asbestiform). The result of the air test/s in fibres per millilitre of air, were

Sample	Type	Reason for Sampling	Location	Result
A-17081-24-001-1	Background	Background air tests around the stock piles to assess airborne fibre level concentration under semi controlled conditions.	Sp1 - Perimeter of stock pile	< 0.01 f/ml
A-17081-24-001-2	Background	Background air tests around the stock piles to assess airborne fibre level concentration under semi controlled conditions.	Sp2- Perimeter of stock piles	< 0.01 f/ml
A-17081-24-001-3	Background	Background air tests around the stock piles to assess airborne fibre level concentration under semi controlled conditions.	Sp3- Perimeter of area	< 0.01 f/ml
A-17081-24-001-4	Background	Background air tests around the stock piles to assess airborne fibre level concentration under semi controlled conditions.	Sp4- Perimeter of the area	< 0.01 f/ml

Analyst	Virender Lally	Signature		Time	15:00	Date	31/10/2022

Opinions and interpretations contained within this report are outside of our UKAS accreditation. Sampling and testing was carried out in accordance with documented in-house test methods and procedures based on HSG248 Ed2 (Test Procedures 1and 2). Any deviations from these procedures are noted within the comments section of the report.

Job No	17081	Client Job No		Report No	A-17081-24-001 - Issue 1	Date	31/10/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						



Job No	17081	Client Job No		Report No	A-17081-24-001 - Issue 1	Date	31/10/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Air Test Results

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17081-24-001 -1	SP-053	VL-01	Sp1 - Perimeter of stock pile	12:50	13:50	480	< 0.01 f/ml
A-17081-24-001 -2	SP-054	VL-02	Sp2- Perimeter of stock piles	12:53	13:53	480	< 0.01 f/ml
A-17081-24-001 -3	SP-055	VL-03	Sp3- Perimeter of area	12:55	13:55	480	< 0.01 f/ml
A-17081-24-001 -4	SP-056	Vl-04	Sp4- Perimeter of the area	12:57	13:57	480	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17081-24-001-1	8	8	8	60	2.5	200	0.001
A-17081-24-001-2	8	8	8	60	3	200	0.002
A-17081-24-001-3	8	8	8	60	2.5	200	0.001
A-17081-24-001-4	8	8	8	60	3	200	0.002

Microscope no	MS-05	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	CN69DWG	Flowmeter No:	FLO-03
NPL Test Slide No	NPL-07	Flowmeter No:	FLO-06
Stage Micrometer No	SM-07	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-005	Graticule Diameter measured (µm):	100
Air pressure (mb)	N/A	Timepiece Reference	MOB-13
Temperature (°C):	N/A	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Analyst	Virender Lally	Signature		Date	31/10/2022

Photographs





Photograph 20184



Photograph 20185



Photograph 20186

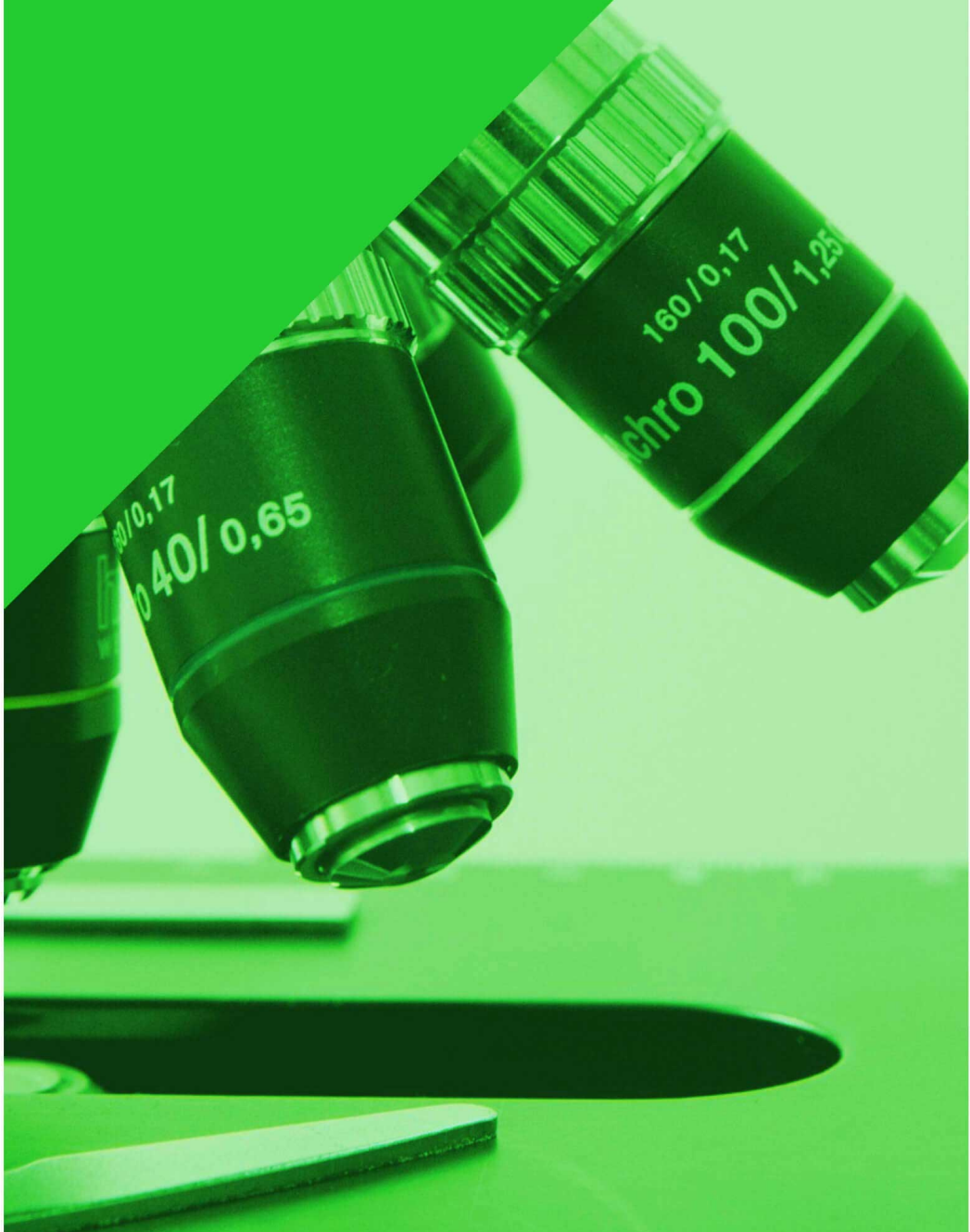
Photograph 20187

HFS
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Web: www.hfsenvironmental.co.uk





Job No	17134	Client Job No		Report No	A-17134-24-001 - Issue 1	Date	07/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	08/11/2022	HFS Environmental	

4026

Job Details

Certificate Type	Airborne Fibre Concentration	Date	07/11/2022
Client Details	Toureen Contractors Ltd	Job No	17134
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ	Report No	A-17134-24-001 - Issue 1
Contractors Details	Toureen Group	Client Job No	
Location of work area	Perimeter of stock piles	Start time	08:30
Supervisors Name	Maurice o Connel	Asbestos Type	Chrysotile, Unknown
Description of works	Background air tests to assess airborne fibre level concentration during asbestos handpicking from the stock piles under semi controlled conditions.		

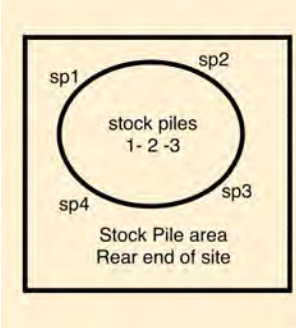
Summary
Air testing was carried out and the samples analysed under a microscope. A calculation was used to measure the airborne fibre levels (all respirable fibres were counted, not just asbestiform). The result of the air test/s in fibres per millilitre of air, were

Sample	Type	Reason for Sampling	Location	Result
A-17134-24-001-1	Background	Background air tests to assess airborne fibre level concentration during asbestos handpicking from the stock piles under semi controlled conditions. Note :- Heavy rain	Sp1 - Perimeter of stock piles	< 0.01 f/ml
A-17134-24-001-2	Background	Background air tests to assess airborne fibre level concentration during asbestos handpicking from the stock piles under semi controlled conditions. Note- Heavy Rain	Sp2- Perimeter of stock piles	< 0.01 f/ml
A-17134-24-001-3	Background	Background air tests to assess airborne fibre level concentration during asbestos handpicking from the stock piles under semi controlled conditions Note - Heavy rain	Sp3- Perimeter of stock piles	< 0.01 f/ml
A-17134-24-001-4	Background	Background air tests to assess airborne fibre level concentration during asbestos handpicking from the stock piles under semi controlled conditions. Note - Heavy Rain	sp4- Perimeter of stock pile	< 0.01 f/ml

Analyst	Virender Lally	Signature		Time	12:00	Date	07/11/2022

Opinions and interpretations contained within this report are outside of our UKAS accreditation. Sampling and testing was carried out in accordance with documented in-house test methods and procedures based on HSG248 Ed2 (Test Procedures 1and 2). Any deviations from these procedures are noted within the comments section of the report.

Job No	17134	Client Job No		Report No	A-17134-24-001 - Issue 1	Date	07/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						



Job No	17134	Client Job No		Report No	A-17134-24-001 - Issue 1	Date	07/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Air Test Results

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17134-24-001 -1	SP-053	VL-01	Sp1 - Perimeter of stock piles	09:02	10:02	480	< 0.01 f/ml
A-17134-24-001 -2	SP-054	VL-02	Sp2- Perimeter of stock piles	09:04	10:04	480	< 0.01 f/ml
A-17134-24-001 -3	SP-055	Vl-03	Sp3- Perimeter of stock piles	09:06	10:06	480	< 0.01 f/ml
A-17134-24-001 -4	SP-056	VL-04	sp4- Perimeter of stock pile	09:10	10:10	480	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17134-24-001-1	8	8	8	60	2	200	0.001
A-17134-24-001-2	8	8	8	60	2	200	0.001
A-17134-24-001-3	8	8	8	60	2.5	200	0.001
A-17134-24-001-4	8	8	8	60	2	200	0.001

Microscope no	MS-05	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	CN69DWG	Flowmeter No:	FLO-03
NPL Test Slide No	NPL-07	Flowmeter No:	FLO-06
Stage Micrometer No	SM-07	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-005	Graticule Diameter measured (µm):	100
Air pressure (mb)	N/A	Timepiece Reference	MOB-13
Temperature (°C):	N/A	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Analyst	Virender Lally	Signature		Date	07/11/2022

Photographs





Photograph 20291



Photograph 20292



Photograph 20293



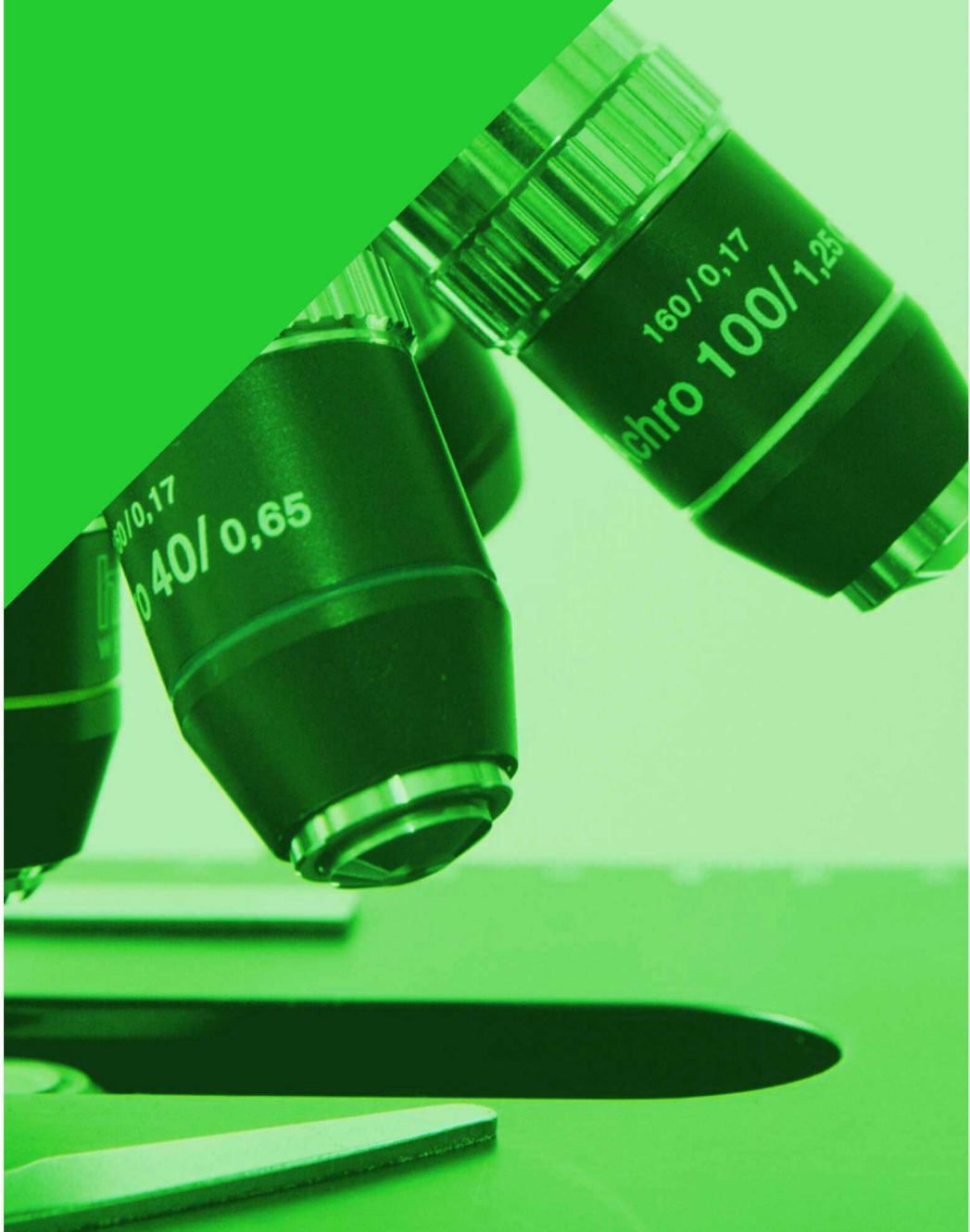
Photograph 20294

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4026

Job No	17134	Client Job No		Report No	A-17134-39-003 - Issue 1	Date	08/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	08/11/2022	HFS Environmental	

4026

Job Details

Certificate Type	Airborne Fibre Concentration	Date	08/11/2022
Client Details	Toureen Contractors Ltd	Job No	17134
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ	Report No	A-17134-39-003 - Issue 1
Contractors Details	Toureen contracts Ltd	Client Job No	
Location of work area	Near Sifter	Start time	11:40
Supervisors Name	Rick Willemse	Asbestos Type	Chrysotile
Description of works	Reassurance air monitoring following end of asbestos works		

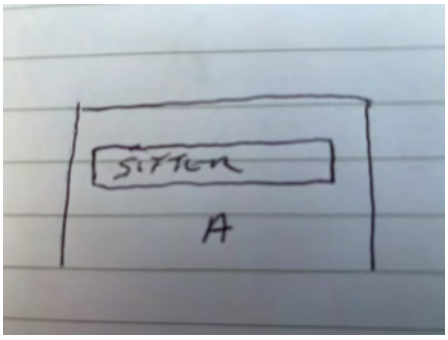
Summary
Air testing was carried out and the samples analysed under a microscope. A calculation was used to measure the airborne fibre levels (all respirable fibres were counted, not just asbestiform). The result of the air test/s in fibres per millilitre of air, were

Sample	Type	Reason for Sampling	Location	Result
A-17134-39-003-1	Reassurance	Reassurance air monitoring following end of works	Near Sifter	< 0.01 f/ml

Analyst	Tony Atherton	Signature		Time	13:26	Date	08/11/2022

Opinions and interpretations contained within this report are outside of our UKAS accreditation. Sampling and testing was carried out in accordance with documented in-house test methods and procedures based on HSG248 Ed2 (Test Procedures 1and 2). Any deviations from these procedures are noted within the comments section of the report.

Job No	17134	Client Job No		Report No	A-17134-39-003 - Issue 1	Date	08/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						



4026

Job No	17134	Client Job No		Report No	A-17134-39-003 - Issue 1	Date	08/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Air Test Results

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17134-39-003-1	SP-009	AA-01	Near Sifter	12:20	12:57	488.4	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17134-39-003-1	13.2	13.2	13.2	37	1	200	0.001

Microscope no	MS-08	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	LO17DYM	Flowmeter No:	FLO-019
NPL Test Slide No	NPL-01	Flowmeter No:	FLO-13
Stage Micrometer No	SM-09	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-001	Graticule Diameter measured (µm):	100
Air pressure (mb)	N/A	Timepiece Reference	MOB-04
Temperature (°C):	N/A	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Analyst	Tony Atherton	Signature		Date	08/11/2022

Photographs





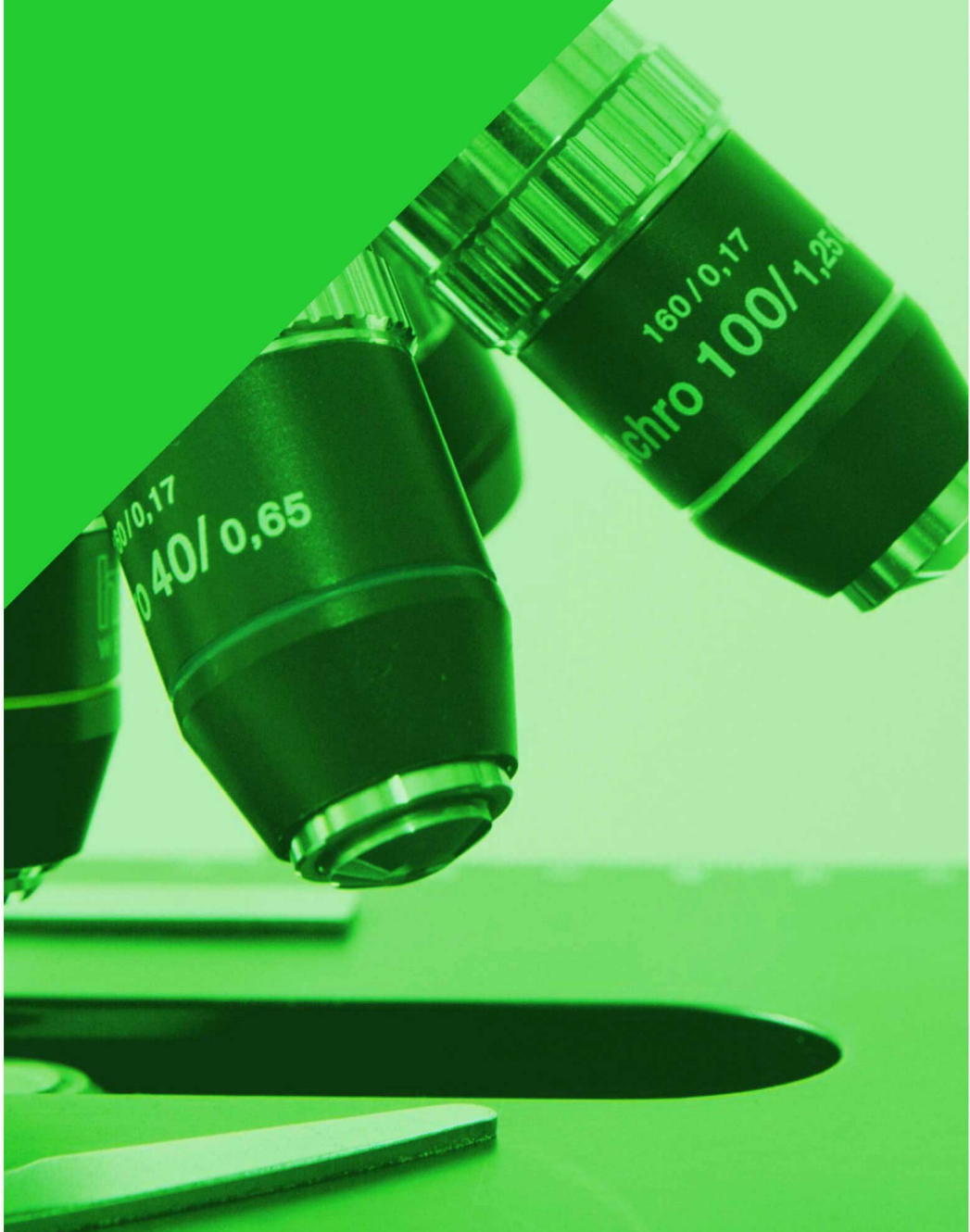
Photograph 20298

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4026

Job No	17134	Client Job No		Report No	A-17134-39-002 - Issue 1	Date	08/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	08/11/2022	HFS Environmental	

4026

Client Details	Toureen Contractors Ltd			Date	08/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ			Job No	17134
Contractors Details	Toureen Contractors Ltd			Report No	A-17134-39-002 - Issue 1
Start time	11:40	ID Number / Serial Number	151RT1790	Client Job No	

Hygiene facilities are free from waste, debris, dust, contaminated clothing, waste bags etc?			Yes		
Interior surfaces are free from debris and settled dust?		Yes	**Inspection result**		**Pass @ 12:16**
Are all areas dry?	Yes	Air movers off and sealed?	Yes	Total brush disturbance time (minutes)	1.5
Floor area of shower and dirty end (m^2)		5	Number of air samples collected		1

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17134-39-002 -1	SP-013	AA-01	Shower / dirty end	12:16	12:53	488.4	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17134-39-002-1	13.2	13.2	13.2	37	3	200	0.002

Microscope no	MS-08	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	LO17DYM	Flowmeter No:	FLO-019
NPL Test Slide No	NPL-01	Flowmeter No:	FLO-13
Stage Micrometer No	SM-09	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-001	Graticule Diameter measured (µm):	100
Air pressure (mb)	N/A	Timepiece Reference	MOB-04
Temperature (°C):	N/A	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

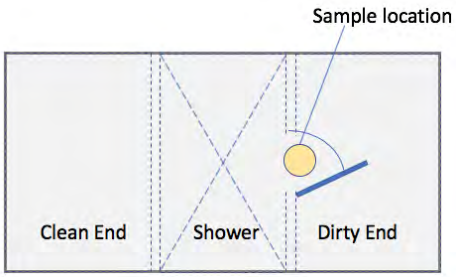
(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Visual inspection Result Pass Air Test Result Pass – The Hygiene Unit is cleared for re-use

Analysts Name	Tony Atherton	Signature		Date	08/11/2022	Time	13:27

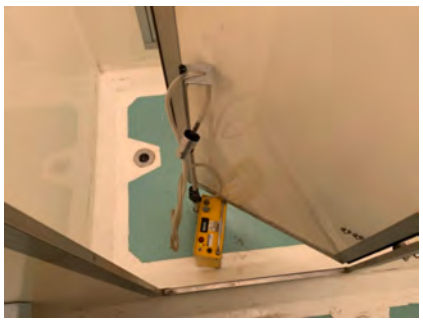
Job No	17134	Client Job No		Report No	A-17134-39-002 - Issue 1	Date	08/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						







Picture showing 'Dirty' end & Shower Unit (Maybe blank for handwritten copies)



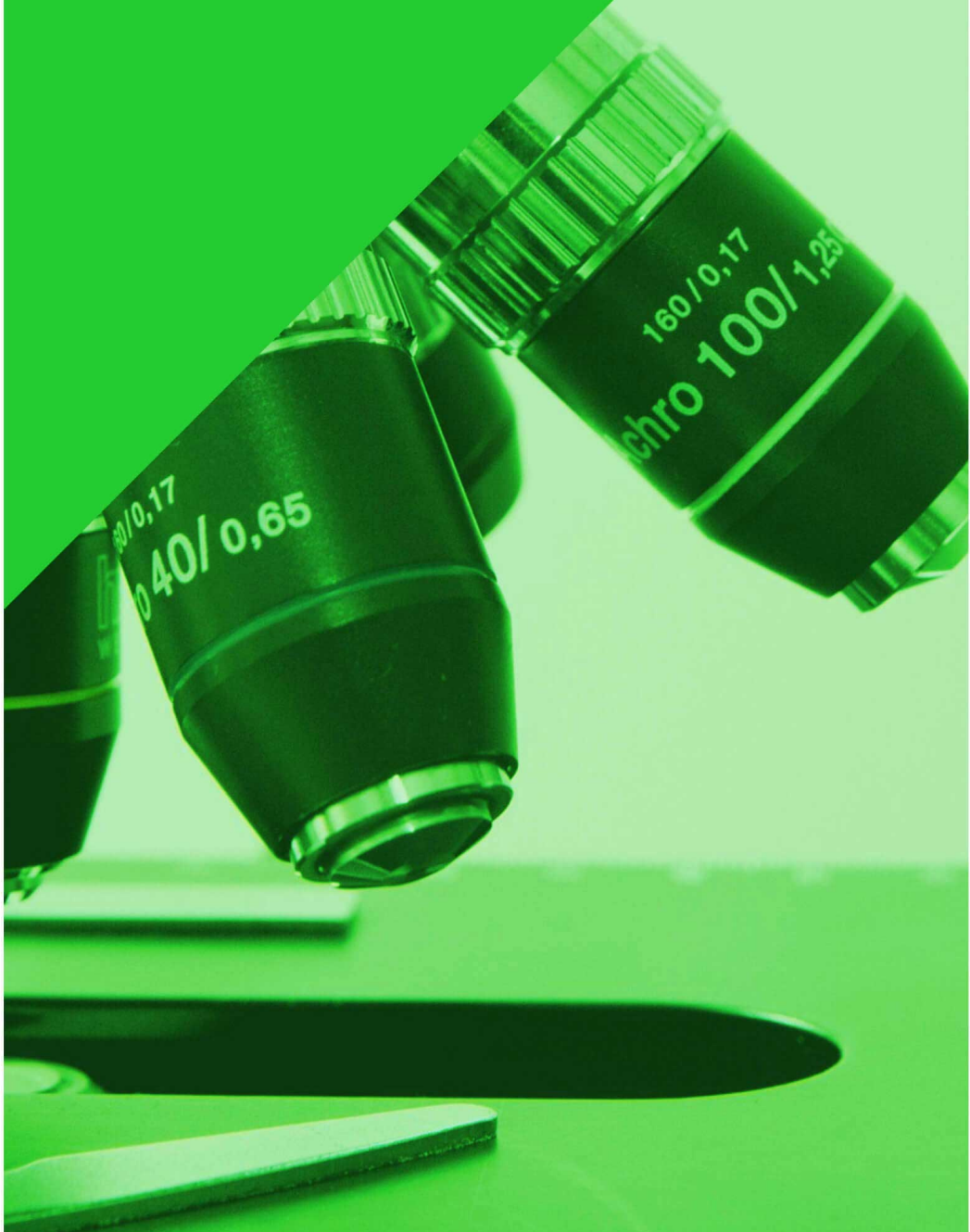
Picture showing Air Sampling Pump (Maybe blank for handwritten copies)

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Job No	17134	Client Job No		Report No	A-17134-24-004 - Issue 1	Date	09/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	10/11/2022	HFS Environmental	

4026

Job Details

Certificate Type	Airborne Fibre Concentration	Date	09/11/2022
Client Details	Toureen Contractors Ltd	Job No	17134
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ	Report No	A-17134-24-004 - Issue 1
Contractors Details	Toureen Group	Client Job No	
Location of work area	Perimeter of Stock piles	Start time	08:40
Supervisors Name	Maurice o Connel	Asbestos Type	Chrysotile, Unknown
Description of works	Background air tests around the perimeter of stock piles to assess airborne fibre level concentration		

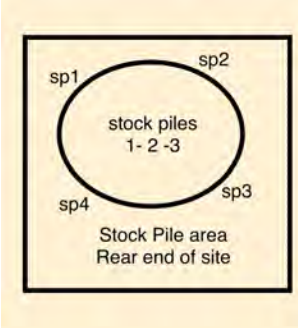
Summary
Air testing was carried out and the samples analysed under a microscope. A calculation was used to measure the airborne fibre levels (all respirable fibres were counted, not just asbestiform). The result of the air test/s in fibres per millilitre of air, were

Sample	Type	Reason for Sampling	Location	Result
A-17134-24-004-1	Background	Background air tests around the perimeter of stock piles to assess airborne fibre level concentration	Sp1- Perimeter of stock piles	< 0.01 f/ml
A-17134-24-004-2	Background	Background air tests around the perimeter of stock piles to assess airborne fibre level concentration	Sp2- Perimeter of stock piles	< 0.01 f/ml
A-17134-24-004-3	Background	Background air tests around the perimeter of stock piles to assess airborne fibre level concentration	Sp3- Perimeter of stock piles	< 0.01 f/ml
A-17134-24-004-4	Background	Background air tests around the perimeter of stock piles to assess airborne fibre level concentration	Sp4- Perimeter of stock piles	< 0.01 f/ml

Analyst	Virender Lally	Signature		Time	12:00	Date	09/11/2022

Opinions and interpretations contained within this report are outside of our UKAS accreditation. Sampling and testing was carried out in accordance with documented in-house test methods and procedures based on HSG248 Ed2 (Test Procedures 1and 2). Any deviations from these procedures are noted within the comments section of the report.

Job No	17134	Client Job No		Report No	A-17134-24-004 - Issue 1	Date	09/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						



Job No	17134	Client Job No		Report No	A-17134-24-004 - Issue 1	Date	09/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Air Test Results

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17134-24-004 -1	SP-053	VL-01	Sp1- Perimeter of stock piles	09:16	10:16	480	< 0.01 f/ml
A-17134-24-004 -2	SP-054	VL-02	Sp2- Perimeter of stock piles	09:20	10:20	480	< 0.01 f/ml
A-17134-24-004 -3	SP-055	Vl-03	Sp3- Perimeter of stock piles	09:24	10:24	480	< 0.01 f/ml
A-17134-24-004 -4	SP-056	VL-04	Sp4- Perimeter of stock piles	09:27	10:27	480	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17134-24-004-1	8	8	8	60	2	200	0.001
A-17134-24-004-2	8	8	8	60	2.5	200	0.001
A-17134-24-004-3	8	8	8	60	2	200	0.001
A-17134-24-004-4	8	8	8	60	2	200	0.001

Microscope no	MS-05	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	CN69DWG	Flowmeter No:	FLO-03
NPL Test Slide No	NPL-07	Flowmeter No:	FLO-06
Stage Micrometer No	SM-07	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-005	Graticule Diameter measured (µm):	100
Air pressure (mb)	N/A	Timepiece Reference	MOB-13
Temperature (°C):	N/A	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Analyst	Virender Lally	Signature		Date	09/11/2022

Photographs





Photograph 20321



Photograph 20322



Photograph 20323



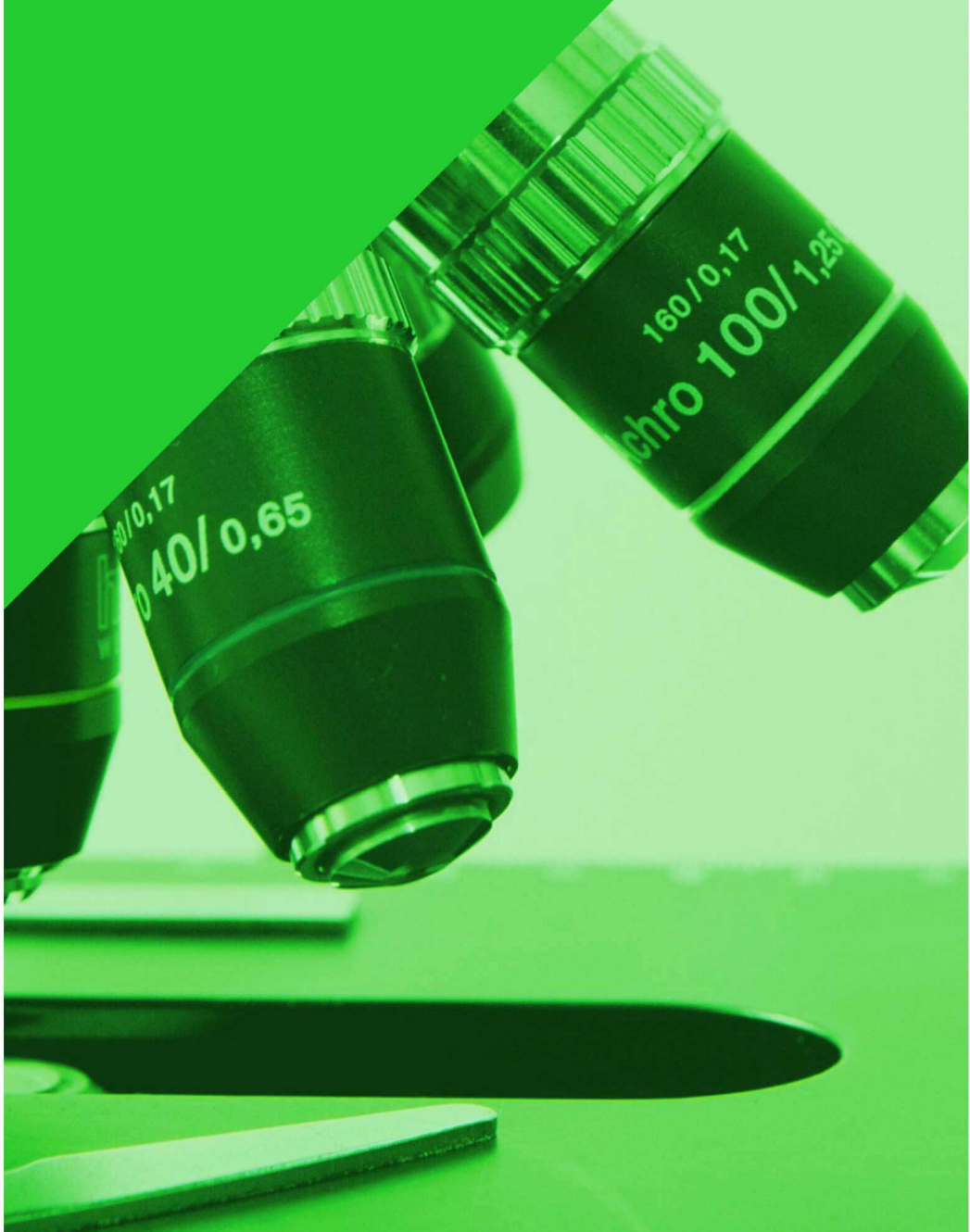
Photograph 20324

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Job No	17134	Client Job No		Report No	A-17134-34-005 - Issue 1	Date	10/11/2022
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	11/11/2022	HFS Environmental	

4026

Job Details

Certificate Type	Airborne Fibre Concentration	Date	10/11/2022
Client Details	Toureen Contractors Ltd	Job No	17134
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ	Report No	A-17134-34-005 - Issue 1
Contractors Details	Toureen Contractors Ltd	Client Job No	
Location of work area	New River Academy - External Area	Start time	10:30
Supervisors Name	Maurice O Connel	Asbestos Type	Other Amphibole, Unknown
Description of works	Background air testing carried out to determine airborne fibre testing levels. Background air testing carried out during crashing concrete on site. Air testing carried out around perimeter.		

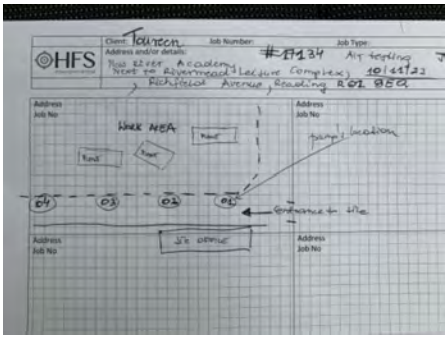
Summary
Air testing was carried out and the samples analysed under a microscope. A calculation was used to measure the airborne fibre levels (all respirable fibres were counted, not just asbestiform). The result of the air test/s in fibres per millilitre of air, were

Sample	Type	Reason for Sampling	Location	Result
A-17134-34-005-1	Background	Background air testing Location: Perimeter	01	< 0.01 f/ml
A-17134-34-005-2	Background	Background air testing Location: Perimeter	02	< 0.01 f/ml
A-17134-34-005-3	Background	Background air testing Location: Perimeter	03	< 0.01 f/ml
A-17134-34-005-4	Background	Background air testing Location: Perimeter	04	< 0.01 f/ml

Analyst	Joanna Brzezinska	Signature		Time	13:05	Date	10/11/2022

Opinions and interpretations contained within this report are outside of our UKAS accreditation. Sampling and testing was carried out in accordance with documented in-house test methods and procedures based on HSG248 Ed2 (Test Procedures 1and 2). Any deviations from these procedures are noted within the comments section of the report.

Job No	17134	Client Job No		Report No	A-17134-34-005 - Issue 1	Date	10/11/2022
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ						



Job No	17134	Client Job No		Report No	A-17134-34-005 - Issue 1	Date	10/11/2022
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ						

Air Test Results

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17134-34-005-1	SP-040	01	01	11:30	12:31	488	< 0.01 f/ml
A-17134-34-005-2	SP-050	02	02	11:31	12:32	488	< 0.01 f/ml
A-17134-34-005-3	SP-051	03	03	11:32	12:33	488	< 0.01 f/ml
A-17134-34-005-4	SP-039	04	04	11:33	12:34	488	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17134-34-005-1	8	8	8	61	2	200	0.001
A-17134-34-005-2	8	8	8	61	3	200	0.002
A-17134-34-005-3	8	8	8	61	2.5	200	0.001
A-17134-34-005-4	8	8	8	61	2	200	0.001

Microscope no	MS-11	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	CN69DVY	Flowmeter No:	FLO-04
NPL Test Slide No	NPL-08	Flowmeter No:	FLO-11
Stage Micrometer No	SM-08	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-008	Graticule Diameter measured (µm):	100
Air pressure (mb)	1021	Timepiece Reference	MOB-06
Temperature (°C):	15	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Analyst	Joanna Brzezinska	Signature		Date	10/11/2022

Photographs





Photograph 20333



Photograph 20334



Photograph 20335



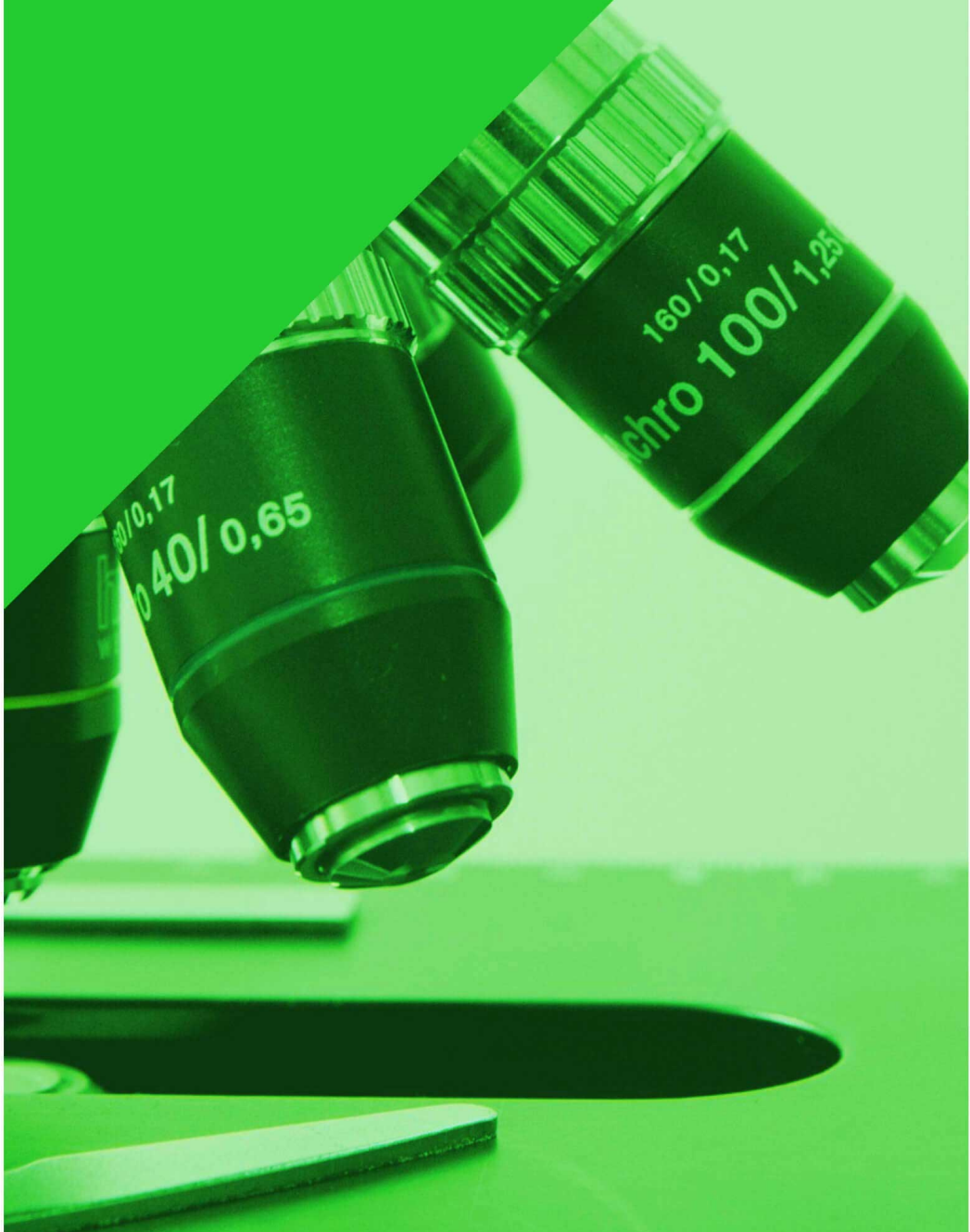
Photograph 20336

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4026

Job No	17134	Client Job No		Report No	A-17134-34-006 - Issue 1	Date	11/11/2022
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	11/11/2022	HFS Environmental	

4026

Job Details

Certificate Type	Airborne Fibre Concentration	Date	11/11/2022
Client Details	Toureen Contractors Ltd	Job No	17134
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ	Report No	A-17134-34-006 - Issue 1
Contractors Details	Toureen Contractors Ltd	Client Job No	
Location of work area	External Area - Perimeter	Start time	12:00
Supervisors Name	Maurice O Connel	Asbestos Type	Other Amphibole, Unknown
Description of works	Background air testing carried out in order to determine airborne fibre testing levels. Background air testing carried out around perimeter during groundworks by the client.		

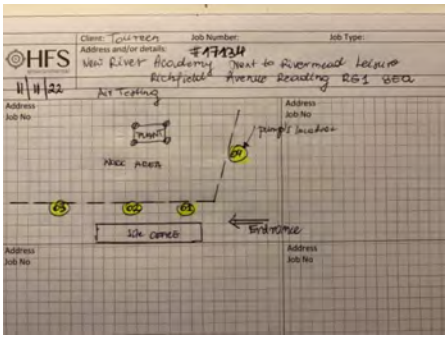
Summary
Air testing was carried out and the samples analysed under a microscope. A calculation was used to measure the airborne fibre levels (all respirable fibres were counted, not just asbestiform). The result of the air test/s in fibres per millilitre of air, were

Sample	Type	Reason for Sampling	Location	Result
A-17134-34-006-1	Background	Location: Perimeter Background air testing during groundwork's	01	Occluded
A-17134-34-006-2	Background	Location: Perimeter Background air testing during groundworks	02	< 0.01 f/ml
A-17134-34-006-3	Background	Location: Perimeter Background air testing during groundworks	03	< 0.01 f/ml
A-17134-34-006-4	Background	Location: Perimeter Background air testing during groundworks	04	< 0.01 f/ml

Analyst	Joanna Brzezinska	Signature		Time	14:00	Date	11/11/2022

Opinions and interpretations contained within this report are outside of our UKAS accreditation. Sampling and testing was carried out in accordance with documented in-house test methods and procedures based on HSG248 Ed2 (Test Procedures 1and 2). Any deviations from these procedures are noted within the comments section of the report.

Job No	17134	Client Job No		Report No	A-17134-34-006 - Issue 1	Date	11/11/2022
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ						



Job No	17134	Client Job No		Report No	A-17134-34-006 - Issue 1	Date	11/11/2022
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ						

Air Test Results

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17134-34-006-1	SP-040	01	01	12:15	13:16	488	Occluded
A-17134-34-006-2	SP-050	02	02	12:16	13:17	3904	< 0.01 f/ml
A-17134-34-006-3	SP-051	03	03	12:17	13:18	488	< 0.01 f/ml
A-17134-34-006-4	SP-039	04	04	12:19	13:20	488	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17134-34-006-1	8	8	8	61	Occluded	Occluded	Occluded
A-17134-34-006-2	8	120	64	61	1	200	0.000
A-17134-34-006-3	8	8	8	61	1.5	200	0.001
A-17134-34-006-4	8	8	8	61	1	200	0.001

Microscope no	MS-11	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	CN69DVY	Flowmeter No:	FLO-04
NPL Test Slide No	NPL-08	Flowmeter No:	FLO-11
Stage Micrometer No	SM-08	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-008	Graticule Diameter measured (µm):	100
Air pressure (mb)	1009	Timepiece Reference	MOB-06
Temperature (°C):	16	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Analyst	Joanna Brzezinska	Signature		Date	11/11/2022

Job No	17134	Client Job No		Report No	A-17134-34-006 - Issue 1	Date	11/11/2022
Site Address	New River Academy Next to Rivermead Leisure Richfield Avenue Reading RG1 8EQ						

Photographs





Photograph 20354



Photograph 20355



Photograph 20356



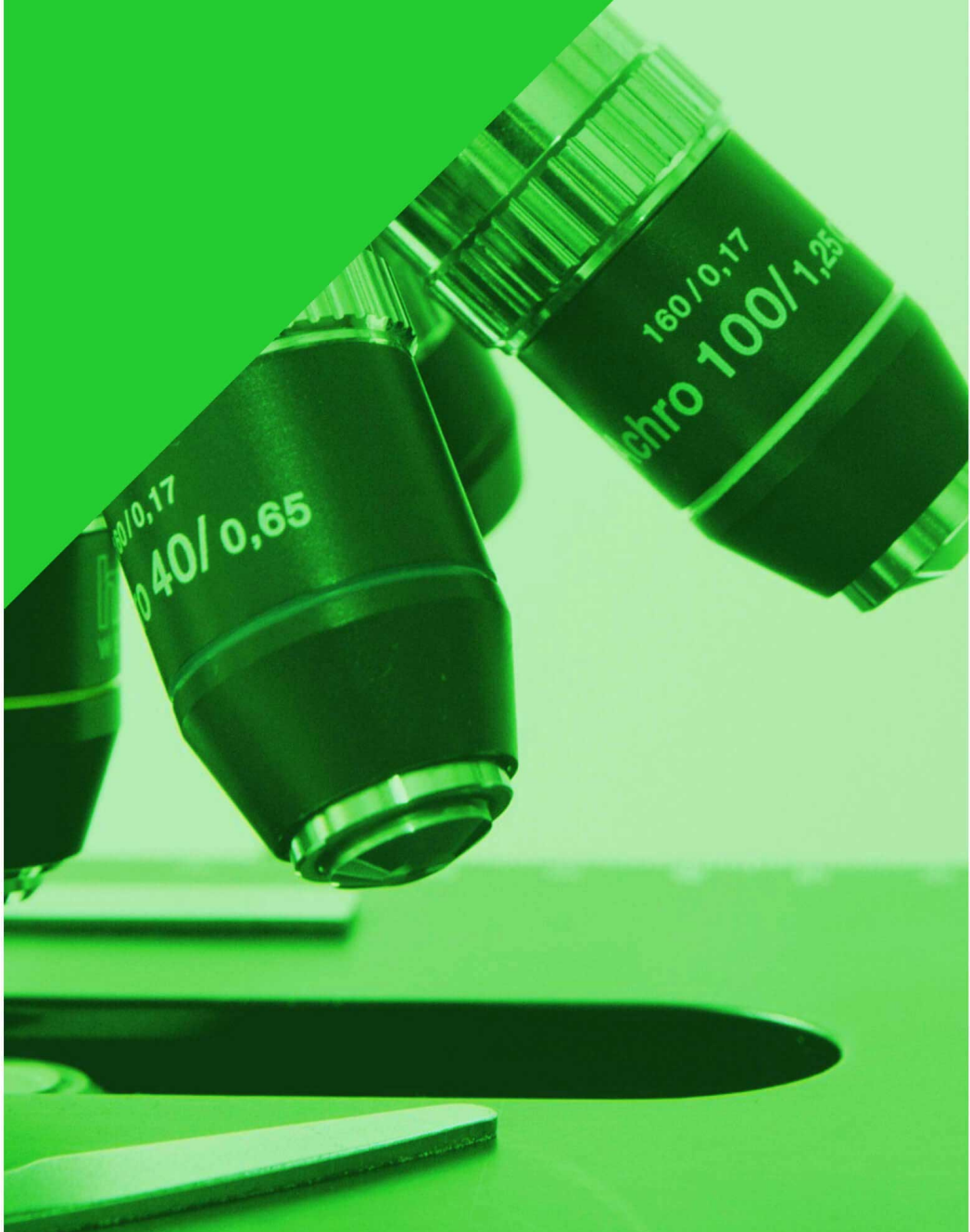
Photograph 20357

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Web: www.hfsenvironmental.co.uk





Job No	17081	Client Job No		Report No	A-17081-34-005 - Issue 1	Date	04/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	14/11/2022	HFS Environmental	

4026

Job Details

Certificate Type	Airborne Fibre Concentration	Date	04/11/2022
Client Details	Toureen Contractors Ltd	Job No	17081
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ	Report No	A-17081-34-005 - Issue 1
Contractors Details	Tourern Contractors Ltd	Client Job No	
Location of work area	Perimeter of the stock piles	Start time	08:00
Supervisors Name	Maurice o' Connel	Asbestos Type	Chrysotile, Other Amphibole
Description of works	Background air testing carried out in order to determine airborne fibre testing levels. Job details: Background air testing carried out during excavation works as well handpicking asbestos containing materials from within contaminated stock piles		

Summary

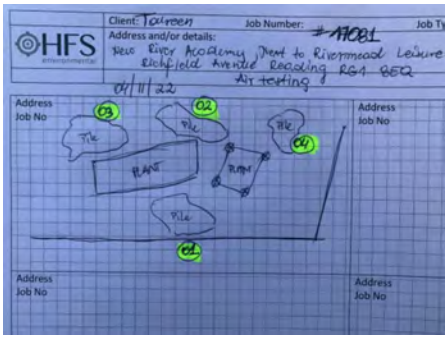
Air testing was carried out and the samples analysed under a microscope. A calculation was used to measure the airborne fibre levels (all respirable fibres were counted, not just asbestiform). The result of the air test/s in fibres per millilitre of air, were

Sample	Type	Reason for Sampling	Location	Result
A-17081-34-005-1	Background	Background air testing	01	< 0.01 f/ml
A-17081-34-005-2	Background	Background air testing during excavation works and handpicking asbestos containing materials from the contaminated stock piles	02	< 0.01 f/ml
A-17081-34-005-3	Background	Background air testing during excavation works and handpicking asbestos containing materials from the contaminated stock piles	03	< 0.01 f/ml
A-17081-34-005-4	Background	Background air testing during excavation works and handpicking asbestos containing materials from the contaminated stock piles	04	< 0.01 f/ml

Analyst	Joanna Brzezinska	Signature		Time	11:15	Date	04/11/2022

Opinions and interpretations contained within this report are outside of our UKAS accreditation. Sampling and testing was carried out in accordance with documented in-house test methods and procedures based on HSG248 Ed2 (Test Procedures 1and 2). Any deviations from these procedures are noted within the comments section of the report.

Job No	17081	Client Job No		Report No	A-17081-34-005 - Issue 1	Date	04/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						



Job No	17081	Client Job No		Report No	A-17081-34-005 - Issue 1	Date	04/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading, RG1 8EQ						

Air Test Results

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17081-34-005-1	SP-050	01	01	08:40	09:41	488	< 0.01 f/ml
A-17081-34-005-2	SP-051	02	02	08:41	09:42	488	< 0.01 f/ml
A-17081-34-005-3	SP-052	03	03	08:42	09:43	488	< 0.01 f/ml
A-17081-34-005-4	SP-039	04	04	08:44	09:45	488	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17081-34-005-1	8	8	8	61	1.5	200	0.001
A-17081-34-005-2	8	8	8	61	2.5	200	0.001
A-17081-34-005-3	8	8	8	61	2.5	200	0.001
A-17081-34-005-4	8	8	8	61	2	200	0.001

Microscope no	MS-11	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	CN69DVY	Flowmeter No:	FLO-04
NPL Test Slide No	NPL-08	Flowmeter No:	FLO-11
Stage Micrometer No	SM-08	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-008	Graticule Diameter measured (µm):	100
Air pressure (mb)	1010	Timepiece Reference	MOB-06
Temperature (°C):	7	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Analyst	Joanna Brzezinska	Signature		Date	04/11/2022

Photographs





Photograph 20270



Photograph 20271



Photograph 20272



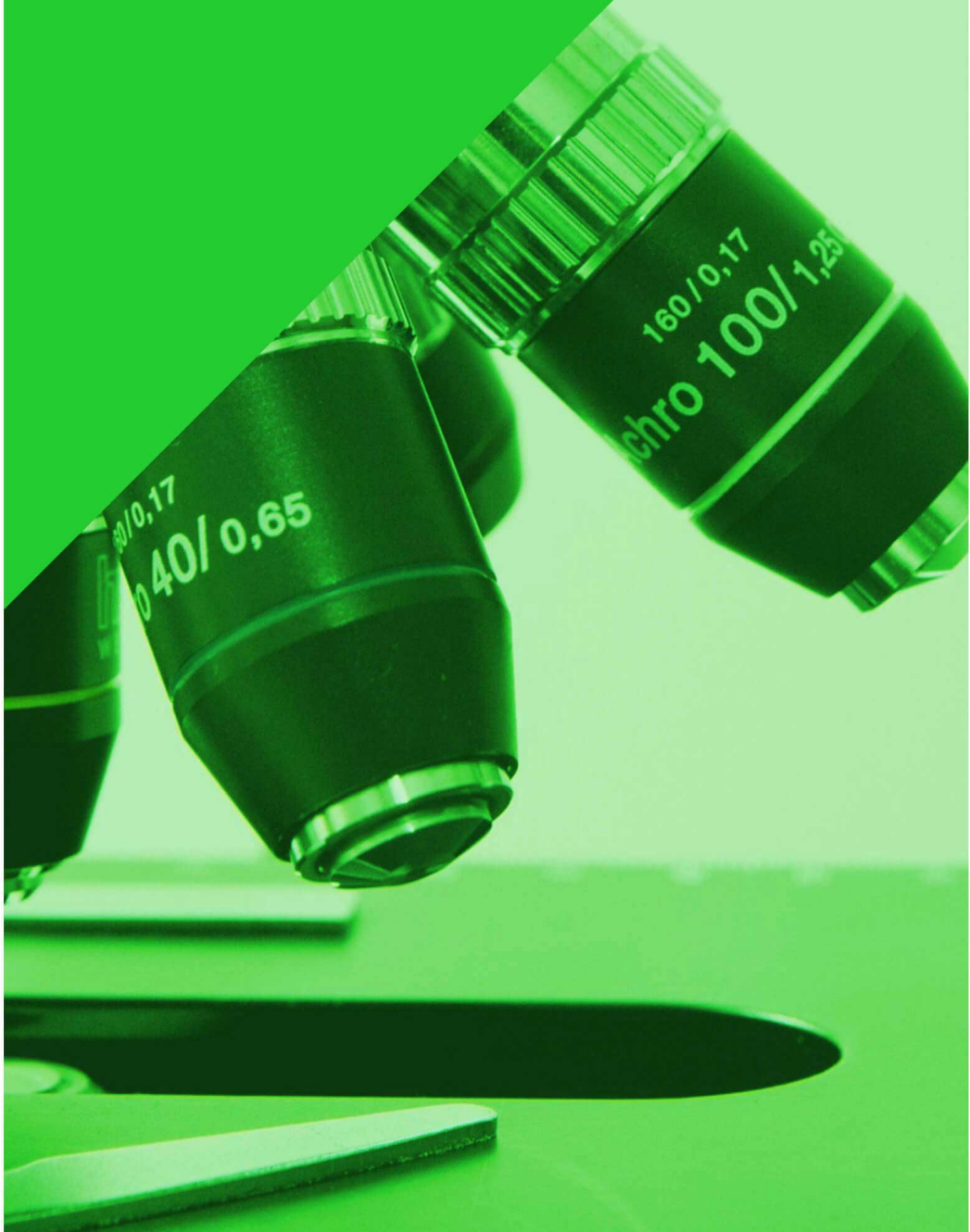
Photograph 20273

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4026

Job No	17081	Client Job No		Report No	A-17081-34-002 - Issue 1	Date	01/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading RG1 8EQ						

Issue Number	Date	Publisher	Reason
1	28/11/2022	HFS Environmental	

4026

Job Details

Certificate Type	Airborne Fibre Concentration	Date	01/11/2022
Client Details	Toureen Contractors Ltd	Job No	17081
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading RG1 8EQ	Report No	A-17081-34-002 - Issue 1
Contractors Details	Maurice O Connel	Client Job No	
Location of work area	External Area adjecent to pilling area	Start time	08:00
Supervisors Name	Toureen Contractors Ltd	Asbestos Type	Other Amphibole, Unknown
Description of works	Background air testing carried out in order to determine airborne fibre testing levels. Background air testing carried out during pilling works - Area/ Pilling 3 location: Perimeter		

Summary

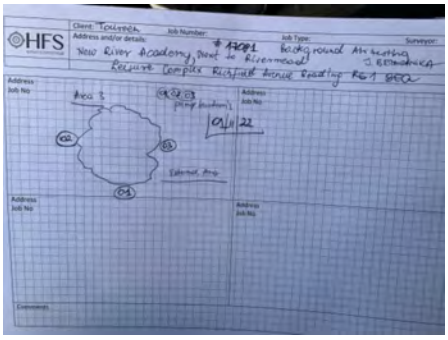
Air testing was carried out and the samples analysed under a microscope. A calculation was used to measure the airborne fibre levels (all respirable fibres were counted, not just asbestiform). The result of the air test/s in fibres per millilitre of air, were

Sample	Type	Reason for Sampling	Location	Result
A-17081-34-002-1	Background	Background air testing Location: External Area 3 Perimeter of stock pile	01	< 0.01 f/ml
A-17081-34-002-2	Background	Background air testing Location: External Area 3 Perimeter o stock pile	02	< 0.01 f/ml
A-17081-34-002-3	Background	Background air testing Location: External Area 3 Perimeter of stock pile	03	< 0.01 f/ml

Analyst	Joanna Brzezinska	Signature		Time	10:30	Date	01/11/2022

Opinions and interpretations contained within this report are outside of our UKAS accreditation. Sampling and testing was carried out in accordance with documented in-house test methods and procedures based on HSG248 Ed2 (Test Procedures 1and 2). Any deviations from these procedures are noted within the comments section of the report.

Job No	17081	Client Job No		Report No	A-17081-34-002 - Issue 1	Date	01/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading RG1 8EQ						



HFS environmental

UKAS TESTING 4026

Job No	17081	Client Job No		Report No	A-17081-34-002 - Issue 1	Date	01/11/2022
Site Address	New River Academy, Next to Rivermead Leisure Complex, Richfield Avenue, Reading RG1 8EQ						

Air Test Results

Sample No	Pump No	Cowl No	Location	Start Time	Finish Time	Volume	Reported Result
A-17081-34-002-1	SP-050	01	01	08:45	09:45	690	< 0.01 f/ml
A-17081-34-002-2	SP-051	02	02	08:46	09:46	660	< 0.01 f/ml
A-17081-34-002-3	SP-039	03	03	08:47	09:47	660	< 0.01 f/ml

Sample No	Start flow rate l/m	Finish flow rate l/m	Actual flow rate l/m	Total time (minutes)	Fibre count	Fields counted	Calculated Result
A-17081-34-002-1	11	12	11.5	60	1	200	0.000
A-17081-34-002-2	11	11	11	60	1.5	200	0.001
A-17081-34-002-3	11	11	11	60	1	200	0.000

Microscope no	MS-11	Samples scanned using x10 objective	Yes
Laboratory type	Mobile	Exposed Filter Diameter (mm2)	22.5
Laboratory reference	CN69DVY	Flowmeter No:	FLO-04
NPL Test Slide No	NPL-08	Flowmeter No:	FLO-11
Stage Micrometer No	SM-08	NPL Band 5 Achieved:	Yes
Barometer / Thermometer Reference	TB-008	Graticule Diameter measured (µm):	100
Air pressure (mb)	1007	Timepiece Reference	MOB-06
Temperature (°C):	14	Field Blank Result	N/A

Sampling and Testing is carried out in accordance with current legislation and guidance as detailed in the analysts guide HSG248 Ed2 and company in-house Technical Procedures.

NOTE:

(*) UNCERTAINTY OF MEASUREMENT: The lower limit of accurate measurement (fibre level, f/ml) of the above method is stated in HSG248 Ed2 as about 0.010 fibres/ml. When the sample volume is equal to or greater than 480 litres and 200 graticule fields are examined, the result may be expressed as <0.01f/ml. For sample volumes below 480 litres and counts of less than 200 graticules, the lower limit of accurate measurement will be higher.

(+) ACTUAL FLOW RATE: Determined by averaging the calibrated intermediate flow rate and/or where differences in ambient temperatures and/or pressures between the calibration and sampling sites are greater than 5%.

Analyst	Joanna Brzezinska	Signature		Date	01/11/2022

Photographs







Photograph 20190



Photograph 20191



Photograph 20192

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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44669
Issue:	1
Date of Issue:	16/11/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	Not Supplied
Customer Reference:	Not Supplied
Date Received:	11/11/2022
Date Approved:	16/11/2022
Details:	River Academy
Approved by:	

Tim Reeve, Quality Officer

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44669, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
301635	EMP 1	24/10/2022	15/11/2022		
301636	EMP 2	24/10/2022	15/11/2022		
301637	EMP 3	24/10/2022	15/11/2022		
301638	EMP 4	24/10/2022	15/11/2022		
301639	EMP 5	24/10/2022	15/11/2022		

Results Summary

Report No.: 22-44669, issue number 1

			ELAB Reference	301635	301636	301637	301638	301639
			Customer Reference					
			Sample ID					
			Sample Type	WATER	WATER	WATER	WATER	WATER
			Sample Location	EMP 1	EMP 2	EMP 3	EMP 4	EMP 5
			Sample Depth (m)					
			Sampling Date	24/10/2022	24/10/2022	24/10/2022	24/10/2022	24/10/2022
Determinand	**Codes**	**Units**	**LOD**					
Frisbee Monitoring Station								
Date Monitoring Started	N	-	0	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022
Date Monitoring Finished	N	-	0	24/10/2022	24/10/2022	24/10/2022	24/10/2022	24/10/2022
Number of Days Exposed	N	Days	0	14	14	14	14	14
Total insoluble solids	N	mg	0.1	0.3	< 0.1	1.9	0.7	0.5
Total Dust Deposition	N	mg/m2/day	0.1	0.5	< 0.1	3.4	1.2	0.9

Report Information

Report No.: 22-44669, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	22-44808
Issue:	1
Date of Issue:	25/11/2022
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	Not Supplied
Customer Reference:	TCL1121
Date Received:	18/11/2022
Date Approved:	25/11/2022
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 22-44808, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
302305	EMP1	14/11/2022	18/11/2022		
302306	EMP2	14/11/2022	18/11/2022		
302307	EMP3	14/11/2022	18/11/2022		
302308	EMP4	14/11/2022	18/11/2022		
302309	EMP5	14/11/2022	18/11/2022		

Results Summary

Report No.: 22-44808, issue number 1

			ELAB Reference	302305	302306	302307	302308	302309
			Customer Reference					
			Sample ID					
			Sample Type	WATER	WATER	WATER	WATER	WATER
			Sample Location	EMP1	EMP2	EMP3	EMP4	EMP5
			Sample Depth (m)					
			Sampling Date	14/11/2022	14/11/2022	14/11/2022	14/11/2022	14/11/2022
Determinand	**Codes**	**Units**	**LOD**					
Frisbee Monitoring Station								
Date Monitoring Started	N	-	0	24/10/2022	24/10/2022	24/10/2022	24/10/2022	24/10/2022
Date Monitoring Finished	N	-	0	14/11/2022	14/11/2022	14/11/2022	14/11/2022	14/11/2022
Number of Days Exposed	N	Days	0	21	21	21	21	21
Total insoluble solids	N	mg	0.1	0.2	0.6	0.8	0.3	0.7
Total Dust Deposition	N	mg/m2/day	0.1	0.2	0.7	0.9	0.4	0.8

Report Information

Report No.: 22-44808, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	23-46010
Issue:	1b
Date of Issue:	07/02/2023
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	Not Supplied
Customer Reference:	TCL1211
Date Received:	19/01/2023
Date Approved:	07/02/2023
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 23-46010, issue number 1b

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
308600	EMP1	10/01/2023	19/01/2023		
308601	EMP2	10/01/2023	19/01/2023		
308602	EMP3	10/01/2023	19/01/2023		
308603	EMP4	10/01/2023	19/01/2023		
308604	EMP5	10/01/2023	19/01/2023		

2683

Results Summary

Report No.: 23-46010, issue number 1b

			ELAB Reference	308600	308601	308602	308603	308604
			Customer Reference					
			Sample ID					
			Sample Type	WATER	WATER	WATER	WATER	WATER
			Sample Location	EMP1	EMP2	EMP3	EMP4	EMP5
			Sample Depth (m)					
			Sampling Date	10/01/2023	10/01/2023	10/01/2023	10/01/2023	10/01/2023
Determinand	**Codes**	**Units**	**LOD**					
Frisbee Monitoring Station								
Date Monitoring Started	N	-	0	03/01/2023	03/01/2023	03/01/2023	03/01/2023	03/01/2023
Date Monitoring Finished	N	-	0	10/01/2023	10/01/2023	10/01/2023	10/01/2023	10/01/2023
Number of Days Exposed	N	Days	0	7	7	7	7	7
Total insoluble solids	N	mg	0.1	0.4	0.7	2.4	1.1	0.9
Total Dust Deposition	N	mg/m2/day	0.1	1.4	2.5	8.5	3.9	3.2

Method Summary

Report No.: 23-46010, issue number 1b

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
pH	M	Air dried sample	25/01/2023	113	Electromeric
Phenols in solids	M	As submitted sample	23/01/2023	121	HPLC
Low range Aliphatic hydrocarbons soil	N	As submitted sample	24/01/2023	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	24/01/2023	181	GC-MS
BTEX in solids	M	As submitted sample	24/01/2023	181A	GC-MS
Total cyanide	M	As submitted sample	23/01/2023	204	Colorimetry
TPH CWG soil by gc-gc	N	As submitted sample	19/01/2023	271	
Asbestos identification	U	Air dried sample	27/01/2023	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	24/01/2023	300	ICPMS

Tests marked N are not UKAS accredited

Report Information

Report No.: 23-46010, issue number 1b

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.
	Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
	ELAB are unable to provide an interpretation or opinion on the content of this report.
	The results relate only to the sample received.
	PCB congener results may include any coeluting PCBs
	Uncertainty of measurement for the determinands tested are available upon request
	Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

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Telephone: (01424) 718618

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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	23-46937
Issue:	1
Date of Issue:	01/03/2023
Contact:	David Skinner
Customer Details:	Toureen Contractors Ltd 25 Cecil Road Harrow MiddlesexHA3 5QY
Quotation No:	Q22-03340
Order No:	TCL1121
Customer Reference:	TCL1121
Date Received:	24/02/2023
Date Approved:	01/03/2023
Details:	River Academy
Approved by:	

Mike Varley, General Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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Sample Summary

Report No.: 23-46937, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
313549	EMP1	30/01/2023	24/02/2023		
313550	EMP2	30/01/2023	24/02/2023		
313551	EMP3	30/01/2023	24/02/2023		
313552	EMP4	30/01/2023	24/02/2023		
313553	EMP5	30/01/2023	24/02/2023		
313554	EMP1	13/02/2023	24/02/2023		
313555	EMP2	13/02/2023	24/02/2023		
313556	EMP3	13/02/2023	24/02/2023		
313557	EMP4	13/02/2023	24/02/2023		
313558	EMP5	13/02/2023	24/02/2023		

Results Summary

Report No.: 23-46937, issue number 1

			ELAB Reference	313549	313550	313551	313552	313553	313554	313555	313556	313557	313558
			Customer Reference										
			Sample ID										
			Sample Type	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
			Sample Location	EMP1	EMP2	EMP3	EMP4	EMP5	EMP1	EMP2	EMP3	EMP4	EMP5
			Sample Depth (m)										
			Sampling Date	30/01/2023	30/01/2023	30/01/2023	30/01/2023	30/01/2023	13/02/2023	13/02/2023	13/02/2023	13/02/2023	13/02/2023
Determinand	**Codes**	**Units**	**LOD**										
Frisbee Monitoring Station													
Date Monitoring Started	N	-	0	16/01/2023	16/01/2023	16/01/2023	16/01/2023	16/01/2023	30/01/2023	30/01/2023	30/01/2023	30/01/2023	30/01/2023
Date Monitoring Finished	N	-	0	30/01/2023	30/01/2023	30/01/2023	30/01/2023	30/01/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023
Number of Days Exposed	N	Days	0	14	14	14	14	14	17	17	17	17	17
Total insoluble solids	N	mg	0.1	1.4	0.8	1.1	0.9	0.1	0.1	0.3	0.4	0.2	0.2
Total Dust Deposition	N	mg/m2/day	0.1	2.5	1.4	1.9	1.6	0.2	0.1	0.4	0.6	0.3	0.3

Report Information

Report No.: 23-46937, issue number 1

Key

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N	do not currently hold UKAS accreditation
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>	means "greater than"
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ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

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g	Sample age exceeds stability time (sampling to analysis)

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All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

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

APPENDIX G:

EXPORT

Date	Ticket No	SIC Code	Destination	Permit No	Waste Carrier	WCL No	Waste Source	Cons/Demo/Exc	EWC	Waste Stream	Weight (t)
14/11/2022	271009	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271010	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271011	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271012	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271015	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271016	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271017	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271018	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271019	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271020	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271021	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271022	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271005	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	270995	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271006	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	270996	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271007	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	270997	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271008	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	270998	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	270999	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271000	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271001	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/11/2022	271002	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	271025	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	271026	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	271027	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	271028	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	271029	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	271030	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	271031	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	271032	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	40104	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	40103	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/11/2022	40102	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/11/2022	40115	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/11/2022	40114	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/11/2022	40113	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/11/2022	40112	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/11/2022	40111	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/11/2022	40116	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/11/2022	40117	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/11/2022	40118	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/11/2022	40119	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/11/2022	40120	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
21/11/2022	40121	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
21/11/2022	40122	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
21/11/2022	40123	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
21/11/2022	40124	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/11/2022	40130	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/11/2022	40131	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/11/2022	40132	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/11/2022	40133	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/11/2022	40134	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/11/2022	40135	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/11/2022	40137	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/11/2022	40138	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/11/2022	40139	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/11/2022	40140	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/11/2022	40141	42.11/0	Wexham Park Golf Course	EPR/JB3102FY	Soil & Water Solutions	CDBU127229	Demolition	Demolition	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271045	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271003	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271037	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271004	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271013	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271014	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271033	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271034	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271035	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271036	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271038	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/11/2022	271039	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/11/2022	271040	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/11/2022	271041	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/11/2022	271042	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/11/2022	271044	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/11/2022	271046	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/11/2022	271047	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/11/2022	271048	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/11/2022	271049	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271063	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271065	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271066	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271067	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271068	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271069	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271064	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271070	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	371071	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271072	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271075	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	371076	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271050	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271051	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271052	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271053	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271055	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271056	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271057	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271058	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271059	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271060	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271061	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
28/11/2022	271062	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271077	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271078	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271080	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271081	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271082	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271085	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271086	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271087	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271088	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	214089	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271023	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
29/11/2022	271024	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	275504	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	275505	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	275506	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	275507	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	275501	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	275502	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20

Date	Ticket No	SIC Code	Destination	Permit No	Waste Carrier	WCL No	Waste Source	Cons/Demo/Exc	EWC	Waste Stream	Weight (t)
30/11/2022	271043	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271054	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271090	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271091	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271092	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271093	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271094	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271095	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271096	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271097	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	271099	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/11/2022	275500	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	271073	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	271074	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	271079	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	271083	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	271084	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	271094	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275498	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275503	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275508	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275509	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275510	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275511	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275513	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275514	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275831	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	275832	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/12/2022	276030	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276031	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276032	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276033	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276034	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276035	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276036	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276037	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276038	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276040	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276041	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276042	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276043	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276044	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/12/2022	276045	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
05/12/2022	276047	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
05/12/2022	276048	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
05/12/2022	276057	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
05/12/2022	276025	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	276026	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	276027	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	276028	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	276039	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376049	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376052	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376053	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376054	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376055	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376056	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376058	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376059	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	376060	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	276061	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/12/2022	276062	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276063	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276064	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276065	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276066	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276068	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276069	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276070	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276073	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276074	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276075	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276076	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276078	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276079	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276080	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276081	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/12/2022	276082	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
12/12/2022	KENNYW/CE277	38.11/0	Eversley Haulage Park	EAWML83582	R Collard	CBDU232795	Earthworks	Excavation	17 06 05	Construction Materials Containing Asbestos 17 06 05	0.84
12/12/2022	42803	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
12/12/2022	42804	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
12/12/2022	42801	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
12/12/2022	42802	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
13/12/2022	42807	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
13/12/2022	42808	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
13/12/2022	42805	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
13/12/2022	42806	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/12/2022	42701	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/12/2022	42702	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
18/12/2022	42755	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	42756	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	42758	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	42757	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	42759	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	43452	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	43451	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	43453	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	43454	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	43455	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	46363	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	46703	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
19/12/2022	46704	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	42760	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	42761	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	42762	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	43456	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	43457	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	43458	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	43459	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	43460	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	46368	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	46367	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/12/2022	46366	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278110	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278114	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278140	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278146	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278156	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278160	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278164	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278165	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278166	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20

Date	Ticket No	SIC Code	Destination	Permit No	Waste Carrier	WCL No	Waste Source	Cons/Demo/Exc	EWC	Waste Stream	Weight (t)
24/01/2023	278169	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278170	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
24/01/2023	278171	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278173	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278174	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278175	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278176	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278178	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278270	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278271	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278274	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278275	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278276	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278279	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
25/01/2023	278280	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278281	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278282	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278141	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278145	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278161	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278163	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278168	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278172	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278284	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278285	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278287	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278288	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285202	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285203	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285205	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285206	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285207	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285208	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285210	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285211	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285212	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285213	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285214	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278177	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285188	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285189	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285190	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285191	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285192	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285195	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285196	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285197	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285198	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285200	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	285201	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
26/01/2023	278289	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	278282	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	278273	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	278283	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	278521	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285522	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285523	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285524	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285525	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285526	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285527	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285528	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285530	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285550	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285551	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285552	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285553	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285531	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285532	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285533	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285535	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285536	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285537	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285538	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285539	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285545	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285546	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285547	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	285548	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	43267	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	43268	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	41450	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	43351	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	43265	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	43266	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	41448	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	41449	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	46484	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	46485	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	46486	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
27/01/2023	46488	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	43269	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	43270	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	43352	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	43355	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	43353	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	43354	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	278167	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285204	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285209	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285555	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285556	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285558	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285559	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285563	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285564	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285565	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285566	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285567	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285568	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285569	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285570	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285685	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285687	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285688	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285689	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285690	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285691	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
30/01/2023	285692	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285693	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285694	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285695	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20

Date	Ticket No	SIC Code	Destination	Permit No	Waste Carrier	WCL No	Waste Source	Cons/Demo/Exc	EWC	Waste Stream	Weight (t)
31/01/2023	285696	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285697	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285698	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285699	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285700	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285701	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	286012	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	286013	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	286014	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	286015	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	285702	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	286017	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	286018	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	286019	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	46495	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	46494	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	46493	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	46492	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	43357	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	43271	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	43275	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	43272	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
31/01/2023	43273	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	43358	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	43360	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	43359	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	43362	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	43261	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	278277	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	278278	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285193	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285194	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285199	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285529	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285534	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285541	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285542	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285554	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285557	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285543	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285560	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	285561	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
01/02/2023	286271	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	43214	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	43215	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286563	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286564	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286565	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286566	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286568	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286569	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286570	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286573	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286571	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286574	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286575	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286576	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286583	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286584	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286585	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
02/02/2023	286586	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286916	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286917	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286918	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286919	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286920	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286921	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286922	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286923	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286926	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286927	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286928	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286931	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286932	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286933	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
03/02/2023	286934	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	285540	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	285544	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	285549	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	285562	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286016	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286020	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286021	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286567	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286572	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286577	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286579	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286524	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	286937	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	286938	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	278179	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	286587	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286929	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286580	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286581	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/02/2023	286582	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	286925	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	286930	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	286935	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	286939	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287740	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287744	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287741	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287533	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287534	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287742	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287745	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287535	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	286940	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287531	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/02/2023	287532	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287748	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287794	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287749	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287795	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287787	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287788	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287789	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287796	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287790	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287800	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287791	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20

Date	Ticket No	SIC Code	Destination	Permit No	Waste Carrier	WCL No	Waste Source	Cons/Demo/Exc	EWC	Waste Stream	Weight (t)
08/02/2023	287801	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/02/2023	287793	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
13/02/2023	288203	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
13/02/2023	288204	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
13/02/2023	288205	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
13/02/2023	288206	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/02/2023	288198	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/02/2023	299199	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/02/2023	288207	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
14/02/2023	288208	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/02/2023	287806	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/02/2023	287807	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/02/2023	288192	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/02/2023	288195	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
15/02/2023	288196	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/02/2023	287792	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/02/2023	288197	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/02/2023	287809	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/02/2023	287180	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/02/2023	287811	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/02/2023	287743	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
16/02/2023	287746	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/02/2023	290017	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/02/2023	290018	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/02/2023	290019	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/02/2023	290020	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/02/2023	290021	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/02/2023	290022	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
17/02/2023	290023	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/02/2023	290046	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/02/2023	290053	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/02/2023	290054	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/02/2023	290047	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/02/2023	290055	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/02/2023	290048	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/02/2023	290387	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
20/02/2023	290049	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/02/2023	287747	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/02/2023	287808	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/02/2023	290024	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/02/2023	290060	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/02/2023	290388	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/02/2023	290389	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/02/2023	290390	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
22/02/2023	290061	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/02/2023	290066	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/02/2023	290067	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/02/2023	290068	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
23/02/2023	290069	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/03/2023	293784	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/03/2023	293785	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/03/2023	293786	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
06/03/2023	293787	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293772	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293773	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293774	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293775	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293788	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293289	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	292790	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	292291	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293792	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293793	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293794	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293796	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293797	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293798	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293799	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293804	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293805	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293806	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
07/03/2023	293807	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	293808	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294587	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	293814	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	239817	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294621	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294622	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294623	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294624	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	293809	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	293812	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	293813	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	293816	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294349	42.11/0	FCC Sutton Courenay	EPR/BV7100IK/V005	J Mould	CBDU180726	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294626	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294636	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294631	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294637	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294627	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294532	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294628	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294638	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294633	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294625	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294634	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294629	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294641	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294642	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294643	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294639	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294640	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
08/03/2023	294544	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/03/2023	294730	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/03/2023	294739	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/03/2023	294731	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/03/2023	294732	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/03/2023	294733	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/03/2023	294630	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/03/2023	294740	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20
09/03/2023	294741	42.11/0	Reading Quarry	EPR/JB3132AR	J Mould	CBDU173096	Earthworks	Excavation	17 05 04	Soil and stone other than those mentioned in 17 05 03	20

Appendix C
Ashfield Soil Reuse Verification

ASHFIELD ACM RESULTS SUMMARY CAPPING VALIDATION

I2 No.	Clients Reference	Asbestos Identification	Asbestos in Soil Screen / Identification Name	Asbestos Quantification (Stage 2)	Asbestos Quantification Total
2524659	A5	Not-detected	-	-	-
2524660	A6	Not-detected	-	-	-
2524661	A7	Not-detected	-	-	-
2524662	A8	Not-detected	-	-	-
2529152	B5	Not-detected	-	-	-
2529153	B6	Not-detected	-	-	-
2529154	B7	Not-detected	-	-	-
2529155	B8	Not-detected	-	-	-
2531438	C5	Not-detected	-	-	-
2531439	C6	Not-detected	-	-	-
2531440	C7	Not-detected	-	-	-
2531441	C8	Not-detected	-	-	-
2531442	D5	Not-detected	-	-	-
2531443	D6	Not-detected	-	-	-
2531444	D7	Detected	Chrysotile	< 0.001	< 0.001
2531445	D8	Not-detected	-	-	-
2531446	E5	Not-detected	-	-	-
2531447	E6	Not-detected	-	-	-
2531448	E7	Not-detected	-	-	-
2531449	E8	Not-detected	-	-	-
2534222	F5	Not-detected	-	-	-
2534223	F6	Not-detected	-	-	-
2534224	F7	Not-detected	-	-	-
2534225	F8	Not-detected	-	-	-
2534226	G5	Not-detected	-	-	-
2534227	G6	Not-detected	-	-	-
2534228	A3	Not-detected	-	-	-
2534229	A4	Not-detected	-	-	-
2534230	B3	Not-detected	-	-	-
2534231	B4	Not-detected	-	-	-
2534232	C3	Not-detected	-	-	-
2534233	C4	Not-detected	-	-	-
2534351	D2	Not-detected	-	-	-
2534352	D3	Not-detected	-	-	-
2534353	D4	Not-detected	-	-	-
2534354	E2	Not-detected	-	-	-
2534355	E3	Not-detected	-	-	-
2534356	E4	Not-detected	-	-	-
2534357	F2	Not-detected	-	-	-
2534358	F3	Not-detected	-	-	-
2534359	F4	Not-detected	-	-	-
2534360	G3	Not-detected	-	-	-
2534361	G4	Not-detected	-	-	-
2534362	G7	Not-detected	-	-	-
2534363	G8	Not-detected	-	-	-

ASHFIELD
SOLUTIONS GROUP

GEOCHEMICAL RESULTS SUMMARY, CAPPING VALIDATION

				Lab Reference	2524659	2524660	2524661	2524662	2529152	2529153	2529154	2529155	2531438	2531439	2531440	2531441	2531442	2531443	2531444
				Sample Location	A5	A6	A7	A8	B5	B6	B7	B8	C5	C6	C7	C8	D5	D6	D7
				Sampling Date	07/12/2022	07/12/2022	07/12/2022	06/12/2022	07/12/2022	07/12/2022	07/12/2022	07/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022
Determinand	**Units**	**LOD**	**SAC Cover Reuse Criteria**	**Phytotoxic SAC Planting**															
Moisture Content	%	0.1			11	12	13	18	12	14	15	13	14	13	15	13	13	14	12
Metals																			
Arsenic	mg/kg	0.5	40	50	25	24	27	23	28	25	25	24	36	38	26	26	28	27	27
Cadmium	mg/kg	0.2	11	3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	mg/kg	1	910	400	25	27	31	31	32	31	32	27	30	31	29	32	26	28	28
Copper	mg/kg	4	1000	200	18	32	35	51	28	25	38	37	29	48	39	42	22	27	27
Lead	mg/kg	1	310		38	60	76	130	64	64	110	88	70	78	110	110	48	73	120
Mercury	mg/kg	0.1	10	1	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	1	< 0.3
Nickel	mg/kg	1	180	110	24	24	27	28	29	28	27	26	28	29	27	29	28	26	27
Selenium	mg/kg	1	430		< 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
Vanadium	mg/kg	0.5	500		51	52	61	54	64	57	57	52	59	64	56	58	60	61	59
Zinc	mg/kg	4.5	1000	300	74	98	130	180	110	110	150	130	120	160	140	170	90	110	120
Inorganics																			
Total Cyanide	mg/kg	1	24		< 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
Miscellaneous																			
pH	pH units	0.1	Ideally 5 to 9		7.1	7.2	7.5	7.4	8	7.5	7.6	7.6	7.7	7.7	7.8	7.6	7.7	7.9	7.7
Phenols																			
Phenol	mg/kg	1	10		< 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
Polyaromatic hydrocarbons																			
Naphthalene	mg/kg	0.1	2.3		< 0.05*	< 0.05	< 0.05	0.16	0.19*	0.21	0.2	0.2	0.25	0.26	0.24	0.25	0.16	0.18	0.18
Acenaphthylene	mg/kg	0.1			< 0.05*	< 0.05	< 0.05	0.63	< 0.05	0.07	0.07	0.07	< 0.05	< 0.05	0.06	0.08	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.1			< 0.05*	< 0.05	< 0.05	0.17	< 0.05	0.06	0.11	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.1			< 0.05*	< 0.05	< 0.05	0.14	< 0.05	0.05	0.07	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.1			0.06*	0.13	0.21	4.9	0.22*	0.67	0.98	0.99	0.18	0.19	0.38	0.31	0.06	0.14	0.17
Anthracene	mg/kg	0.1			< 0.05*	< 0.05	0.08	1.2	0.07	0.26	0.32	0.31	0.06	0.05	0.12	0.11	< 0.05	0.05	0.05
Fluoranthene	mg/kg	0.1			0.17*	0.36	0.76	11	0.59*	1.9	1.9	2	0.56*	0.49*	0.93*	0.88*	0.22*	0.49*	0.6*
Pyrene	mg/kg	0.1			0.18*	0.36	0.71	10	0.55*	1.9	1.8	1.7*	0.53*	0.42*	0.86*	0.88*	0.24*	0.45*	0.55*
Benzo(a)anthracene	mg/kg	0.1			0.11*	0.23	0.55	5.1	0.33*	1.2	0.96	1.1	0.31*	0.31*	0.52*	0.54*	0.15*	0.28*	0.35*
Chrysene	mg/kg	0.1			0.08*	0.2	0.43	4.1	0.3*	1	0.83	0.87*	0.28*	0.26*	0.48*	0.48*	0.14*	0.28*	0.3*
Benzo(b)fluoranthene	mg/kg	0.1			0.16*	0.29	0.64	5.5	0.49	1.4	1.1	1.2	0.45	0.39	0.66	0.73	0.24	0.37	0.45
Benzo(k)fluoranthene	mg/kg	0.1			0.07*	0.15	0.27	2.5	0.26*	0.65	0.51	0.58*	0.24*	0.21*	0.35*	0.37*	0.14*	0.21*	0.22*
Benzo(a)pyrene	mg/kg	0.1	5.3		0.13*	0.26	0.52	5.1	0.44*	1.1	1.1	0.99	0.42	0.36	0.61	0.66	0.22	0.33	0.39
Indeno(1,2,3-cd)pyrene	mg/kg	0.1			0.1*	0.16	0.31	2.8	0.21	0.61	0.53	0.53	0.25	0.19	0.32	0.38	0.12	0.18	0.21
Dibenzo(a,h)anthracene	mg/kg	0.1			< 0.05*	< 0.05	0.09	0.63	< 0.05	0.14	0.12	0.14	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05
Benzo[g,h,i]perylene	mg/kg	0.1			0.11*	0.16	0.38	3	0.23	0.71	0.61	0.58*	0.25	0.2	0.36	0.42	0.11	0.2	0.22
Total PAH(16)	mg/kg	0.4	250		1.17*	2.3	4.95	57.2	3.88*	12	11.2	11.4*	3.78*	3.33*	5.89*	6.15*	1.8*	3.16*	3.69*
BTEX																			
Benzene	ug/kg	10	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0*	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	ug/kg	10	1000		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0*	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	ug/kg	10			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes	ug/kg	10			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE	ug/kg	10			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
TPH CWG																			
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01	50		<0.001	<0.001	<0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01			<0.001	<0.001	<0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30		<0.001	<0.001	<0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130		<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
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1			<0.2	<0.2	<0.2	<0.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1			<0.8	<0.8	<0.8	<0.8	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1			<8.0	<8.0	<8.0	<8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Total aliphatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_AL)	mg/kg	1			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01	50		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130		< 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
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1			< 2.0	< 2.0	< 2.0	7.5	< 2.0	2.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1			< 10	< 10	< 10	30	< 10	13	16	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1			< 10	< 10	< 10	46	< 10	27	33	15	< 10	< 10	< 10	< 10	< 10	< 10	< 10
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1			< 10	< 10	< 10	83	12	43	51	25	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Total aromatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_AR)	mg/kg	1			< 10	< 10	< 10	83	12	85.2	100	40	0	0	0	0	0	0	0
Total petroleum hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_Total)	mg/kg	1	500		0	0	0	83	12	85.2	100	40	0	0	0	0	0	0	0
Organics																			
Coal tar	%	0.01			Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified

ASHFIELD SOLUTIONS GROUP

				Lab Reference	2531445	2531446	2531447	2531448	2531449	2534222	2534223	2534224	2534225	2534226	2534227	2534228	2534229	2534230	2534231	2534232
				Sample Location	D8	E5	E6	E7	E8	F5	F6	F7	F8	G5	G6	A3	A4	B3	B4	C3
				Sampling Date	12/12/2022	12/12/2022	12/12/2022	12/12/2022	12/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022
Determinand	**Units**	**LOD**	**SAC Cover Reuse Criteria**	**Phytotoxic SAC Planting**																
Moisture Content	%	0.1			14	11	13	15	14	9.8	14	14	15	9.7	11	12	9.6	87	10	11
Metals																				
Arsenic	mg/kg	0.5	40	50	24	29	30	25	23	33	22	27	27	32	28	39	33	29	26	29
Cadmium	mg/kg	0.2	11	3	< 0.2	< 0.2	< 0.2	1.1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	mg/kg	1	910	400	30	29	28	25	29	33	25	30	34	34	33	38	33	35	33	32
Copper	mg/kg	4	1000	200	40	20	22	34	41	46	29	43	72	44	27	26	37	37	36	31
Lead	mg/kg	1	310		110	43	54	110	110	80	70	220	180	140	63	62	83	71	90	99
Mercury	mg/kg	0.1	10	1	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel	mg/kg	1	180	110	28	28	27	23	26	31	22	26	29	32	28	31	30	30	27	28
Selenium	mg/kg	1	430		< 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
Vanadium	mg/kg	0.5	500		54	61	61	47	55	66	50	60	60	68	66	80	67	67	62	63
Zinc	mg/kg	4.5	1000	300	150	86	88	97	130	140	110	130	200	140	110	120	150	130	150	140
Inorganics																				
Total Cyanide	mg/kg	1	24		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0
Miscellaneous																				
pH	pH units	0.1	Ideally 5 to 9		7.8	7.9	7.7	7.7	7.6	8	8.1	8.1	8.7	7.9	8	6.5	7.7	7.6	7.8	8
Phenols																				
Phenol	mg/kg	1	10		< 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
Polyaromatic hydrocarbons																				
Naphthalene	mg/kg	0.1	2.3		0.18	0.15	0.17	0.18	0.23	< 0.05	< 0.05	0.13	0.18	0.15	0.16	0.15	0.16	0.16	< 0.05	0.11
Acenaphthylene	mg/kg	0.1			0.05	< 0.05	< 0.05	0.09	< 0.05	< 0.05	< 0.05	0.12	0.18	0.05	0.11	< 0.05	0.06	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.1			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.1			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.1			0.41	0.06	0.23	0.45	0.26	0.21*	0.31*	0.63*	0.59*	0.17*	0.72*	0.07*	0.13*	0.22*	0.14*	0.48*
Anthracene	mg/kg	0.1			0.16	< 0.05	0.07	0.15	0.09	0.05*	0.1*	0.24*	0.2*	0.07*	0.25*	< 0.05	0.06*	0.08*	< 0.05	0.16*
Fluoranthene	mg/kg	0.1			1.1*	0.18*	0.74*	1.3*	0.9*	0.45	1.1	2.1*	1.7*	0.59*	2.3*	0.23*	0.36*	0.57*	0.44*	1.3*
Pyrene	mg/kg	0.1			1.1*	0.16*	0.73*	1.3*	0.84*	0.4*	1.1*	2*	1.7*	0.59*	2.2*	0.25*	0.38*	0.52*	0.42*	1.2*
Benzo(a)anthracene	mg/kg	0.1			0.69*	0.11*	0.42*	0.78*	0.5*	0.26	0.73	1.3	1.1	0.41	1.4	0.17	0.24	0.32	0.23	0.74
Chrysene	mg/kg	0.1			0.6*	0.1*	0.34*	0.67*	0.41*	0.25*	0.5*4	0.95	0.84	0.29	1.1	0.12	0.16	0.22	0.27*	0.54
Benzo(b)fluoranthene	mg/kg	0.1			0.87	0.16	0.48	0.96	0.63	0.34	1.1	1.4*	1.3*	0.51*	1.5*	0.26*	0.29*	0.35*	0.43*	0.78*
Benzo(k)fluoranthene	mg/kg	0.1			0.43*	0.08*	0.28*	0.48*	0.28*	0.13*	0.35*	0.59	0.51	0.21	0.69	0.11	0.12	0.14	0.15*	0.33
Benzo(a)pyrene	mg/kg	0.1	5.3		0.81	0.15	0.46	0.86	0.56	0.26	0.81	1.2*	1.1*	0.42*	1.3*	0.21*	0.25*	0.28*	0.34*	0.65*
Indeno(1,2,3-cd)pyrene	mg/kg	0.1			0.43	0.08	0.22	0.48	0.31	0.16	0.5	0.71	0.7	0.27	0.74	0.13	0.17	0.18	0.21	0.36
Dibenzo(a,h)anthracene	mg/kg	0.1			0.07	< 0.05	< 0.05	0.08	0.05	< 0.05	0.11	0.16	0.14	0.08	0.15	< 0.05	< 0.05	< 0.05	< 0.05	0.1
Benzo[g,h,i]perylene	mg/kg	0.1			0.46	0.08	0.24	0.52	0.32	0.19	0.58	0.82	0.74	0.34	0.79	0.16	0.19	0.2	0.21	0.43
Total PAH(16)	mg/kg	0.4	250		7.34*	1.31*	4.38*	8.27*	5.38*	2.7*	7.35*	12.5*	11*	4.15*	13.3*	1.86*	2.57*	3.24*	2.84*	7.12*
BTEX																				
Benzene	ug/kg	10	100		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	ug/kg	10	1000		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	ug/kg	10			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes	ug/kg	10			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE	ug/kg	10			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
TPH CWG																				
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01	50		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130		< 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
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1			< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1			< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Total aliphatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_AL)	mg/kg	1			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01	50		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130		< 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
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1			< 10	< 10	< 10	< 10	14	< 10	11	25	11	< 10	19	< 10	< 10	< 10	< 10	14
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1			< 10	< 10	< 10	< 10	16	10	16	36	18	12	26	< 10	< 10	< 10	11	21
Total aromatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_AR)	mg/kg	1			0	0	0	0	30	10	27	61	29	12	45	0	0	0	11	35
Total petroleum hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_Total)	mg/kg	1	500		0	0	0	0	30	10	27	61	29	12	45	0	0	0	11	35
Organics																				
Coal tar	%	0.01			Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified

ASHFIELD
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				Lab Reference	2534233
				Sample Location	C4
				Sampling Date	13/12/2022
Determinand	Units	LOD	SAC Cover Reuse Criteria	Phytotoxic SAC Planting	
Moisture Content	%	0.1			9.9
Metals					
Arsenic	mg/kg	0.5	40	50	24
Cadmium	mg/kg	0.2	11	3	< 0.2
Chromium	mg/kg	1	910	400	30
Copper	mg/kg	4	1000	200	36
Lead	mg/kg	1	310		87
Mercury	mg/kg	0.1	10	1	< 0.3
Nickel	mg/kg	1	180	110	26
Selenium	mg/kg	1	430		< 1.0
Vanadium	mg/kg	0.5	500		56
Zinc	mg/kg	4.5	1000	300	130
Inorganics					
Total Cyanide	mg/kg	1	24		2.4
Miscellaneous					
pH	pH units	0.1	Ideally 5 to 9		7.9
Phenols					
Phenol	mg/kg	1	10		< 1.0
Polyaromatic hydrocarbons					
Naphthalene	mg/kg	0.1	2.3		0.11
Acenaphthylene	mg/kg	0.1			0.06
Acenaphthene	mg/kg	0.1			0.07
Fluorene	mg/kg	0.1			0.07
Phenanthrene	mg/kg	0.1			1.1*
Anthracene	mg/kg	0.1			0.31*
Fluoranthene	mg/kg	0.1			1.4*
Pyrene	mg/kg	0.1			1.2*
Benzo(a)anthracene	mg/kg	0.1			0.68
Chrysene	mg/kg	0.1			0.48
Benzo(b)fluoranthene	mg/kg	0.1			0.65*
Benzo(k)fluoranthene	mg/kg	0.1			0.25
Benzo(a)pyrene	mg/kg	0.1	5.3		0.53*
Indeno(1,2,3-cd)pyrene	mg/kg	0.1			0.3
Dibenzo(a,h)anthracene	mg/kg	0.1			0.07
Benzo[g,h,i]perylene	mg/kg	0.1			0.35
Total PAH(16)	mg/kg	0.4	250		7.7*
BTEX					
Benzene	ug/kg	10	100		< 5.0
Toluene	ug/kg	10	1000		< 5.0
Ethylbenzene	ug/kg	10			< 5.0
Xylenes	ug/kg	10			< 5.0
MTBE	ug/kg	10			< 5.0
TPH CWG					
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01	50		< 0.001
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01			< 0.001
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30		< 0.001
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130		< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1			< 2.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1			< 8.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1			< 8.0
Total aliphatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_AL)	mg/kg	1			0
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01	50		< 0.001
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01			< 0.001
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30		< 0.001
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130		< 1.0
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1			2.2
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1			< 10
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1			11
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1			21
Total aromatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_AR)	mg/kg	1			34.2
Total petroleum hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_Total)	mg/kg	1	500		34.2
Organics					
Coal tar	%	0.01			Not Identified

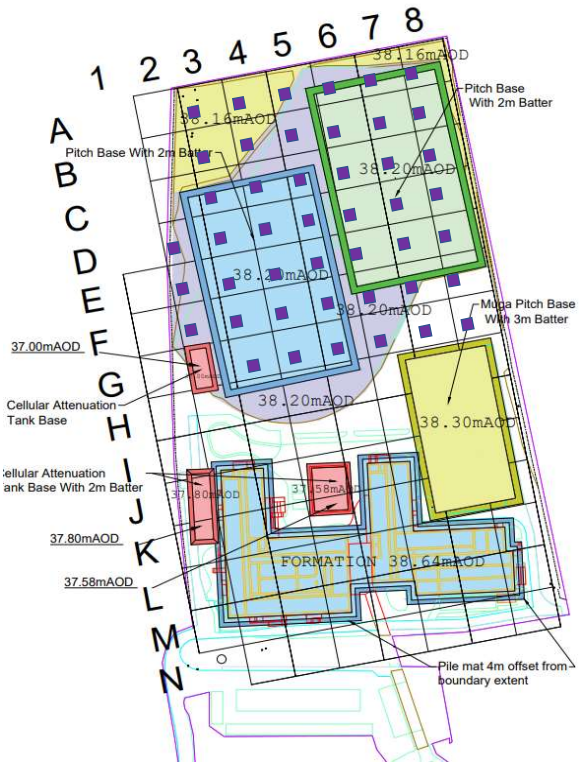
2534351	2534352	2534353	2534354	2534355	2534356	2534357	2534358	2534359	2534360	2534361	2534362	2534363
D2	D3	D4	E2	E3	E4	F2	F3	F4	G3	G4	G7	G8
14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022
14	12	14	13	12	13	12	14	13	15	14	16	11
36	26	30	24	27	29	29	28	23	24	25	22	23
< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
33	38	35	28	32	33	30	32	28	28	28	27	28
51	42	33	27	32	31	29	36	43	38	57	49	45
96	100	87	70	77	79	67	80	89	77	130	120	99
< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3	< 0.3	0.6	< 0.3
30	30	29	24	28	27	26	29	25	25	28	23	25
< 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
66	58	68	54	60	67	60	65	54	55	51	48	50
130	180	140	110	130	130	110	130	140	150	280	160	160
< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
7.6	7.7	7.6	7.5	7.6	7.5	7.9	7.7	7.6	7.7	7.7	7.9	7.9
< 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
0.15	0.13	0.14	0.14	0.14	0.11	0.13	0.08	0.11	0.11	0.14	0.16	0.15
0.05	0.11	< 0.05	< 0.05	0.05	0.06	< 0.05	0.07	0.06	0.08	0.07	0.12	0.12
0.12	0.17	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05
0.09	0.22	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05
0.87	3.4	0.15	0.12	0.38	0.32	0.15	0.21	0.3	0.35	0.35	0.56	0.37
0.21	1.1	0.05	< 0.05	0.15	0.15	0.05	0.09	0.1	0.13	0.14	0.21	0.18
1.1	6.3	0.64	0.45	0.91	0.81	0.47	0.84	0.83	0.99	1.9	1.6	1.8
1	5.3	0.63	0.45	0.88	0.81	0.46	0.87	0.78	0.97	1.8	1.5	1.8
0.54	2.7	0.41	0.31	0.54	0.5	0.3	0.66	0.51	0.6	1.4	0.95	1
0.45	2.2	0.32	0.23	0.4	0.41	0.21	0.5	0.38	0.46	0.94	0.71	0.72
0.56	2.8	0.49	0.39	0.61	0.57	0.37	0.78	0.58	0.68	1.4	1.1	1.1
0.23	0.93	0.22	0.14	0.24	0.23	0.16	0.3	0.25	0.26	0.57	0.39	0.46
0.5	1.9	0.4	0.31	0.51	0.45	0.29	0.67	0.49	0.58	1.1	0.93	0.99
0.28	1.2	0.24	0.22	0.32	0.29	0.19	0.4	0.31	0.34	0.65	0.58	0.58
< 0.05	0.29	< 0.05	< 0.05	0.07	0.06	< 0.05	0.09	0.08	0.08	0.16	0.13	0.14
0.31	1.3	0.29	0.24	0.32	0.32	0.22	0.41	0.35	0.38	0.73	0.63	0.66
6.49	30	3.98	3	5.52	5.09	3	5.97	5.13	6.01	11.4	9.75	10.1
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
< 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
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
0	0	0	0	0	0	0	0	0	0	0	0	0
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 2.0	4.9	< 2.0	< 2.0	< 2.0	2.1	< 2.0	< 2.0	13	< 2.0	< 2.0	< 2.0	< 2.0
< 10	14	< 10	< 10	< 10	< 10	< 10	< 10	15	< 10	< 10	< 10	< 10
< 10	24	11	< 10	< 10	13	< 10	13	34	17	16	22	17
< 10	43	16	13	< 10	19	< 10	21	62	25	24	32	26
0	85.9	27	13	0	35.9	0	34	124	42	40	54	43
0	85.9	27	13	0	35.9	0	34	124	42	40	54	43
Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified

ASHFIELD
SOLUTIONS GROUP

SAMPLE GRID TRACKER

Sample Key

Soil Suite with ACM ID



SAMPLE METHODOLOGY

Validation soil samples to demonstrate compliance with reuse criteria will be collected on a systemised grid. This grid is demonstrated on the S
In accordance with the Remediation Strategy (RS) and Remediation Implementation Plan (RIP). Testing shall be undertaken at a rate of one tes
At each sample location a composite sample will be collected from 10 spot locations, either in the grid. Or at the stockpile grid location.
The composite sample will be mixed prior to transferral into laboratory samples containers.
Samples will be submitted and compared against the soil resue criteria as detailed in the agreed Remediation Strategy.
Using the methodolgy detailed in the SoBRA Sampling Protocol for Asbestos in Soil. A separate soil sample will be submitted in a 1l tub for Asbe

Soil Reuse Criteria

Substance	SACs for Soft Cover Soils	Phytotoxic SACs for Planted Areas
Arsenic	40	50
Cadmium	11 (1)	3
Chromium	910	400
Copper	1,000 (1)	200
Lead	310	-
Mercury	10 (1)	1
Nickel	180	110
Selenium	430	-
Vanadium	500 (1)	-
Zinc	1,000 (1)	300
Total Cyanide	24	-
Asbestos	TOPSOIL – Asbestos not identified. SUBSOIL – Ideally asbestos not identified, but also consider allowing for 'sporadic' Chrysotile Stage 2 results at <0.001% if no visible ACMs.	-
Sum TPH Fractions	500	-
TPH (C5 - C8)	50	-
TPH (C8 - C10)	30	-
TPH (C10 - C12)	130	-
TPH (C12 - C35)	Via Sum	-
Benzene	0.1	-
Sum TEX	1 (1)	-
Sum 16-PAH	250	-
Naphthalene	2.3	-
BaP 'Coal Tar'	5.3	-
Total Phenols	10 (1)	-
Soil pH (Potential skin irritant)	Ideally, soil should be in the range of pH 5 to 9	-
Deleterious, noxious & odourous materials'	Qualitative 'absence'	-
Notes: (1) Lowered from published criteria		

Appendix D
Beenham Topsoil Pre-Import Data

Freeland
HORTICULTURE LIMITED

Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent
BR8 7LT

Attention : Philippa Lambourne

Our Ref: 1133-SA

21 February 2023

Dear Philippa

Topsoil Analysis Report : Beenham Topsoil –February 2023

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- pH & electrical conductivity values;
- major plant nutrients (N, P, K, Mg) & organic matter content;
- particle size distribution and stone content;
- heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- sulphate, sulphur, sulphide;
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16)
- banded aromatic and aliphatic petroleum hydrocarbons (C_5-C_{35}).
- Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

Freeland 01322 619161

COMMENTS

pH & Electrical Conductivity (salinity) Values

The sample was alkaline in nature (pH 8.5) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (1137µS/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by $CaSO_4$ extract (BS3882 requirement) fell below the maximum specified value (3300µS/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes.

Particle Size Distribution & Stone Content

The sample contained 81% sand and fell into the Sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (0.6%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compare with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in. 'The LQM/CIEH S4Uls' for Human Health Risk Assessmet (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, Sandy Loam. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Freeland 01322 619161

Freeland
HORTICULTURE LIMITED

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Beenham, Berkshire
Month/Year	February 23
Our Ref	1133-SA
Date	21 February 2023

		Composite sample
pH Value & Salinity		
pH value (1:2.5 soil/water ext)	units	8.5
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	1137
Electrical Conductivity (1:2.5 soil/CaSO4 ext)	µS/cm	3043
Neutralising Value ($CaCO_3$ equivalent)	%	4.3
Organic Matter & Nutrient Status		
Organic Matter (LOI)	%	5.0
Organic Carbon (Derived)	%	2.9
Total Nitrogen	%	0.373
Carbon:Nitrogen Ratio	:1	7.8
Available Phosphorus	mg/l	33.6
Available Potassium	mg/l	1365
Available Magnesium	mg/l	145
Particle Size Analysis & Stones		
Clay (<0.002mm)	%	9
Silt (0.063-0.002mm)	%	16
Sand (2.0-0.063mm)	%	81
Texture Class	UK Class	Sandy Loam
Stones 2-20mm	% by DW	0.5
Stones 20-50mm	% by DW	0.1
Stones >50mm	% by DW	0.0
Potential Contaminants		
Total Arsenic (As)	mg/kg	8.7
Total Cadmium (Cd)	mg/kg	0.11
Total Chromium (Cr)	mg/kg	42.8
Hexavalent Chromium (CR^{VI})	mg/kg	1.1
Total Copper (Cu)	mg/kg	13.9
Total Lead (Pb)	mg/kg	26.8
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	14.5
Total Selenium (Se)	mg/kg	0.25
Total Zinc (Zn)	mg/kg	75.4
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	26.9
Total Vanadium (V)	mg/kg	16.2
Hot Water Soluble Boron (B)	mg/kg	1.5
Total Cyanide (CN)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	6.0
Easily Liberated Sulphide (S^{2-})	mg/kg	<1
Water Soluble Sulphate (SO_4^{2-})	mg/l	85.0
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Chain of Custody requires a Freeland Horticulture Delivery Ticket-01322 619161

Freeland
HORTICULTURE LIMITED

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Beenham, Berkshire
Month/Year	February 23
Our Ref	1133-SA
Date	21 February 2023

Polyaromatic Hydrocarbons

Naphthalene	mg/kg	<0.05
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	<0.05
Fluorene	mg/kg	<0.05
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.05
Fluoranthene	mg/kg	0.2
Pyrene	mg/kg	0.2
Benzo[a]anthracene	mg/kg	0.2
Chrysene	mg/kg	0.2
Benzo[b]fluoranthene	mg/kg	0.2
Benzo[k]fluoranthene	mg/kg	0.2
Benzo[a]pyrene	mg/kg	0.1
Indeno[1,2,3-cd]pyrene	mg/kg	0.2
Dibenzo[a,h]anthracene	mg/kg	0.1
Benzo[g,h,i]perylene	mg/kg	0.1
Total PAHs sum US EPA 16	mg/kg	1.6

Banded Petroleum Hydrocarbons

Aliphatic TPH >C_5-C_6	mg/kg	<0.05
Aliphatic TPH >C_6-C_8	mg/kg	<0.05
Aliphatic TPH >C_8-C_{10}	mg/kg	<0.05
Aliphatic TPH >C_{10}-C_{12}	mg/kg	<10
Aliphatic TPH >C_{12}-C_{16}	mg/kg	<10
Aliphatic TPH >C_{16}-C_{21}	mg/kg	<10
Aliphatic TPH >C_{21}-C_{35}	mg/kg	28.0
Aliphatic TPH >C_{35}-C_{44}	mg/kg	<12

Aromatic TPH >C_5-C_7	mg/kg	<0.05
Aromatic TPH >C_7-C_8	mg/kg	<0.05
Aromatic TPH >C_8-C_{10}	mg/kg	<0.05
Aromatic TPH >C_{10}-C_{12}	mg/kg	<10
Aromatic TPH >C_{12}-C_{16}	mg/kg	<10
Aromatic TPH >C_{16}-C_{21}	mg/kg	<10
Aromatic TPH >C_{21}-C_{35}	mg/kg	41.0
Aromatic TPH >C_{35}-C_{44}	mg/kg	34.0

Total Petroleum Hydrocarbons (C_5-C_{44})	mg/kg	103

BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p-Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

Chain of Custody requires a Freeland Horticulture Delivery Ticket-01322 619161

Freeland
HORTICULTURE LIMITED

Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent
BR8 7LT

Attention : Philippa Lambourne

Our Ref: 1152-SA

19 April 2023

Dear Philippa

Topsoil Analysis Report : Beenham Topsoil –April 2023

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- pH & electrical conductivity values;
- major plant nutrients (N, P, K, Mg) & organic matter content;
- particle size distribution and stone content;
- heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- sulphate, sulphur, sulphide;
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16)
- banded aromatic and aliphatic petroleum hydrocarbons (C_5-C_{35}).
- Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

Freeland 01322 619161

COMMENTS

pH & Electrical Conductivity (salinity) Values

The sample was alkaline in nature (pH 8.5) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (1039µS/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by $CaSO_4$ extract (BS3882 requirement) fell below the maximum specified value (3300µS/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes.

Particle Size Distribution & Stone Content

The sample contained 85% sand and fell into the Sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (0.4%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compare with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in. 'The LQM/CIEH S4Uls' for Human Health Risk Assessmet (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, Sandy Loam. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Freeland 01322 619161

Freeland
HORTICULTURE LIMITED

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Beenham, Berkshire
Month/Year	April 23
Our Ref	1152-SA
Date	19 April 2023

		Composite sample
pH Value & Salinity		
pH value (1:2.5 soil/water ext)	units	8.5
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	1039
Electrical Conductivity (1:2.5 soil/CaSO4 ext)	µS/cm	2953
Organic Matter & Nutrient Status		
Organic Matter (LOI)	%	5.7
Organic Carbon (Derived)	%	3.3
Total Nitrogen	%	0.297
Carbon:Nitrogen Ratio	:1	11.2
Available Phosphorus	mg/l	39.2
Available Potassium	mg/l	1243
Available Magnesium	mg/l	139
Particle Size Analysis & Stones		
Clay (<0.002mm)	%	10
Silt (0.063-0.002mm)	%	8
Sand (2.0-0.063mm)	%	82
Texture Class	UK Class	Sandy loam
Stones 2-20mm	% by DW	0.4
Stones 20-50mm	% by DW	0.0
Stones >50mm	% by DW	0.0
Potential Contaminants		
Total Arsenic (As)	mg/kg	6.6
Total Cadmium (Cd)	mg/kg	<0.1
Total Chromium (Cr)	mg/kg	<10
Hexavalent Chromium (CR^{VI})	mg/kg	<0.2
Total Copper (Cu)	mg/kg	11.2
Total Lead (Pb)	mg/kg	15.9
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	<10
Total Selenium (Se)	mg/kg	0.16
Total Zinc (Zn)	mg/kg	97.1
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	21.8
Total Vanadium (V)	mg/kg	10.1
Hot Water Soluble Boron (B)	mg/kg	1.7
Total Cyanide (CN)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	<5
Easily Liberated Sulphide (S^{2-})	mg/kg	<1
Water Soluble Sulphate (SO_4^{2-})	mg/l	65.8
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Chain of Custody requires a Freeland Horticulture Delivery Ticket-01322 619161

Freeland
HORTICULTURE LIMITED

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Beenham, Berkshire
Month/Year	April 23
Our Ref	1152-SA
Date	19 April 2023

Polyaromatic Hydrocarbons

Naphthalene	mg/kg	<0.05
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	<0.05
Fluorene	mg/kg	<0.05
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.05
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	<0.1
Benzo[a]anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo[b]fluoranthene	mg/kg	<0.1
Benzo[k]fluoranthene	mg/kg	<0.1
Benzo[a]pyrene	mg/kg	<0.1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.1
Dibenzo[a,h]anthracene	mg/kg	<0.1
Benzo[g,h,i]perylene	mg/kg	<0.1
Total PAHs sum US EPA 16	mg/kg	<1

Banded Petroleum Hydrocarbons

Aliphatic TPH >C_5-C_6	mg/kg	<0.05
Aliphatic TPH >C_6-C_8	mg/kg	<0.05
Aliphatic TPH >C_8-C_{10}	mg/kg	<0.05
Aliphatic TPH >C_{10}-C_{12}	mg/kg	<10
Aliphatic TPH >C_{12}-C_{16}	mg/kg	<10
Aliphatic TPH >C_{16}-C_{21}	mg/kg	<10
Aliphatic TPH >C_{21}-C_{35}	mg/kg	32.0
Aliphatic TPH >C_{35}-C_{44}	mg/kg	<12

Aromatic TPH >C_5-C_7	mg/kg	<0.05
Aromatic TPH >C_7-C_8	mg/kg	<0.05
Aromatic TPH >C_8-C_{10}	mg/kg	<0.05
Aromatic TPH >C_{10}-C_{12}	mg/kg	<10
Aromatic TPH >C_{12}-C_{16}	mg/kg	<10
Aromatic TPH >C_{16}-C_{21}	mg/kg	<10
Aromatic TPH >C_{21}-C_{35}	mg/kg	32.0
Aromatic TPH >C_{35}-C_{44}	mg/kg	<12

Total Petroleum Hydrocarbons (C_5-C_{44})	mg/kg	64.0

BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p-Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

Chain of Custody requires a Freeland Horticulture Delivery Ticket-01322 619161

Freeland
HORTICULTURE LIMITED

Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent
BR8 7LT

Attention : Philippa Lambourne

Our Ref: 1158-SA

10 May 2023

Dear Philippa

Topsoil Analysis Report : Beenham Topsoil –May 2023

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- pH & electrical conductivity values;
- major plant nutrients (N, P, K, Mg) & organic matter content;
- particle size distribution and stone content;
- heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- sulphate, sulphur, sulphide;
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16)
- banded aromatic and aliphatic petroleum hydrocarbons (C_5-C_{35}).
- Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

Freeland 01322 619161

COMMENTS

pH & Electrical Conductivity (salinity) Values

The sample was alkaline in nature (pH 8.5) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (1501µS/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by $CaSO_4$ extract (BS3882 requirement) fell below the maximum specified value (3300µS/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes.

Particle Size Distribution & Stone Content

The sample contained 84% sand and fell into the Sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (1.4%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compare with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in. 'The LQM/CIEH S4Uls' for Human Health Risk Assessmet (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, Sandy Loam. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Freeland 01322 619161

Freeland
HORTICULTURE LIMITED

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Beenham, Berkshire
Month/Year	May 23
Our Ref	1158-SA
Date	10 May 2023

		Composite sample
pH Value & Salinity		
pH value (1:2.5 soil/water ext)	units	8.5
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	1501
Electrical Conductivity (1:2.5 soil/CaSO4 ext)	µS/cm	3257
Organic Matter & Nutrient Status		
Organic Matter (LOI)	%	7.2
Organic Carbon (Derived)	%	4.2
Total Nitrogen	%	0.416
Carbon:Nitrogen Ratio	:1	10.1
Available Phosphorus	mg/l	41.2
Available Potassium	mg/l	1323
Available Magnesium	mg/l	150
Particle Size Analysis & Stones		
Clay (<0.002mm)	%	9
Silt (0.063-0.002mm)	%	7
Sand (2.0-0.063mm)	%	84
Texture Class	UK Class	Sandy Loam
Stones 2-20mm	% by DW	0.2
Stones 20-50mm	% by DW	1.2
Stones >50mm	% by DW	0.0
Potential Contaminants		
Total Arsenic (As)	mg/kg	7.2
Total Cadmium (Cd)	mg/kg	0.14
Total Chromium (Cr)	mg/kg	10.3
Hexavalent Chromium (CR^{VI})	mg/kg	<0.2
Total Copper (Cu)	mg/kg	11.6
Total Lead (Pb)	mg/kg	18.4
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	10.8
Total Selenium (Se)	mg/kg	0.13
Total Zinc (Zn)	mg/kg	60.6
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	27.1
Total Vanadium (V)	mg/kg	12.1
Hot Water Soluble Boron (B)	mg/kg	1.1
Total Cyanide (CN)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	9.0
Easily Liberated Sulphide (S^{2-})	mg/kg	<1
Water Soluble Sulphate (SO_4^{2-})	mg/l	78.4
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Chartered Institute of Horticulture Member 01322 619161

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Beenham, Berkshire
Month/Year	May 23
Our Ref	1158-SA
Date	10 May 2023

Polyaromatic Hydrocarbons

Naphthalene	mg/kg	<0.05
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	<0.05
Fluorene	mg/kg	<0.05
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.05
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	0.1
Benzo[a]anthracene	mg/kg	<0.1
Chrysene	mg/kg	0.1
Benzo[b]fluoranthene	mg/kg	0.1
Benzo[k]fluoranthene	mg/kg	<0.1
Benzo[a]pyrene	mg/kg	<0.1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.1
Dibenzo[a,h]anthracene	mg/kg	<0.1
Benzo[g,h,i]perylene	mg/kg	<0.1
Total PAHs sum US EPA 16	mg/kg	<1

Banded Petroleum Hydrocarbons

Aliphatic TPH >C_5-C_6	mg/kg	<0.05
Aliphatic TPH >C_6-C_8	mg/kg	<0.05
Aliphatic TPH >C_8-C_{10}	mg/kg	<0.05
Aliphatic TPH >C_{10}-C_{12}	mg/kg	<10
Aliphatic TPH >C_{12}-C_{16}	mg/kg	<10
Aliphatic TPH >C_{16}-C_{21}	mg/kg	<10
Aliphatic TPH >C_{21}-C_{35}	mg/kg	34.0
Aliphatic TPH >C_{35}-C_{44}	mg/kg	<12

Aromatic TPH >C_5-C_7	mg/kg	<0.05
Aromatic TPH >C_7-C_8	mg/kg	<0.05
Aromatic TPH >C_8-C_{10}	mg/kg	<0.05
Aromatic TPH >C_{10}-C_{12}	mg/kg	<10
Aromatic TPH >C_{12}-C_{16}	mg/kg	<10
Aromatic TPH >C_{16}-C_{21}	mg/kg	<10
Aromatic TPH >C_{21}-C_{35}	mg/kg	41.0
Aromatic TPH >C_{35}-C_{44}	mg/kg	43.0

Total Petroleum Hydrocarbons (C_5-C_{44})	mg/kg	118

BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p- Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

Freeland
HORTICULTURE LIMITED

Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent
BR8 7LT

Attention : Philippa Lambourne

Our Ref: 1168-SA

6 June 2023

Dear Philippa

Topsoil Analysis Report : Beenham Topsoil –June 2023

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- pH & electrical conductivity values;
- major plant nutrients (N, P, K, Mg) & organic matter content;
- particle size distribution and stone content;
- heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- sulphate, sulphur, sulphide;
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16)
- banded aromatic and aliphatic petroleum hydrocarbons (C_5-C_{35}).
- Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

Freeland 01322 619161

COMMENTS

pH & Electrical Conductivity (salinity) Values

The sample was alkaline in nature (pH 8.5) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (887µS/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by $CaSO_4$ extract (BS3882 requirement) fell below the maximum specified value (3300µS/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes.

Particle Size Distribution & Stone Content

The sample contained 78% sand and fell into the Sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (3%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compare with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in. 'The LQM/CIEH S4Uls' for Human Health Risk Assessmet (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, Sandy Loam. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Freeland 01372 619161

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Beenham, Berkshire
Month/Year	June 23
Our Ref	1168-SA
Date	06 June 2023

		Composite sample
pH Value & Salinity		
pH value (1:2.5 soil/water ext)	units	8.5
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	887
Electrical Conductivity (1:2.5 soil/CaSO4 ext)	µS/cm	2800
Organic Matter & Nutrient Status		
Organic Matter (LOI)	%	7.4
Organic Carbon (Derived)	%	4.3
Total Nitrogen	%	0.321
Carbon:Nitrogen Ratio	:1	13.4
Available Phosphorus	mg/l	47.8
Available Potassium	mg/l	1068
Available Magnesium	mg/l	147
Particle Size Analysis & Stones		
Clay (<0.002mm)	%	12
Silt (0.063-0.002mm)	%	10
Sand (2.0-0.063mm)	%	78
Texture Class	UK Class	SandyLoam
Stones 2-20mm	% by DW	0.9
Stones 20-50mm	% by DW	2.1
Stones >50mm	% by DW	0.0
Potential Contaminants		
Total Arsenic (As)	mg/kg	7.7
Total Cadmium (Cd)	mg/kg	0.18
Total Chromium (Cr)	mg/kg	13.0
Hexavalent Chromium (CR^{VI})	mg/kg	0.3
Total Copper (Cu)	mg/kg	12.9
Total Lead (Pb)	mg/kg	18.9
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	13.1
Total Selenium (Se)	mg/kg	0.26
Total Zinc (Zn)	mg/kg	71.2
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	30.9
Total Vanadium (V)	mg/kg	14.7
Hot Water Soluble Boron (B)	mg/kg	1.6
Total Cyanide (CN)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	6.4
Easily Liberated Sulphide (S^{2-})	mg/kg	<1
Water Soluble Sulphate (SO_4^{2-})	mg/l	65.2
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Beenham, Berkshire
Month/Year	June 23
Our Ref	1168-SA
Date	06 June 2023

Polyaromatic Hydrocarbons

Naphthalene	mg/kg	<0.05
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	<0.05
Fluorene	mg/kg	<0.05
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.05
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	<0.1
Benzo[a]anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo[b]fluoranthene	mg/kg	<0.1
Benzo[k]fluoranthene	mg/kg	<0.1
Benzo[a]pyrene	mg/kg	<0.1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.1
Dibenzo[a,h]anthracene	mg/kg	<0.1
Benzo[g,h,i]perylene	mg/kg	<0.1
Total PAHs sum US EPA 16	mg/kg	<1

Banded Petroleum Hydrocarbons

Aliphatic TPH >C_5-C_8	mg/kg	<0.05
Aliphatic TPH >C_6-C_8	mg/kg	<0.05
Aliphatic TPH >C_8-C_{10}	mg/kg	<0.05
Aliphatic TPH >C_{10}-C_{12}	mg/kg	<10
Aliphatic TPH >C_{12}-C_{16}	mg/kg	<10
Aliphatic TPH >C_{16}-C_{21}	mg/kg	<10
Aliphatic TPH >C_{21}-C_{35}	mg/kg	30.0
Aliphatic TPH >C_{35}-C_{44}	mg/kg	30.0

Aromatic TPH >C_5-C_7	mg/kg	<0.05
Aromatic TPH >C_7-C_8	mg/kg	<0.05
Aromatic TPH >C_8-C_{10}	mg/kg	<0.05
Aromatic TPH >C_{10}-C_{12}	mg/kg	<10
Aromatic TPH >C_{12}-C_{16}	mg/kg	<10
Aromatic TPH >C_{16}-C_{21}	mg/kg	<10
Aromatic TPH >C_{21}-C_{35}	mg/kg	74.0
Aromatic TPH >C_{35}-C_{44}	mg/kg	74.0

Total Petroleum Hydrocarbons (C_5-C_{44})	mg/kg	208

BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p- Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

Appendix E
Leighton Buzzard Topsoil Pre-Import Data

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Alissia Mathews
Bourne Amenity Ltd
The Wharf
Newenden
Cranbrook
Kent TN18 5QG

29th July 2024
Our Ref: TOHA/24/1458/SS
Your Ref: PO 135281

Bourne Amenity Ltd

Dear Sirs

Topsoil Analysis Report: River Academy – Beenham Topsoil

We have completed the analysis of the soil sample recently received, referenced *Beenham Topsoil,* and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the sample for general landscape purposes (trees, shrubs, amenity grass). In addition, this sample has been assessed to determine its compliance with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil).*

This report presents the results of analysis for the sample received, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the topsoil has left the Bourne Amenity site.

SAMPLE EXAMINATION

The sample was described as a very dark brown (Munsell Colour 10YR 2/2), slightly moist, slightly plastic, moderately calcareous SANDY LOAM with a weakly developed, fine to medium, granular structure*. The sample was slightly stony and contained a high proportion of organic fines and occasional woody fragments. No unusual odours, roots or rhizomes of pernicious weeds were observed.

*This appraisal of soil structure was made from examination of a disturbed sample. Structure is a key soil characteristic that may only be accurately assessed by examination in an in-situ state.



Plate 1 – Beenham Topsoil Sample

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- detailed particle size analysis (5 sands, silt, clay);
- stone content (2-20mm, 20-50mm, >50mm);
- pH and electrical conductivity values;
- calcium carbonate;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- visible contaminants (>2mm);
- heavy metals (Sb, As, B, Ba, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, V, Zn);
- total cyanide and total (mono) phenols;
- elemental sulphur, acid volatile sulphur and water soluble sulphate;
- speciated PAHs (US EPA16 suite);
- aromatic and aliphatic TPH (C5-C35 banding);
- benzene, toluene, ethylbenzene, xylene (BTEX);
- asbestos screen.

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

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RESULTS OF ANALYSIS

Detailed Particle Size Analysis and Stone Content

The sample fell into the *sandy loam* texture class. Further detailed particle size analysis found the sample to have a very high proportion of particles in the *very fine sand* (0.05-0.15mm) and *fine sand* (0.15-0.25mm) fractions. Topsoils such as this are prone to self-compaction when initially placed in a landscape environment, which can lead to limited drainage and poor aeration, particularly if the soil has no developed structure. Placing the topsoil to a maximum depth of 300mm can help reduce the impact, which is in line with BS3882:2015, section A.3.

The stone content of the sample was low and, as such, stones should not restrict the use of the soil for general landscape purposes.

pH and Electrical Conductivity Values

The sample was strongly alkaline in reaction (pH 8.5). This pH value would be considered suitable for general landscape purposes providing species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value (water extract) was low, which indicates that soluble salts were not present at levels that would be harmful to plants.

The electrical conductivity value by $CaSO_4$ extract (*BS3882* requirement) fell below the maximum specified value (3300 µS/cm) given in *BS3882:2015 – Table 1*.

Organic Matter and Fertility Status

The sample was adequate to well supplied with organic matter and all major plant nutrients.

The C:N ratio of the sample was acceptable for general landscape purposes.

Potential Contaminants

With reference to *BS3882:2015 - Table 1*: Notes 3 and 4, there is a requirement to confirm levels of potential contaminants in relation to the topsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of site-specific assessment criteria, the concentrations that affect human health have been compared with the *residential with homegrown produce* land use in the Suitable For Use Levels (S4ULs) presented in *The LQM/CIEH S4ULs for Human Health Risk Assessment* (2015) and the DEFRA SP1010: *Development of Category 4 Screening Levels* (C4SLs) *for Assessment of Land Affected by Contamination – Policy Companion Document* (2014).

Of the potential contaminants determined, none was found at levels that exceeded their guideline values.

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in *BS3882:2015 – Table 1*.

Visible Contaminants

A low sharps content (0.03% >2.00mm) was recorded within the topsoil sample.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil sample for general landscape purposes. The analysis has also been undertaken to determine the sample's compliance with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil).*

From the soil examination and subsequent laboratory analysis, the sample was described as a strongly alkaline, non-saline, moderately calcareous *sandy loam*, with an adequate structure and a low stone content. The sample contained sufficient reserves organic matter and all major plant nutrients. Of the potential contaminants determined, none exceeded their respective guideline values. A sharps content (0.03% >2.00mm) was recorded within the topsoil sample.

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Based on the available results, the horticultural properties of the topsoil represented by this sample would be considered suitable for general landscape purposes, provided species tolerant of alkaline and moisture retentive soil conditions are selected, and the physical condition of the soil is satisfactory.

However, assessment of the visible contaminants indicates the presence of sharps within the topsoil. Depending on the use of this soil, the presence of such material at the surface could present a health and safety risk for end-users.

The presence of sharp materials would limit the places where this topsoil may be used safely. For example, it would not be acceptable for areas where end-users are likely to come into direct contact with this soil, including a domestic garden or play area. However, the soil may be acceptable for some landscape areas, providing close contact with end-users is not anticipated – this may include roadside verges or planting beds in commercial developments for instance.

It is recommended that further testing is undertaken to confirm the significance of this result.

The topsoil was not compliant with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil),* due to the presence of sharps (0.03% >2.00mm).

Soil Handling Recommendations

It is important to maintain the physical condition of the soil and avoid structural damage during all phases of soil handling (e.g. stockpiling, respreading, cultivating, planting, seeding or turfing). As a consequence, soil handling operations should be carried out when soil is sufficiently dry to be non-plastic (friable) in consistency.

It is important to ensure that the soil is not unnecessarily compacted by trampling or trafficking by site machinery, and soil handling should be stopped during and after heavy rainfall and not continued until the soil is friable in consistency. If the soil is structurally damaged and compacted at any stage during the course of soiling or landscaping works, it should be cultivated appropriately to relieve the compaction and to restore the soil's structure prior to any planting, turfing or seeding.

Further details on soil handling are provided in Annex A of *BS3882:2015.*

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully





Ross Friar
MEnvSci
Soil Scientist

Helen Stanley
BSc MSc MISoilSci CSci
Senior Associate

For & on behalf of Tim O'Hare Associates LLP

Bourne Amenity Ltd

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Client:	**Bourne Amenity Ltd**
Project:	**River Academy**
Job:	**Topsoil Analysis (BS3882:2015)**
Date:	**29/07/2024**
Job Ref No:	**TOHA/24/1458/SS**

Sample Reference			**Beenham Topsoil**
		Accreditation	
Clay (<0.002mm)	%	UKAS	12
Silt (0.002-0.05mm)	%	UKAS	12
Very Fine Sand (0.05-0.15mm)	%	UKAS	33
Fine Sand (0.15-0.25mm)	%	UKAS	29
Medium Sand (0.25-0.50mm)	%	UKAS	11
Coarse Sand (0.50-1.0mm)	%	UKAS	2
Very Coarse Sand (1.0-2.0mm)	%	UKAS	1
Total Sand (0.002 - 2.0mm)	%	UKAS	76
Texture Class (UK Classification)	--	UKAS	SL
Stones (2-20mm)	% DW	GLP	2
Stones (20-50mm)	% DW	GLP	1
Stones (>50mm)	% DW	GLP	0
Visible Contaminants: Plastics >2.00mm	%	UKAS	0.01
Visible Contaminants: Sharps >2.00mm	%	UKAS	0.03
pH Value (1:2.5 water extract)	units	UKAS	8.5
Calcium Carbonate	%	UKAS	6
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS	1010
Electrical Conductivity (1:2 $CaSO_4$ extract)	uS/cm	UKAS	2905
Exchangeable Sodium Percentage	%	UKAS	3.5
Organic Matter (LOI)	%	UKAS	5.7
Total Nitrogen (Dumas)	%	UKAS	0.20
C : N Ratio	ratio	UKAS	16
Extractable Phosphorus	mg/l	UKAS	47
Extractable Potassium	mg/l	UKAS	1149
Extractable Magnesium	mg/l	UKAS	144
Total Antimony (Sb)	mg/kg	MCERTS	1
Total Arsenic (As)	mg/kg	MCERTS	7
Total Barium (Ba)	mg/kg	MCERTS	24
Total Beryllium (Be)	mg/kg	MCERTS	0.3
Total Cadmium (Cd)	mg/kg	MCERTS	< 0.2
Total Chromium (Cr)	mg/kg	MCERTS	8
Hexavalent Chromium (Cr VI)	mg/kg	MCERTS	< 1.8
Total Copper (Cu)	mg/kg	MCERTS	11
Total Lead (Pb)	mg/kg	MCERTS	19
Total Mercury (Hg)	mg/kg	MCERTS	< 0.3
Total Nickel (Ni)	mg/kg	MCERTS	10
Total Selenium (Se)	mg/kg	MCERTS	< 1.0
Total Vanadium (V)	mg/kg	MCERTS	14
Total Zinc (Zn)	mg/kg	MCERTS	54
Water Soluble Boron (B)	mg/kg	MCERTS	2
Total Cyanide (CN)	mg/kg	MCERTS	< 1.0
Total (mono) Phenols	mg/kg	MCERTS	< 1.0
Elemental Sulphur	mg/kg	MCERTS	7
Sulphide	mg/kg	MCERTS	2
Water Soluble Sulphate (SO_4)	mg/kg	MCERTS	310
Naphthalene	mg/kg	MCERTS	< 0.05
Acenaphthylene	mg/kg	MCERTS	< 0.05
Acenaphthene	mg/kg	MCERTS	< 0.05
Fluorene	mg/kg	MCERTS	< 0.05
Phenanthrene	mg/kg	MCERTS	0.10
Anthracene	mg/kg	MCERTS	< 0.05
Fluoranthene	mg/kg	MCERTS	0.20
Pyrene	mg/kg	MCERTS	0.18
Benzo(a)anthracene	mg/kg	MCERTS	0.10
Chrysene	mg/kg	MCERTS	0.10
Benzo(b)fluoranthene	mg/kg	MCERTS	0.12
Benzo(k)fluoranthene	mg/kg	MCERTS	0.07
Benzo(a)pyrene	mg/kg	MCERTS	0.11
Indeno(1,2,3-cd)pyrene	mg/kg	MCERTS	0.06
Dibenzo(a,h)anthracene	mg/kg	MCERTS	< 0.05
Benzo(g,h,i)perylene	mg/kg	MCERTS	0.08
Total PAHs (sum USEPA16)	mg/kg	MCERTS	1.1
Aliphatic TPH >C5 - C6	mg/kg	MCERTS	< 0.020
Aliphatic TPH >C6 - C8	mg/kg	MCERTS	< 0.020
Aliphatic TPH >C8 - C10	mg/kg	MCERTS	< 0.050
Aliphatic TPH >C10 - C12	mg/kg	MCERTS	< 1.0
Aliphatic TPH >C12 - C16	mg/kg	MCERTS	< 2.0
Aliphatic TPH >C16 - C21	mg/kg	MCERTS	< 8.0
Aliphatic TPH >C21 - C35	mg/kg	MCERTS	52
Aliphatic TPH (C5 - C35)	mg/kg	MCERTS	52
Aromatic TPH >C5 - C7	mg/kg	MCERTS	< 0.010
Aromatic TPH >C7 - C8	mg/kg	MCERTS	< 0.010
Aromatic TPH >C8 - C10	mg/kg	MCERTS	< 0.050
Aromatic TPH >C10 - C12	mg/kg	MCERTS	< 1.0
Aromatic TPH >C12 - C16	mg/kg	MCERTS	< 2.0
Aromatic TPH >C16 - C21	mg/kg	MCERTS	< 10
Aromatic TPH >C21 - C35	mg/kg	MCERTS	< 10
Aromatic TPH (C5 - C35)	mg/kg	MCERTS	< 10
Benzene	mg/kg	MCERTS	< 0.005
Toluene	mg/kg	MCERTS	< 0.005
Ethylbenzene	mg/kg	MCERTS	< 0.005
p & m-xylene	mg/kg	MCERTS	< 0.005
o-xylene	mg/kg	MCERTS	< 0.005
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	MCERTS	< 0.005
Asbestos Screen	ND/D	ISO 17025	Not-detected

SANDY LOAM

Visual Examination

The sample was described as a very dark brown (Munsell Colour 10YR 2/2), slightly moist, slightly plastic, moderately calcareous SANDY LOAM with a weakly developed, fine to medium, granular structure. The sample was slightly stony and contained a high proportion of organic fines and occasional woody fragments. No unusual odours, roots or rhizomes of pernicious weeds were observed.

R. Friar

Ross Friar
MEnvSci
Soil Scientist

Results of analysis should be read in conjunction with the report they were issued with

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Bourne Amenity Ltd

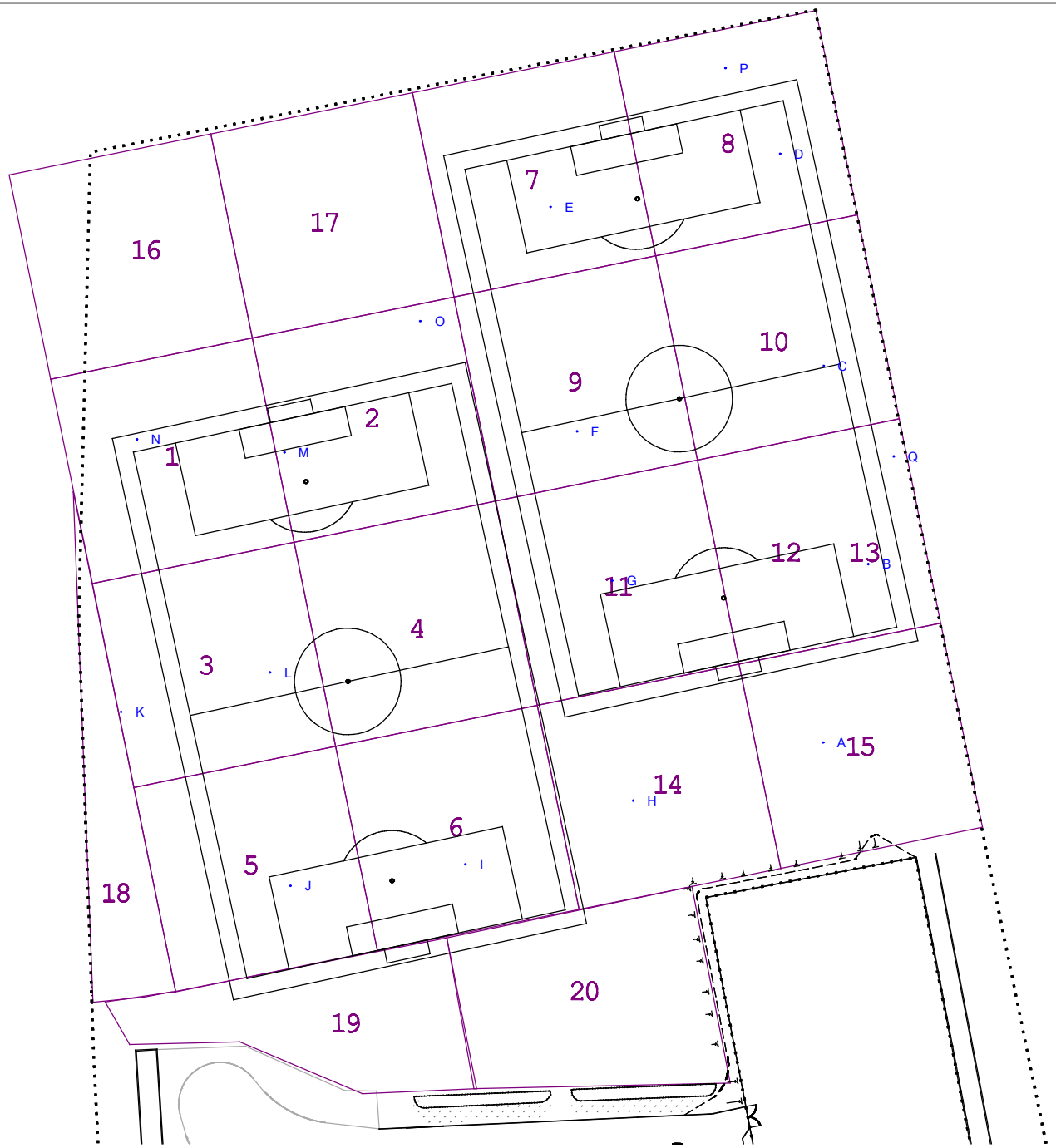
Appendix F
Burrows Sports Pitch Topsoil Verification

SAMPLE METHODOLOGY

Validation soil samples to demonstrate compliance with reuse criteria will be collected on a systemised grid. This grid is demonstrated on the S
In accordance with the Remediation Strategy (RS) and Remediation Implementation Plan (RIP). Testing shall be undertaken at a rate of one tes
At each sample location a composite sample will be collected from 10 spot locations, either in the grid. Or at the stockpile grid location.
The composite sample will be mixed prior to transferral into laboratory samples containers.
Samples will be submitted and compared against the soil resue criteria as detailed in the agreed Remediation Strategy.
Using the methodolgy detailed in the SoBRA Sampling Protocol for Asbestos in Soil. A separate soil sample will be submitted in a 1l tub for Asbe

Soil Reuse Criteria

Substance	SACs for Soft Cover Soils	Phytotoxic SACs for Planted Areas
Arsenic	40	50
Cadmium	11 (1)	3
Chromium	910	400
Copper	1,000 (1)	200
Lead	310	-
Mercury	10 (1)	1
Nickel	180	110
Selenium	430	-
Vanadium	500 (1)	-
Zinc	1,000 (1)	300
Total Cyanide	24	-
Asbestos	TOPSOIL – Asbestos not identified. SUBSOIL – Ideally asbestos not identified, but also consider allowing for 'sporadic' Chrysotile Stage 2 results at <0.001% if no visible ACMs.	-
Sum TPH Fractions	500	-
TPH (C5 - C8)	50	-
TPH (C8 - C10)	30	-
TPH (C10 - C12)	130	-
TPH (C12 - C35)	Via Sum	-
Benzene	0.1	-
Sum TEX	1 (1)	-
Sum 16-PAH	250	-
Naphthalene	2.3	-
BaP 'Coal Tar'	5.3	-
Total Phenols	10 (1)	-
Soil pH (Potential skin irritant)	Ideally, soil should be in the range of pH 5 to 9	-
Deleterious, noxious & odourous materials'	Qualitative 'absence'	-
Notes: (1) Lowered from published criteria		



Burrows Contractors Ltd
Targetts Farm
Wokingham, Berkshire
RG40 5RH

www.burrowscontractors.co.uk
01344 306820

River Academy

Drawing No: 1
Topsoil Depth Locations (A-Q)
Topsoil sampling Grid (1-20)

Scale 1:1000	Sheet Size: A4
Drawn By:	Drawing Number: 1

Revision History

Revision	1	11/06/2024	CB
Revision			

Sheet No: 1 / 1

BC Template
File Name: 240422 Ricer Academy.vce

				Pitch Topsoil Pre-import					Pitch Topsoil Post-import																		
				Lab Reference	1133-SA	1152-SA	1156-SA	1168-SA	2850609	2850610	2850611	2850612	2850613	2850614	2850615	2850616	2850617	2850618	2850619	2850620	204086	204087	204088	204089	204090	204091	204092	204093
				Customer Reference																							
				Sample ID																							
				Customer Reference																							
				Sample Location	Stockpile	Stockpile	Stockpile	Stockpile	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
				Sampling Date	21/02/2023	19/04/2024	10/05/2023	06/06/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	16/10/2023	17/05/2024	17/05/2024	17/05/2024	17/05/2024	17/05/2024	17/05/2024	17/05/2024	17/05/2024
Determinand	**Units**	**LOD**	**SAC Cover Reuse Criteria**	**Phytotoxic SAC Planting**																							
Moisture Content	%	0.1							19	20	22	20	21	19	19	19	20	19	19	21	20	20	16	22	18	17	15	16
Material removed	%	0.1																										
Description of inert material removed		0																										
Metals																												
Arsenic	mg/kg	0.5	40	50	8.7	6.6	7.2	7.7	8.4	6.7	6.6	7.2	6.8	6.8	6.9	6.5	6.8	7.2	7	6.6	7.3	9.9	7.5	7.8	6.9	9.1	8	7
Cadmium	mg/kg	0.2	11	3	0.11	<0.1	0.14	0.18	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium	mg/kg	1	910	400	42.8	<10	10.3	13	7.5	6	6	6.5	6.2	6.4	5.8	6.3	6.2	6.1	6.4	6.1	6.8	8.4	6.4	6.5	7.3	9.7	8.3	7.9
Copper	mg/kg	4	1000	200	13.9	11.2	11.6	12.9	24	12	23	11	11	10	13	11	20	13	12	14	12	14	10	12	14	16	14	18
Lead	mg/kg	1	310		26.8	15.9	18.4	18.9	16	14	13	16	15	14	16	16	17	17	16	15	16	20	13	16	16	25	20	26
Mercury	mg/kg	0.1	10	1	<0.2	<0.2	<0.2	<0.2	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel	mg/kg	1	180	110	14.5	<10	10.8	13.1	9.4	7.7	7.7	8.7	7.7	7.8	7.3	7.8	7.9	8.5	8	7.8	8.4	11	8.3	8.5	8.2	9.6	9.5	8.6
Selenium	mg/kg	1	430		0.25	0.16	0.13	0.26	< 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	< 1.0	< 1.0	< 1.0
Vanadium	mg/kg	0.5	500		16.2	10.1	12.1	14.7	13	11	11	12	11	11	10	11	12	12	11	11	12	15	12	12	12	15	14	14
Zinc	mg/kg	4.5	1000	300	75.4	97.1	60.6	71.2	44	44	42	51	56	48	47	52	50	52	49	47	57	68	49	58	57	65	63	77
Barium	mg/kg				26.9	21.8	27.1	30.9																				
Beryllium	mg/kg				<1	<1	<1	<1																				
Hexavalent Chromium	mg/kg				1.1	<0.2	<0.2	0.3																				
Inorganics																												
Total Cyanide	mg/kg	1	24		<1	<1	<1	<1	<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	< 1.0	< 1.0	< 1.0
Miscellaneous																												
Acid Neutralisation Capacity	mol/kg	0.1																										
Loss on Ignition	%	0.01																										
pH	pH units	0.1	Ideally 5 to 9		8.5	8.5	8.5	8.5	8	7.5	7.6	7.6	7.6	7.7	7.7	7.8	7.6	7.7	7.9	7.7	8.2	8.1	8.2	7.4	7.7	7.9	8.2	8.4
Total Organic Carbon	%	0.01			2.9	3.3	4.2	4.3																				
Organics																												
>C8-C10 BCB (EH_1D_Total)	mg/kg	1	30																									
>C10-C12 BCB (EH_1D_Total)	mg/kg	1	130																									
>C12-C16 BCB (EH_1D_Total)	mg/kg	1																										
>C16-C21 BCB (EH_1D_Total)	mg/kg	1																										
>C21-C35 BCB (EH_1D_Total)	mg/kg	1																										
>C35-C40 BCB (EH_1D_Total)	mg/kg	1																										
Total (>C8-C40) BCB (EH_1D_Total)	mg/kg	1	500																									
Phenols																												
Phenol	mg/kg	1	10		<1	<1	<1	<1	<1	< 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	< 1.0	< 1.0
M,P-Cresol	mg/kg	1																										
O-Cresol	mg/kg	1																										
3,4-Dimethylphenol	mg/kg	1																										
2,3-Dimethylphenol	mg/kg	1																										
2,3,5-trimethylphenol	mg/kg	1																										
Total Monohydric Phenols	mg/kg	5	10																									
Polyaromatic hydrocarbons																												
Naphthalene	mg/kg	0.1	2.3		<0.05	<0.05	<0.05	<0.05	1.1	1.3	1.7	1.2	1.6	1.5	2.3	2.3	2	1.4	2	5.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1			<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.29	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.1			<0.05	<0.05	<0.05	<0.05	0.07	0.08	0.08	0.08	0.1	0.1	0.15	0.16	0.15	0.14	0.24	1.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.1			<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	0.05	0.05	0.07	0.07	0.12	0.11	0.12	0.11	0.21	1.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05
Phenanthrene	mg/kg	0.1			<0.1	<0.1	<0.1	<0.1	0.06	0.06	0.08	0.08	0.1	0.13	0.19	0.21	0.27	0.33	0.71	6.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.9	< 0.05	< 0.05
Anthracene	mg/kg	0.1			<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.06	0.08	0.11	0.19	1.9	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05
Fluoranthene	mg/kg	0.1			0.2	0.1	0.1	0.1	0.06	0.06	0.08	0.07	0.07	0.08	0.12	0.14	0.17	0.22	0.44	6.8	0.1	0.1	< 0.05	< 0.05	0.13	1.4	0.1	0.17
Pyrene	mg/kg	0.1			0.2	<0.1	0.1	<0.1	0.05	0.05	0.06	0.05	0.05	0.07	0.09	0.11	0.14	0.18	0.34	5.8	0.08	0.1	< 0.05	< 0.05	0.11	1.2	0.1	0.16
Benzo(a)anthracene	mg/kg	0.1			0.2	<0.1	<0.1	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.08	0.15	2.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.41	< 0.05	< 0.05
Chrysene	mg/kg	0.1			0.2	<0.1	0.1	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.09	0.12	2.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.52	< 0.05	0.07
Benzo(b)fluoranthene	mg/kg	0.1			0.2	<0.1	0.1	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.11	0.14	2.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.42	< 0.05	0.09
Benzo(k)fluoranthene	mg/kg	0.1			0.2	<0.1	<0.1	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.08	1.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.27	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.1	5.3		0.1	<0.1	<0.1	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08	0.1	2.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.37	< 0.05	0.07
Indeno(1,2,3-cd)pyrene	mg/kg	0.1			0.2	<0.1	<0.1	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	1	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.15	< 0.05	< 0.05
Dibenzo(a,h)anthracene	mg/kg	0.1			0.1	<0.1	<0.1	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.18	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05
Benzo(g,h,i)perylene	mg/kg	0.1			0.1	<0.1	<0.1	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.07	1.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.18	< 0.05	< 0.05
Total PAH(16)	mg/kg	0.4	250		1.6	<1	<1	<1	1.33	1.56	2.04	1.48	2.01	1.91	3.07	3.12	3.04	3.03	4.82	41.3	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	6.12	< 0.80	< 0.80
Total (of 17) PAHs	mg/kg	2	250																									
BTEX																												
Benzene	ug/kg	10	0.1		<0.02	<0.02	<0.02	<0.02	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	ug/kg	10	1		<0.2	<0.2	<0.2	<0.2	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	ug/kg	10			<0.04	<0.04	<0.04	<0.04	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Xylenes	ug/kg	10			<0.2	<0.2	<0.2	<0.2	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE	ug/kg	10							< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0								
TPH CWG																												
TPH C12 - C35 (EH_CU_1D_TOTAL)	mg/kg	10							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	49								
TPH (>C5 - C8) (HS_1D_TOTAL)	mg/kg	0.1	50						< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	<1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>C5 - C10) (HS_1D_TOTAL)	mg/kg	1																			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (>C8 - C10) (HS_1D_TOTAL)	mg/kg	1	30						< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	<1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (>C10 - C12) (EH_CU_1D_TOTAL)	mg/kg	2	130						< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	4.6	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C5 - C7) (HS_1D_TOTAL)	mg/kg	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								
TPH (C8 - C10) (HS_1D_TOTAL)	mg/kg	1							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0								
TPH (C10 - C12) (EH_CU_1D_TOTAL)	mg/kg	1							< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.6								
TPH (>C10 - C35) (EH_CU_1D_TOTAL)	mg/kg	10																			31	39	40	25	17	32	28	27
TPH (C12 - C16) (EH_CU_1D_TOTAL)	mg/kg	4							< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	8.6								
TPH (>C12 - C35) (EH_CU_1D_TOTAL)	mg/kg	10																			31	39	40	25	17	32	28	27
TPH (C16 - C21) (EH_CU_1D_TOTAL)	mg/kg	10							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	22								
TPH (C21 - C35) (EH_CU_1D_TOTAL)	mg/kg	10							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	19								
TPH (C5 - C35) (EH_CU+HS_1D_TOTAL)	mg/kg	10							< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	54								
>C5-C6 Aliphatic (HS_1D_MS)	mg/kg	0.01	50		<0.05	<0.05	<0.05	<0.05																				
>C6-C8 Aliphatic (HS_1D_MS)	mg/kg	0.01			<0.05	<0.05	<0.05	<0.05																				
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	mg/kg	1	30		<0.05	<0.05	<0.05	<0.05																				
>C10-C12 Aliphatic (EH_2D_AL)	mg/kg	1	130		<10	<10	<10	<10																				
>C12-C16 Aliphatic (EH_2D_AL)	mg/kg	1			<10	<10	<10	<10													< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aliphatic (EH_2D_AL)	mg/kg	1			<10	<10	<10	<10													< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
>C21-C35 Aliphatic (EH_2D_AL)	mg/kg	1			28	32	34	30													12	20	10	9	< 8.0	11	13	12
>C35-C40 Aliphatic (EH_2D_AL)	mg/kg	1			<12	<12	<12	30																				
Total aliphatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_AL)	mg/kg	1																										
>C5-C7 Aromatic (HS_1D_MS)	mg/kg	0.01	50		<0.05	<0.05	<0.05	<0.05																				
>C7-C8 Aromatic (HS_1D_MS)	mg/kg	0.01			<0.05	<0.05	<0.05	<0.05																				
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	mg/kg	1	30		<0.05	<0.05	<0.05	<0.05																				
>C10-C12 Aromatic (EH_2D_AR)	mg/kg	1	130		<10	<10	<10	<10																				
>C12-C16 Aromatic (EH_2D_AR)	mg/kg	1			<10	<10	<10	<10													< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
>C16-C21 Aromatic (EH_2D_AR)	mg/kg	1			<10	<10	<10	<10													< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
>C21-C35 Aromatic (EH_2D_AR)	mg/kg	1			41	32	41	74													13	13	24	13	14	12	10	11
>C35-C40 Aromatic (EH_2D_AR)	mg/kg	1			34	<12	43	74																				
Total aromatic hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_AR)	mg/kg	1																										
Total petroleum hydrocarbons (>C5 - C35) (HS_1D_MS+EH_2D_Total)	mg/kg	1	500		103	64	118	208													31	39	40	25	17	32	28	27
Mineral Oil w Florisil (EH_CU_1D_Total)	mg/kg	5																										
PCB (ICES 7 conganers)																												
Total PCBs (7 congeners)	mg/kg	0.03																										
Organics																												
Coal tar	%	0.01							Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified	Not Identified

Appendix G
B+K Amenity Topsoil Verification



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River Academy



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River Academy



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River Academy



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KEY

TREES AND HEDGE PLANTING

- EXISTING TREES
- EXISTING VEGETATION
- PROPOSED TREE PLANTING
  Refer to Planting Schedule
- PROPOSED ROOT BARRIER
- PROPOSED HEDGE PLANTING
  Refer to Planting Schedule

TREES AND HEDGE PLANTING

- PROPOSED AMENITY PLANTING
  Refer to Planting Schedule
- PROPOSED MEADOW PLANTING
  Refer to Planting Schedule
- PROPOSED WILDFLOWER PLANTING
  Refer to Planting Schedule
- PROPOSED NATIVE SHRUB MIX
  Soil stabilisation hessian matting to be provided as per NBS specification
  Refer to Planting Schedule
- PROPOSED GRASS SEED
  Refer to Planting Schedule

Due to the installation of a copper lined barrier to prevent regrowth of Japanese Knotweed, it is not practical to install large tree pits for larger nursery stock trees.

SOUTHERN PLAN INSET

REV	DATE	DESCRIPTION
C11	07/03/2024	Ditch updated to suit site conditions with native shrub mix.
C10	18/01/2024	Planting bed increased following revised size of cycle canopy
C09	18/01/2024	1. Native scrub mix giving specific hatch 2. Soil erosion matting note added to key

CLIENT

Department for Education

CONTRACTOR

BOWMER + KIRKLAND

CONSULTANT ALA

ares LANDSCAPE ARCHITECTS

PROJECT

River Academy

DRAWING TITLE

Planting Plan

DRAWING PURPOSE

A4 - FOR CONSTRUCTION

DRAWN BY	DATE	CHK'D BY	SCALE	MEDIA
MH	10.09.2021	JG	1:500	A1

CONTRACT DRAWING REFERENCE (AS REQUIRED)

PROJECT - ORIGINATOR - ZONE - LEVEL - TYPE - ROLE - NUMBER	REVISION
FS0949-ALA-XX-ZZ-DR-L-0013	C11

Appendix H
Burrows Amenity Topsoil Verification

Burrows Contractors Ltd
Targetts Farm
Maidenhead Road
Wokingham
Berkshire
RG40 5RH

e: cath@burrowscontractors.co.uk

i2 Analytical Ltd.
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Croxley Green
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Herts,
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t: 01923 225404
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Analytical Report Number : 24-038802

Project / Site name:	River Academy	**Samples received on:**	27/08/2024
Your job number:		**Samples instructed on/ Analysis started on:**	28/08/2024
Your order number:		**Analysis completed by:**	05/09/2024
Report Issue Number:	1	**Report issued on:**	05/09/2024
Samples Analysed:	3 soil 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

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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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 24-038802
Project / Site name: River Academy

Lab Sample Number				299353	299354	299355
Sample Reference				1	2	3
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				24/08/2024	24/08/2024	24/08/2024
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	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	13	15
Total mass of sample received	kg	0.1	NONE	1.1	1.5	1.7
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	DSO	DSO	DSO
General Inorganics						
pH (L099)	pH Units	N/A	MCERTS	7.8	7.8	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Phenols						
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Speciated PAHs						
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.07
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.09	0.05	0.15
Pyrene	mg/kg	0.05	MCERTS	0.08	< 0.05	0.13
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.06	0.08
Chrysene	mg/kg	0.05	MCERTS	0.06	< 0.05	0.07
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.12	0.13	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.07	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.06	0.11	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.05	0.07	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.07	0.1	< 0.05
Total PAH						
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.4	7.5	7.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.4
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	9.4	8.1	8.6
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	15	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	20	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	10	9.1	9.1
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	16	15	16
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	66	62	69

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-038802
Project / Site name: River Academy

Lab Sample Number				299353	299354	299355
Sample Reference				1	2	3
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				24/08/2024	24/08/2024	24/08/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**			
Petroleum Hydrocarbons						
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH (>EC5 - EC10) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (>EC5 - EC8) HS_1D_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
TPH (>EC8 - EC10) HS_1D_TOTAL	mg/kg	0.02	MCERTS	< 0.02	< 0.02	< 0.02
TPH (>EC10 - EC12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH (>EC10 - EC35) EH_CU_1D_TOTAL	mg/kg	10	NONE	< 10	< 10	< 10
TPH (>EC12 - EC35) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH Total >EC5 - EC35 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	< 10	< 10	< 10
VOCs						
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	5	MCERTS	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Total BTEX	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0

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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 24-038802
Project / Site name: River Academy

* 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 *
299353	1	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
299354	2	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation
299355	3	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation

Analytical Report Number : 24-038802
Project / Site name: River Academy

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (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
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	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
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
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/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/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
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

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.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

Sample Deviation Report

Analytical Report Number : 24-038802

Project / Site name: River Academy

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
1	N/A	S	299353	b	BTEX and/or Volatile organic compounds in soil	L073B	b
1	N/A	S	299353	b	Monohydric phenols in soil	L080-PL	b
1	N/A	S	299353	b	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	b
1	N/A	S	299353	b	Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	L076B/L088-PL	b
1	N/A	S	299353	b	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	L076B/L088-PL	b

Analytical Report Number: 24-038802
Project / Site name: River Academy

Lab Sample Number					299353	299354	299355
Sample Reference					1	2	3
Sample Number					None Supplied	None Supplied	None Supplied
Depth (m)					None Supplied	None Supplied	None Supplied
Date Sampled					24/08/2024	24/08/2024	24/08/2024
Time Taken					None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	**Criteria**			
Stone Content	%	0.1	NONE		< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE		14	13	15
Total mass of sample received	kg	0.001	NONE		1.1	1.5	1.7
Asbestos in Soil	Type	N/A	ISO 17025		Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A		DSO	DSO	DSO
General Inorganics							
pH (L099)	pH Units	N/A	MCERTS	5 - 9	7.8	7.8	7.9
Total Cyanide	mg/kg	1	MCERTS	24	< 1.0	< 1.0	< 1.0
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	10	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	2.3	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS		< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS		< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS		< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS		< 0.05	< 0.05	0.07
Anthracene	mg/kg	0.05	MCERTS		< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS		0.09	0.05	0.15
Pyrene	mg/kg	0.05	MCERTS		0.08	< 0.05	0.13
Benzo(a)anthracene	mg/kg	0.05	MCERTS		< 0.05	0.06	0.08
Chrysene	mg/kg	0.05	MCERTS		0.06	< 0.05	0.07
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025		0.12	0.13	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025		< 0.05	0.07	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	5.3	0.06	0.11	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS		0.05	0.07	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS		< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS		0.07	0.1	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	250	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	40	8.4	7.5	7.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	3	< 0.2	< 0.2	0.4
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	400	9.4	8.1	8.6
Copper (aqua regia extractable)	mg/kg	1	MCERTS	200	15	15	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	310	22	20	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	110	10	9.1	9.1
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	430	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	500	16	15	16
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	300	66	62	69
VOCs							
Benzene	µg/kg	5	MCERTS	100	< 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	5	MCERTS		< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS		< 5.0	< 5.0	< 5.0
Total BTEX	µg/kg	5	MCERTS		< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons							
TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL	mg/kg	2	MCERTS	500	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	500	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	500	< 8.0	< 8.0	< 8.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS		< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS		< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS		< 10	< 10	< 10
TPH (>C5 - C10) HS_1D_TOTAL	mg/kg	1	NONE		< 1.0	< 1.0	< 1.0
TPH (>C5 - C8) HS_1D_TOTAL	mg/kg	0.1	NONE	50	< 0.1	< 0.1	< 0.1
TPH (>C8 - C10) HS_1D_TOTAL	mg/kg	1	NONE	30	< 0.02	< 0.02	< 0.02
TPH (>C10 - C12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	130	< 2.0	< 2.0	< 2.0
TPH (>C10 - C35) EH_CU_1D_TOTAL	mg/kg	10	NONE	500	< 10	< 10	< 10
TPH (>C12 - C35) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	500	< 10	< 10	< 10
TPH Total >EC5 - EC35 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	500	< 10	< 10	< 10

Appendix I
GeoShield Verification Report and Certificate

GEOSHIELD

Verification Certificate

Date: 31 July 2024

Structural Waterproofing Contracts Limited

Riverside Academy
Reading
RG1 8EQ

The documentation in this handover package shows that the installation of the Gas Membrane and ancillaries was installed to specification.
Verified in accordance with BS 8485:2015+A1:2019 and CIRIA 735.
All areas were verified, and remediation issues corrected.

Paul Colbeck
Director of Site Services

GeoShield Verification Plan

PROJECT DESCRIPTION

GEO103260
Structural Waterproofing Contracts Limited,
300-22-1018 Riverside Academy,
Reading,
RG1 8EQ

The proposed development for which gas protection measures are required involves a new main school building, separate sports block, Multi Use Games Area (“MUGA”), new playing pitches together with car and cycle parking works, new accesses onto the public highway and all ancillary works and landscaping.

In accordance with BS8485:2015 + A1 2019 for a type B building and the building must conform to a Characteristic Specification (CS) rating of 2, so mitigation will need to be 2.5 points.
A VOC/Hydrocarbon resistant vapour barrier has been specified. Extra precautions have been taken into consideration due to the building type being a high school.

Geoshield have adopted the highest validation and verification principles associated with BS8485:2015 + A1 2019, BR 211, Public Health England, NHBC Technical Extra April 2016 and CIRIA 735. This pre-verification plan reviews the design to ensure it is compliant with the developer and planning authority requirements and in conjunction with the relevant investigation report in accordance with BS8485:2015 +A1 2019. Included in this pre-verification plan are all the items for the requirements in section 8 BS8485:2015+A1 2019 CIRIA 735.

In summary, the design does achieve a required level of attention to detail with its robust specific gas membrane design (2.0 points), the structural barrier of a reinforced ground bearing concrete slab above the basal membrane (0.5 point) and a 625mm sub floor void for ventilation provisions (1.5 points).

The pre-verification plan confirms how the installation will be tested in accordance with CIRIA735. The verification visits will be documented in verification reports during the project that are suitable for submission to the local planning authority in order to satisfy and discharge planning consent. All faults identified during inspection and the verification site visit of the ground gas system will be itemised as remediations which will need to be signed off in the remediation log for the proposed building.

GeoShield Verification Plan

PROJECT DESCRIPTION

Pre-Verification Plan

GeoShield are appointed by the Client to carry out independent validation, verification and integrity testing of the ground gas protection system on site. The Pre-Verification plan sets out the requirements and procedures that GeoShield will adopt to ensure that the installation is in line with the proposed design, relevant UK standards and guidance.
GeoShield take no responsibility for any warranties to third parties for the design of the system or the installation.

Limitations

The Pre-Verification plan prepared by GeoShield Limited is limited to the proposed ground gas protection measures installed. The Pre-Verification plan has been prepared in line with the relevance UK Standards and Guidance (BS8485:2015+A1:2019 & CIRIA 735) alongside the information made available to GeoShield by the Client. The conclusions made in the report are considered to be correct at the time of wiring, but additional information provided/discovered may require amendments to the Plan. GeoShield recognises that changes to relevant standard and guidance may occur at any time which may cause the conclusions made to be incorrect - GeoShield do not accept any responsibility or liability for the implications of such changes.

The Pre-Verification plan does not in itself constitute verification that the membrane has been installed in accordance with this document. Validation and verification of the installed membrane will be covered in separate verification reports following physical inspection of the gas barrier and will include photographic evidence of the installation.

Waterproofing elements (where applicable) do not fall into the remit of this Pre-Verification plan or future inspections. GeoShield will provide the opinion on membrane's suitability for ground gas protection purposes – no liability is offered or implied for the waterproofing element which should be checked by others.

GeoShield Verification Plan

CONTENTS

Section 1	Project description
Section 2	Project material specification
Section 3	Project information
Section 4	GeoShield surveyor information and CVs
Section 5	Project information: Drawings, S.I, MSDS, Radon Maps
Section 6	Client Details
Section 7	Application team leaders
Section 8	Health and safety
Section 9	Applicator competence
Section 10	Gas regime
Section 11	Testing
Section 12	Risk assessment
Section 13	Method Statement
Section 14	Project technical assessments
Section 15	Pre-Contract Meeting Checklist
Section 16	Pre-Contract Meeting Summary
Appendix A	Geoshield Method Statement

GeoShield Verification Plan

PROJECT REFERENCE: GEO103260

PROJECT: 300-22-1018 Riverside Academy

PROJECT ADDRESS:

Reading,

RG1 8EQ

SPECIFICATION: Verified in accordance CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in-accordance with manufactures instructions.

JUTA GP1 Gas Membrane

JUTA GP1 SAM

JUTA GP Titanflex (basal lower level membrane)

JUTA GP Titantank

GeoShield Verification Plan

NAME OF SURVEYOR: Paul Colbeck

VERIFICATION COMPANY: GeoShield Limited

Icon Business Centre

4100 Park Approach

Thorpe Park

Leeds

CONTACT NUMBER: 07462 546 926

EMAIL ADDRESS: pcolbeck@geoshield.co.uk

ORDER NUMBER: To be confirmed

PER VISIT: YES: ☐ NO: ☐ PROJECT: YES: ☐ NO: ☐

GeoShield Verification Plan

Geoshield CV

Since 2015 construction and design standards in the UK had begun to be restructured with the aim of eliminating all possible factors that relate to the failure of systems applied to protect against life threatening ground gas ingress into new constructions. The spearhead of these changes was in the UK with the updated version of the British Standard Code of practice for the design of protective measures for Methane and Carbon Dioxide ground gases for new buildings (BS8485:2015 +A1 2019).

Since 2015 GeoShield is a leading company in ground gas verification. A fully independent company working to the highest standards of CIRIA735 – Good practice on the testing and verification of protection systems for buildings against hazardous ground gases.

GeoShield Verification Plan

Geoshield CV

Field Services (Operational) team is lead by Paul Colbeck who has over 20 years' experience in the construction industry and is 1 of 9 SGPV's in the country. (SGPV - Specialists in Gas Protection Verification under Gas Protection Verification Scheme accredited by CL:AIRE. There are only 9 accredited SGPV's currently in the UK, 2 of which are employed by GeoShield).

Paul is also an assessor for NVQ Level 2 in the installation of Gas Membrane Systems designed to protect against hazardous ground gases (Radon, Methane, Carbon Dioxide & Hydro-Carbons) as well as NVQ Level 4 in Verification of Ground Gas protection systems.

GeoShield are active members of British Geomembrane Association, Property Care Association, The Radon Council, UK Radon Association and European Radon Association.

Paul Colbeck also resides as a chair of the British Verification Council (a platform dedicated to raising standards in the ground gas verification).

GeoShield Verification Plan

SPECIFICATION

Gas Protection Verification

The Gas Protection Verification Accreditation Scheme (GPVS) is a scheme that seeks to raise standards in membrane inspection, verification and reporting and provide all stakeholders involved in land contamination management with confidence that risks associated with ground gases have been adequately managed. The scheme applies to both the practical installation of the gas mitigation measures and to the verification reporting process.

Title Reference & Description:

Declaration Section

Geoshield has two qualified SGPV's under the CL:AIRE accreditation scheme this allows us to create a declaration for this project and our verification reports and verification plans are subject to independent audit by CL:AIRE.

GeoShield Verification Plan

SPECIFICATION



CERTIFICATE of ACCREDITATION

This is to certify that

Paul Colbeck

has been awarded the following accreditation

Gas Protection Verification Scheme (GPVS)

Specialist (SGPV)

Certificate No.: YQ7mZNE8x6

Issued: 4 December 2020
Valid for 4 years from the above date

Gas Protection Verification

Richard Froggatt
CL:AIRE Chairman

CL:AIRE is a Charitable Company Limited by Guarantee
Registered in England 3740059 / Entrust Enrolment No. 119820 / Registered Charity No. 1075611
Chiltern House, Haddenham Business Centre, Thame Road, Haddenham, Buckinghamshire, HP17 8BY
Telephone: +44 (0)1844 296112 | Email: enquiries@claire.co.uk | Website: www.claire.co.uk

Title Reference & Description:

Certificate of Accreditation (SGPV) - Paul Colbeck

GeoShield Verification Plan

SPECIFICATION



ABBE Quality Accredited

Certificate of Achievement

(Full Award)

This is to certify that

Paul Colbeck

has been assessed as meeting the required level of competence for all the units necessary to achieve the full award

ABBE Level 4 NVQ Diploma in Verification of Ground Gas Protection Systems

603/3266/9

Units achieved: Mandatory Units K/617/0687, M/617/0688, K/617/0690, M/617/0691, A/617/0693, F/617/0694, J/617/0695

Signed :

Professor Julian Beer, Chair of ABBE Board

ofqual REGULATED register.ofqual.gov.uk

Date: 06/07/2021

Candidate Registration No : 0000037535 Certificate Issue No : 145402

00029035

Title Reference & Description:

Certificate of Achievement - NVQ Level 4 (ABBE) - Paul Colbeck

GeoShield Verification Plan

SPECIFICATION



CERTIFICATE of ACCREDITATION

This is to certify that

Jake Purdie-Clark

has been awarded the following accreditation

Gas Protection Verification Scheme (GPVS)

Specialist (SGPV)

Certificate No.: kBQ62grG22

Issued: 22 February 2021

Valid for 4 years from the above date

Gas Protection Verification

Richard Froggatt
CL:AIRE Chairman

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Chiltern House, Haddenham Business Centre, Thame Road, Haddenham, Buckinghamshire, HP17 8BY
Telephone: +44 (0)1844 296112 | Email: enquiries@claire.co.uk | Website: www.claire.co.uk

Title Reference & Description:

Certificate of Accreditation (SGPV) - Jake Purdie-Clark

GeoShield Verification Plan

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Plan

SPECIFICATION

GGS Ltd.
Unit 10, Bamford Business Park,
Hibbert Street, Stockport, SK4 1PL
Telephone: 0161 232 7465
Email: info@ggs-uk.com
Web: www.ggs-uk.com

Experts in Continuous Monitoring

GGS2686 Ground Gas & VOC Vapour Risk Assessment

River Academy, Reading



GGS Site Photograph (November 2021)

Prepared for:
Ashfield Solutions Group

For: Ashfield Solutions Group
Ref No.: GGS2686GGVRA01
Date: 02/03/2022

Title Reference & Description:

GGS2686 River Academy, Reading GGVRA Final

GeoShield Verification Plan

SPECIFICATION

6 Generic Qualitative Ground-Gas Risk Assessment

6.1 Methane and carbon dioxide

As an initial approach, GGS has undertaken a Generic Screening Assessment for the Site using the maximum concentrations of methane and carbon dioxide which have been identified within the monitoring locations during all recorded ground gas monitoring carried out by GGS and REC, along with maximum steady positive flow to represent 'worst possible' current conditions as per CIRIA C665 guidance. These are as follows:

- Methane – 25.9%v/v;
- Carbon dioxide – 39.3%v/v;
- Steady flow rate – 0.6 l/hr .

The hazardous gas flow rates have been calculated using the following equation:

Hazardous gas flow rate (litres of gas per hour) = (Chg – measured hazardous gas concentration (% v/v /100) x q (borehole flow rate in litres per hour)

Hazardous gas flow rates can be used (with consideration of additional factors) to determine appropriate Characteristic Situations based on the modified Wilson and Card classification system as shown in Table 6.1 below:

Table 6.1 Modified Wilson and Card classification system

Hazardous gas flow rates	Risk Classification	Characteristic Situation
<0.07	Very Low Risk	1
<0.7	Low Risk	2
<3.5	Moderate Risk	3
<15	Moderate to High Risk	4
<70	High Risk	5
>70	Very High Risk	6

Title Reference & Description:

GGS2686 River Academy, Reading GGVRA Final

6 Generic Qualitative Ground-Gas Risk Assessment

GeoShield Verification Plan

SPECIFICATION

GGS Ground Gas & VOC Vapour Risk Assessment
River Academy, Reading

Table 6.2 below summarises hazardous gas flow rates and the Characteristic Situation calculated using the maximum gas concentrations and maximum positive steady flow measured during all monitoring completed at the Site to represent 'worst possible' conditions as per CIRIA guidance C665 Situation A (e.g., factories, shops, commercial, warehouses, schools, cinemas, sports centres, stadiums, high rise housing, housing with basements).

Table 6.2 Gas Screening Value Calculation as per CIRIA C665 Situation A from all monitoring completed at the site

Maximum CH_4 concentration (% v/v)	Maximum CO_2 concentration (% v/v)	Maximum steady state flow rate (L/hr)	Hazardous CH_4 Flow Rate (L/hr)	Hazardous CO_2 Flow Rate (L/hr)	Characteristic Situation (CS)
25.3	39.3	0.6	0.152	0.236	2

The generic screening assessment indicates that the 'Worst Possible' classification is CS2, or Low risk, with respect to methane and carbon dioxide for the proposed development at the Site.

Tables 6.3 below summarise hazardous gas flow rates and the Characteristic Situation calculated on a borehole-by-borehole basis, using maximum concentration and worst-case steady flow measured at the Site from GGS and REC monitoring investigations to represent 'worst possible' current conditions as per BS8485:2015+A1:2019.

Table 6.3 Gas Screening Value Calculations on borehole-by-borehole basis (using GGS and REC data)

Monitoring Location	Max. positive Steady Flow Rate (l/hr)	Max. CH_4 (% v/v)	Max. CO_2 (% v/v)	Hazardous CH_4 Flow Rate (L/hr)	Hazardous CO_2 Flow Rate (L/hr)	Characteristic Situation (CS)
BH01	<0.1	25.3	39.3	0.025	0.039	1
BH02	<0.1	14.2	20.1	0.014	0.020	1
BH03*	<0.1	2.3	2.1	0.0023	0.0021	1
BH04	<0.1	<0.1	37.5	0.0001	0.038	1
BH05	<0.1	<0.1	34.6	0.0001	0.035	1
BH06	<0.1	5.3	32.6	0.0053	0.033	1
MW1	<0.1	4.0	28.2	0.0040	0.028	1
MW3	0.6	16.3	32.2	0.0978	0.193	2
MW4	<0.1	22.9	38.0	0.023	0.038	1
MW5	<0.1	12.0	23.0	0.012	0.023	1
MW6	<0.1	0.1	15.7	0.0001	0.016	1
MW7	0.2	<0.1	7.9	0.0002	0.016	1

For: Ashfield Solutions Group
Ref No.: GGS2686GGVRA01
Date: 02/03/2022

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GGS2686 River Academy, Reading GGVRA Final

Table 6.2 - The site has been classified as a CS2 ground gas regime due to elevated levels of carbon dioxide and methane ground gases.

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SPECIFICATION



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Where materials are derived from natural aggregates (e.g. quarry), upon provision of appropriate testing / certification from the supplier no further independent testing shall be required.

Recycled aggregates may be acceptable for use in the scheme. However, these shall require acceptable certification from the supplier and testing once the material arrives at site. Testing should be undertaken at a rate of one test per 250m³, with a minimum of three tests per import round. The use of recycled aggregates shall be as approved by the Client and appointed geo-environmental consultant.

7.9 Task 9 – VOC Vapour Protection

A full assessment of ground gas and VOC vapour risk and conceptual design for ground gas and VOC vapour mitigation is presented in the GGS 2022 report to which the reader is referred.

In summary, the concept design provides protection via a combination of the following elements:

(1) A ground gas retardation apron to prevent the accumulation of VOC vapours / odours within the void space beneath buildings.
(2) Inherent passive ventilation provided by the floorspace.
(3) An upgrade of the proposed waterproof membrane to a Gas and VOC resistant membrane (fully welded and sealed).

The following outlines the key aspects of the mitigation to be adopted for the site and the further detailed design works that are required.

- Piling of the foundations is completed.
- Installation of service ducts. Note service trenches should ideally not breach the site capping. Where this cannot be avoided, service ducts to be fully sealed at joints to prevent gas or VOC vapour ingress into the void. Where the trench reaches the protection apron, a suitable low permeability plug should be formed within the trench to retard gas and VOC vapour migration. The trench should be lined where it interfaces with waste to manage migration of pollution along preferential pathways.
- Suitable compaction and rolling of the piling mat, and apron around the building footprint. This should extend to where the existing thickness of clay capping is maintained. This layer should be suitable to minimise soil settlement.
- Provision of access locations to the piling mat, should pressure relief or active gas management be required as a future safeguard.
- Laying of a suitably robust geotextile over the piling mat.
- Installation of a sub membrane monitoring network (building footprints only).
- Installation of a suitably robust geomembrane. The membrane should extend across the full apron and be keyed into the capping. Any service penetrations shall be suitably sealed. The membrane shall be chemically resistant to hydrocarbons and retard methane, carbon dioxide and VOCs.
- Covering the surface with a suitable thickness of concrete suitable for water loading under flood conditions and aid post flood cleaning requirements. It is not a design requirement that the concrete does not crack from a gas and VOC management point of view.
- Sealing the internal ducting following installation of services.
- Suitable protection of the membrane shall be included to ensure follow-on trades do not damage the membrane in the period following installation but before the floor slab is constructed.

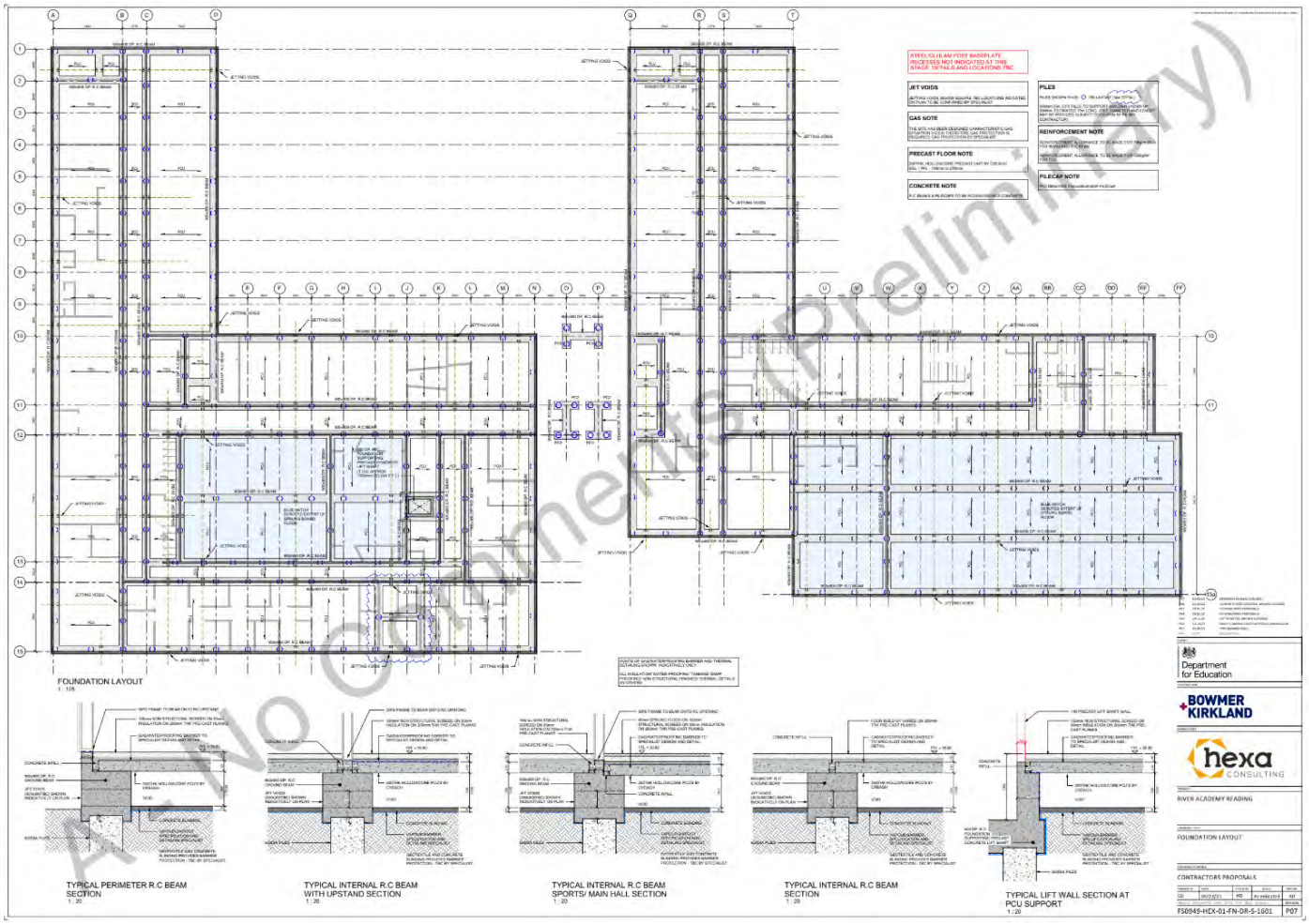
Title Reference & Description:

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

VOC Vapour resistant protection measures have been specified.

GeoShield Verification Plan

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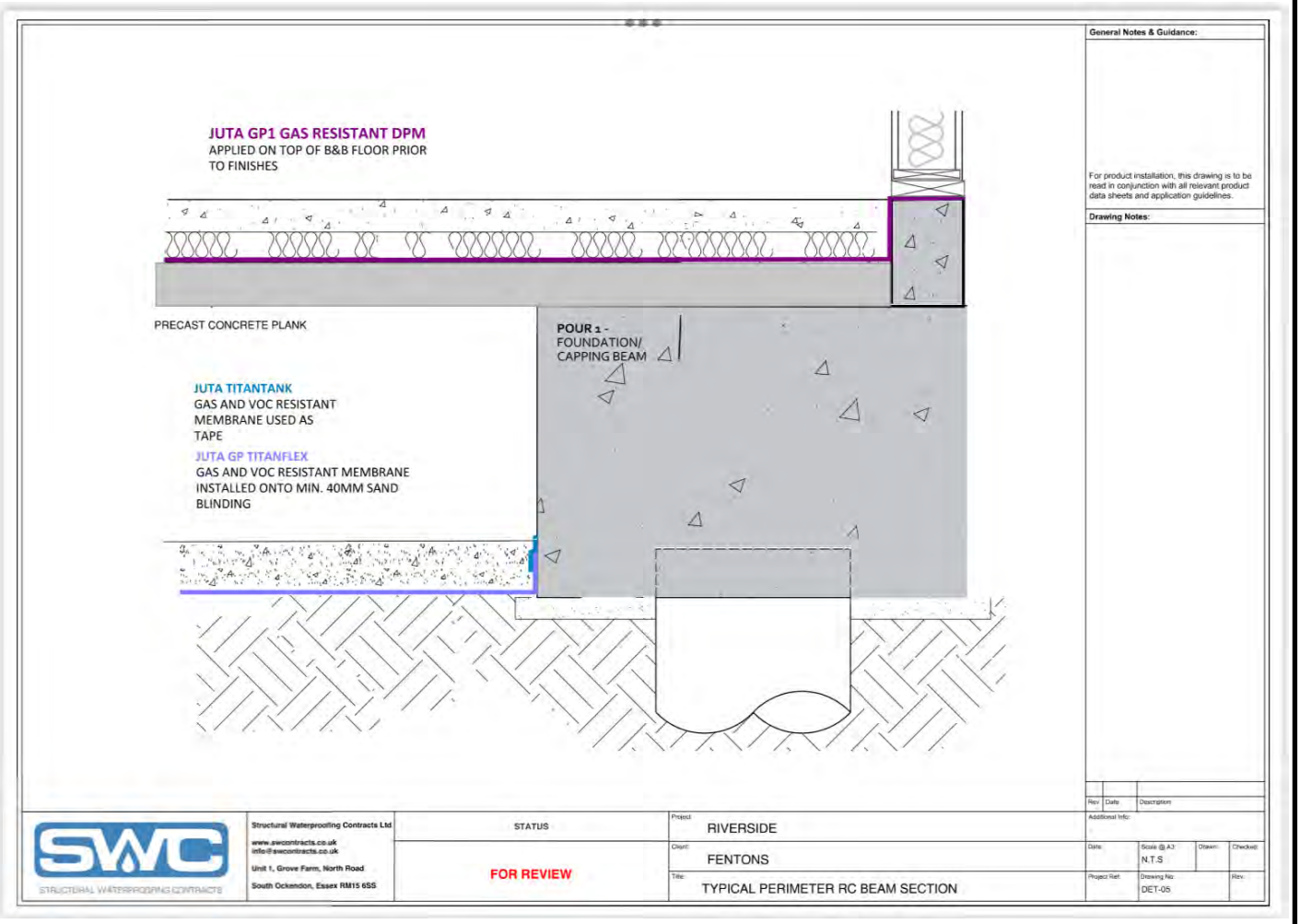
No Comments (Preliminary)

Title Reference & Description:

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

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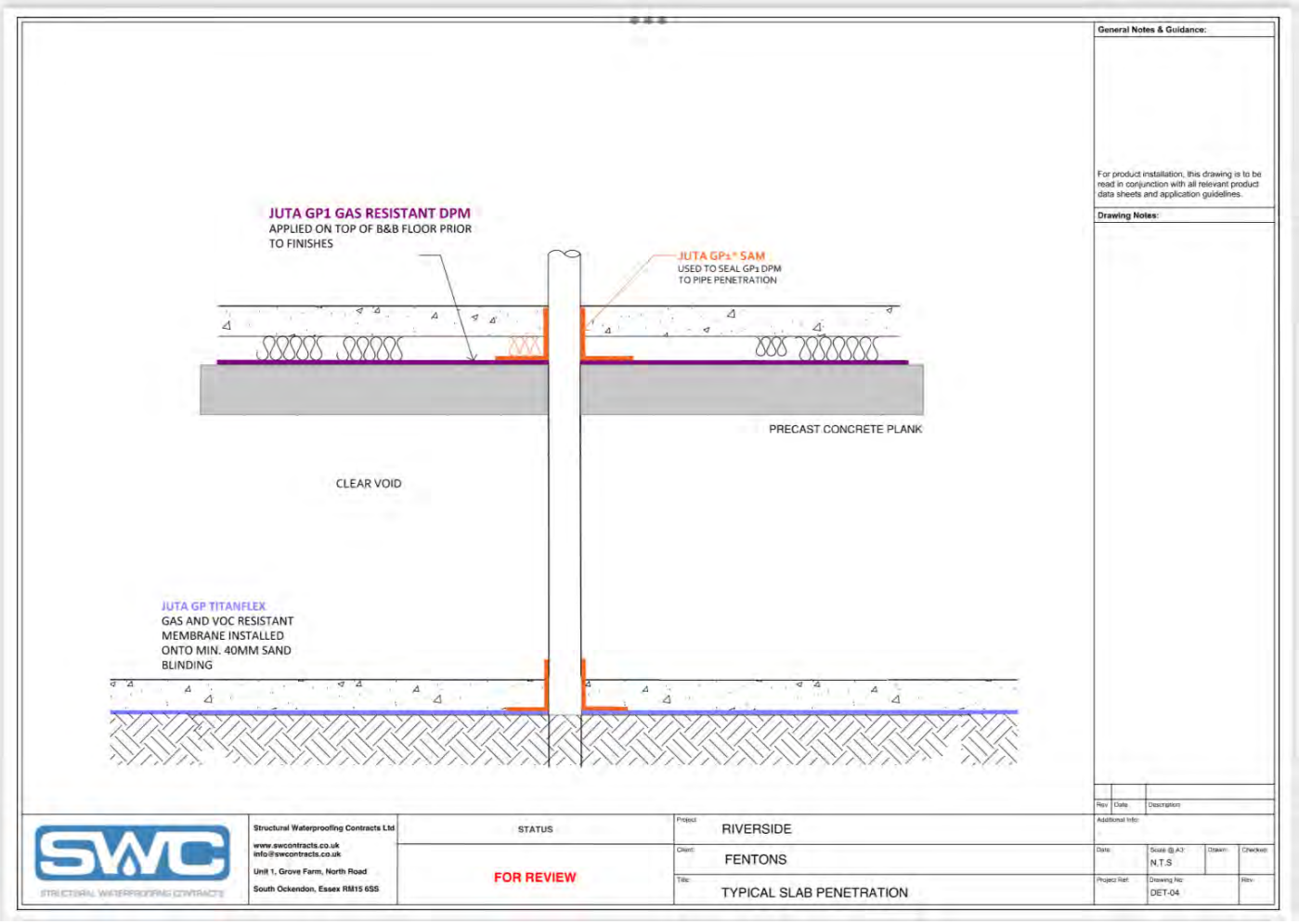


Title Reference & Description:

SWC_RVS-Det_Version A

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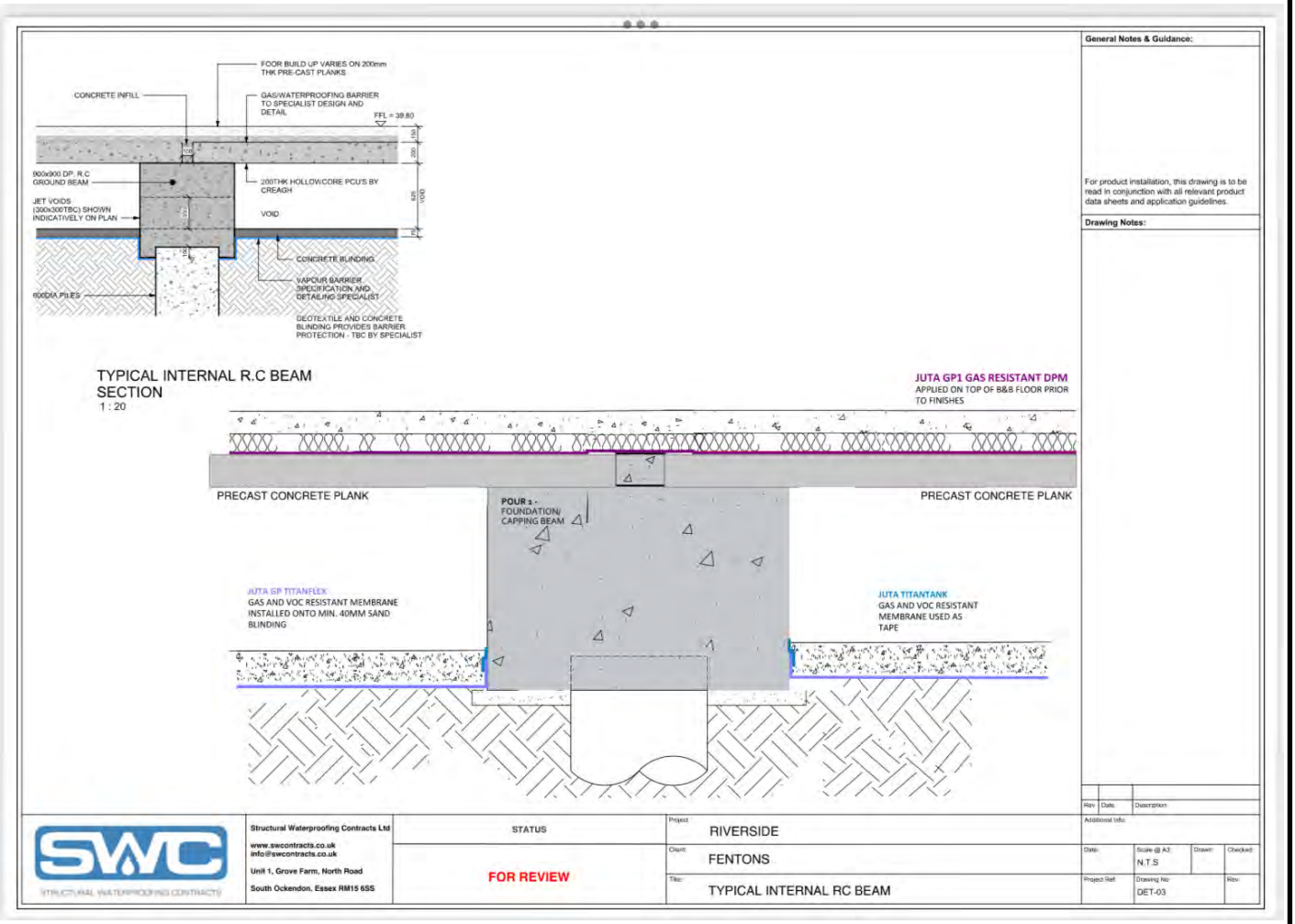


Title Reference & Description:

SWC_RVS-Det_Version A

GeoShield Verification Plan

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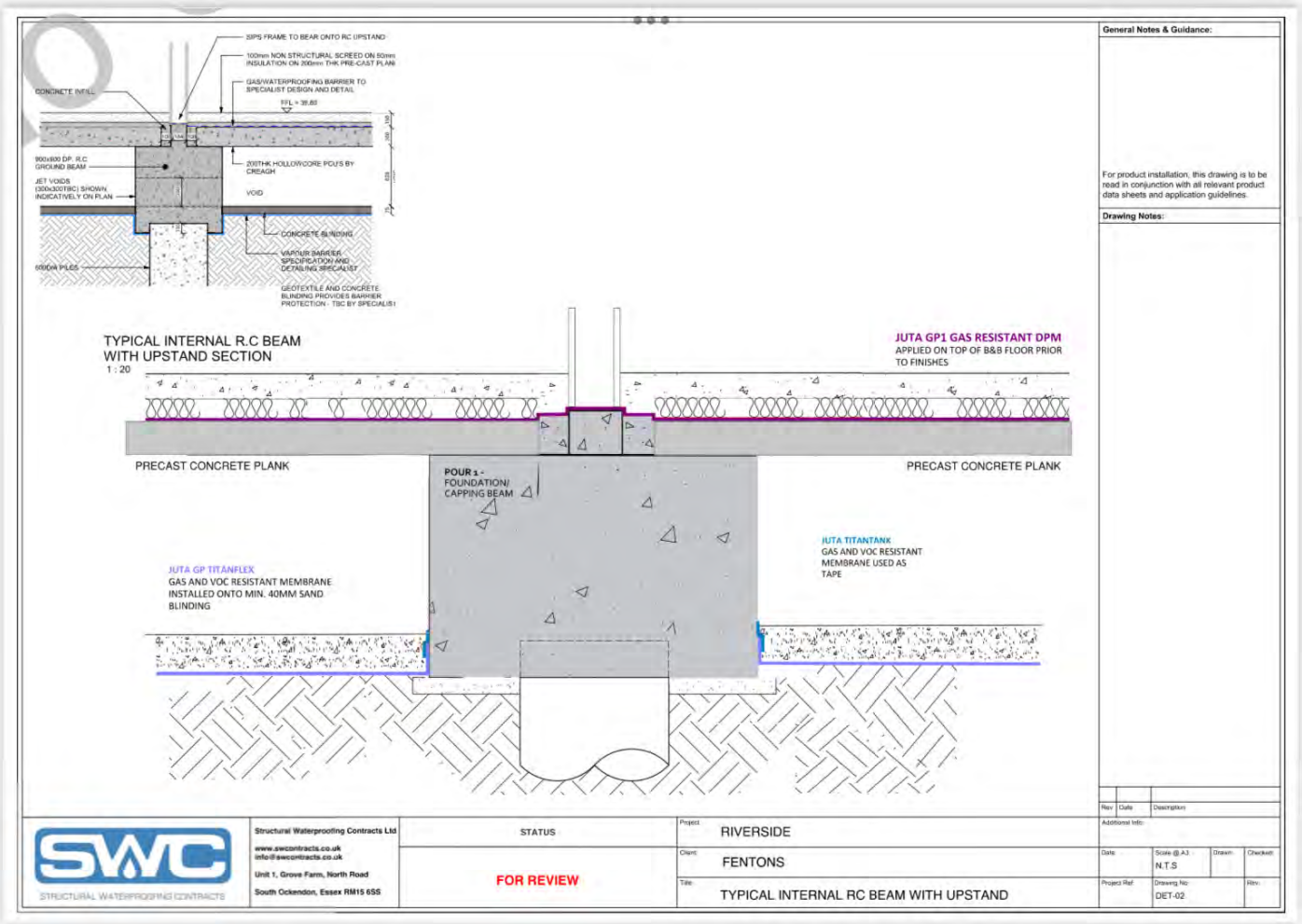


Title Reference & Description:

SWC_RVS-Det_Version A

GeoShield Verification Plan

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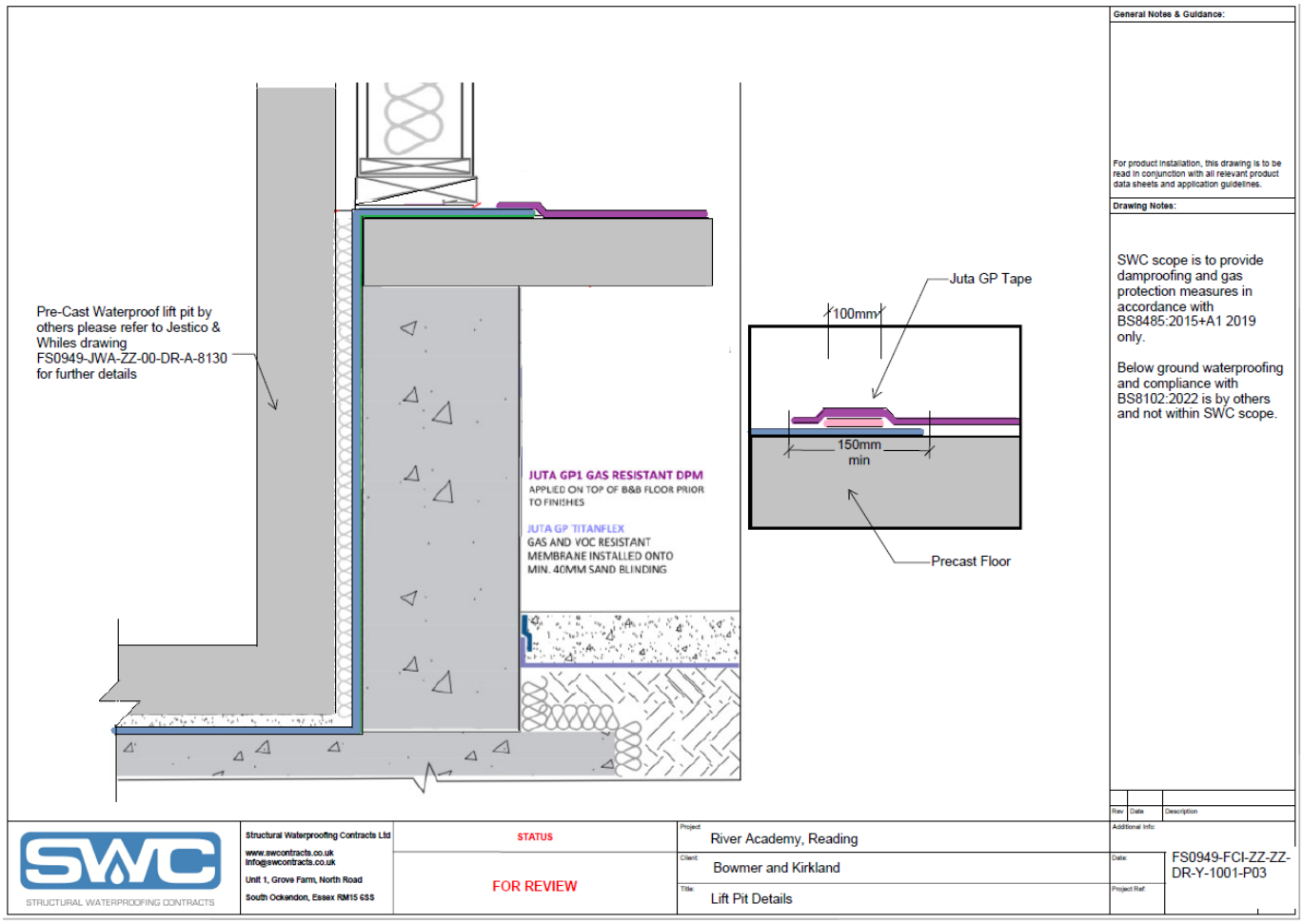


Title Reference & Description:

SWC_RVS-Det_Version A

GeoShield Verification Plan

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Title Reference & Description:

FS0949-FCI-ZZ-ZZ-DR-Y-1001-P03

GeoShield Verification Plan

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Title Reference & Description:

JUTA GP Titanflex Technical Data Sheet

GeoShield Verification Plan

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GROUND GAS PROTECTION
GP® TITANFLEX®
TECHNICAL DATA SHEET

GP® TITANFLEX®

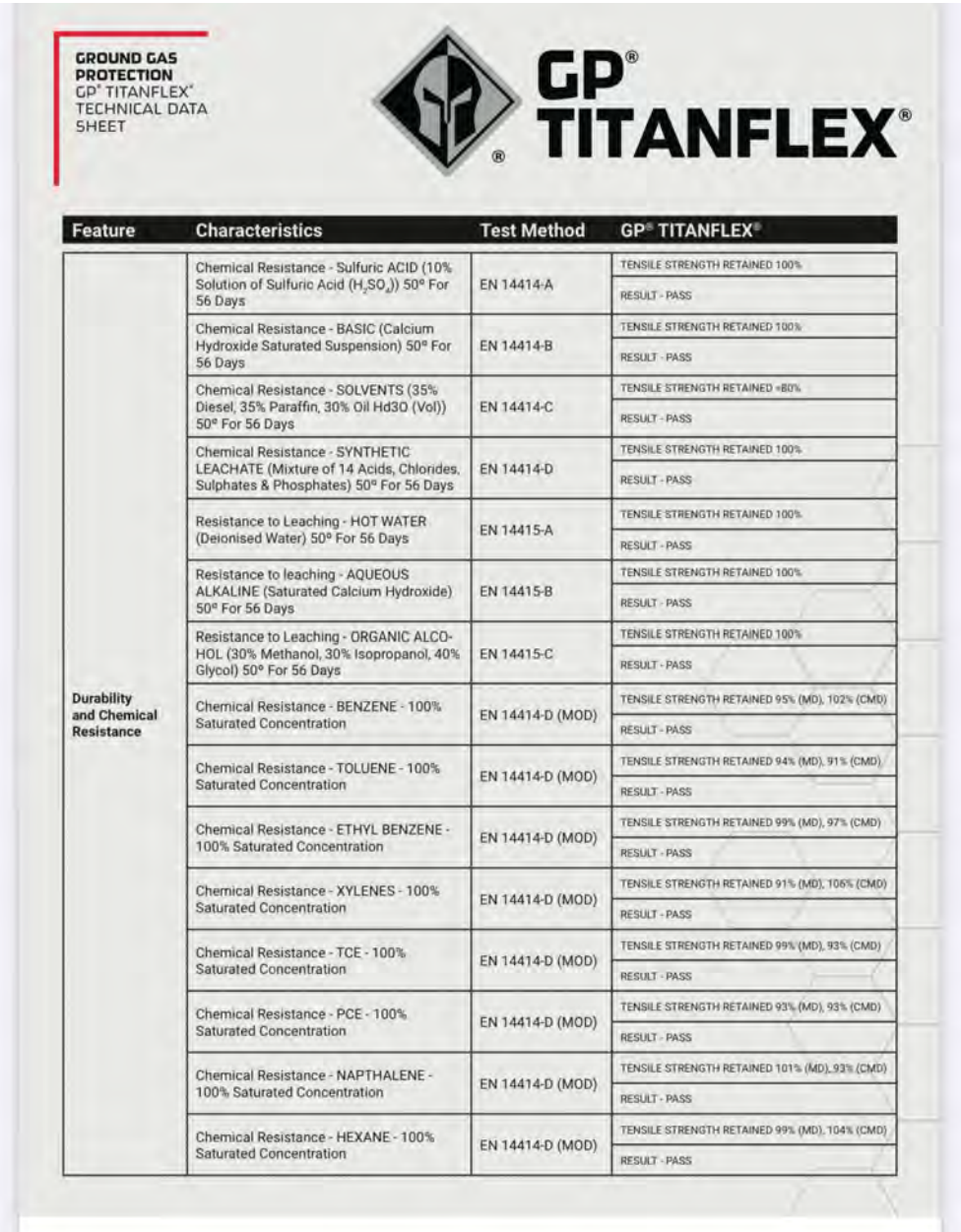
Feature	Characteristics	Test Method	GP® TITANFLEX®
Physical Properties	Thickness	EN 1849-2	0.5 mm
	Width	EN 1849-2	2 m
	Length	EN 1849-2	50 m
	Weight	EN 1849-2	500 g/m²
Hydraulic Press	Water Vapour Transmission Rate	EN 1931	0.11 - 0.18 g/m²/day
	Water Tightness (60 kPa)	EN 1928	Pass
	Water Tightness (196 kPa - 20 m Water Head) (Basement Application)	EN 1928	Pass
Mechanical Properties	Resistance to Static Load	EN 12730-B	≥ 20 kg
	Puncture Resistance	EN 12236	≥ 2.0 kN
	Tensile Strength (MD)	EN 12311-1	> 550 N/50mm
	Tensile Strength (CMD)	EN 12311-1	> 400 N/50mm
	Tensile Elongation (MD/CMD)	EN 12310-1	> 550 %
	Tear Resistance (MD/CMD)	EN 12310-1	> 300 N
	Resistance to Impact	EN 12691-B	650 mm
	Reaction to Fire	EN 13501-1	E Class
	Resistance to Artificial Ageing	EN 1296/EN 1928	Pass
	Resistance to Chemicals	EN 1296/EN 1928	Pass
Compliance and Certification	CE Mark - EN13967:2012		
	NHBC Standards Compliant		
	CIRIA C748 Compliant		
	BS 8485:2015 Compliant		
Vapour Permeability 100% Concentration	Transmission Rate of Benzene	EN ISO 15105-2	< 3.6 mg/m²/day
	Transmission Rate of Toluene	EN ISO 15105-2	< 13.8 mg/m²/day
	Transmission Rate of Ethyl Benzene	EN ISO 15105-2	< 2.7 mg/m²/day
	Transmission Rate of Xylenes (M,P,O)	EN ISO 15105-2	< 7.7 mg/m²/day
	Transmission Rate of Hexane	EN ISO 15105-2	< 0.6 mg/m²/day
	Transmission Rate of Vinyl Chloride	EN ISO 15105-2	< 0.05 mg/m²/day
	Transmission Rate of Trichloroethene (TCE)	EN ISO 15105-2	< 54.7 mg/m²/day
	Transmission Rate of Tetrachloroethene (PCE)	EN ISO 15105-2	< 26.2 mg/m²/day
	Transmission Rate of Naphthalene	EN ISO 15105-2	< 0.0006 mg/m²/day
	Transmission Rate of CIS-1,2-Dichloroethylene	EN ISO 15105-2	< 1.1 mg/m²/day
Gas Permeability	Methane Permeability	EN ISO 15105-1	0.13 ml/m²/day/atm
	Methane Permeability (Jointed)	EN ISO 15105-1	1.00 ml/m²/day/atm
	Carbon Dioxide Permeability	EN ISO 15105-1	3.01 ml/m²/day/atm
	Vinyl Chloride Gas Permeability	EN ISO 15105-1	0.04 ml/m²/day/atm
	Radon Permeability	K124/02/195	1.0 x 10⁻¹² m²/S

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JUTA GP Titanflex Technical Data Sheet

GeoShield Verification Plan

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GP® TITANFLEX®

Feature	Characteristics	Test Method	GP® TITANFLEX®
Durability and Chemical Resistance	Chemical Resistance - Sulfuric ACID (10% Solution of Sulfuric Acid (H_2SO_4)) 50° For 56 Days	EN 14414-A	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - BASIC (Calcium Hydroxide Saturated Suspension) 50° For 56 Days	EN 14414-B	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - SOLVENTS (35% Diesel, 35% Paraffin, 30% Oil Hd3O (Vol)) 50° For 56 Days	EN 14414-C	TENSILE STRENGTH RETAINED =80% RESULT - PASS
	Chemical Resistance - SYNTHETIC LEACHATE (Mixture of 14 Acids, Chlorides, Sulphates & Phosphates) 50° For 56 Days	EN 14414-D	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to Leaching - HOT WATER (Deionised Water) 50° For 56 Days	EN 14415-A	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to leaching - AQUEOUS ALKALINE (Saturated Calcium Hydroxide) 50° For 56 Days	EN 14415-B	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to Leaching - ORGANIC ALCOHOL (30% Methanol, 30% Isopropanol, 40% Glycol) 50° For 56 Days	EN 14415-C	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - BENZENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 95% (MD), 102% (CMD) RESULT - PASS
	Chemical Resistance - TOLUENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 94% (MD), 91% (CMD) RESULT - PASS
	Chemical Resistance - ETHYL BENZENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 97% (CMD) RESULT - PASS
	Chemical Resistance - XYLENES - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 91% (MD), 106% (CMD) RESULT - PASS
	Chemical Resistance - TCE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - PCE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 93% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - NAPTHALENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 101% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - HEXANE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 104% (CMD) RESULT - PASS

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JUTA GP Titanflex Technical Data Sheet

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SPECIFICATION



GROUND GAS PROTECTION
GP® TITANFLEX®
TECHNICAL DATA SHEET

GP® TITANFLEX®

JUTA UK
Please contact JUTA UK Directly for more information on GP®4

Jointing and Sealing
GP® TITANFLEX® can be heat welded or taped, with jointing carried out by competent personnel with suitable qualifications in accordance with best practice. GP® TITANFLEX® should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. JUTA pre-formed details, or self adhesive gas membrane are available for sealing around protuberances.

Accessory Products
- GP® DPC
- GP® Tape
- GP® Self Adhesive Membrane (SAM)
- GP® Primer
- GP® Top Hats and Preformed Corners
- GP® Protection Fleece
- GP® Void Vent (24/40mm)

Title Reference & Description:

JUTA GP Titanflex Technical Data Sheet

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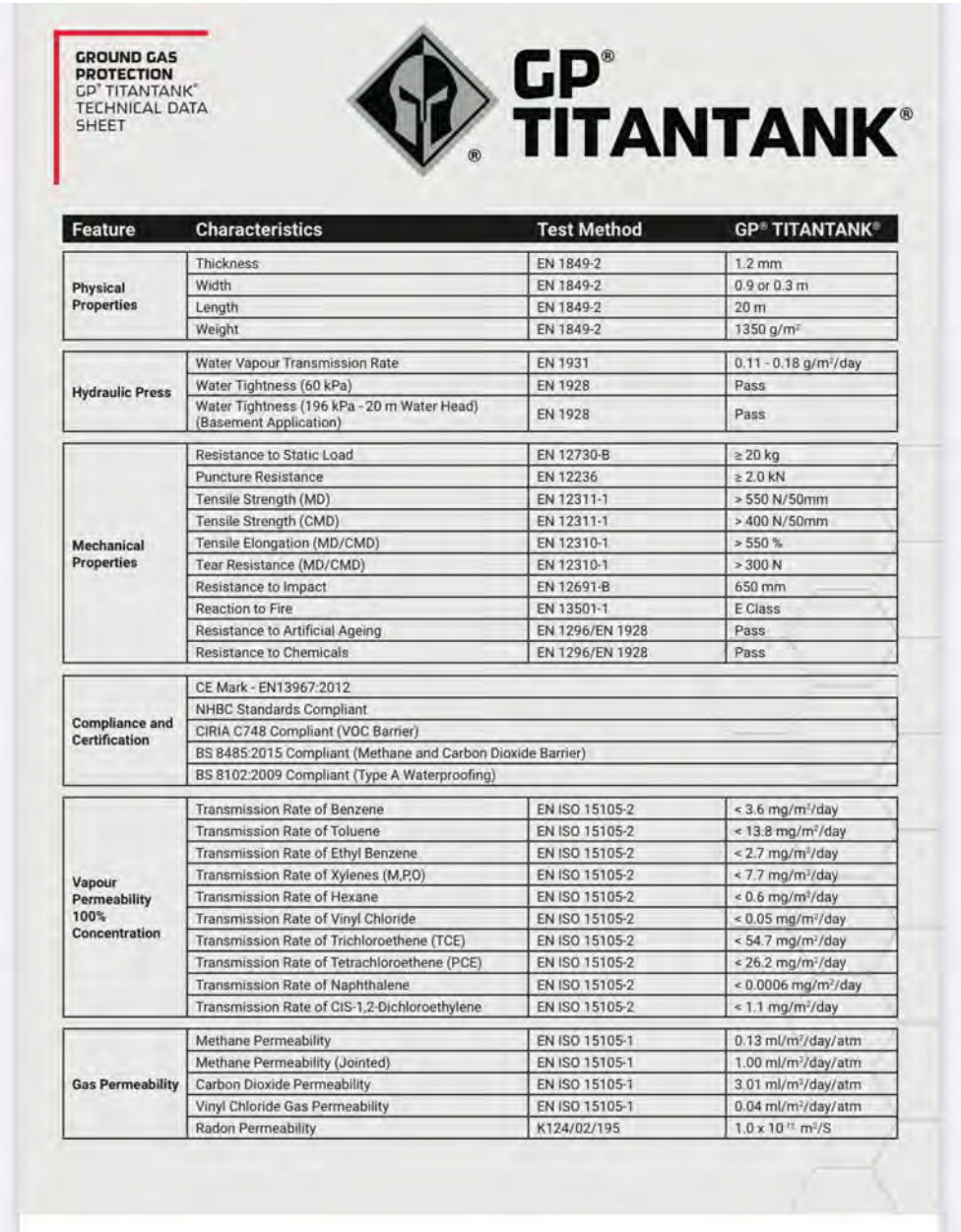


Title Reference & Description:

JUTA GP Titantank Technical Data Sheet

GeoShield Verification Plan

SPECIFICATION



GROUND GAS PROTECTION
GP® TITANTANK®
TECHNICAL DATA SHEET

GP® TITANTANK®

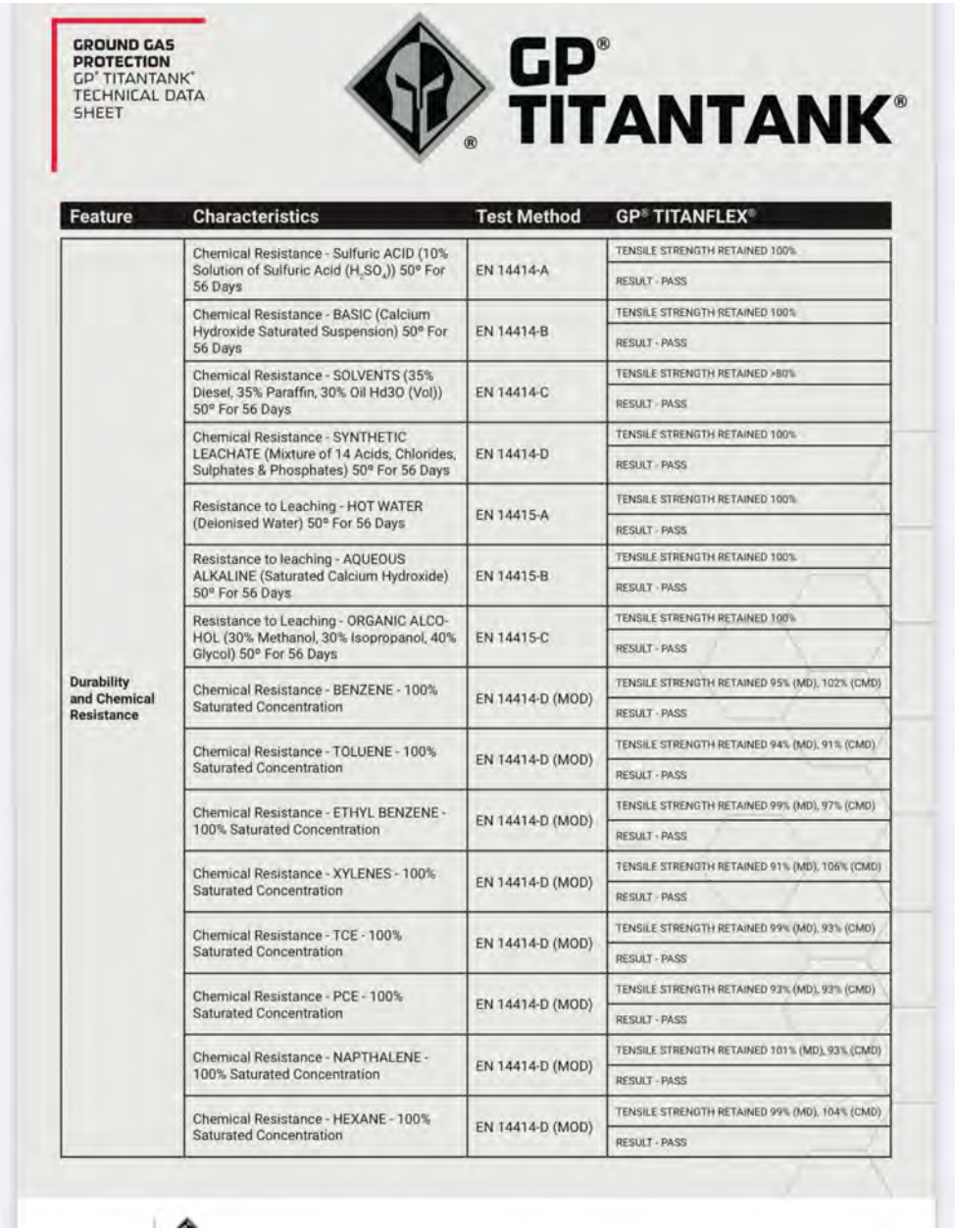
Feature	Characteristics	Test Method	GP® TITANTANK®
Physical Properties	Thickness	EN 1849-2	1.2 mm
	Width	EN 1849-2	0.9 or 0.3 m
	Length	EN 1849-2	20 m
	Weight	EN 1849-2	1350 g/m²
Hydraulic Press	Water Vapour Transmission Rate	EN 1931	0.11 - 0.18 g/m²/day
	Water Tightness (60 kPa)	EN 1928	Pass
	Water Tightness (196 kPa - 20 m Water Head) (Basement Application)	EN 1928	Pass
Mechanical Properties	Resistance to Static Load	EN 12730-B	≥ 20 kg
	Puncture Resistance	EN 12236	≥ 2.0 kN
	Tensile Strength (MD)	EN 12311-1	> 550 N/50mm
	Tensile Strength (CMD)	EN 12311-1	> 400 N/50mm
	Tensile Elongation (MD/CMD)	EN 12310-1	> 550 %
	Tear Resistance (MD/CMD)	EN 12310-1	> 300 N
	Resistance to Impact	EN 12691-B	650 mm
	Reaction to Fire	EN 13501-1	E Class
	Resistance to Artificial Ageing	EN 1296/EN 1928	Pass
	Resistance to Chemicals	EN 1296/EN 1928	Pass
Compliance and Certification	CE Mark - EN13967:2012		
	NHBC Standards Compliant		
	CIRIA C748 Compliant (VOC Barrier)		
	BS 8485:2015 Compliant (Methane and Carbon Dioxide Barrier)		
	BS 8102:2009 Compliant (Type A Waterproofing)		
Vapour Permeability 100% Concentration	Transmission Rate of Benzene	EN ISO 15105-2	< 3.6 mg/m²/day
	Transmission Rate of Toluene	EN ISO 15105-2	< 13.8 mg/m²/day
	Transmission Rate of Ethyl Benzene	EN ISO 15105-2	< 2.7 mg/m²/day
	Transmission Rate of Xylenes (M,P,O)	EN ISO 15105-2	< 7.7 mg/m²/day
	Transmission Rate of Hexane	EN ISO 15105-2	< 0.6 mg/m²/day
	Transmission Rate of Vinyl Chloride	EN ISO 15105-2	< 0.05 mg/m²/day
	Transmission Rate of Trichloroethene (TCE)	EN ISO 15105-2	< 54.7 mg/m²/day
	Transmission Rate of Tetrachloroethene (PCE)	EN ISO 15105-2	< 26.2 mg/m²/day
	Transmission Rate of Naphthalene	EN ISO 15105-2	< 0.0006 mg/m²/day
	Transmission Rate of CIS-1,2-Dichloroethylene	EN ISO 15105-2	< 1.1 mg/m²/day
Gas Permeability	Methane Permeability	EN ISO 15105-1	0.13 ml/m²/day/atm
	Methane Permeability (Jointed)	EN ISO 15105-1	1.00 ml/m²/day/atm
	Carbon Dioxide Permeability	EN ISO 15105-1	3.01 ml/m²/day/atm
	Vinyl Chloride Gas Permeability	EN ISO 15105-1	0.04 ml/m²/day/atm
	Radon Permeability	K124/02/195	1.0 x 10⁻¹² m²/S

Title Reference & Description:

JUTA GP Titantank Technical Data Sheet

GeoShield Verification Plan

SPECIFICATION



GROUND GAS PROTECTION
GP® TITANTANK®
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GP® TITANTANK®

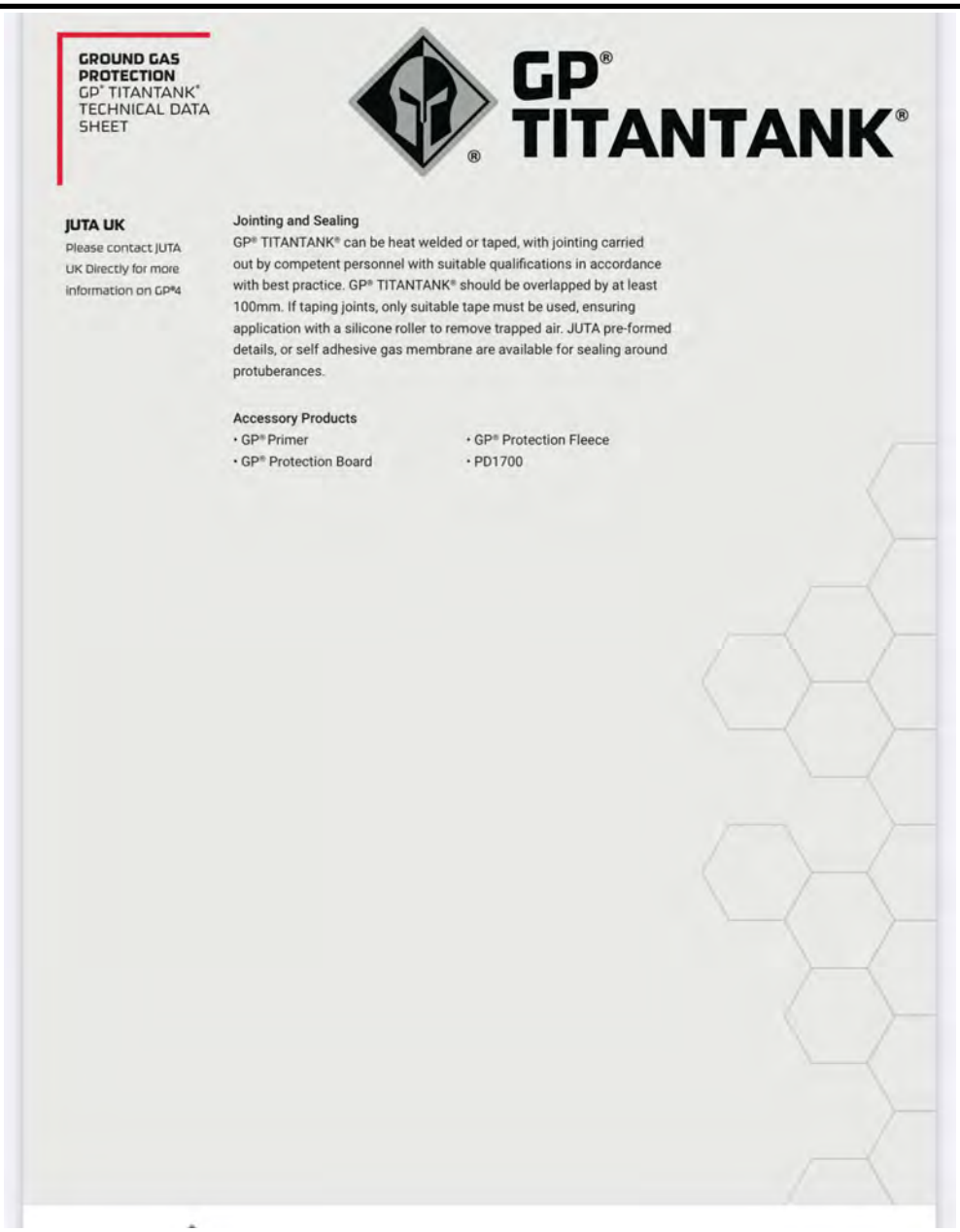
Feature	Characteristics	Test Method	GP® TITANFLEX®
Durability and Chemical Resistance	Chemical Resistance - Sulfuric ACID (10% Solution of Sulfuric Acid (H_2SO_4)) 50° For 56 Days	EN 14414-A	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - BASIC (Calcium Hydroxide Saturated Suspension) 50° For 56 Days	EN 14414-B	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - SOLVENTS (35% Diesel, 35% Paraffin, 30% Oil Hd30 (Vol)) 50° For 56 Days	EN 14414-C	TENSILE STRENGTH RETAINED >80% RESULT - PASS
	Chemical Resistance - SYNTHETIC LEACHATE (Mixture of 14 Acids, Chlorides, Sulphates & Phosphates) 50° For 56 Days	EN 14414-D	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to Leaching - HOT WATER (Deionised Water) 50° For 56 Days	EN 14415-A	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to leaching - AQUEOUS ALKALINE (Saturated Calcium Hydroxide) 50° For 56 Days	EN 14415-B	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Resistance to Leaching - ORGANIC ALCOHOL (30% Methanol, 30% Isopropanol, 40% Glycol) 50° For 56 Days	EN 14415-C	TENSILE STRENGTH RETAINED 100% RESULT - PASS
	Chemical Resistance - BENZENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 95% (MD), 102% (CMD) RESULT - PASS
	Chemical Resistance - TOLUENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 94% (MD), 91% (CMD) RESULT - PASS
	Chemical Resistance - ETHYL BENZENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 97% (CMD) RESULT - PASS
	Chemical Resistance - XYLENES - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 91% (MD), 106% (CMD) RESULT - PASS
	Chemical Resistance - TCE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - PCE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 93% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - NAPTHALENE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 101% (MD), 93% (CMD) RESULT - PASS
	Chemical Resistance - HEXANE - 100% Saturated Concentration	EN 14414-D (MOD)	TENSILE STRENGTH RETAINED 99% (MD), 104% (CMD) RESULT - PASS

Title Reference & Description:

JUTA GP Titantank Technical Data Sheet

GeoShield Verification Plan

SPECIFICATION



GROUND GAS PROTECTION
GP® TITANTANK®
TECHNICAL DATA SHEET

GP® TITANTANK®

JUTA UK
Please contact JUTA UK Directly for more information on GP®4

Jointing and Sealing
GP® TITANTANK® can be heat welded or taped, with jointing carried out by competent personnel with suitable qualifications in accordance with best practice. GP® TITANTANK® should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. JUTA pre-formed details, or self adhesive gas membrane are available for sealing around protuberances.

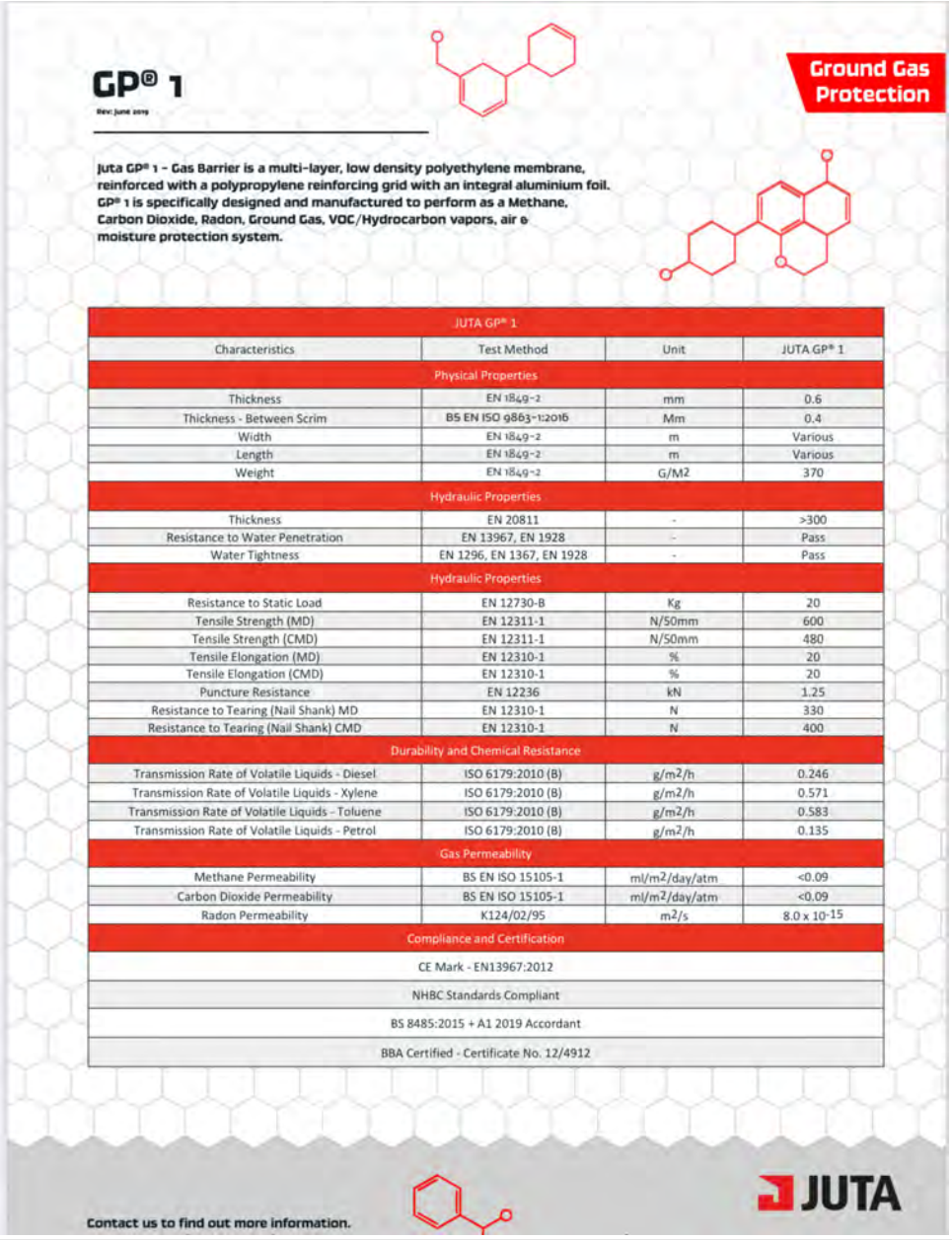
Accessory Products
- GP® Primer
- GP® Protection Board
- GP® Protection Fleece
- PD1700

Title Reference & Description:

JUTA GP Titantank Technical Data Sheet

GeoShield Verification Plan

SPECIFICATION



GP® 1

Rev: June 2019

Ground Gas Protection

Juta GP® 1 – Gas Barrier is a multi-layer, low density polyethylene membrane, reinforced with a polypropylene reinforcing grid with an integral aluminium foil. GP® 1 is specifically designed and manufactured to perform as a Methane, Carbon Dioxide, Radon, Ground Gas, VOC/Hydrocarbon vapors, air e moisture protection system.

JUTA GP® 1			
Characteristics	Test Method	Unit	JUTA GP® 1
Physical Properties			
Thickness	EN 1849-2	mm	0.6
Thickness - Between Scrim	BS EN ISO 9863-1:2016	Mm	0.4
Width	EN 1849-2	m	Various
Length	EN 1849-2	m	Various
Weight	EN 1849-2	G/M2	370
Hydraulic Properties			
Thickness	EN 20811	-	>300
Resistance to Water Penetration	EN 13967, EN 1928	-	Pass
Water Tightness	EN 1296, EN 1367, EN 1928	-	Pass
Hydraulic Properties			
Resistance to Static Load	EN 12730-B	Kg	20
Tensile Strength (MD)	EN 12311-1	N/50mm	600
Tensile Strength (CMD)	EN 12311-1	N/50mm	480
Tensile Elongation (MD)	EN 12310-1	%	20
Tensile Elongation (CMD)	EN 12310-1	%	20
Puncture Resistance	EN 12236	kN	1.25
Resistance to Tearing (Nail Shank) MD	EN 12310-1	N	330
Resistance to Tearing (Nail Shank) CMD	EN 12310-1	N	400
Durability and Chemical Resistance			
Transmission Rate of Volatile Liquids - Diesel	ISO 6179:2010 (B)	g/m2/h	0.246
Transmission Rate of Volatile Liquids - Xylene	ISO 6179:2010 (B)	g/m2/h	0.571
Transmission Rate of Volatile Liquids - Toluene	ISO 6179:2010 (B)	g/m2/h	0.583
Transmission Rate of Volatile Liquids - Petrol	ISO 6179:2010 (B)	g/m2/h	0.135
Gas Permeability			
Methane Permeability	BS EN ISO 15105-1	ml/m2/day/atm	<0.09
Carbon Dioxide Permeability	BS EN ISO 15105-1	ml/m2/day/atm	<0.09
Radon Permeability	K124/02/95	m2/s	8.0×10^{-15}
Compliance and Certification			
CE Mark - EN13967:2012			
NHBC Standards Compliant			
BS 8485:2015 + A1 2019 Accordant			
BBA Certified - Certificate No. 12/4912			

Contact us to find out more information.

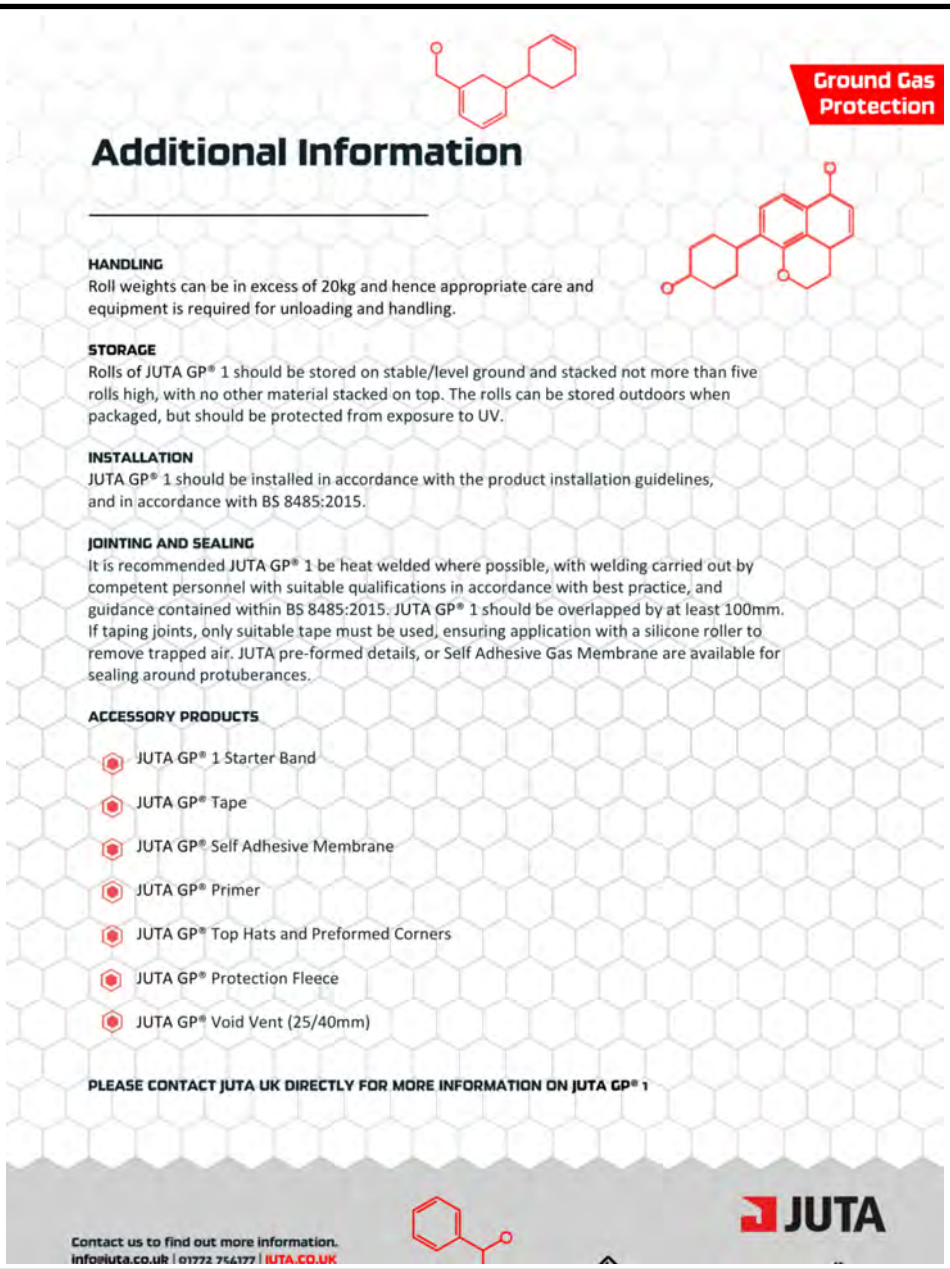
JUTA

Title Reference & Description:

JUTA GP1 Gas Barrier Technical Data Sheet

GeoShield Verification Plan

SPECIFICATION



Ground Gas Protection

Additional Information

HANDLING
Roll weights can be in excess of 20kg and hence appropriate care and equipment is required for unloading and handling.

STORAGE
Rolls of JUTA GP® 1 should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.

INSTALLATION
JUTA GP® 1 should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015.

JOINTING AND SEALING
It is recommended JUTA GP® 1 be heat welded where possible, with welding carried out by competent personnel with suitable qualifications in accordance with best practice, and guidance contained within BS 8485:2015. JUTA GP® 1 should be overlapped by at least 100mm. If taping joints, only suitable tape must be used, ensuring application with a silicone roller to remove trapped air. JUTA pre-formed details, or Self Adhesive Gas Membrane are available for sealing around protuberances.

ACCESSORY PRODUCTS

- JUTA GP® 1 Starter Band
- JUTA GP® Tape
- JUTA GP® Self Adhesive Membrane
- JUTA GP® Primer
- JUTA GP® Top Hats and Preformed Corners
- JUTA GP® Protection Fleece
- JUTA GP® Void Vent (25/40mm)

PLEASE CONTACT JUTA UK DIRECTLY FOR MORE INFORMATION ON JUTA GP® 1

Contact us to find out more information.
info@juta.co.uk | 01772 764372 | JUTA.CO.UK

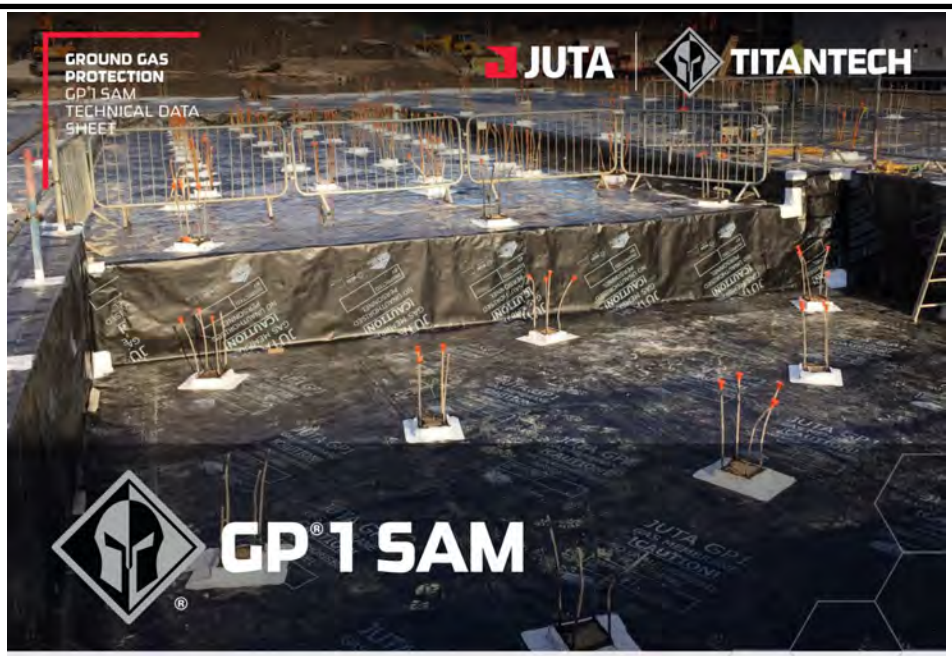
JUTA

Title Reference & Description:

JUTA GP1 Gas Barrier Technical Data Sheet

GeoShield Verification Plan

SPECIFICATION



GP®1 SAM, gas protection self adhesive membrane, is a bituminous gas proof and water proof sheet, composed of self-adhesive SBS polymer modified bitumen incorporating GP®1 with an upper surface finish of black reinforced LDPE, and a lower surface finish of siliconized release film. GP®1 SAM is used for the gas/ waterproofing of underground structures where harmful ground gasses are anticipated, and as a self adhesive accessory to GP®1.

Thickness	1.2 mm
Width	0.9 m or 0.3 m
Length	20 m
Weight	1100 g/m²

TITANTECH®
For developers of brownfield and contaminated sites the TITANTECH® family of products represent a major step forward in safeguarding projects against gaseous and chemical contamination.

Handling
Roll weights can be in excess of 20 kg (approx 33 kg/roll) and hence appropriate care and equipment is required for unloading and handling. This product is non-toxic nor flammable.

Storage
Rolls of GP®1 SAM should be stored on in a cool, dry place, and be protected from exposure to rain, sun, heat and cold temperatures prior to installation. Exposure to sunlight for extended period of time could cause difficulty with removal of the release film.

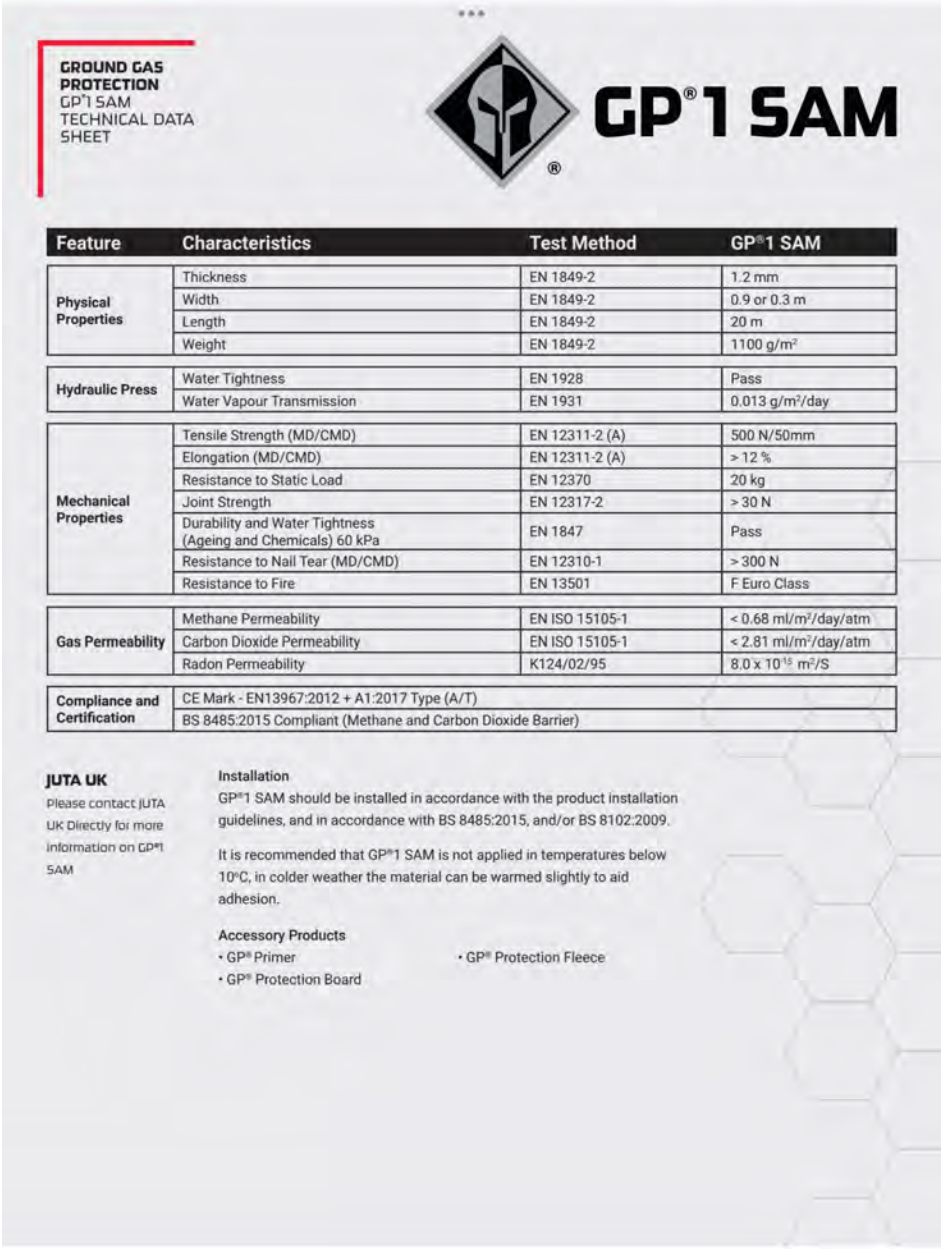
BBA
CE UK CA

Title Reference & Description:

JUTA GP1 SAM Technical Data Sheet

GeoShield Verification Plan

SPECIFICATION



GROUND GAS PROTECTION
GP®1 SAM
TECHNICAL DATA SHEET

GP®1 SAM

Feature	Characteristics	Test Method	GP®1 SAM
Physical Properties	Thickness	EN 1849-2	1.2 mm
	Width	EN 1849-2	0.9 or 0.3 m
	Length	EN 1849-2	20 m
	Weight	EN 1849-2	1100 g/m²
Hydraulic Press	Water Tightness	EN 1928	Pass
	Water Vapour Transmission	EN 1931	0.013 g/m²/day
Mechanical Properties	Tensile Strength (MD/CMD)	EN 12311-2 (A)	500 N/50mm
	Elongation (MD/CMD)	EN 12311-2 (A)	> 12 %
	Resistance to Static Load	EN 12370	20 kg
	Joint Strength	EN 12317-2	> 30 N
	Durability and Water Tightness (Ageing and Chemicals) 60 kPa	EN 1847	Pass
	Resistance to Nail Tear (MD/CMD)	EN 12310-1	> 300 N
	Resistance to Fire	EN 13501	F Euro Class
Gas Permeability	Methane Permeability	EN ISO 15105-1	< 0.68 ml/m²/day/atm
	Carbon Dioxide Permeability	EN ISO 15105-1	< 2.81 ml/m²/day/atm
	Radon Permeability	K124/02/95	8.0 x 10^{-15} m²/S
Compliance and Certification	CE Mark - EN13967:2012 + A1:2017 Type (A/T)		
	BS 8485:2015 Compliant (Methane and Carbon Dioxide Barrier)		

JUTA UK
Please contact JUTA UK Directly for more information on GP®1 SAM

Installation
GP®1 SAM should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015, and/or BS 8102:2009.

It is recommended that GP®1 SAM is not applied in temperatures below 10°C, in colder weather the material can be warmed slightly to aid adhesion.

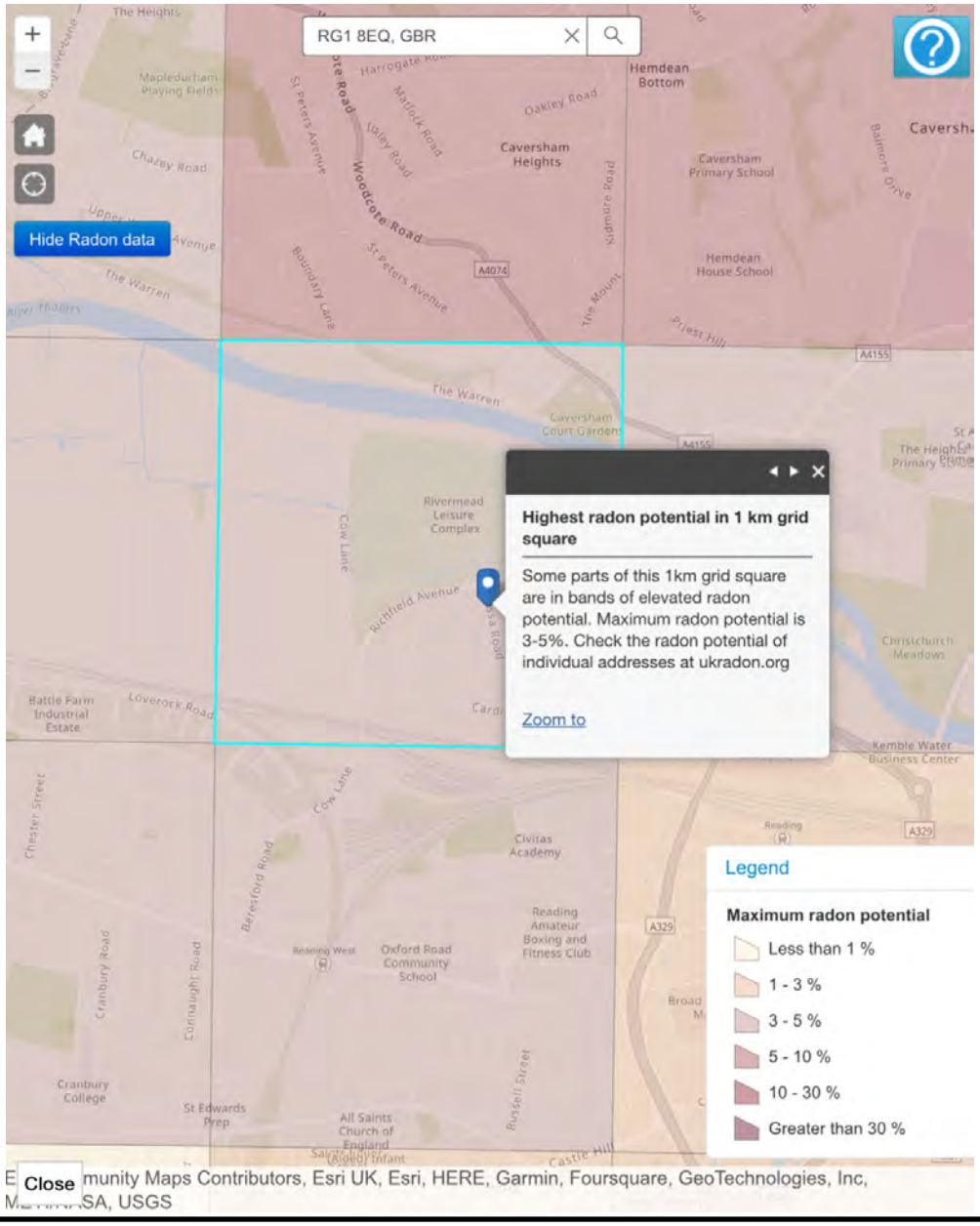
Accessory Products
- GP® Primer
- GP® Protection Board
- GP® Protection Fleece

Title Reference & Description:

JUTA GP1 SAM Technical Data Sheet

GeoShield Verification Plan

RADON MAPS UK - (Map 1) Site Location



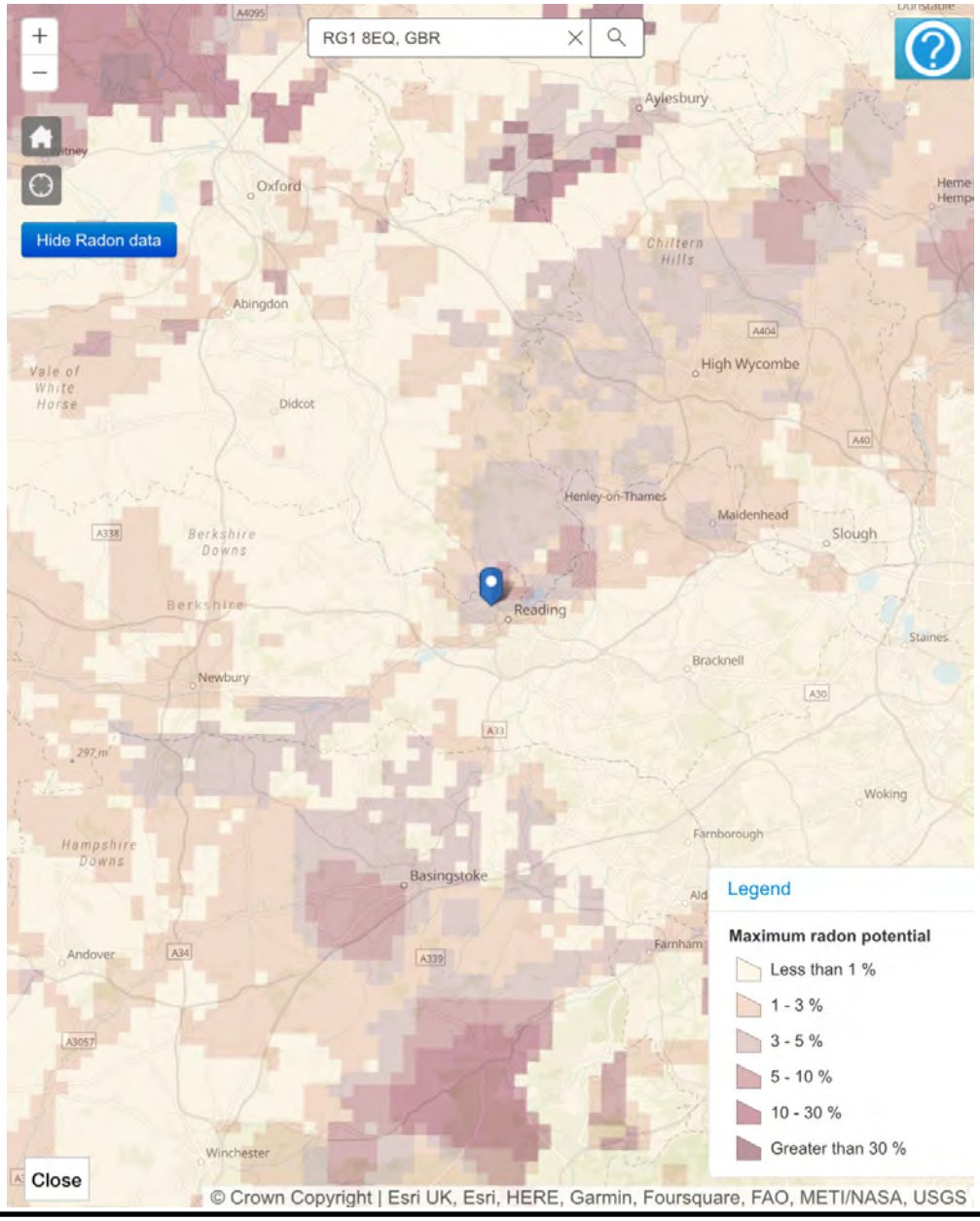
Maximum Radon Potential: 3-5%

Description: Basic radon protection measures are required.

Postcode: RG1 8EQ

GeoShield Verification Plan

RADON MAPS UK - (Map 2) Nearby Location



Maximum Radon Potential:	3-5%
Description:	Basic radon protection measures are required.

GeoShield Verification Plan

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GeoShield Verification Plan

APPLICATOR'S DETAILS

APPLICATOR NAME: Tom Evemy

COMPANY: SWContracts Limited

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME: Michael Crump

COMPANY: SWContracts Limited

APPLICATOR TEL:

APPLICATOR EMAIL:

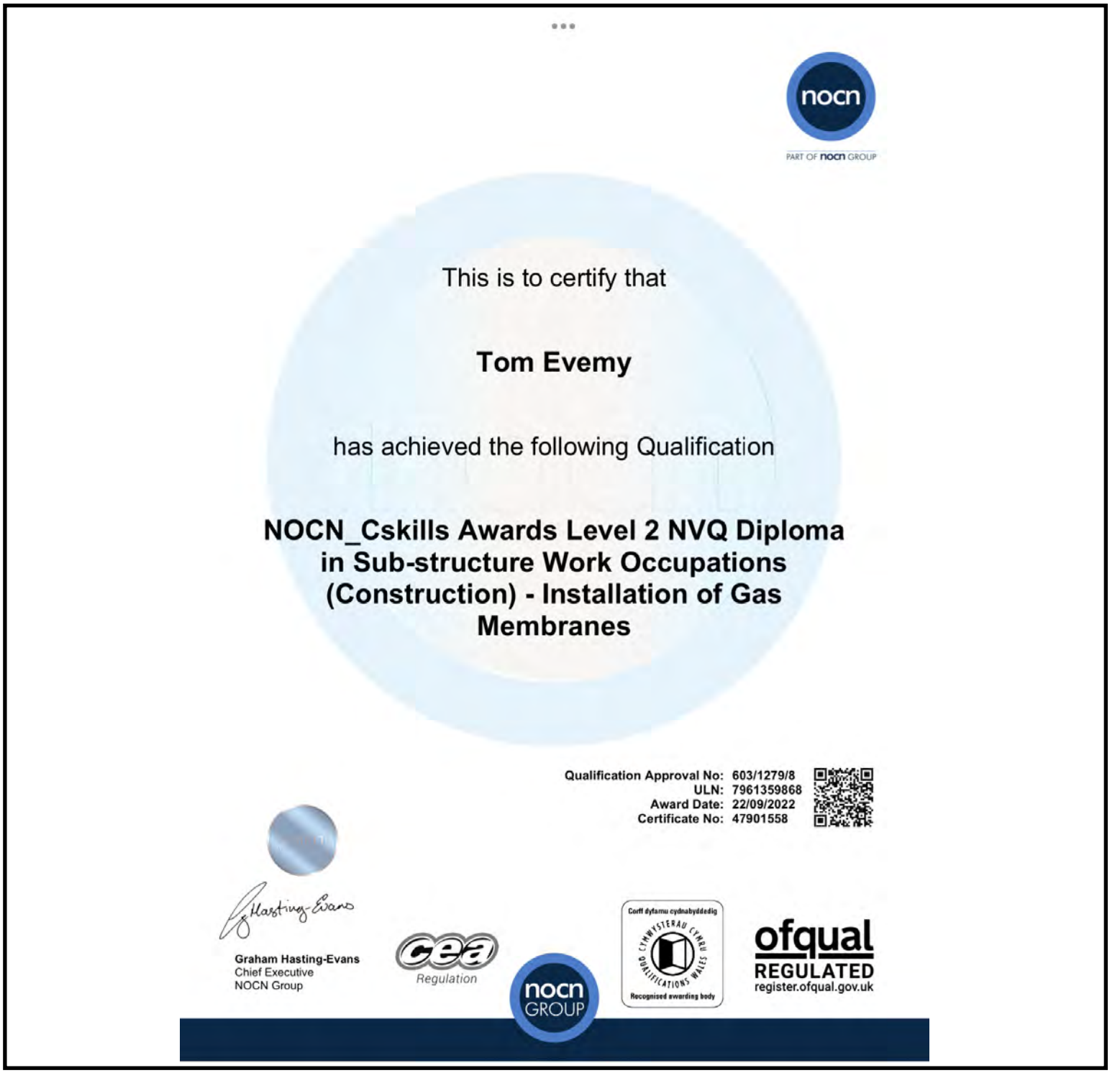
NOTES:

At least one member of each team group will have a NVQ Level 2

qualification in the gas membrane installation.

GeoShield Verification Plan

Tom Evemy NVQ 2



nocn
PART OF nocn GROUP

This is to certify that

Tom Evemy

has achieved the following Qualification

NOCN_Cskills Awards Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction) - Installation of Gas Membranes

Qualification Approval No: 603/1279/8
ULN: 7961359868
Award Date: 22/09/2022
Certificate No: 47901558

Graham Hasting-Evans
Chief Executive
NOCN Group

Regulation

Corff dyfarnu cydnabyddedig
Recognised awarding body

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REGULATED
register.ofqual.gov.uk

nocn GROUP

GeoShield Verification Plan

Tom Evemy NVQ 2

PART OF nocn GROUP

Tom Evemy

Unit(s) Awarded

Unit Title	Unit Code	Credit(s)	Level
Conforming to General Health, Safety and Welfare in the Workplace	A/503/1170	2	L1
Moving, Handling and Storing Resources in the Workplace	F/503/1171	5	L2
Conforming to Productive Working Practices in the Workplace	J/503/1169	3	L2
Preparing to install gas membranes in the workplace	K/615/6045	15	L2
Installing gas membranes in the workplace	M/615/6046	19	L2

Qualification Approval No: 603/1279/8
ULN: 7961359868
Award Date: 22/09/2022
Certificate No: 47901558

Graham Hasting-Evans
Chief Executive
NOCN Group

Regulation

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Michael Crump NVQ 2



nocn

PART OF nocn GROUP

This is to certify that

Michael Crump

has achieved the following Qualification

NOCN_Cskills Awards Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction) - Installation of Gas Membranes

Qualification Approval No: 603/1279/8
ULN: 2812637152
Award Date: 02/12/2022
Certificate No: 47947779

Graham Hasting-Evans
Chief Executive
NOCN Group

Regulation

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GeoShield Verification Plan

Michael Crump NVQ 2

nocn
PART OF nocn GROUP

Michael Crump

Unit(s) Awarded

Unit Title	Unit Code	Credit(s)	Level
Conforming to General Health, Safety and Welfare in the Workplace	A/503/1170	2	L1
Moving, Handling and Storing Resources in the Workplace	F/503/1171	5	L2
Conforming to Productive Working Practices in the Workplace	J/503/1169	3	L2
Preparing to install gas membranes in the workplace	K/615/6045	15	L2
Installing gas membranes in the workplace	M/615/6046	19	L2

Qualification Approval No: 603/1279/8
ULN: 2812637152
Award Date: 02/12/2022
Certificate No: 47947779

Graham Hasting-Evans
Chief Executive
NOCN Group

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APPLICATOR'S DETAILS

TRAINING LEVEL:

SPECIALIST CONTRACTOR:	YES	✔		NO			
NVQ LEVEL 2:	YES	✔		NO			
NVQ LEVEL 4:	YES			NO		✔	
COMPETENT APPLICATOR :	YES	✔		NO			

REASON FOR VISIT:

DURING INSTALLATION:	✔	UNDERSLAB VENTILATION	✔
PRE - POUR:	✔	DPC MEMBRANE CONNECTION	
TESTING:	✔	OTHER (PLEASE SPECIFY):	✔

NOTES: OTHER - Attendance for 12 month gas monitoring.

NOTES: Having worked with SWC on numerous successful projects these applicators will be deemed to be at an appropriate skill level for the job of installing the ground gas protection measures.

GeoShield Verification Plan

HEALTH AND SAFETY

INDUCTION:	YES	✔	NO:	
INDUCTION TIME:	TBC at the pre-start meeting			
CSCS CARD:	YES	✔	NO:	
CSCS CARD NUMBER:	13466546			
METHOD STATEMENT:	YES	✔	NO:	
RISK ASSESSMENT:	YES	✔	NO:	
COSHH:	YES	✔	NO:	

SITE SPECIFIC HAZARDS: Materials falling from height

Slips, trips and falls

Excavations

Confined spaces

Plant

GeoShield Verification Plan

Riverside Academy

In accordance with guidance from CIRIA 735 & CIRIA C748.

Radon gas protection measures specify to the guidance from the BR 211 document:

VOC/Hydrocarbons	✔	RADON BASIC	✔
		RADON FULL	

Characteristic Specification (CS) Rating	CS2
Building Type:	TYPE B
POINTS REQUIRED UNDER BS8485:2019	3.5 POINTS

POINTS GAINED FROM BS8485:2019

Score for Structural Barrier:	0.5 POINT
Grade 2 Basement:	N/A
Grade 3 Basement:	N/A
Score for Venting:	1.5 POINTS
Car Park:	N/A
Score for Membrane:	2.0 POINTS
POINTS ACHIEVED UNDER BS8485 2019:	4.0 POINTS

GeoShield Verification Plan

TESTING PROCEDURES

VISUAL: PICK & PROBE/MECHANICAL POINT STRESS TEST:	✔
NON-DESTRUCTIVE COMPRESSED AIR LANCE TEST:	✔
NON-DESTRUCTIVE SMOKE TEST:	
DESTRUCTIVE JOINT TESTING:	
NON-DESTRUCTIVE TRACER GAS TESTING:	
DIELECTRIC POROSITY TEST:	
PUMP TEST FOR "Twinny" WELD	

NOTES: From the risk assessment GeoShield will initially conduct a visual

NOTES: and pick and probe testing regime for this project.

NOTES: Air lance testing with be conducted to test the installed membrane in

NOTES: accordance with CIRIA 735.

NOTES: Verification and air lance testing with be 100%.

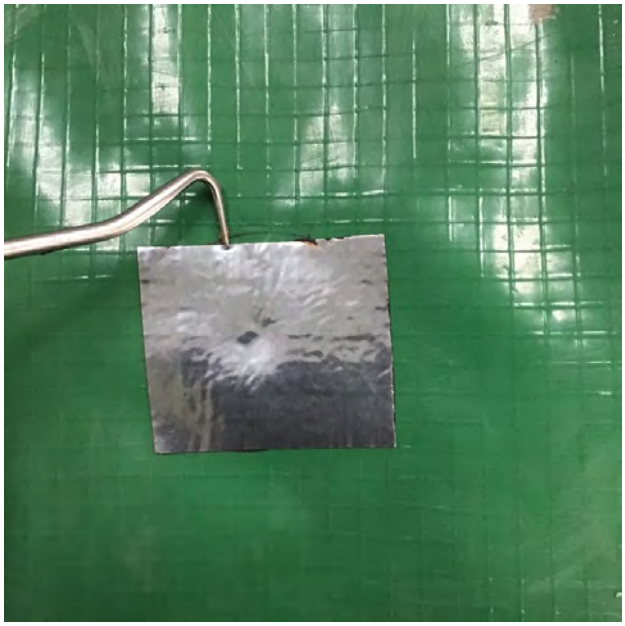
NOTES: Only if the application falls below the accepted standard will other testing

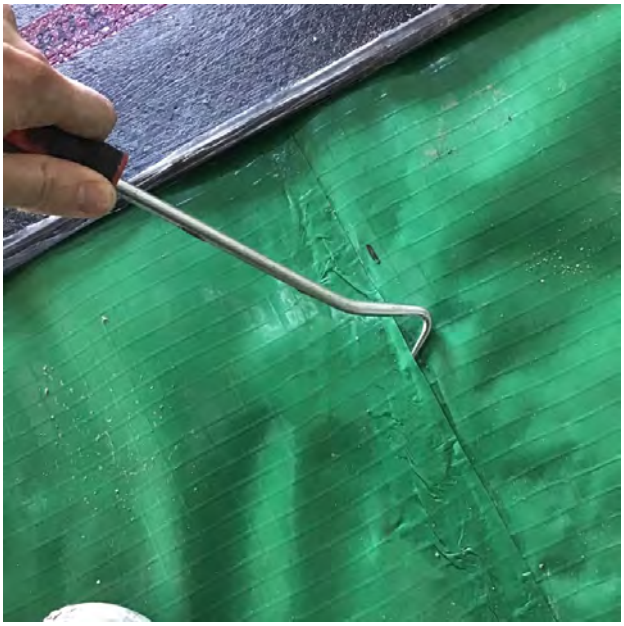
NOTES: be used.

GeoShield Verification Plan

SPECIFICATION

Mechanical Point Stress/ ‘Pick and Probe’ Testing





CIRIA 735

4.3.2 - Mechanical point stress tests involve running a blunt instrument (e.g. a screwdriver) along the edge of a seam to identify any unbonded seams. This method is not as effective as air lancing but it can be especially useful in hard to reach areas where it is not possible to air lance.

The instrument used should not puncture the gas membrane. This method is less appropriate for materials that are easily punctured where an air lance test is more suitable (although if a gas membrane can be easily punctured its suitability as a membrane is open to question).

GeoShield Verification Plan

SPECIFICATION

Air Lance Testing





CIRIA 735

4.3.3 - Air lance testing identifies unbonded areas of seam by directing a high pressure jet of air at the seam. The air is at a minimum pressure of 345kPa via a 4.8mm nozzle and is located no more than 50mm from the seam being tested.

In order to achieve the requirements of ASTM D4437-08:2013 bespoke specialist equipment is required to maintain the required pressure.

GeoShield Verification Plan

RISK ASSESSMENT

SITE SPECIFIC CIRCUMSTANCES	1	2	3	4	5
Complexity of Design			✔		
Repetition of design				✔	
Experience of workforce		✔			
Gas regime			✔		
Project management experience			✔		
Installation conditions (exposed?)			✔		
Robust Project specific gas design		✔			

TYPE OF RISK	RANGE	RISK
High Risk	23 - 30	
Medium High Risk	19 - 22	20
Medium Risk	15 - 18	
Medium Low Risk	11 - 14	
Low Risk	0 - 10	

GeoShield have classed this project as a medium high risk.

GeoShield will lay all parameters down for standards at the pre-verification meeting to

assist both the installer and the main contractor.

GeoShield Verification Plan

VERIFICATION REPORT

These items will be included in the report

NUMBER 1	GAS MEMBRANE SPECIFICATION
NUMBER 2	ELEMENTS OF THE GAS MEMBRANE
NUMBER 3	DATE, TIME and WEATHER CONDITIONS
NUMBER 4	PLANS and DETAILS ISSUED
NUMBER 5	INSTALLATION PHOTO's RELATING TO GRID LINES
NUMBER 6	REPORTING DEFECTS AND LOGGING IN REMEDIATION LOG
NUMBER 7	AREAS OF LIMITATION (areas unable to inspect)
NUMBER 8	LOGGING AND REPORTING RESULTS OF TESTING

VERIFICATION REPORT ISSUE

HARD COPY:	YES	✔	NO		EMAIL:	YES	✔	NO	
DROP BOX LINK:	YES	✔	NO		FLASH DRIVE:	YES		NO	✔

GeoShield Verification Plan

METHOD STATEMENT - Page 1

EXPECTED VISITS:-	30 site visits are deemed necessary for verification, however

extra visits may be considered for potential remediations before sign off.

12 months of gas monitoring testing will be conducted (Geoshield attendance).

TESTING:-	Mechanical Point Stress (Pick & Probe) testing on taped areas.

Air lancing will be 100% verified however where health and safety concerns or restricted access is applicable then a risk assessment will be done on the day.

PURPOSE:-	Geoshield are 3rd party gas membrane verifiers and in order of this

project to be compliant with BS8485:2019 and in accordance with CIRIA 735.

This project will NOT achieve sign off for gas membrane installation unless independent verification is carried out.

REPORTING:-	Each site visit be accompanied with a written and electronic report.

Any remediations either completed on the visit or outstanding for a later date will be recorded and logged, sign off will not be achieved for each section area until all remediations has been completed. This will be fully recorded at all times.

GeoShield Verification Plan

METHOD STATEMENT - Page 2

GROUND GAS RISK:- From detail design drawings this project has been classified as a Type B building and a CS2 rating in accordance with BS8485:2015+A1 2019. This will require to mitigate a minimum score of 3.5 points. A VOC/hydrocarbon resistant vapour membrane has been specified. Basic Radon protection measures are also required. This will be achieved by 3rd party verification, slab or ground type and ventilation provision. Both of the gas membranes will be fully verified and tested. A combination of which will achieve the necessary requirements.

GAS MEMBRANE PROTECTION:- It is essential that upon satisfactory install of that the gas membrane is protected, during and after verification work is completed. In addition warning labels will be issued by Geoshield to advise on the need to restrict access to the installed area by follow on trades and their due diligence. This will help to reduce potential damage caused. This is essential before the final slab or screed is poured over the membrane.

FINAL:- Geoshield will liaise with the projects site supervision and all relevant parties prior to the installation start. This plan will be presented and reviewed, all points made clear as previously stated. Any alterations will be listed at the end of this plan as an all party agreed way forward.

GeoShield Verification Plan

VERIFICATION PLAN

METHOD STATEMENT

VERIFICATION STRATEGY:

Percentage Strategy:	1st 10 Plots (100%), 11-50 Plots (1:5) & 51 or > (1:10)	
Percentage Strategy:	100% Verification for VOC/Hydrocarbons	✔
Verification Percentage on site:	100%	Not Specified

Remarks: Geoshield will work with the installer and contractor so that a robust Methodology for protecting the gas membranes will be put in place.

It is recommended that the installers are present at the time of testing so any remediations can be rectified. If remediations are not rectified the nature of the fault found will determine whether or not extra visits are required to test remediations.

Protection Type:-	Protection Board		Protection Fleece	
Insulation		Remarks:	Not specified.	

GeoShield Verification Plan

TESTING PROCEDURE

Method Statement - Pipe Penetrations and Service Entries Notice Signs





Geoshield Notice Signs -

During testing on site, notice signs will be tied to all pipe penetrations and a service entires which have not passed inspection.
Areas cannot be passed unless verification stickers have been applied to the Notice Signs, once remediations have been successfully carried out.

GeoShield Verification Plan

TESTING PROCEDURE

Method Statement - Membrane Sticker Notice Signs





Geoshield Notice Signs -

During testing on site, areas cannot be passed unless verification stickers have been applied, once remediations have been successfully carried out.

GeoShield Verification Plan

SUBSTRATE METHOD STATEMENT

SUBSTRATE TYPE:

Block and Beam Construction	Yes	✔	No				
Minimum Preparation	Swept Clear	Yes	✔	No			
Minimum Preparation	Vacuuming	Yes		No	✔		
Minimum Preparation	Compressed air to remove	Yes		No	✔		
Minimum Preparation	Remove Mortar Droppings	Yes	✔	No			
Stone Substrate	Yes	✔	No				
Minimum Preparation	Minimum 25mm Sand Blinding	Yes	✔	No			
Minimum Preparation	Limestone Dust	Yes	✔	No			
Minimum Preparation	Compacted Substrate	Yes	✔	No			
Minimum Preparation	No large stones	Yes	✔	No			
Concrete Substrate	Yes		No	✔			
Minimum Preparation	No Hollows	Yes		No	✔		
Minimum Preparation	Troweled Surface	Yes		No	✔		
Remarks:	The concrete planks will be swept clean of snots and debris before the JUTA GP1 membrane is to be installed on the floor level.						

GeoShield Verification Plan

PRE-CONTRACT MEETING

Items for discussion at the Pre-Contract meeting	
>Induction Procedure	
>Identification of installation team and point of contact	
>Identification of Project management team	
>Identification of Sub-Contractors associated with membrane installation	
>Validation of Membrane and design specification	
>Verification procedure	
>Notifications for Verification	
>Preparation of substrate	
>Program of works	
>Utility entry	
>Protection of Membrane	
>Remediation Procedure	
>Testing Procedures	
>Sign off Procedure	
>Installer PI	

All information is assumed correct at time of issue.

DATE:	

GeoShield Verification Plan

PRE-CONTRACT MEETING SUMMARY

A pro-forma quality assurance document will be discussed during the Pre-Verification

meeting and training undertaken with the management team for non verified areas.

The Pre-Verification meeting will be led by Geoshield and should include all relevant

parties who have an impact on the installation and future protection. Geoshield will

provide guidance and strategy for all parties.

The site specific checklist will be covered as well as the risk assessment.

This site has been classified as a CS2 gas regime rating with VOC protection measures.

Any design alterations will be discussed and included in a revised Pre-Verification Plan.

Any specification changes must also be included in a revised Pre-Verification Plan.

All items will be minuted by the Geoshield representative.

This Pre-Verification plan follows all current guidance and the aim is to make all parties

aware of the ramifications of poor installation and their responsibilities if they damage

the membrane.

GeoShield Verification Plan

Appendices

Appendix A - Geoshield Method Statement

Geoshield will be in attendance for the gas monitoring over the 12 month period.

The probes and Pipework will also be verified for the 12 months testing also.

River Academy Reading

12 Month Gas Monitoring Method Statement

Rev 5

Purpose of this document

This method statement lays out the methodology that GeoShield will adopt to monitor the VOC's, CO2 and Methane to alleviate the requirements in:
RBC Planning Application Number 212061 Ref. EP/734261

This method statement provides a robust accurate strategy to show the performance of the Basal membrane. Although the Basal membrane is fully verified in accordance with CIRIA 735 it provides real life monitoring over a 12 month period.

Contents

- Method Statement
  - Sample Pipework
  - Plans and Probe design below Basal layer
- Method Statement
  - Testing Strategy
- Appendix 1
  - Risk assessment Pipe work
- Appendix 2
  - CV GeoShield
- Appendix 3
  - CV Gas sampling consultant

Method Statement
Pipework Install

Method Statement

GeoShield will incorporate a live proactive approach.

The locations of the testing points are located on drawings

- GEO103260.2a REV4 Plan 1
- GEO103260.2b REV4 Plan 2

PROPOSAL

It is proposed to supply and install 19no.sub floor probes within the sub floor void and 13no. sub floor probes within the building footprint oversite immediately below the basal membrane terminating in 13no. externally located probe monitoring points.

Materials

1. 13no. lockable wall mounted monitoring point probe boxes IP65 Rated

dims 200mm x 300mm x 130mm complete with 4no. T-Mex LT 2000 monitoring valves and 1no. 30mm diam. probe pipe input point.

2. 32no. sub floor probes see attached drawing no. 5719 AA(57) 002 P2.

3. Probe sample pipe ext. diam. 8.0mm and proprietary wall fittings.

4. 110mm inground manifold plastic pipework and proprietary fittings.

Installation

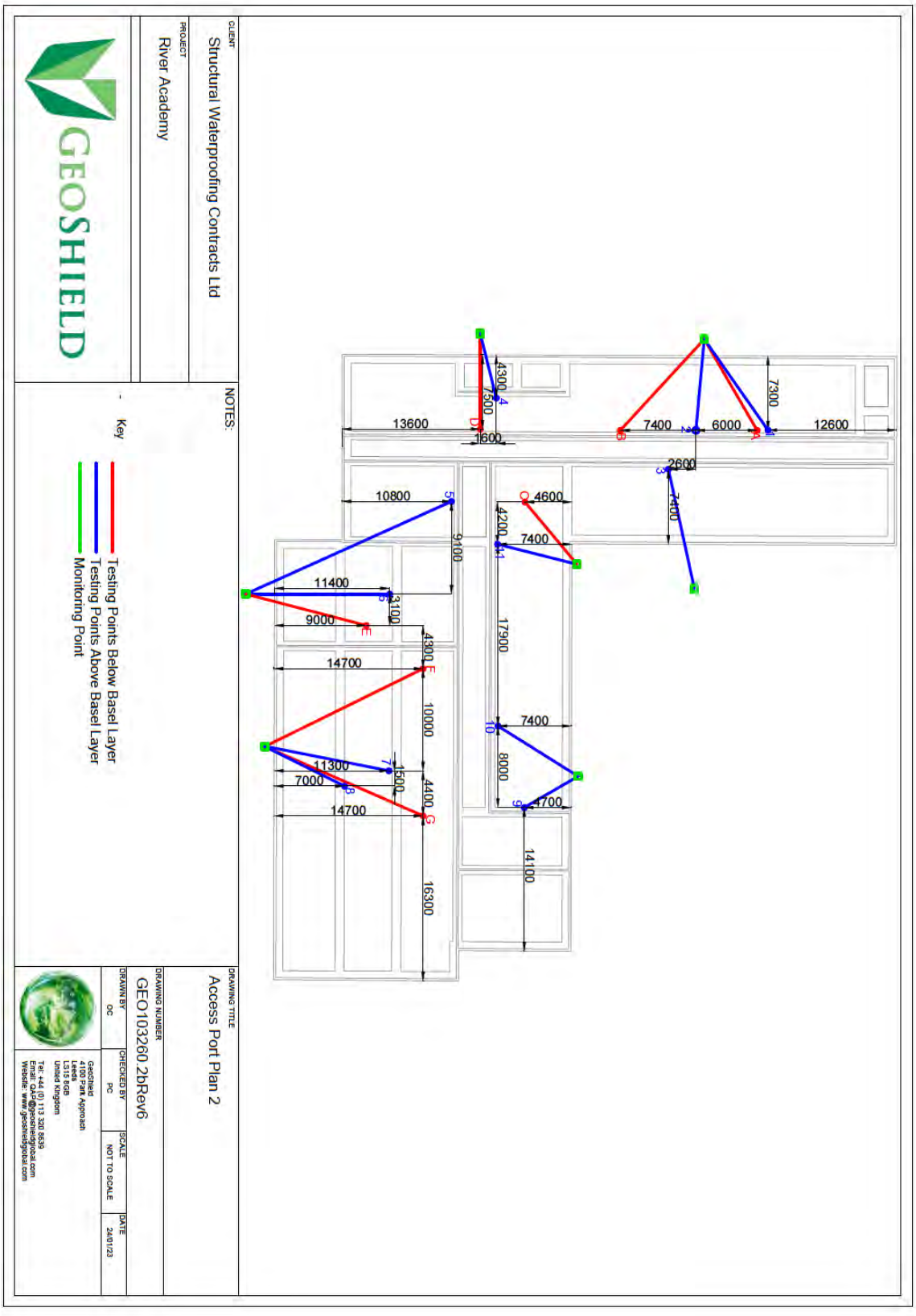
1. 13no. sub floor probes complete with probe sample pipe to be shallow trenched in the building footprint oversite within horizontal sections of 110mm plastic manifold pipework. Manifold pipework to be taken through the perimeter construction and turned vertically immediately adjacent to the perimeter to terminate at a low level wall mounted probe sample box. Trenching and back filling for sub floor probes and manifold and any passings required to be by main contractor. Location of sub floor probes, manifolds and monitoring points to be as detailed on drawings numbers GEO103260 2a, 2b Rev 4, see attached.

2. 19no. sub floor probes to be wall mounted within the sub floor void with sections of probe sample pipework surface mounted and fixed to the sub floor walls and taken back to the externally located probe sample points as detailed on drawings numbers GEO103260.2a, 2b Rev 4, see attached. At each sample point location to be 1no. passing through the sub floor void perimeter construction, passing to either be 50mm diam. clear or approx. 40mm diam. plastic pipe section, pipe to extend min 100mm either side of wall construction, to be provided by main contractor.

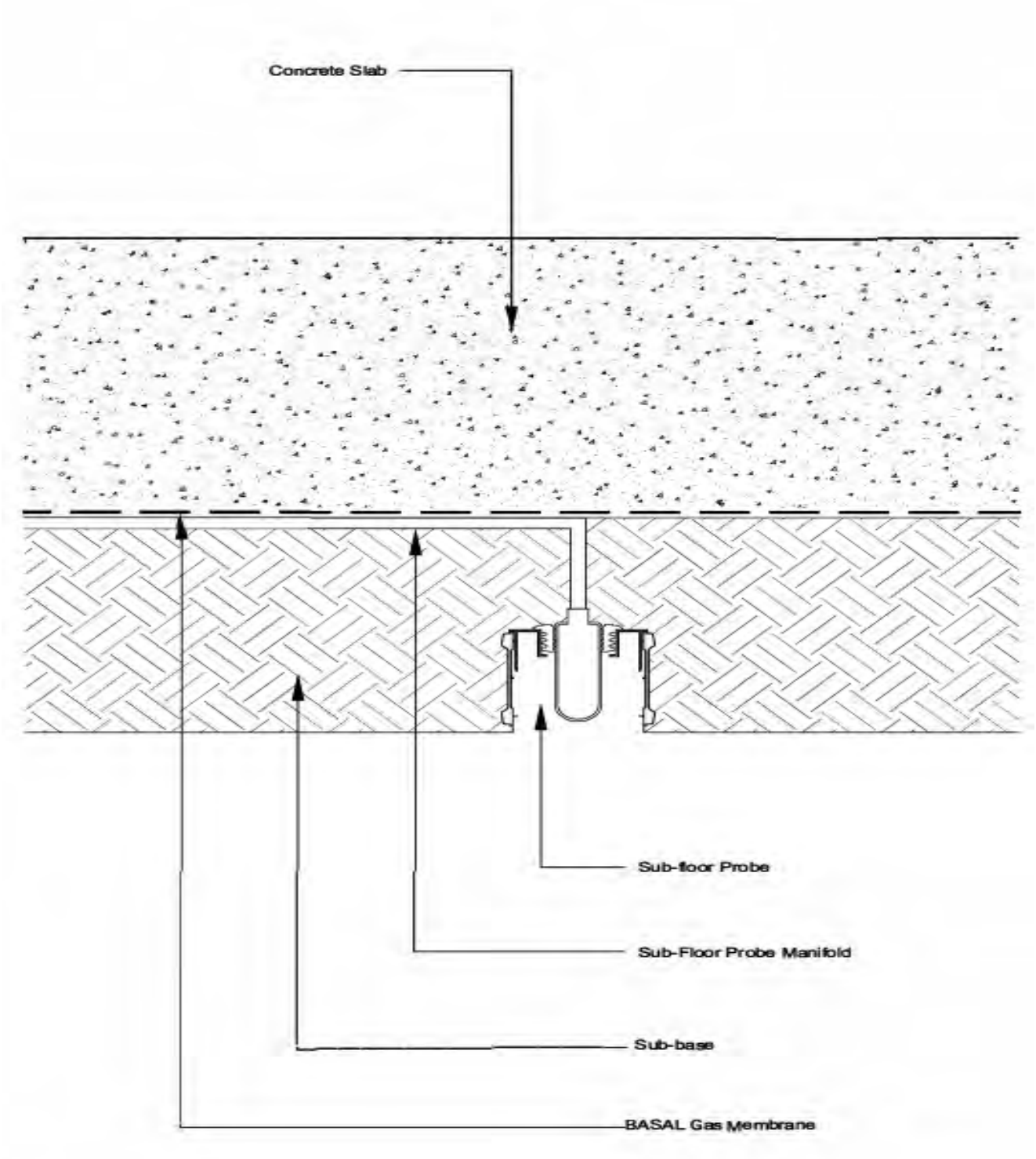
3. Risk assessments APPENDIX 1 1, 2 3, 5, 31, 103, 104

GEO103260.2a REV4 Plan 1

GEO103260.2b REV4 Plan 2



Method Statement (cont)



Probe Detail beneath basal membrane

Method Statement
Testing Strategy

Method Statement

The proposed development comprises two ‘L’ shaped academy buildings (east and west) that require ground gas and volatile vapour protection. The gas protection design has been provided by others and generally comprises a volatile vapour resistant membrane at ground level (basal layer) beneath a subfloor void of 600mm and a further ground gas membrane at ground floor level of the proposed buildings. As part of the installation and verification of the gas protection measures, we understand that monthly monitoring events are required to assess for the presence of the ground gases beneath the basal layer and within the subfloor void of the proposed new academy buildings.

Prestige Air Technology Limited are to complete the installation sample pipework. As part of their installation works, pipework is to be installed across the building footprint to allow monitoring and sampling of gases beneath the basal layer and within the subfloor void. The pipework will terminate at monitoring points within lockable cabinets at the building perimeter. The arrangement of the monitoring points and cabinets has been provided by GeoShield Limited.

- Plan Layout GEO103260.2a REV4
- Plan Layout GEO103260.2b REV4

Method Statement

It is proposed to complete a pre-start site visit to confirm the monitoring points and locations are suitably installed and labelled prior to the start of the monitoring programme and this is included in the attached cost estimate.

Monitoring events are to be completed initially at fortnightly intervals in the first month and thereafter at monthly intervals for a period of one year. At total of fourteen monitoring events are therefore proposed.

On all monitoring events it is proposed to record (GFM430 or similar device) ground gases using a portable gas analyser to record the presence of standard ground gases (CH_4, CO_2, O_2, H_2S), together with atmospheric pressure. In addition, it is proposed to assess for the presence of volatile organic compounds (VOCs) using a Photo Ionisation Detector (PID) with a 10.6eV lamp. The PID will provide a result for the total concentration of VOCs present in parts per million (ppm).

Method Statement

With respect to the risk criteria for Methane and Carbon Dioxide we would propose to use the criteria presented in BS8485 for standard landfill gas. For the hydrocarbons and VOCs, there is no specific guidance criteria for individual compounds. Some criterion are present within Occupational Health guidance or within the CLEA documents but generally we would complete a specific assessment for whatever compound is present to develop a compound specific criteria. ASL will follow the criteria in GGS Limited report entitled 'Ground Gas & VOC Vapour Risk Assessment, River Academy, Reading', Report ref. GGS2686GGVRA01, dated 2nd February

In the past we have used a total VOC concentration as recorded by the PID of 10ppm or 50ppm as indicative of a potential risk and the need for further investigation and more detailed analysis. These are arbitrary field test triggers and do not have any real scientific basis.

In summary if VOC concentrations are identified above 10ppm then a laboratory test will be undertaken from that sample.

Method Statement

The testing of the ground gas samples is based on the suite of analysis used in the GGS Limited report entitled ‘Ground Gas & VOC Vapour Risk Assessment, River Academy, Reading’, Report ref. GGS2686GGVRA01, dated 2nd February 2022. This includes speciated VOCs including tentatively identified compounds (TICs), BTEX compounds, PRO and TPH banded and CWG. Dedicated sampling apparatus including tubing and pressurised cannisters (Summa) will be required for each sampling point.
We have allowed for quarterly reporting to include the factual results of the monitoring and testing completed during the quarter and interpretation of the results by comparison with relevant industry standards. Due to the scale of these works and the volume of data that will be produced we have allowed a monthly project management fee for the duration of the monitoring programme.

We would be able to mobilise to site for the pre-start siter visit with one week’s notice. The first monitoring event will be completed approximately one week after the pre-start visit subject to there being no issues arising from the pre-start visit

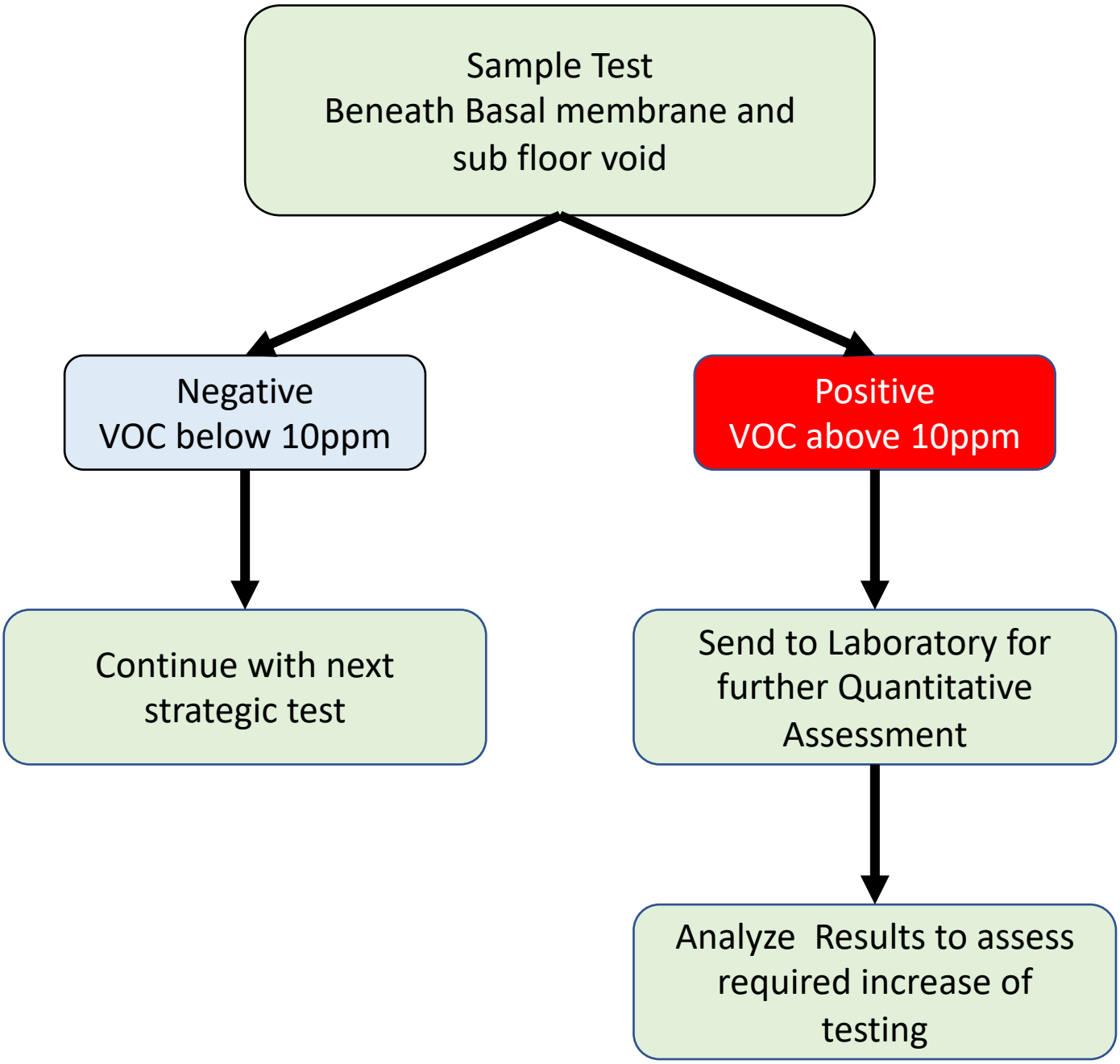
Method Statement

A standard monitoring event (without gas sampling) will be completed over three days. The quarterly monitoring events, that include gas sampling, will be completed over six to seven days. Please note that significant cost savings could be made if the number of sampling points and the suite of analysis are reduced, and therefore the time spent on site can be subsequently reduced.

We would require authorised access to the site for the duration of the monitoring events. If monitoring events need to be aborted due to site flooding or other access issues it is proposed that the monitoring event affected will be either removed from the monitoring programme. If the aborted event is proposed to include gas sampling and testing, this event will be moved to the next in the event in the monitoring programme.

All works will be completed in accordance with appropriate industry standards.

Flow Chart Showing Testing Strategy



Appendix 1
Risk Assessments
Installation
sampling pipe work

GeoSHIELD

PRESTIGE AIR TECHNOLOGY RISK ASSESSMENT SHEET	
ASSESSMENT No.1	**DATE** November 2022
LOCATION On site	
OPERATION/PROCESS: **Manipulation of 100mm/150mm plastic pipework and associated fittings**	
EQUIPMENT USED N/A	
SUBSTANCES USED N/A	**COSHH ASSESSMENT** N/A
HAZARDS IDENTIFIED: Manipulation of pipes and fittings and attempting to lift excessive weights	**NOISE ASSESSMENT:** Not done
SECONDARY HAZARDS None	
EXPOSED PERSONS Personnel involved	**EXPOSURE TO OTHER PERSONNEL** None
FREQUENCY OF EXPOSURE: Every day	**DURATION OF EXPOSURE** 8 hours per day
CONTROLS MEASURES P.P.E. to be worn at all times Ensure – 1) Fluorescent jackets/waistcoats. 2) Safety footwear 3) Safety glasses 4) Hard hats	5) Gloves 6) Personnel are fully trained 7) Limited weight per single person (20kg) 8) All pipework installation to be carried out with teams of 2no. personnel
MONITORING RESULTS: No accidents recorded	
RISK ASSESSMENT Low	
ASSESSOR: Andy Collins	**POSITION:** Health & Safety Officer

GEOSHIELD

PRESTIGE AIR TECHNOLOGY RISK ASSESSMENT SHEET	
ASSESSMENT No.2	**DATE:** November 2022
LOCATION On site	
OPERATION/PROCESS: Plastic pipe cutting	
EQUIPMENT USED Hand saw, hand file	
SUBSTANCES USED N/A	**COSHH ASSESSMENT** N/A
HAZARDS IDENTIFIED: Minor cuts and abrasions	**NOISE ASSESSMENT:** Not done
SECONDARY HAZARDS None	
EXPOSED PERSONS Personnel involved	
FREQUENCY OF EXPOSURE: Every day	**DURATION OF EXPOSURE** 8 hours per day
CONTROLS MEASURES P.P.E at all times **Ensure –** 1) Fluorescent jackets/waistcoats 2) Safety footwear	3) Safety glasses 4) Hard hats 5) Gloves 6) Personnel are fully trained
MONITORING RESULTS: No accidents recorded	
RISK ASSESSMENT Low	
ASSESSOR: Andy Collins	**POSITION:** Health & Safety Officer

GEOSHIELD

PRESTIGE AIR TECHNOLOGY RISK ASSESSMENT SHEET	
ASSESSMENT No.3	**DATE:** November 2022
LOCATION On site	
OPERATION/PROCESS: Production of electric power	
EQUIPMENT USED Generator	
SUBSTANCES USED Petrol	**COSHH ASSESSMENT** Done
HAZARDS IDENTIFIED: Petrol spillage whilst refilling	**NOISE ASSESSMENT:** 81dB
SECONDARY HAZARDS Heat from engine body	
EXPOSED PERSONS Operator and assistant	**EXPOSURE TO OTHER PERSONNEL** To be excluded from 1 m radius
FREQUENCY OF EXPOSURE: Every day	**DURATION OF EXPOSURE** 8 hours per day
CONTROL MEASURE P.P.E. to be worn at all times Ensure – 1) Equipment is well maintained 2) Fluorescent jackets/waistcoats 3) Safety footwear 4) Safety glasses 5) Hard hats	6) Gloves 7) A minimum of 2 people are available to lift equipment. 9) Necessary containers/funnels are available for re-fuelling, drip tray to be used 6. Equipment to have separate earth. 7. Maintained fire extinguisher.
MONITORING RESULTS: No accidents recorded	
RISK ASSESSMENT Low	
ASSESSOR: Andy Collins	**POSITION:** Health & Safety Officer

GEOSHIELD

PRESTIGE AIR TECHNOLOGY RISK ASSESSMENT SHEET	
ASSESSMENT No. 5	**DATE:** November 2022
LOCATION On site	
OPERATION/PROCESS: Contact with ground – low level –non specific contamination	
EQUIPMENT USED N/A	
SUBSTANCES USED N/A	**COSHH ASSESSMENT** N/A
HAZARDS IDENTIFIED: Ingestion	**NOISE ASSESSMENT:** Not done
SECONDARY HAZARDS None	
EXPOSED PERSONS Personnel involved	**EXPOSURE TO OTHER PERSONNEL** None
FREQUENCY OF EXPOSURE: Every day	**DURATION OF EXPOSURE** 8 hours per day
CONTROLS MEASURES P.P.E. to be worn at all times Ensure – 1) Fluorescent jackets/waistcoats 2) Safety footwear 3) Safety glasses 4) Hard hats	5) Gloves 6) No smoking 7) Eating and drinking only in welfare facilities 8) Hands washed min. end each work Period and prior to work breaks
MONITORING RESULTS: No accidents recorded	
RISK ASSESSMENT Low	
ASSESSOR: Andy Collins	**POSITION:** Health & Safety Officer

GEOSHIELD

PRESTIGE AIR TECHNOLOGY RISK ASSESSMENT SHEET	
ASSESSMENT No.31	**DATE:** November 2022
LOCATION On site	
OPERATION/PROCESS: Use of electric power tools all 110V.	
EQUIPMENT USED 200mm Sander	
SUBSTANCES USED N/A	**COSHH ASSESSMENT** Not done
HAZARDS IDENTIFIED: Cuts and abrasions	**NOISE ASSESSMENT:** Not done
SECONDARY HAZARDS None	
EXPOSED PERSONS Personnel involved	**EXPOSURE TO OTHER PERSONNEL** N/A
FREQUENCY OF EXPOSURE: Every day	**DURATION OF EXPOSURE** 8 hours per day
CONTROL MEASURES P.P.E. Ensure – 1. Personnel are fully trained. 2. Equipment is fully maintained. 3. gloves are worn at all times.	4. Safety goggles 5. Safety shoes 6. Equipment to be PAT certificated.
MONITORING RESULTS: No accidents recorded	
RISK ASSESSMENT Low	
ASSESSOR: Andy Collins	**POSITION:** Health & Safety Officer

GeoSHIELD

PRESTIGE AIR TECHNOLOGY RISK ASSESSMENT SHEET	
ASSESSMENT No. 103	**DATE:** June 2022
LOCATION On site	
OPERATION/PROCESS: Use of electric power tools all 110V.	
EQUIPMENT USED **Handheld Cordless Power Drill**	
SUBSTANCES USED N/A	**COSHH ASSESSMENT** Not done
HAZARDS IDENTIFIED: Cuts and abrasions	**NOISE ASSESSMENT:** Not done
SECONDARY HAZARDS Hand, Arm vibration	
EXPOSED PERSONS Personnel involved	**EXPOSURE TO OTHER PERSONNEL** N/A
FREQUENCY OF EXPOSURE: Every day	**DURATION OF EXPOSURE** 8 hours per day
CONTROL MEASURES P.P.E. Ensure – 1. Fluorescent jackets/waistcoats 2. Safety footwear 3. Safety glasses 4. Hard hat 5. Gloves	6. Personnel fully trained 7. Equipment to be PAT tested. 8. Equipment is fully maintained 9. Trigger time to be less than 15 mins hammer action or 1 hour rotary action per day
MONITORING RESULTS: No accidents recorded	
RISK ASSESSMENT Low	
ASSESSOR: Andy Collins	**POSITION:** Health & Safety Officer

GEOSHIELD

PRESTIGE AIR TECHNOLOGY RISK ASSESSMENT SHEET	
ASSESSMENT No.104	**DATE:** November 2022
LOCATION On site	
OPERATION/PROCESS: Use of hand tools	
EQUIPMENT USED Hand held non-mechanical tools	
SUBSTANCES USED N/A	**COSHH ASSESSMENT** Not done
HAZARDS IDENTIFIED: Cuts and abrasions	**NOISE ASSESSMENT:** Not done
SECONDARY HAZARDS None	
EXPOSED PERSONS Personnel involved	**EXPOSURE TO OTHER PERSONNEL** NA
FREQUENCY OF EXPOSURE: Every day	**DURATION OF EXPOSURE** 8 hours per day
CONTROL MEASURES P.P.E. to be worn at all times Ensure – 1) Personnel are fully trained. 2) Fluorescent jackets/waistcoats 3) Safety footwear	4) Safety glasses 5) Hard hats 6) Gloves 7) Equipment is fully maintained
MONITORING RESULTS: No accidents recorded	
RISK ASSESSMENT Low	
ASSESSOR: Andy Collins	**POSITION:** Health & Safety Officer

Appendix 2
GeoShield CV

Since 2015 construction and design standards in the UK had begun to be restructured with the aim of eliminating all possible factors that relate to the failure of systems applied to protect against life threatening ground gas ingress into new constructions. The spearhead of these changes was in the UK with the updated version of the British Standard Code of practice for the design of protective measures for Methane and Carbon Dioxide ground gases for new buildings (BS8485:2015 +A1 2019). Since 2015 GeoShield is a leading company in ground gas verification. A fully independent company working to the highest standards of CIRIA735 – Good practice on the testing and verification of protection systems for buildings against hazardous ground gases.

Field Services (Operational) team is lead by Paul Colbeck who has over 20 years' experience in the construction industry and is 1 of 9 SGPV's in the country. (SGPV - Specialists in Gas Protection Verification under Gas Protection Verification Scheme accredited by CL:AIRE. There are only 9 accredited SGPV's currently in the UK, 2 of which are employed by GeoShield).

Paul is also an assessor for NVQ Level 2 in the installation of Gas Membrane Systems designed to protect against hazardous ground gases (Radon, Methane, Carbon Dioxide & Hydro-Carbons) as well as NVQ Level 4 in Verification of Ground Gas protection systems. GeoShield are active members of British Geomembrane Association, Property Care Association, The Radon Council, UK Radon Association and European Radon Association. Paul Colbeck also resides as a chair of the British Verification Council (a platform dedicated to raising standards in the ground gas verification).

Appendix 3
Site Investigation Consultant CV

ASL is a geo-environmental consultancy offering a comprehensive range of geo-environmental services to support the acquisition and development of land in the UK. We aim to provide site purchasers, vendors and property developers with the information necessary to assist with property valuations and development by cost effective mitigation of geo-environmental issues.

ASL has extensive experience in contaminated land risk assessment on a wide range of contaminated land sites including petrol filling stations, former gas works, scrap yards, engineering works, power stations, ordnance and battery manufacturing plants and railway land. We continually conduct research into new investigation and remediation techniques and current legislation to ensure that the advice we provide is the best available.

ASL's expertise in geotechnical engineering covers the determination of the founding properties of ground conditions in relation to traditional shallow foundations, piling and ground improvement techniques for new and existing structures. We also provide expert advice on pavement design, sustainable urban drainage systems, earthworks, slope stability, solution features and mining issues.
We pride ourselves on working closely with our clients to develop the most appropriate solution to any given situation using the best and most cost effective processes and products without the constraints of any in-house portfolio. This independence allows ASL to provide a proactive, practical and economical approach to projects.

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	001
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in-accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: Zone A - Below Basal Layer - Probes 1 and 2.

SITE CONDITIONS:

WEATHER: Overcast

TEMPERATURE: 7c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

TIME: 12:30-13:30 REPORT NUMBER: 001

DATE: 27/01/2023

ACCOMPANIED Darren - Fenton Group.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



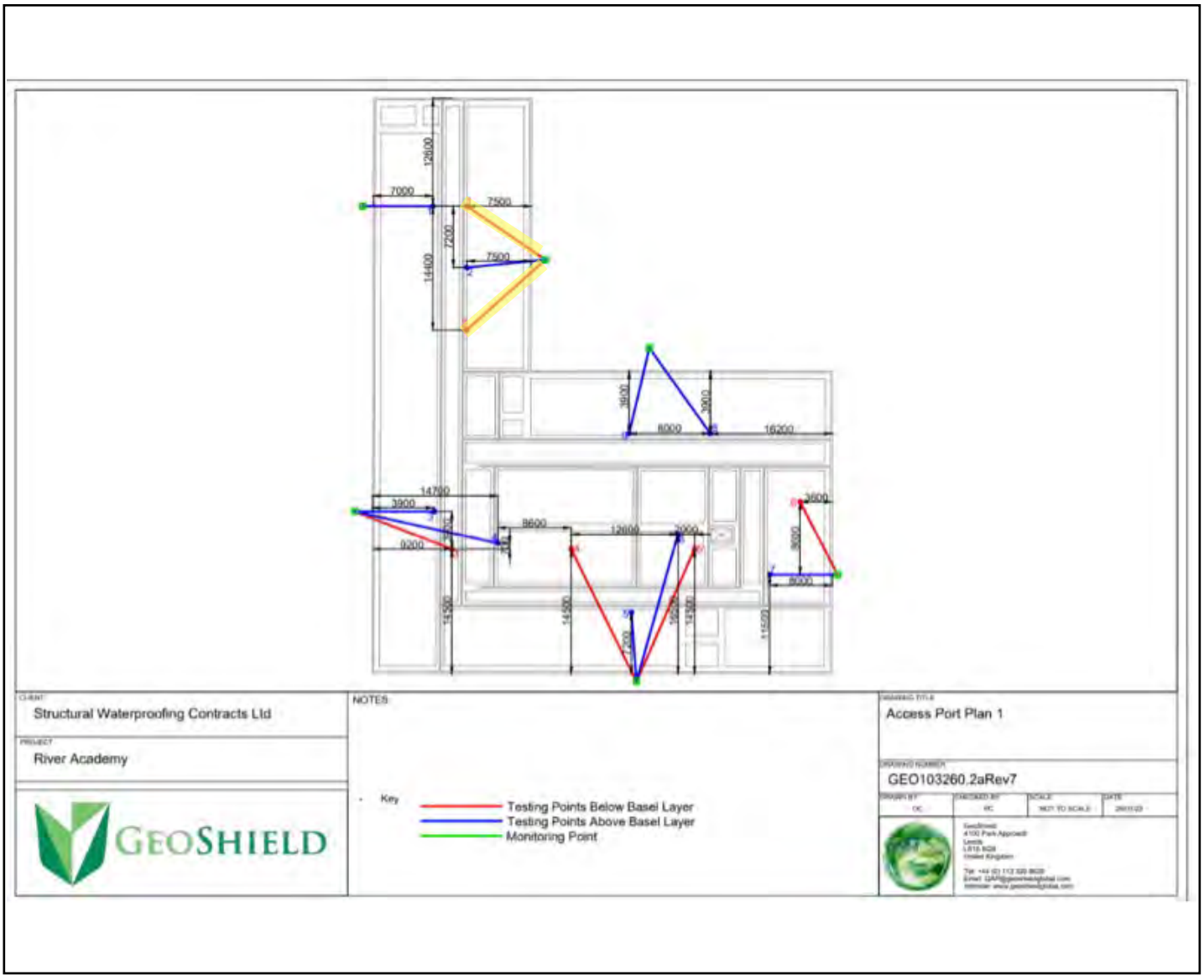
The above photograph displays Fenton's Zone Layout Plan.

Inspection was carried out within zone A.

Below Basal Layer - Probes 1 and 2.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays Geoshield ground gas monitoring probe layout plan.

The ground gas monitoring probes verified during this visit are highlighted yellow.

Below Basal Layer - Probes 1 and 2.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Below Basal Layer - Probes 1 and 2.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

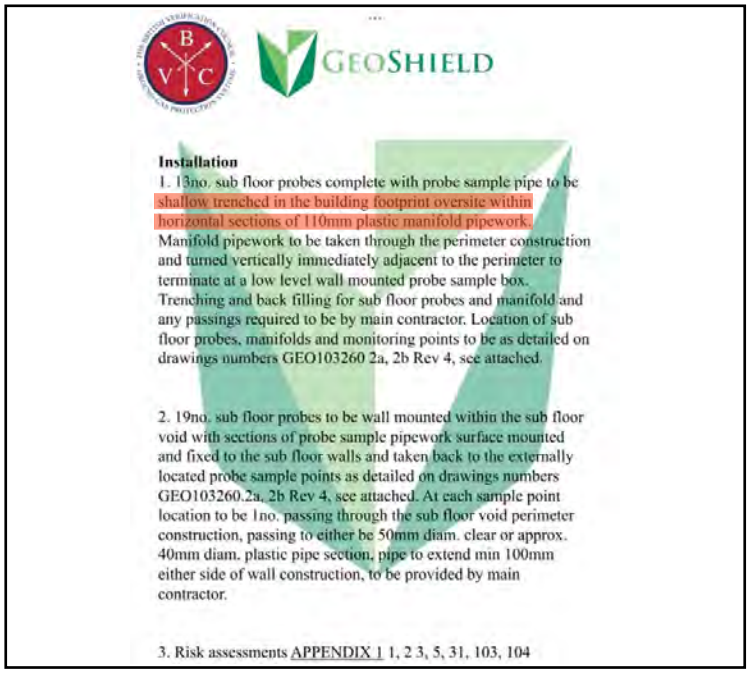
LOCATION/GRID LINE: Zone A - Below Basal Layer - Probes 1 and 2.

NOTES: Installation-

The first below basal layer probes have been installed by specialists from Prestige Air.

The probe pipe has been encapsulated inside 110mm PVC drainage pipe as stated in

Geoshields installation method statement as highlighted in the photograph on the left.



GEOSHIELD

Installation

1. 13no. sub floor probes complete with probe sample pipe to be shallow trenched in the building footprint oversite within horizontal sections of 110mm plastic manifold pipework. Manifold pipework to be taken through the perimeter construction and turned vertically immediately adjacent to the perimeter to terminate at a low level wall mounted probe sample box. Trenching and back filling for sub floor probes and manifold and any passings required to be by main contractor. Location of sub floor probes, manifolds and monitoring points to be as detailed on drawings numbers GEO103260 2a, 2b Rev 4, see attached.

2. 19no. sub floor probes to be wall mounted within the sub floor void with sections of probe sample pipework surface mounted and fixed to the sub floor walls and taken back to the externally located probe sample points as detailed on drawings numbers GEO103260.2a, 2b Rev 4, see attached. At each sample point location to be 1no. passing through the sub floor void perimeter construction, passing to either be 50mm diam. clear or approx. 40mm diam. plastic pipe section, pipe to extend min 100mm either side of wall construction, to be provided by main contractor.

3. Risk assessments APPENDIX 1 1, 2 3, 5, 31, 103, 104

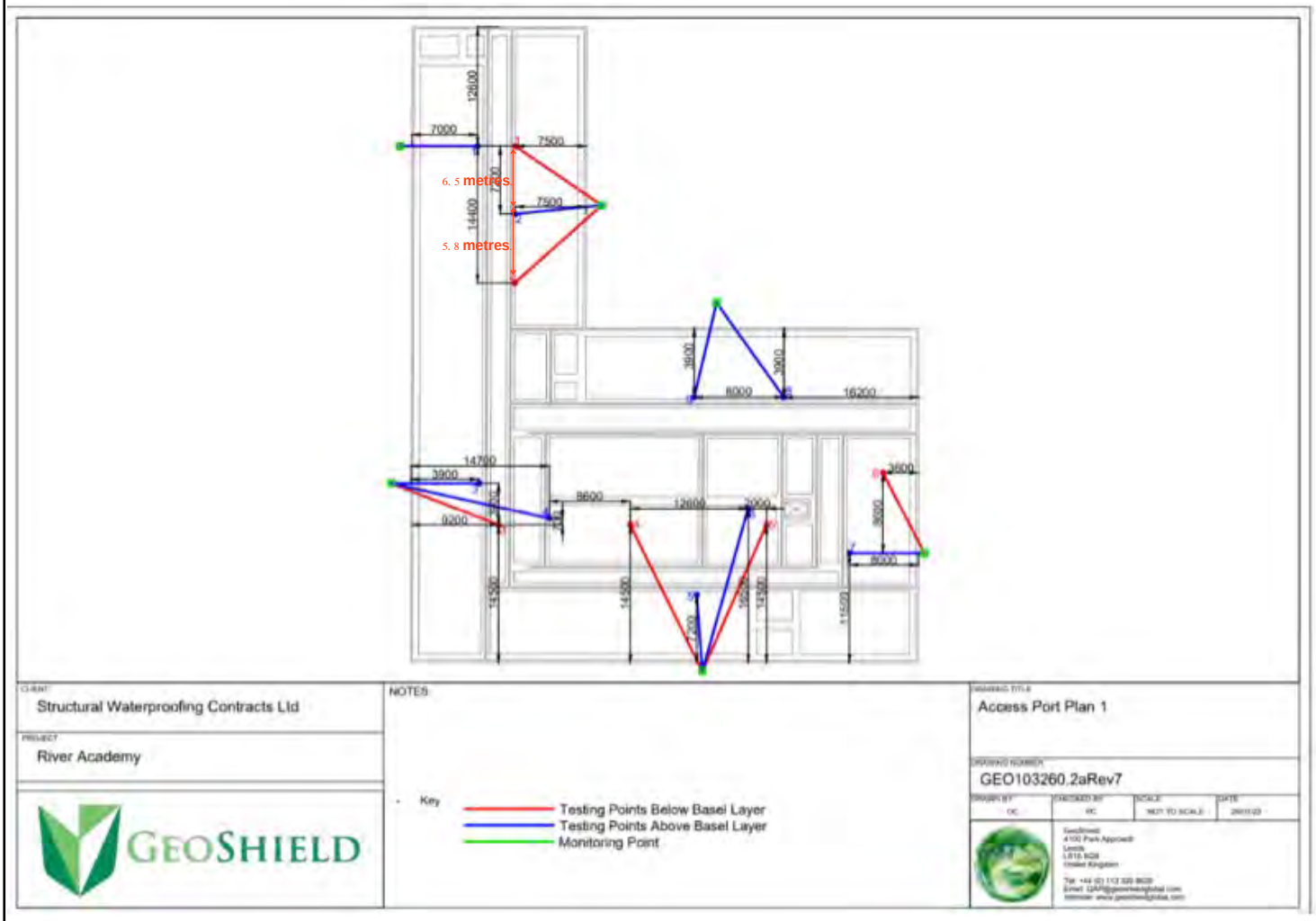


The photograph above on the left displays the pipe work shallow trenched within the

basal layer which has been backfilled accordingly with sand.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



Upon arrival the centres of probes one and two within the below basal layer were measured against the Geoshield design. It was identified that probe 1 was of 6.5 metres from centre and probe 2 was 5.8metres from centre. It has been confirmed that the ground gas monitoring will not be affected by these measurements.

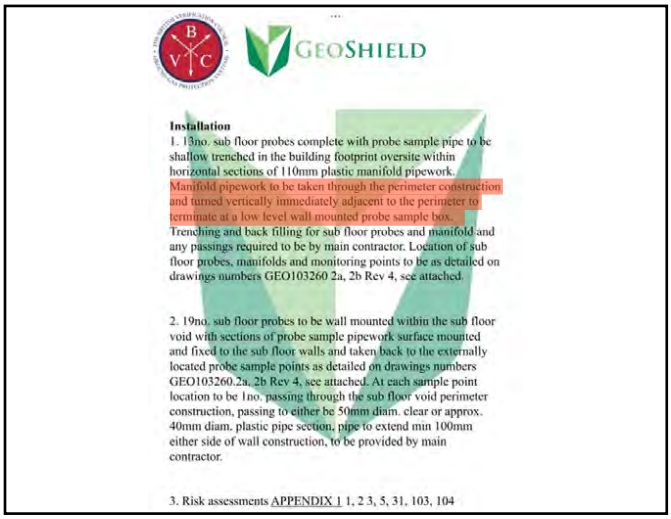
GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Zone A - Below Basal Layer - Probes 1 and 2.

NOTES: mounting box-

The pipe work has been returned through the perimeter concrete beam and returned vertically immediately and fixed according as per the probe monitoring method state-meant highlighted below on the left.



GEOSHIELD

Installation

1. 13no. sub floor probes complete with probe sample pipe to be shallow trenched in the building footprint oversite within horizontal sections of 110mm plastic manifold pipework. Manifold pipework to be taken through the perimeter construction and turned vertically immediately adjacent to the perimeter to terminate at a low level wall mounted probe sample box. Trenching and back filling for sub floor probes and manifold and any passings required to be by main contractor. Location of sub floor probes, manifolds and monitoring points to be as detailed on drawings numbers GEO103260 2a, 2b Rev 4, see attached.

2. 19no. sub floor probes to be wall mounted within the sub floor void with sections of probe sample pipework surface mounted and fixed to the sub floor walls and taken back to the externally located probe sample points as detailed on drawings numbers GEO103260.2a, 2b Rev 4, see attached. At each sample point location to be 1no. passing through the sub floor void perimeter construction, passing to either be 50mm diam. clear or approx. 40mm diam. plastic pipe section, pipe to extend min 100mm either side of wall construction, to be provided by main contractor.

3. Risk assessments APPENDIX 1 1, 2 3, 5, 31, 103, 104



The photograph above on the right displays the manifold pipe work returned horizontally and fixed upon the concrete, the probe monitoring pipe work has been sealed and housed within the manifold pipe. The probe sample box will be installed at a later date once required.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: Zone A - Below Basal Layer - Probes 1 and 2.

NOTES: Backfilling-

Once the initial verification visit had been conducted and completed Geoshield stayed present whilst the ground workers from Fentons proceeded to backfill the manifold pipe housing the ground gas proper monitoring pipe work.





The photographs displays evidence of a suitable sand blinding being applied around the manifold pipe work. Although an initial protection has been implemented around the ground gas monitoring probe pipe work it was good to see this procedure being carried out ensuring a horizontal line is still achieved as required.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Manifold pipe work exiting perimeter.



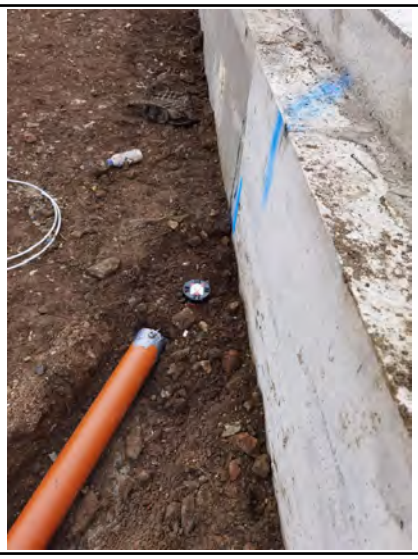
Ground gas monitor installed.

Manifold pipe work sealed off.



Manifold pipe work returned

horizontally.



Ground gas monitor installed.

Manifold pipe work sealed off.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
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Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the first visit to Riverside Academy, Reading where verification was required for the installation of the below basal layer probe one and two in zone A installed by the specialists from Prestige Air. The ground gas monitoring pipe work has been encapsulated in a 110mm manifold pipe work and returned horizontally immediately through perimeter. The ground gas monitors have been installed to the centres marked out by Fenton's Engineer. It was identified probe 1 was at 6.5m and probe 2 was at 5.8m which was confirmed wouldn't affect the monitoring. However, the remainder of the probes are to be installed as per Geoshields design. Geoshield were present during the backfilling process where Fentons ensured a sand blinding had been used and the manifold pipe work was kept horizontal.

GEOSHIELD SIGNATURE:



DATE:	27/01/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	002
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Elvis
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED:	Zone A - Basal Layer. Gridlines; C-D/1-10, A-B/1-2 & B-C/1-6.

SITE CONDITIONS:

# WEATHER:	Overcast
# TEMPERATURE:	7c
# MEMBRANE TEMPERATURE:	N/a
# RELATIVE HUMIDITY:	N/a

TIME:	09:00-11:30	REPORT NUMBER:	002
DATE:	06/02/2023		
ACCOMPANIED	Darren - Fenton Group and SWC installers.		

GEOSHIELD Verification Report

VERIFICATION LAYOUT



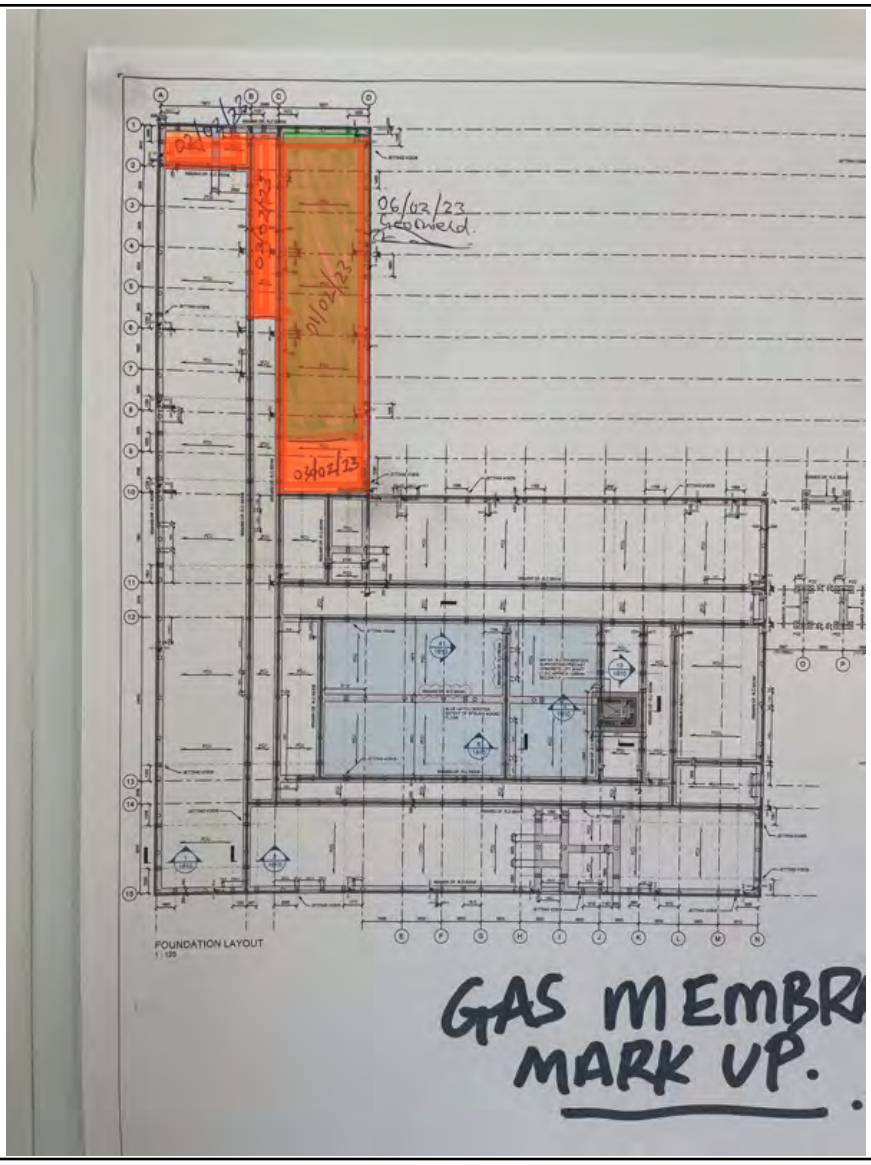
The above photograph displays Fenton's Zone Layout Plan.

Inspection was carried out within zone A.

Juta Titan Flex to basal layer. Gridlines; C-D/1-10, A-B/1-2 & B-C/1-6.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays the proposed basal layer layout plan.

The Juta Titan Flex installation verified during this visit are highlighted red above.

Basal Layer. Gridlines; C-D/1-10, A-B/1-2 & B-C/1-6.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Basal Layer. Gridlines; C-D/1-10,

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Basal Layer. Gridlines; B-C/1-6.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Basal Layer. Gridlines; A-B/1-2.

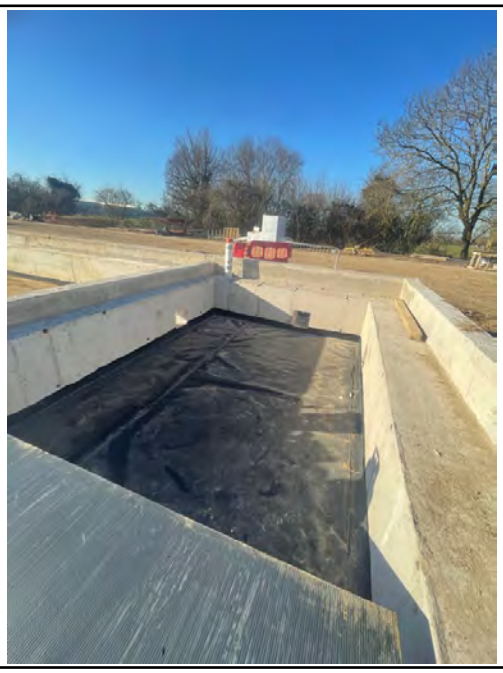
GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Basal Layer. Gridlines; C-D/1-10, A-B/1-2 & B-C/1-6.

NOTES: Installation-

The specialist NVQ trained gas membrane installers have carried out the installation of Juta Titan Flex in accordance to manufactures specification and to the proposed design details. The Juta Titan Flex has been installed upon a rollered sand blinded substrate…



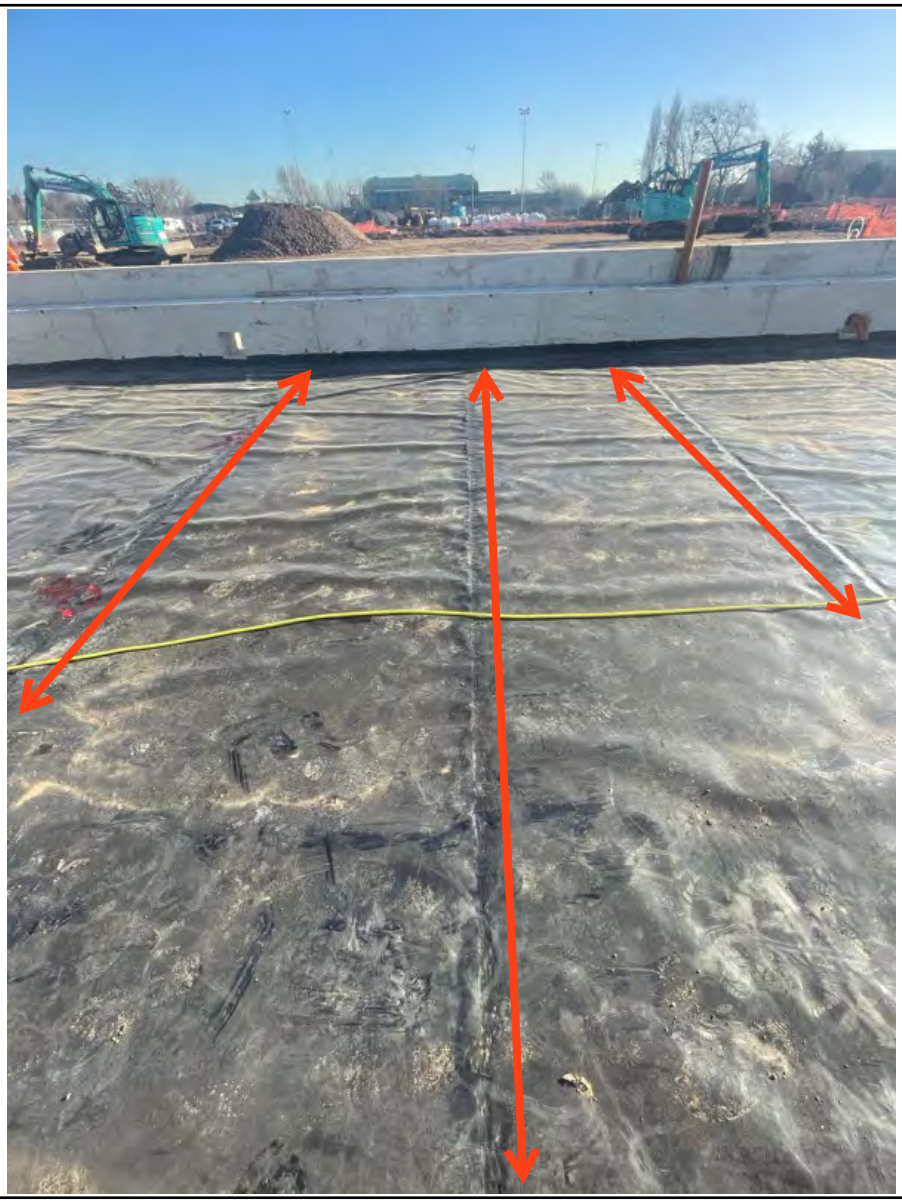


…eliminating any damages from occurring beneath the membrane from sharp objects.

The photographs above display alternate overview photographs of the areas verified.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



All overlaps between sheets of Juta Titan Flex membrane have been lapped a minimum of 100mm conforming to manufactures specification and guidelines and welded using a hot air tool and silicone roller in accordance with BS8485:2019 ensuring a minimum 40mm welded lap joint is achieved. Consistently welded lap joints highlighted above.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays one of the testing procedures carried out during this visit. A mechanical point stress also known as a pick&probe test was conducted to the lap joints throughout the complete line out installation .Several faults were identified in conjunction to airlance integrity testing which were remediated on site by SWC.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Basal Layer. Gridlines; C-D/1-10, A-B/1-2 & B-C/1-6.

NOTES: Retrofit-

Once the Juta Titan Flex has been installed across the areas referenced it has been terminated/sealed upon the concrete walls which have been primed prior to application via retrofit detail as per the proposed design detail using Juta Titan Tank which is a…





…gas resistant self adhesive membrane. The primed walls will help aid in the adherence of the Juta Titan Tank which has been lapped upon the primed concrete and returned upon the Juta Titan Flex as shown in the photograph above on the left.

The internal corners have been sealed prior to the retrofit creating a reinforced seal to a good NVQ standard as shown above on the right.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The above photo displays a mechanical point stress being conducted upon a sealed

perimeter retrofit detail which has been achieved using Juta Titan Tank.

All details have been heated down and received rolled pressure applied to ensure

complete adhesion has been achieved. Verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



A single pipe penetration present within basal layer- Gridlines; C-D/1-10 has to been

successfully sealed in accordance to manufactures specification and to a good NVQ

standard using the Juta Titan Tank gas resistant self adhesive membrane.

Verified in accordance with CIRIA 735.

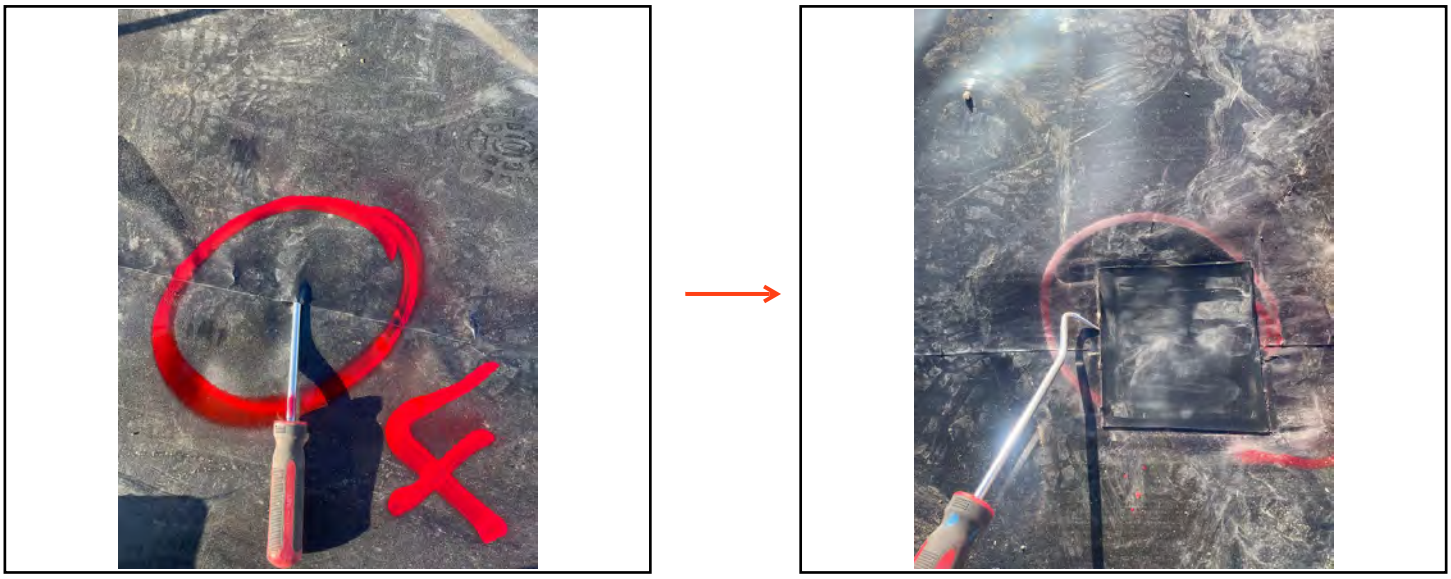
GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: Basal Layer. Gridlines; C-D/1-10,

NOTES: Faults identified & remediated-

During this site verification visit a couple of testing procedures were conducted. These were the mechanical point stress test as mentioned & non-destructive airlance integrity testing. Thorough visual inspections took place across the whole installation too.



The photograph above on the left displays the typical faults that were identified, small miswelded lap joints. The installers were notified and carried out the patch repair remediations using Juta Titan Tank as shown above on the right. Further pick & probe tests identified no further faults. Verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Installer carrying out patch repair .



Pick&probe testing carried out to Juta Titan Tank retrofit.



Pick&probe testing to welded lap joint



Next area in preparation for Juta Titan Flex installation.

GEOSHIELD Verification Report

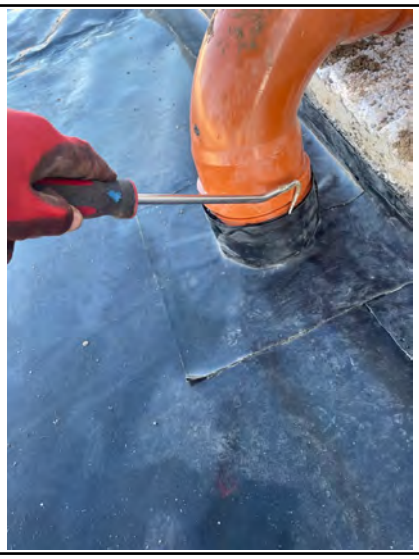
ADDITIONAL PHOTOGRAPHS



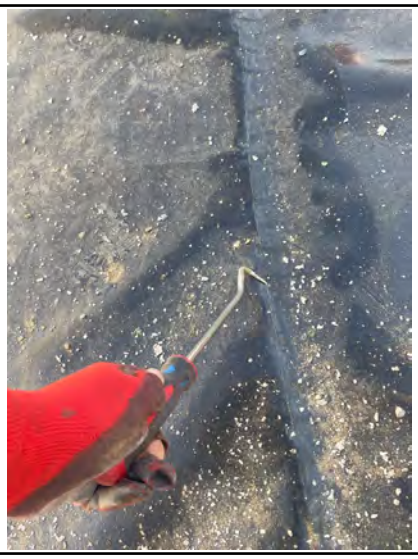
Consistently welded lap joint.



Reinforced internal corner detail.



Pick&probe testing to sealed pipe penetration.



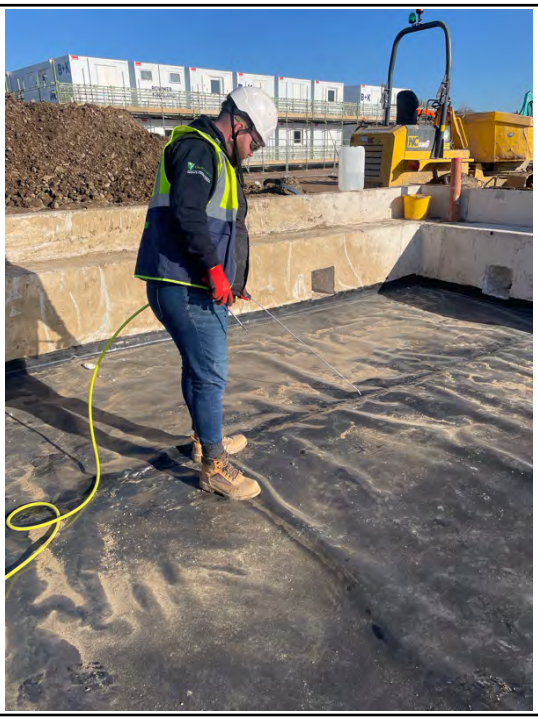
Pick&probe testing to welded lap joint

AIR LANCE INTEGRITY TESTING

AIR LANCE TEST: ASTM D4437-08:2013 Inspects all seams for unbonded areas using a 4.8mm air nozzle held not more than 51mm away from the seam. 50 Psi is the minimum requirement. The air nozzle is directed on the upper edge seam, riffles indicate a unbonded seam. Each seam is numbered and failure marked with a F/1 F/2 classification and a description given



Airlance testing welded lap joint.



Airlance testing welded lap joint.



Airlance testing welded lap joint.



Airlance testing welded lap joint.

GEOSHIELD LTD
TANKING, GAS AND HYDROCARBON BARRIER SYSTEMS
QUALITY ASSURANCE PROGRAMS AND INSPECTION SERVICES

INTEGRITY TESTING RECORD

AIR LANCE INTEGRITY TESTING (cont)

Detail of the Gas Membrane	Juta Titan Flex
Detail of Tapes	Juta Titan Tank
Joints and lap design	Welded.

TEST NUMBER:	FAILED OR PASSED	DETAIL, COMMENT AND RECOMMDATIONS
Gridlines; C-D/1-10	Pass	Six miswelds identified. Remediated on-site.
Gridlines; B-C/1-6	Pass	Consistently welded lap joints throughout.
Gridlines; A-B/1-2.	Pass	Consistently welded lap joints throughout.
Retrofit detailing.	Pass	Complete adherence achieved throughout.

NOTES:

Application of Membrane to specification and conforming to manufacturing technical data. Faults found

were remediated on-site in the presence of Geoshield. Overall a good standard of works carried out.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the second visit to Riverside Academy, Reading where verification was required for the installation of the Juta Titan Flex to Basal Layer within Zone A to GL's C-D/1-10, A-B/1-2 & B-C/1-6. installed by the specialists from SWC. All over-laps have been welded using a hot air tool and silicone roller ensuring continuous 40mm welds have been achieved. The Juta Titan Flex has been sealed upon the concrete perimeter(s) which has been primed prior to application via a retrofit detail achieved using Juta Titan Tank as per manufactures specification & design detail.

Thorough visual pick&probe testing plus airlance integrity testing identified a total of 6 faults across all areas which were remediated on-site in the presence of Geoshield . Tested and verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:



DATE: 06/02/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	003
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Elvis
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED:	Zone A - Basal Layer.
Gridlines; C-D/10-11, C-D 12-14, A-B/5-13, B-C/6-13 & C-H/12-12.5	

SITE CONDITIONS:

# WEATHER:	Overcast
# TEMPERATURE:	9c
# MEMBRANE TEMPERATURE:	N/a
# RELATIVE HUMIDITY:	N/a

TIME:	08:00-10:30	REPORT NUMBER:	003
DATE:	15/02/2023		
ACCOMPANIED	Darren - Fenton Group and SWC installers.		

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays Fenton's Zone Layout Plan.

Inspection was carried out within zone A and C

Gridlines; C-D/10-11, C-D 12-14, A-B/5-13, B-C/6-13 & C-H/12-12.5

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays the proposed basal layer layout plan.

The Juta Titan Flex installation verified during this visit are highlighted blue above.

Basal Layer. Gridlines; C-D/10-11, C-D 12-14, A-B/5-13, B-C/6-13 & C-H/12-12.5

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Basal Layer. Gridlines; C-D/10-11

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Basal Layer. Gridlines; C-H/12-12.5

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Basal Layer. Gridlines; A-B/5-13

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS

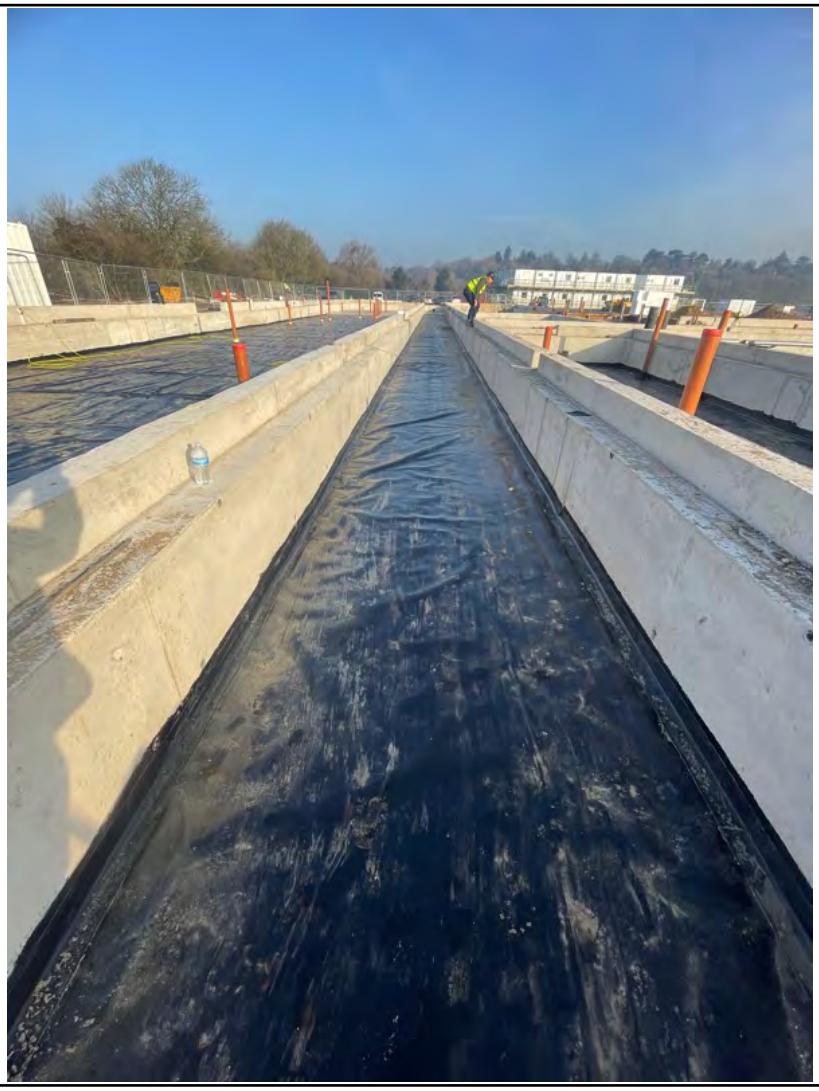


Overview photograph of the area verified during this visit.

Basal Layer. Gridlines; A-B/5-13

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Basal Layer. Gridlines; B-C/6-13

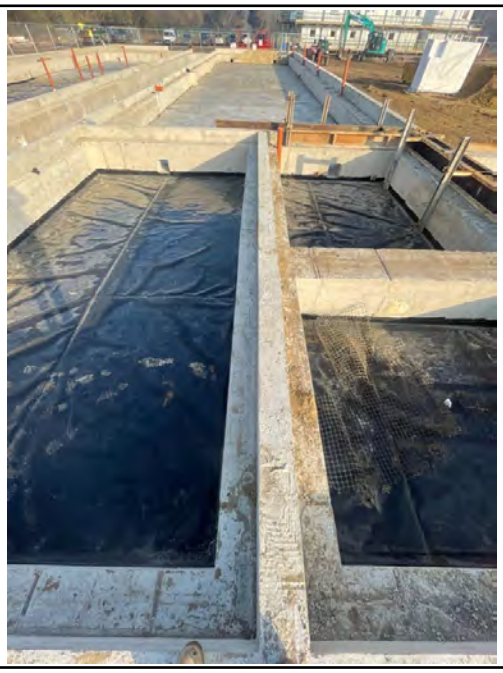
GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Basal layer membrane (see layout).

NOTES: Installation-

The specialist installers from SWC have carried out further retrospective installations of Juta Titan Flex in accordance to manufactures specification and to the proposed design details. The Juta Titan Flex has been installed upon a rollered sand blinded substrate…





…eliminating any damages from occurring beneath the membrane from sharp objects.

The photographs above display alternate overview photographs of the areas verified.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



All overlaps between sheets of Juta Titan Flex membrane have been lapped a minimum of 100mm conforming to manufactures specification and guidelines and welded using a hot air tool and silicone roller in accordance with BS8485:2019 ensuring a minimum 40mm welded lap joint is achieved. Consistently welded lap joints highlighted above.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays one of the testing procedures carried out during this visit. A mechanical point stress also known as a pick&probe test was conducted to the lap joints throughout the complete line out installation. A total of 6 faults were identified in conjunction to airlance integrity testing which were remediated on site by SWC.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Basal layer membrane (see layout).

NOTES: Retrofit-

Once the Juta Titan Flex has been installed across the areas referenced it has been terminated/sealed upon the concrete walls which have been prime for aid adherence.

This had been achieved via a retrofit detail as per the design detail using Juta TitanTank



Evidence of primer.



which is a gas resistant self adhesive membrane. Juta Titan Tank has been lapped upon the cured primed concrete walls around the perimeter of each section verified and returned upon the Juta Titan Flex as shown in the photographs above.

The internal corners have been sealed prior to the retrofit creating a reinforced seal.

Adequate heat and rolled pressure has been applied to ensure complete adherence.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The above photo displays a mechanical point stress being conducted upon a sealed

perimeter retrofit detail which has been achieved using Juta Titan Tank.

A consistent seal has been achieved around the areas referenced. No faults identified.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Basal layer membrane (see layout).

NOTES: Pipe penetrations-

Throughout sections of the Juta Titan Flex installation a number of pipe penetrations required sealing. This has been achieved using Juta Titan Tank to individually seal the pipes where the Juta Titan Flex has been cut tightly around to eliminate voided spaces.





The pipe penetrations have been sealed in accordance to manufacturers specification and to a good NVQ standard as shown in the photograph above on the left.

All sealed pipe penetrations were also subjected to the non-destructive air lance integrity testing a mechanical point stress testing as shown above on the right.

No faults were identified. Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: Basal Layer Gridlines; A-B/5-13

NOTES: Faults identified & remediated-

During this site verification visit a couple of testing procedures were conducted. These were the mechanical point stress test as mentioned & non-destructive airlance integrity testing. Thorough visual inspections took place across the whole installation too.





The photograph above on the left displays the typical faults that were identified, six miswelded lap joints. The installers were notified and carried out the necessary remediations - rewelding the overlap as shown above on the right. Further pick & probe tests identified no further faults. Verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Pick&probe testing to sealed pipe penetration.



Pick&probe testing carried out to Juta Titan Tank retrofit.



Airlance testing to retrofit detail.



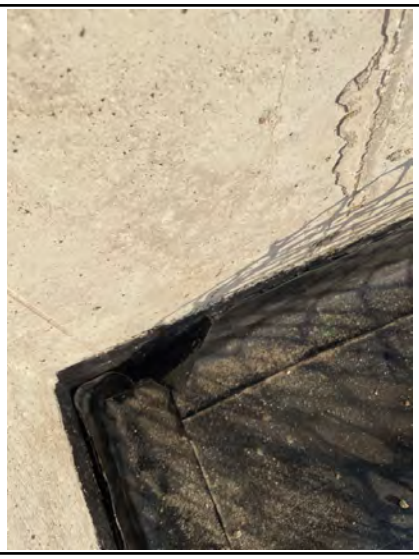
Next area in preparation for Juta Titan Flex installation.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Consistently welded lap joint.



Reinforced internal corner detail.



Pick&probe testing to sealed pipe penetration.



Retrofit and single pipe penetration.

AIR LANCE INTEGRITY TESTING

AIR LANCE TEST: ASTM D4437-08:2013 Inspects all seams for unbonded areas using a 4.8mm air nozzle held not more than 51mm away from the seam. 50 Psi is the minimum requirement. The air nozzle is directed on the upper edge seam, riffles indicate a unbonded seam. Each seam is numbered and failure marked with a F/1 F/2 classification and a description given



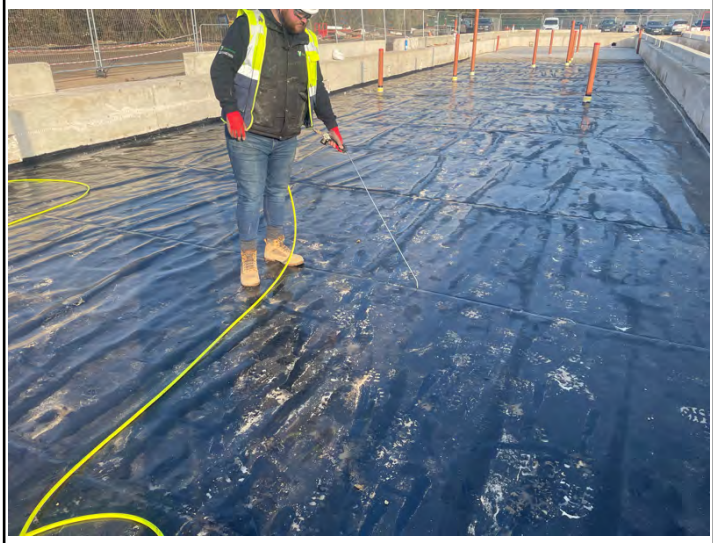
Airlance testing welded lap joint.



Airlance testing welded lap joint.



Airlance testing to sealed pipe penetration.



Airlance testing welded lap joint.

GEOSHIELD LTD
TANKING, GAS AND HYDROCARBON BARRIER SYSTEMS
QUALITY ASSURANCE PROGRAMS AND INSPECTION SERVICES

INTEGRITY TESTING RECORD

AIR LANCE INTEGRITY TESTING (cont)

Detail of the Gas Membrane	Juta Titan Flex
Detail of Tapes	Juta Titan Tank
Joints and lap design	Welded.

TEST NUMBER:	FAILED OR PASSED	DETAIL, COMMENT AND RECOMMDATIONS
Gridlines; A-B/5-13	Pass	Six miswelds identified. Remediated on-site.
Gridlines; C-H/12-12.5	Pass	Consistently welded lap joints throughout.
Gridlines; C-D/10-11	Pass	Consistently welded lap joints throughout.
Gridlines; B-C/6-13	Pass	Consistently welded lap joints throughout.
Gridlines;C-D/10-11	Pass	Consistently welded lap joints throughout.
Retrofit detailing.	Pass	Complete adherence achieved throughout

NOTES:

Application of Membrane to specification and conforming to manufacturing technical data. Faults found

were remediated on-site in the presence of Geoshield. Overall a good standard of works carried out.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the third visit to Riverside Academy, Reading where verification was required for the installation of the Juta Titan Flex to further sections of Basal Layer.

Installation carried out by the specialists from SWC. Overlaps between the sheets of membrane have been welded using a hot air tool & silicone roller ensuring 40mm welds have been achieved. The Juta Titan Flex has been sealed upon the primed concrete perimeter(s) via a retrofit detail achieved using Juta Titan Tank as per per manufactures specification and to the design detail alongside sealing all pipes.

Thorough visual pick&probe testing plus airlance integrity testing identified a total of 6 faults across all areas which were remediated on-site in the presence of Geoshield by SWC . Tested and verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:



DATE:	15/02/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	004
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: Below Basal Layer - Probe 3 & Above Basal Layer -Probes 1 & 2.

SITE CONDITIONS:

WEATHER: Overcast

TEMPERATURE: 7c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

TIME: 12:30-13:30 REPORT NUMBER: 00

DATE: 17/02/2023

ACCOMPANIED Darren - Fenton Group.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



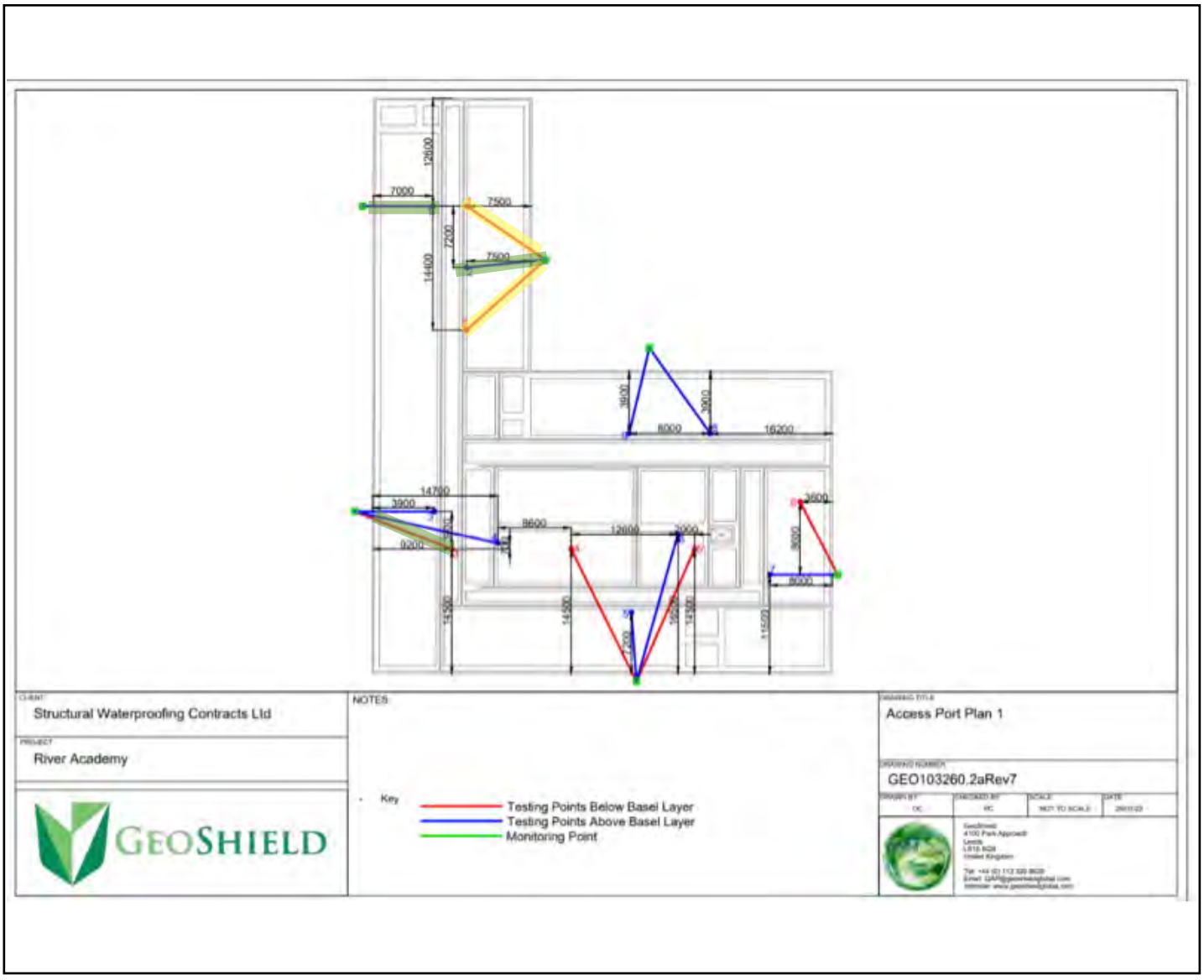
The above photograph displays Fenton's Zone Layout Plan.

Inspection was carried out within zone A and C.

Below Basal Layer - Probe 3 and Above Basal Layer - Probes 1 & 2.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



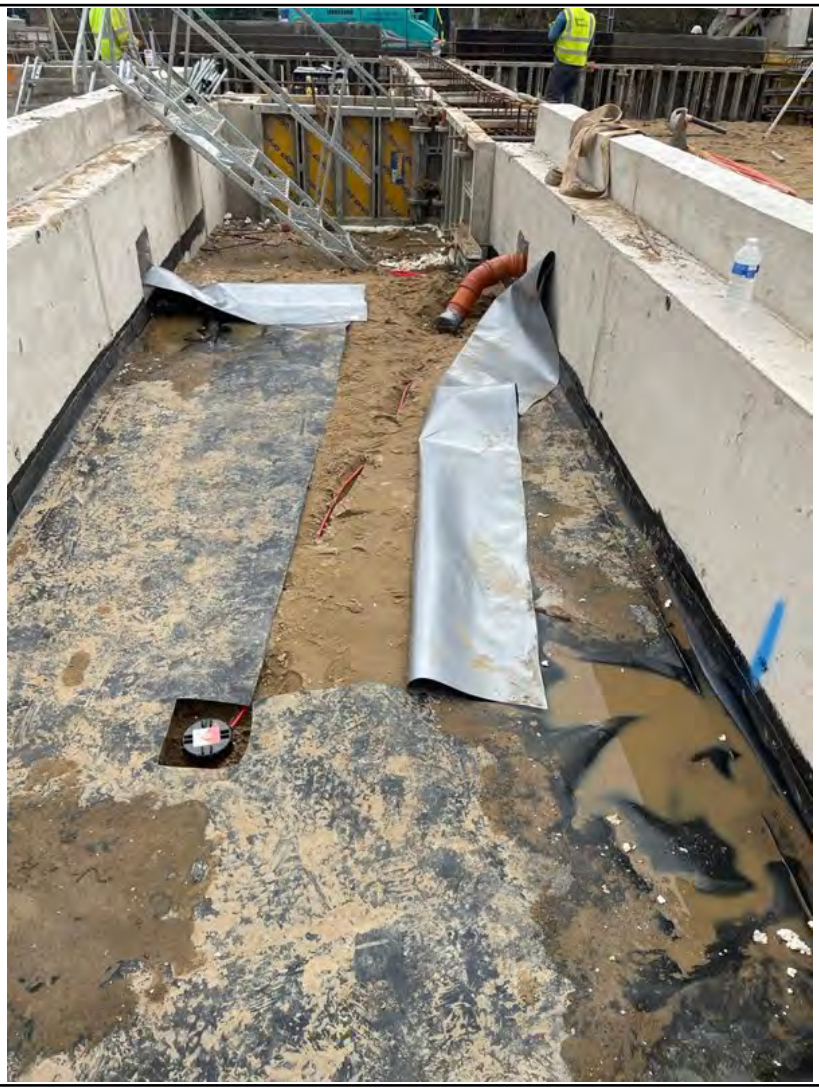
The above photograph displays Geoshield ground gas monitoring probe layout plan.

The ground gas monitoring probes verified during this visit are highlighted green.

Below Basal Layer - Probe 3 and Above Basal Layer - Probes 1 & 2.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Below Basal Layer - Probe 3.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Above Basal Layer - Probes 1 and 2.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Below Basal Layer - Probe 3.

NOTES: Installation-

The third basal layer probes have been installed by specialists from Prestige Air.

The probe pipe has been encapsulated inside 110mm PVC drainage pipe as stated in

Geoshields installation method statement on the first section as shown on the right.





The remainder for probe pipe has been buried slightly before the the Juta Titan Flex has

been re-sealed and lined across the top of it.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Above Basal Layer - Probes 1 & 2.

NOTES: Installation-

The first two (above basal layer probes 1&2) have been installed within the subfloor void as per the specialists agreement. The probe points have been of the exact measurements provided by Geoshield by the senior engineer for the probe mounted…





boxes to be fixed upon the concrete walls as per Geoshields method statement as shown in the photograph above. The probe pipes route has altered due to interfering with the proposed jetting voids. This has been confirmed it would not affect the ground gas monitoring within the void. The photograph above on the left shows the probe pipe exiting/entering into the probe sample box fixed externally as per design.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Manifold pipe works through concrete walls.



Below basal layer probe 3.



Probe pipe fixed into concrete blinding.



Ground gas monitor installed.

Above basal layer.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	
		has been installed.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the fourth visit to Riverside Academy, Reading where verification was required for the installation of the below basal layer probe 3 within zone C and the above basal layer probes 1&2 in zone A installed the specialists from Prestige Air. T basal layer probe pipe has been encapsulated in manifold pipe work as per the method statement. The ground gas monitors have now been installed to the exact centres marked out by Fenton's Engineer, these were confirmed on-site. Probe pipe routes where adjusted accordingly due to interference with the jetting voids. The basal layer probe pipe has been fixed upon the concrete with the monitors fixed upon the walls as required. The membrane in the vicinity of Basal Layer probe 3 requires sealing and repairing due to cutting it to house the basal layer probe.

GEOSHIELD SIGNATURE:



DATE: 17/02/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	005
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Mark Chapman

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07795994117

EMAIL ADDRESS: Mchapman@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: Zone B & C / Below Basal 4 and Above Basal 3.

SITE CONDITIONS:

WEATHER: Sunny

TEMPERATURE: 13c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

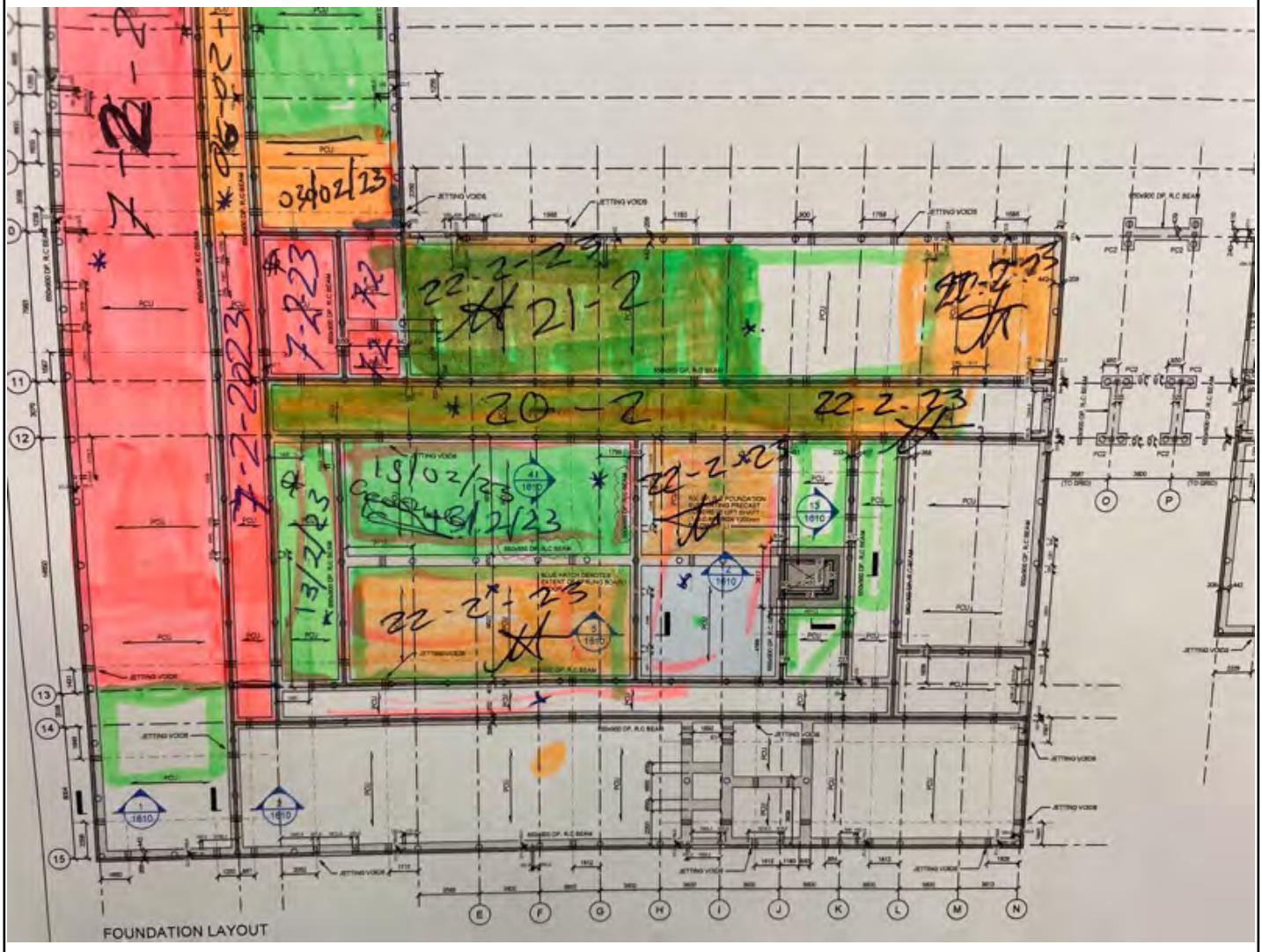
TIME: 13:00-14:00 REPORT NUMBER: 005

DATE: 22/02/2023

ACCOMPANIED Darren - Fenton Group.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



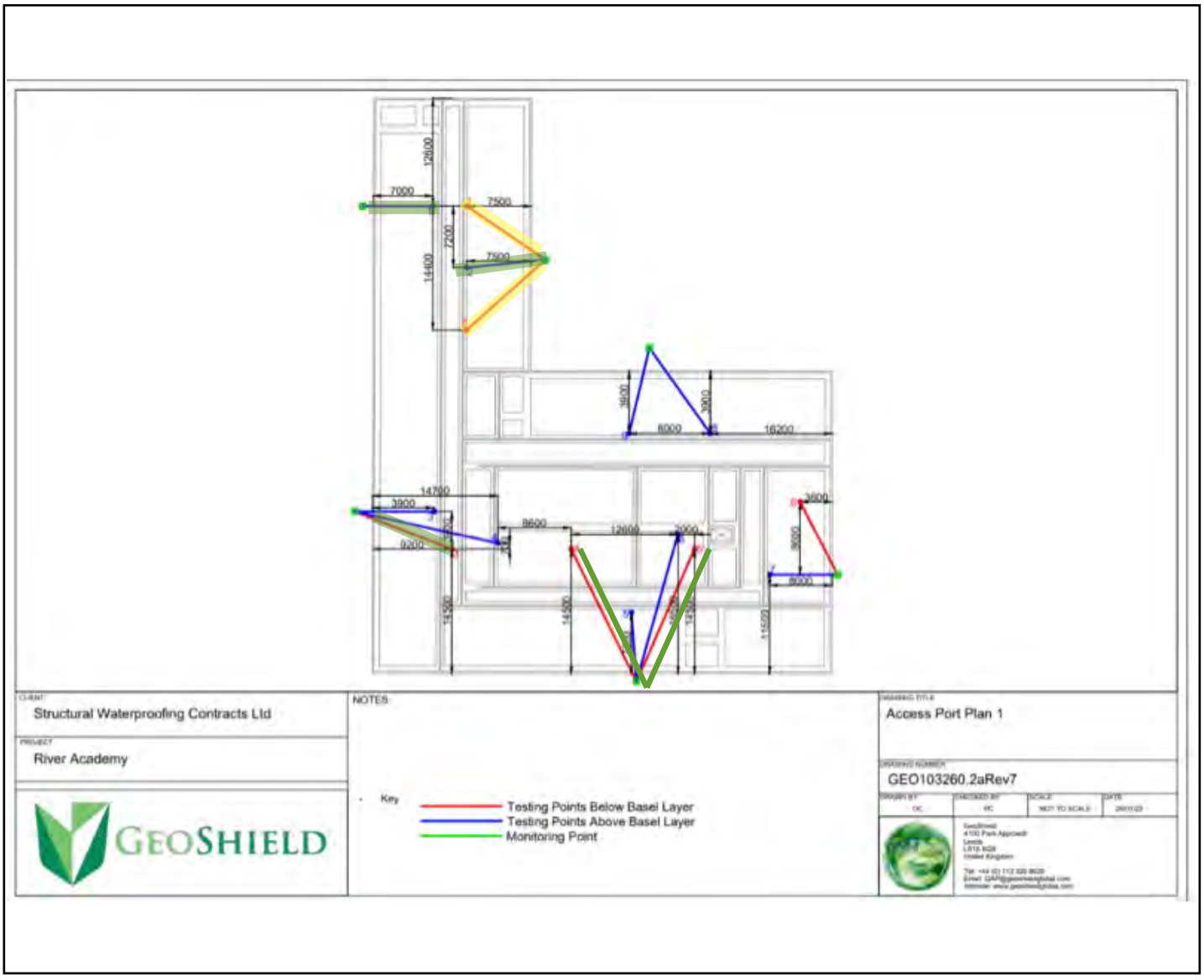
The above photograph displays a layout plan of site.

The areas highlighted in orange are where today's verification took place.

Zone B & C / Below Basal 4 and Above Basal 3

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays Geoshield ground gas monitoring probe layout plan.

The ground gas monitoring probes verified during this visit are highlighted green.

Zone B & C / Below Basal 4 and Above Basal 3.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Below Basal Layer - Probe 4.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Above Basal Layer - Probes 3.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Zone B & C.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Zone B & C.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Below Basal Layer - Probe 3 / Above Basal Layer 4.

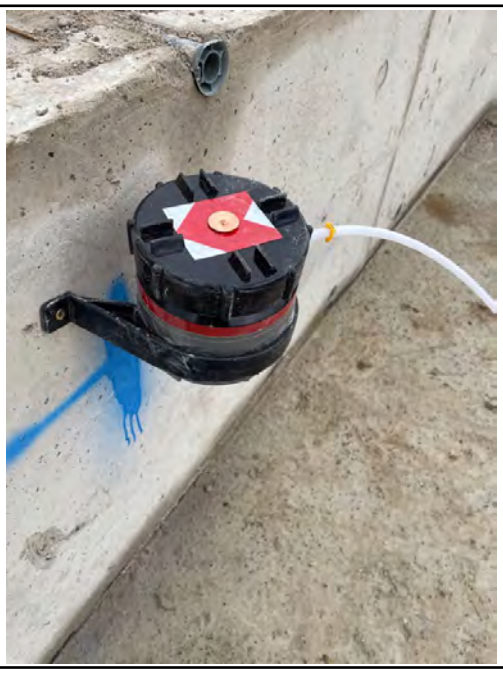
NOTES: Installation-

Probes 3 below basal layer and probe 4 above basal layer have been installed by

Prestige Air encapsulated inside 110mm PVC drainage pipe. The photograph below on

the left displays the below level probe being installed onto a blinded sand floor ready





before the the Juta Titan Flex has been re installed across the top of the probe. The

photograph on the right displays the above level probe mounted to the upstand.

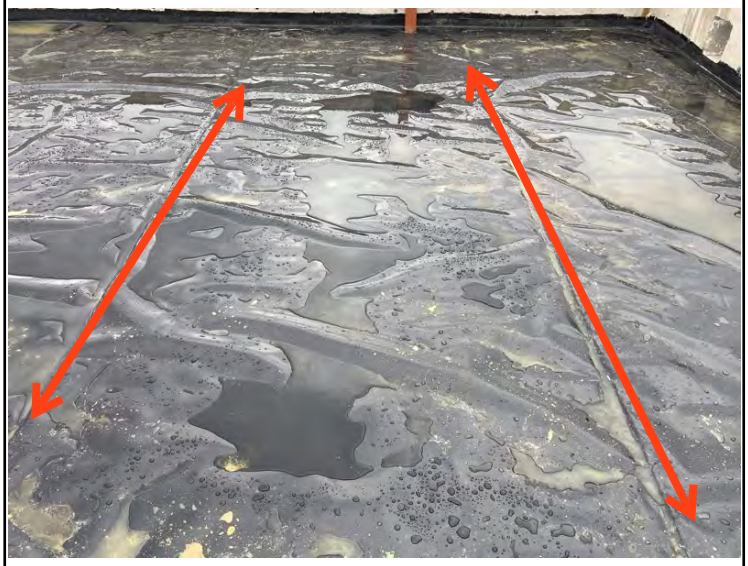
GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Zone B & C

NOTES: Installation:

During today's verification inspection to the infill installation of the Juta Titan Flex gas resistant membrane to Zine B & C, all lap joints have been welded using a hot air tool and silicone roller ensuring sufficient heat and applied pressure to achieve a complete





seal throughout the installation as shown above on the left. The photograph on the right displays an overview photograph of the installation of the Juta Titan Flex.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as a pick and probe test being carried out upon a successfully sealed welded lap joint. X6 faults were identified after a non destructive air lance integrity test and also a visual pick & probe test was carried out upon the referenced areas. Verified in accordance with CIRIA7

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

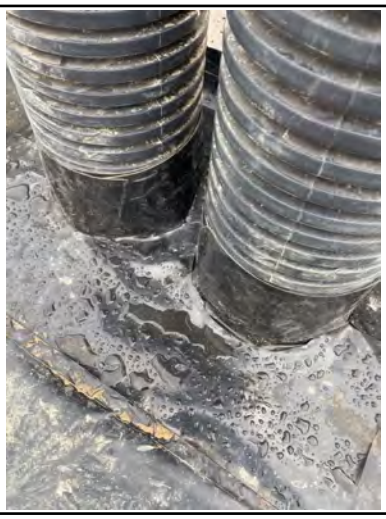
LOCATION/GRID LINE: Zone B & C

NOTES: Pipe Penetrations

During today's inspection several pipe penetrations required sealing and verification.

The photograph below on the left displays a double pipe penetration that has been

sealed using strips of Juta Titan Tank that has been applied around each individual





pipe penetration ensuring no void spaces. Sufficient heat and applied pressure

has been used to achieve a complete and consistent seal throughout the installation.

The photograph above on the right displays the Juta Titan Flex has been fitted

to the pre primed walls tightly also using heat and applied pressure ensuring that

a continuous seal has been achieved.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The photograph above displays a mechanical point stress test being conducted upon a successfully sealed pipe penetration. As seen in the photograph patches or strips of the Juta Titan Tank have been placed tightly around the entire circumference of the pipe form a gas resistant seal. Verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



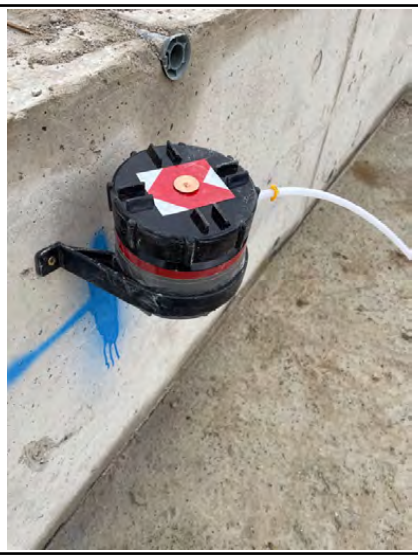
Manifold pipe works through concrete walls.



Below basal layer probe 4.



A rolled sand blinded floor.



Ground gas monitor installed. Above basal layer.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	
		has been installed.	
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES ☐ NO ☐

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off		☐
Gridline/Plot Sign off		☐
Gridline/Plot Sign off		☐
Gridline/Plot Sign off		☐
Gridline/Plot Sign off		☐

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the fifth visit to Riverside Academy, Reading where verification was required for the infill installation and to verify above basal probe 3 and below basal layer 4. All probes have been installed in accordance to manufactures specification and to design detail. All lap joints between the two adjacent sheets of Juta Titan Flex have been welded using a hot air tool and silicone roller, ensuring sufficient heat and applied pressure to form a gas resistant seal. All pipe penetrations have been sealed using strips of Juta Titan Tank which have been placed tightly around the pipe achieving a complete and consistent seal throughout the installation. A non destructive air lance integrity test followed by a visual inspection highlighted X6 faults which were remediated on-site. Verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:



DATE:	22/02/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	006
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Mark Chapman

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07795994117

EMAIL ADDRESS: Mchapman@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME:

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

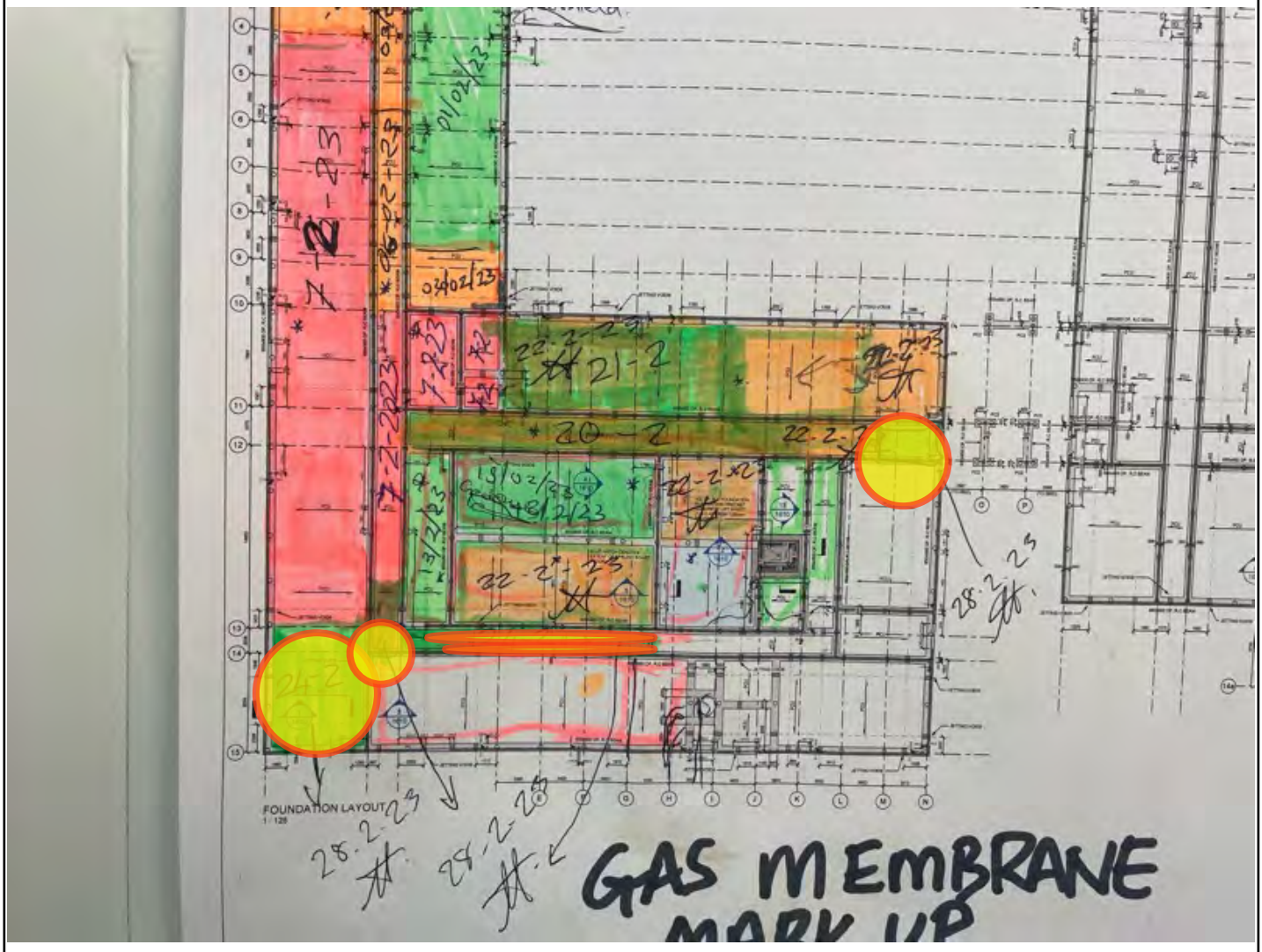
GEOSHIELD Verification Report

AREA SURVEYED:	Zone C & D.
SITE CONDITIONS:	
# WEATHER:	Sunny
# TEMPERATURE:	8c
# MEMBRANE TEMPERATURE:	N/a
# RELATIVE HUMIDITY:	N/a

TIME:	11:30-12:30	REPORT NUMBER:	006
DATE:	28/02/2023		
ACCOMPANIED	Darren - Fenton Group.		

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of site.

The areas highlighted in yellow are where today's verification took place.

Zone C & D.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of one of the areas verified during this visit.

Zone C & D.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



The photograph above displays an overview of one of the areas

verified during today's verification visit.

Zone C & D.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of one of the areas verified during this visit.

Zone C & D.

GEOSHIELD Verification Report

LIMITATIONS

SURVEY AREA: Zone C & D.

RESTRICTIONS AND LIMITATIONS: Limitations:

Upon today's verification visit to the Juta Titan Flex infill installation to Zone C & D a non destructive air lance integrity test could not be carried out due to heavy machinery in use and tarmac lorries requiring access to the roads.



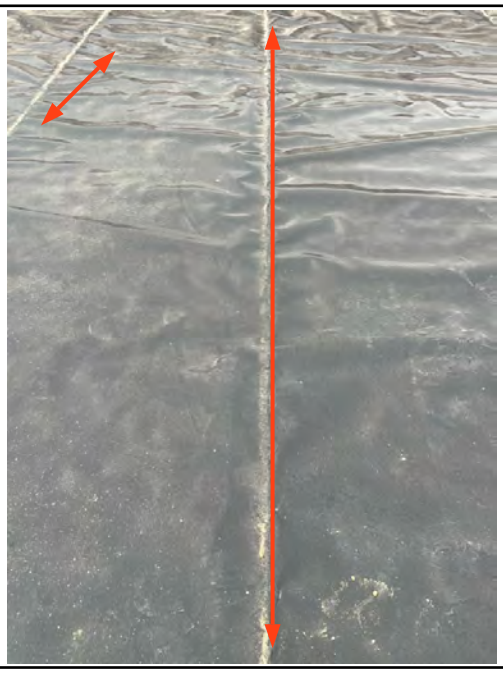
GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Zone C & D.

NOTES: Installation-

During today's verification visit to the infill installation to the Juta Titan Flex gas resistant membrane to Zone C & D, all lap joints have been successfully welded using a hot air tool and silicone roller between the two adjacent sheets of membrane as shown in the photograph above on the left. The photograph above on the right shows an overview photo of the infill installation that required verification during today's visit.





GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also referred to as a pick and probe test being conducted upon a successfully sealed welded lap joint. A thorough visual inspection was carried out upon the referenced area which highlighted no faults or defects. Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Zone C & D.

NOTES: Sealed Details:

Upon today's verification visit several pipe penetrations and below basal probes required sealing and verification. The photograph below on the left displays a sealed pipe penetration that has the Juta Titan Flex pulled tightly around the pipe and Juta





Titan Tank has been applied around the entire circumference of the pipe to ensure a gas resistant seal. The photograph above on the right displays one of the below basal level probes that has been installed by Prestige Air. As seen in the photo a total gas resistant seal has been achieved by using strips of the Juta Titan Tank that has been heated down to form a sufficient seal.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The photograph above displays a mechanical point stress test being conducted

upon a successfully sealed probe. As seen in the photograph the Juta

Titan Flex has been installed tightly against the probe and the Juta Titan Tank has

then been installed around the probe lapping onto the gas membrane.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE



The above photograph displays a mechanical point stress test being carried

out upon a retrofit perimeter detail, using Juta Titan Tank. The inner walls have

been primed and left to cure before the application of the Juta Titan Tank.

No faults identified. Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Patch repair carried out by the installers from SWC.



Pick and Probe upon Below Basal Layer Probe.



Machinery restricting access to Zone C & D.



Juta GP1 SAM used onsite.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	
		has been installed.	
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the sixth visit to Riverside Academy, Reading where verification was required for the infill installation to the Juta Titan Flex to Zone C & D. All lap joints have been successfully welded using a hot air tool and silicone roller and lapped a minimum 100mm confirming to manufacturers specifications and guidelines. All pipe penetrations and probes have been sealed using Juta Titan Tank to form a gas resistant seal throughout the installation process. A retrofit perimeter detail has been installed to the pre primed walls that have been left to cure before the installation of the Juta Titan Tank. A non destructive air lance integrity test was not carried out due to access, but a thorough visual mechanical point stress test was conducted highlighting no faults or defects.Verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:



DATE:	28/02/2023.

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	007
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Mark Chapman

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07795994117

EMAIL ADDRESS: Mchapman@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME:

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

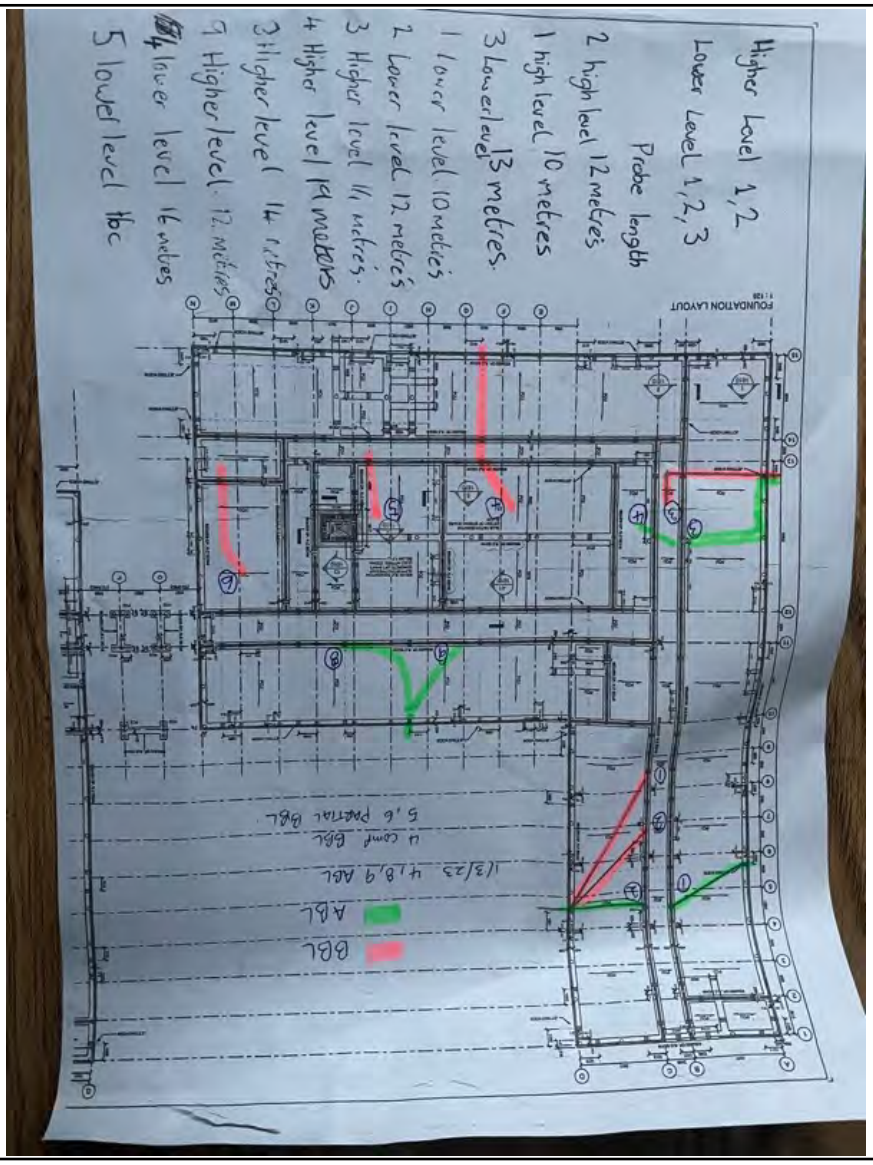
GEOSHIELD Verification Report

AREA SURVEYED:	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL
SITE CONDITIONS:	
# WEATHER:	Overcast
# TEMPERATURE:	8c
# MEMBRANE TEMPERATURE:	N/a
# RELATIVE HUMIDITY:	N/a

TIME:	12:40- 13:50	REPORT NUMBER:	007
DATE:	01/03/2023.		
ACCOMPANIED	Darren - Fenton Group.		

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the positioning of the

various probes installed.

Probes 4,8 & 9 ABL / Probes 5 & 6 BBL.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of one of the probes verified during this visit.

Probes 4,8 & 9 ABL / Probes 5 & 6 BBL

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



The photograph above displays an overview of one of the probes

verified during today's verification visit.

Probes 4,8 & 9 ABL / Probes 5 & 6 BBL

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of one of the probes verified during this visit.

Probes 4,8 & 9 ABL / Probes 5 & 6 BBL.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Probes 4,8 & 9 ABL / Probes 5 & 6 BBL.

NOTES: Installation-

During today's verification visit to the above referenced area several sub floor probes required verification as per Geoshield design. The photograph below shows sections of the ground gas monitoring system has not been encapsulated within the 110mm





pipe due to accessibility, and has been re-routed by the installers from Prestige Air. The photo on the right displays a below basal layer probe installation.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The photograph above displays a below basal layer probe that has been installed by Prestige Air in accordance with Geoshield design. The probe and pipe work have been placed in a trench from a sand blinded floor ready for the installation of the Juta Titan Flex gas Resistant membrane. Care has been taken not to cause damage to the probe.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The photograph above displays the manifold pipe work returned horizontally

up the concrete wall. The manifold pipe work has been sealed and the monitoring

pipe work has been housed within the manifold pipe. The probe sample box still

requires installation, but can be done at a later date.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE



The above photograph displays a section of wall has been removed for the

manifold pipe work to be installed in the correct position as per design

drawing. As mentioned earlier in the report sections of the pipe work have not

been encapsulated in the 110mm pipe and has been back filled with sand.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



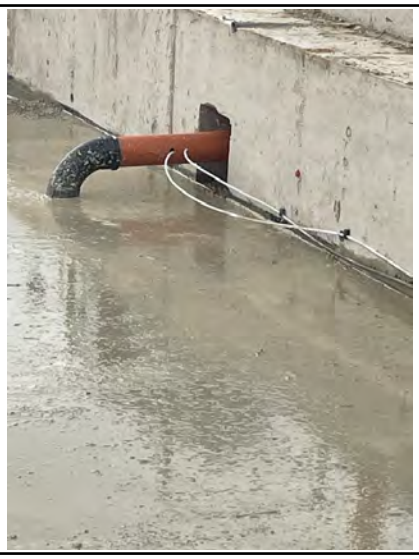
An above basal layer probe installed.



Manifold pipe work installation.



Below basal layer probe installation.



Below basal layer manifold pipe work installation.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	
		has been installed.	
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the seventh visit to Riverside Academy, Reading where verification was required to Probes 4,8 & 9 above basal layer and probes 5 & 6 below basal layer, installed by the specialist from Prestige Air. As mentioned in the report sections of the ground gas monitoring pipe work have not been encapsulated within the 110mm pipe work as stated in the Geoshield method statement. A sand blinding has been used to back fill the trench ready for the installation of the Juta Titan Flex gas resistant membrane. All ground gas monitoring systems below basal layer have been installed to the centres marked out by Fentons engineers and all manifold pipe work has been kept horizontal. A sand blinding has been used throughout the installation of all below basal layer gas monitoring probes.

GEOSHIELD SIGNATURE:



DATE: 01/03/2023.

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	008
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in-accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Mark Chapman

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07795994117

EMAIL ADDRESS: Mchapman@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME:

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: Block B, D & E Extension to Probe 5 BBL.

SITE CONDITIONS:

WEATHER: Overcast

TEMPERATURE: 10c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

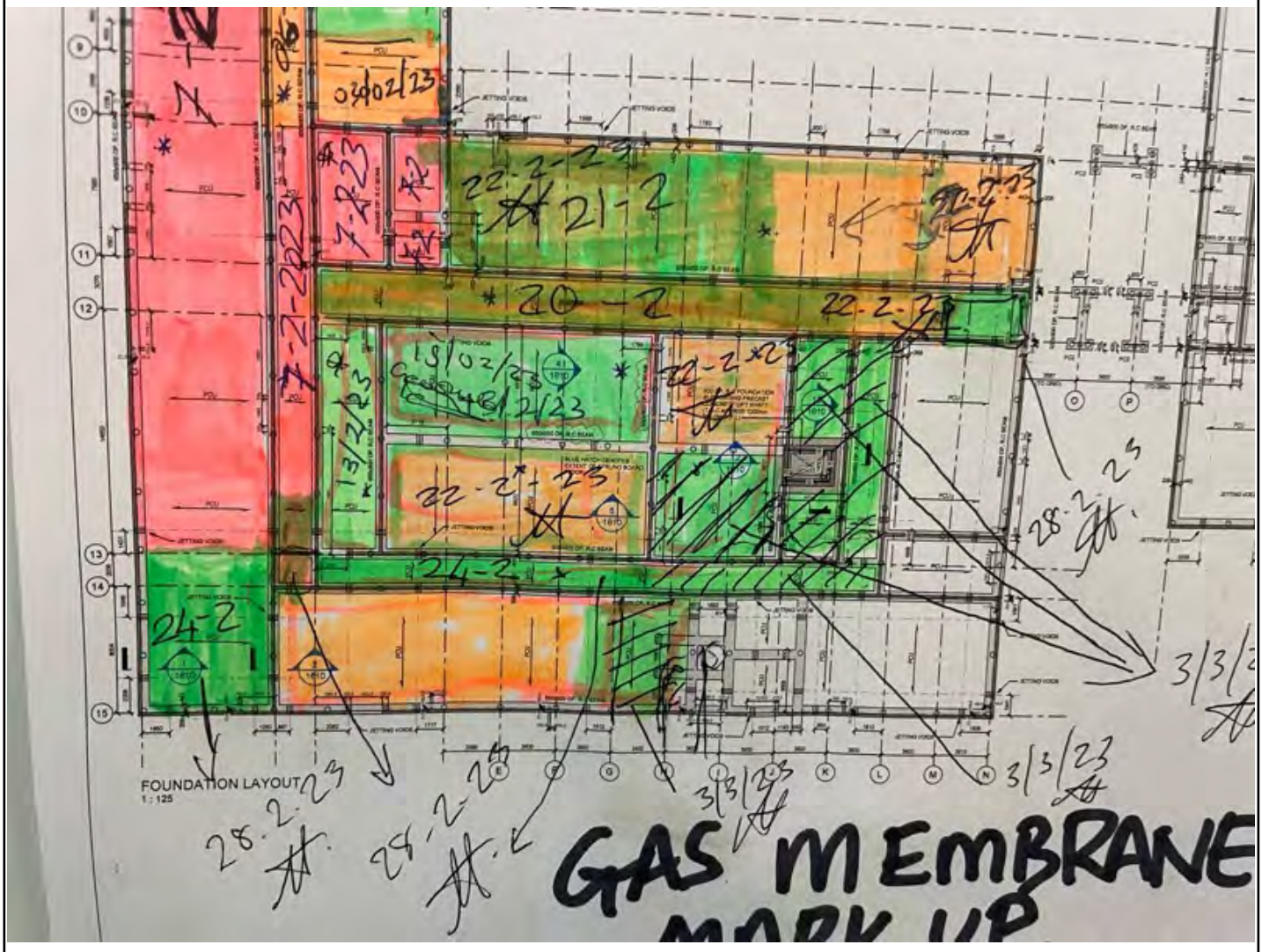
TIME: 10:30-11:40. REPORT NUMBER: 008

DATE: 03/03/2023.

ACCOMPANIED Darren - Fenton Group.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed site

where today's installation and verification took place.

Block B, D & E and Extension to Probe 5 BBL.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of one of the areas verified during this visit.

Block B, D & E and Extension to Probe 5 BBL.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



The photograph above displays an overview of one of the probes

verified during today's verification visit.

Extension to Probe 5 Below Basal Layer.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of one of the probes verified during this visit.

Block B, D & E and Extension to Probe 5 BBL.

GEOSHIELD Verification Report

LIMITATIONS

SURVEY AREA: Block B, D & E and Extension to Probe 5 BBL.

RESTRICTIONS AND LIMITATIONS: Limitations:

During today's verification visit to the above referenced area a non destructive air lance integrity test could not be carried out due to heavy machinery requiring access to the road way. A thorough mechanical point stress test was conducted upon the entire area.



GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Block B, D & E and Extension to Probe 5 BBL.

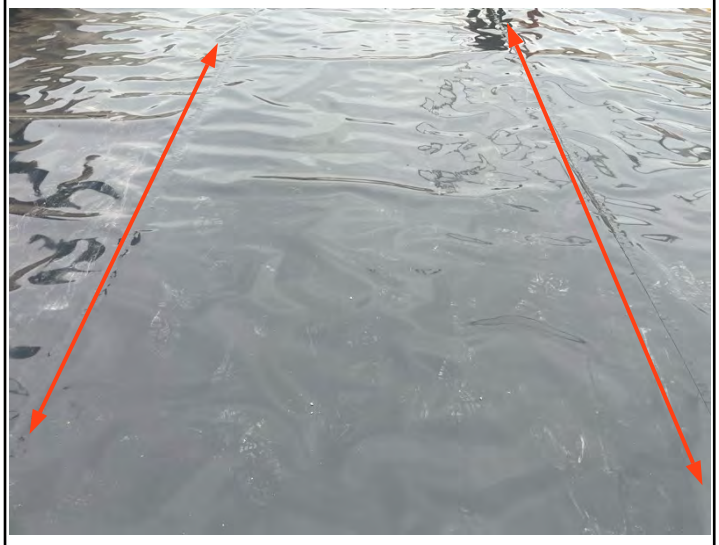
NOTES: Installation-

During today's verification visit to the above referenced area to the infill installation to the

Juta Titan Flex gas resistant membrane, all lap joints have been successfully welded using

a hot air leister and silicone roller, ensuring a minimum 40mm weld between the two





adjacent sheets of membrane as shown in the above photograph on the left. The photo

above on the right displays an overview photo of where today's installation took place.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as a pick and probe test being conducted upon a successfully welded lap joint, highlighted by the red annotation. A thorough visual inspection followed on by a mechanical point stress test upon the entire referenced area highlighted no faults. Verified in accordance with CIRIA73.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays Probe 5 below basal layer being extended through the brick works buried in the sand an has not been encapsulated with the 110mm pipe like other sections that have been verified earlier prior to today's verification inspection.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The photograph above displays the manifold pipe has been successfully sealed

using strips of the Juta Titan Tank that has been pulled tightly around the neck of the

pipe and lapped onto the JutaTitan Flex gas resistant membrane, in accordance

with manufacturers specifications and design.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE



The above photograph displays a mechanical point stress test being performed on a successfully sealed manifold pipe. A petal formation has been used to seal the manifold pipe using strips of the Juta Titan Tank and finished with a top hat detailing to ensure a complete gas resistant seal has been achieved.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE



The above photograph shows one of the dedicated installers from SWC

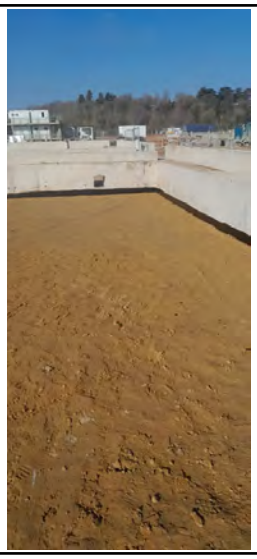
retrofitting a strip of the Juta Titan Tank to the pre primed inner walls using

sufficient heat and applied pressure to achieve a complete and continuous

gas resistant seal throughout the installation process.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



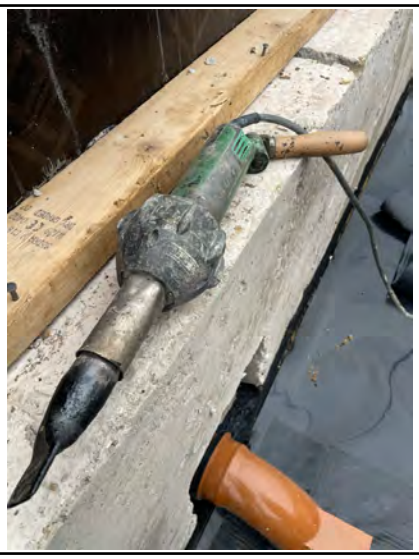
Photograph of the sand blinded floor ready for the membrane.



Manifold pipe work installation.



Installation of the retrofit dealing required onsite.



Photograph above shows a hot air leister used onsite.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES | NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the eighth visit to Riverside Academy, Reading where verification was required to the infill installation to the Juta Titan Flex gas resistant membrane to the above referenced areas. All lap joints have been successfully welded between the two adjacent sheets of Juta Titan Flex. Sufficient heat and applied pressure has been used to form a minimum 40mm weld ensuring a gas resistant seal throughout the installation. All probe manifold pipe work has been installed in accordance with Geoshield design. All probes have been sealed using strips of Juta Titan Tank and a retrofit design around the inner walls has been sealed correctly and in accordance with manufacturers design. A thorough visual and mechanical point stress test highlighted no faults. Tested and verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:



DATE:	01/03/2023.

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	009
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Mark Chapman

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07795994117

EMAIL ADDRESS: Mchapman@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED:	Block B, D & E.
SITE CONDITIONS:	
# WEATHER:	Snowing
# TEMPERATURE:	2c
# MEMBRANE TEMPERATURE:	N/a
# RELATIVE HUMIDITY:	N/a

TIME:	11:00-12:40	REPORT NUMBER:	009
DATE:	08/03/2023.		
ACCOMPANIED	Darren - Fenton Group.		

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed site.

Above in blue is where today's installation and verification took place.

Block B, D & E.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of one of the areas verified during todays verification visit

Block B, D & E.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of one of the areas verified during this visit.

Block B, D & E.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



The photograph above displays an overview of one of the areas

verified during today's verification visit.

Block B, D & E.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Block B, D & E.

NOTES: Installation-

During today's verification visit to the above referenced area to the infill installation to the

Juta Titan Flex gas resistant membrane, all lap joints have been successfully welded using

a hot air leister and silicone roller, ensuring a minimum 100mm overlap between the two





adjacent sheets of membrane as shown in the above photograph on the left. The photo

above on the right displays an overview photo of where today's installation took place.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also referred as a pick and probe test being conducted upon a successfully welded lap joint. A thorough pick and probe test and a non destructive air lance test was conducted upon the referenced areas identifying 5 faults which were remediated onsite. Verified in accordance with CIRIA735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Block B, D & E.

NOTES: Sealed Pipe and Probe Detailing:

During today's verification visit to the above referenced areas several pipe penetrations and below basal layer probes required sealing and verification. Juta Titan Tank has been installed tightly around the neck of the pipes and probes lapping onto the Juta Titan Flex





gas resistant membrane. The photograph on the left above displays a successfully sealed pipe penetration that has been sealed in accordance with manufacturers specification and design detail. The photograph above on the right shows a below basal layer probe that has been installed by Prestige Air beneath a sub blinded sand floor and sealed in the same way as all the pipe penetrations.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The above photograph displays a pick and probe test being carried out upon a

successfully sealed below basal layer probe. Two testing methods have been

used during today's inspection which were a non destructive air lance test followed

by a pick and probe test. Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

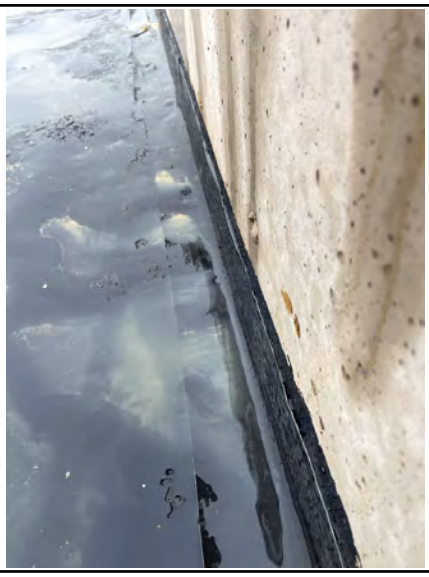
VERIFICATION ITEM THREE

LOCATION/GRID LINE: Block B, D & E.

NOTES: Faults Identified:

During today's verification visit a retrofit design detail has been implemented around the inner walls onto the Juta Titan Flex gas resistant membrane in accordance with manufacturers specification and guidelines. The photograph below on the left displays





one of the faults that was identified during the inspection. Due to weather conditions the Juta Titan Tank has started peeling away from the inner walls and required more heat to stick the membrane down to ensure a gas resistant seal. Photo on the right shows an area that required repair and has been remediated on-site.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Alternate overview photograph of an area requiring verification.



Below Basal Layer Probe installation.



Pick and probe test carried out on a pipe penetration.



Pick and probe test conducted upon a sealed lap joint.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES | NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the ninth visit to Riverside Academy, Reading where verification was required to the infill installation to the Juta Titan Flex gas resistant membrane to the above referenced areas. All lap joints have been successfully welded between the two adjacent sheets of Juta Titan Flex. Applied heat and pressure has been used throughout the installation process ensuring that a gas resistant seal has been achieved. All pipe penetrations and probes have been sealed using strips of the Juta Titan Tank In accordance with manufactures specification and guidelines.

A retrofit detail has been implemented between the inner walls onto the Juta Titan Flex gas membranes. A visual pick and probe test and a non destructive air lance identified 5 faults which were remediated onsite.Verified in accordance with CIRIA73

GEOSHIELD SIGNATURE:



DATE:	08/03/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	010
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz Carey
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED:	Block B, D & E.
SITE CONDITIONS:	
# WEATHER:	Snowing
# TEMPERATURE:	2c
# MEMBRANE TEMPERATURE:	N/a
# RELATIVE HUMIDITY:	N/a

TIME:	11:00-12:40	REPORT NUMBER:	009
DATE:	08/03/2023.		
ACCOMPANIED	Darren - Fenton Group.		

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed site.

Above in blue is where today's installation and verification took place.

Infill installation Gridlines; L-N/13-14 & above basal layer probe 7.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Basal Layer membrane - Gridlines; L-N/13-14

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

Above Basal Layer - Probe 7.

GEOSHIELD Verification Report

LIMITATIONS

SURVEY AREA: Basal Layer membrane - Gridlines; L-N/13-14

RESTRICTIONS AND LIMITATIONS: Insufficient Access-

There was insufficient access to the area requiring verification during this visit. No access was available for the work vehicle to enable non-destructive airlance integrity testing to be conducted. Alternatively, thorough pick&probe tests were conducted.



GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Basal Layer membrane - Gridlines; L-N/13-14

NOTES: Installation-

Juta Titan Flex has been installed across the sand blinded substrate. All overlaps between the sheets of membrane have been successfully welded using a hot air tool and silicone roller as highlighted in the photograph below on the left.





The Juta Titan Flex membrane has been lined tightly too the concrete perimeter walls.

Alternate overview photos displayed above, installed in accordance with BS8485:2019.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick and probe test being conducted upon a consistently welded lap joint. Consistent welds have been achieved, with no faults or defects identified throughout the installation.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Basal Layer membrane - Gridlines; L-N/13-14

NOTES: Pipe penetrations-

Within the area a couple of pipe penetrations required sealing to create a continuous seal across the area. The Juta Titan Flex has been cut tightly around each pipe penetration and sealed accordingly.





The pipe penetrations have been successfully sealed in accordance to manufactures specification using Juta Titan Tank - gas resistant self adhesive membrane to a good NVQ standard. These were also subjected to thorough pick&probe testing as shown in the photo above on the right. Complete adherence has been achieved throughout.

No faults identified. Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

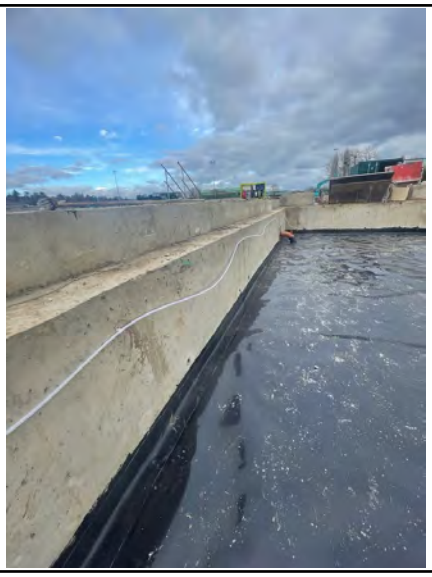
VERIFICATION ITEM THREE

LOCATION/GRID LINE: Basal Layer Probe - 7.

NOTES: Installation-

The final above basal layer probe (7) has been installed within the area. The probe pipe has been mechanically fixed upon the concrete perimeter at a horizontal angle.

This eliminates any sharp angles within the probe pipe which could possibly affect…





…the ground gas monitoring in the future. The probe has been installed to the markup set out by the Fenton engineer to Geoshields design drawing.

The probe pipe has edified the area through pipe work vertically adjacent to area in which it is placed, in accordance to Geoshields method statement.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Pick&probe testing to retrofit detailing.



Pick&probe testing to retrofit detailing.



Pick&probe testing to pipe penetration.



Reinforced retrofit detail.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
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Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the tenth visit to Riverside Academy, Reading where verification was required for the installation of Juta Titan Flex membrane to Gridlines; L-N/13-14 to a basal layer section. All overlaps have been successfully welded using a hot air tool and silicone roller. Pipe penetrations and retrofitting detail to the perimeter of the area referenced have been successfully sealed in accordance to manufactures specification using Juta Titan Tank. All retrofitted surfaces have been primed prior to application to help aid in adherence. The final above basal layer probe (7) within this block has been successfully installed, the probe location has been set out by Fentons engineer. A thorough visual pick and probe test was conducted across the area and identified no faults or defects.Verified in accordance with CIRIA735

GEOSHIELD SIGNATURE:



DATE: 10/03/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	011
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz Carey
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME: Ben

COMPANY: Prestige Air.

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME:

COMPANY:

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13

Below Basal Layer probes 3 and 4.

SITE CONDITIONS:

WEATHER: Overcast

TEMPERATURE: 12c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

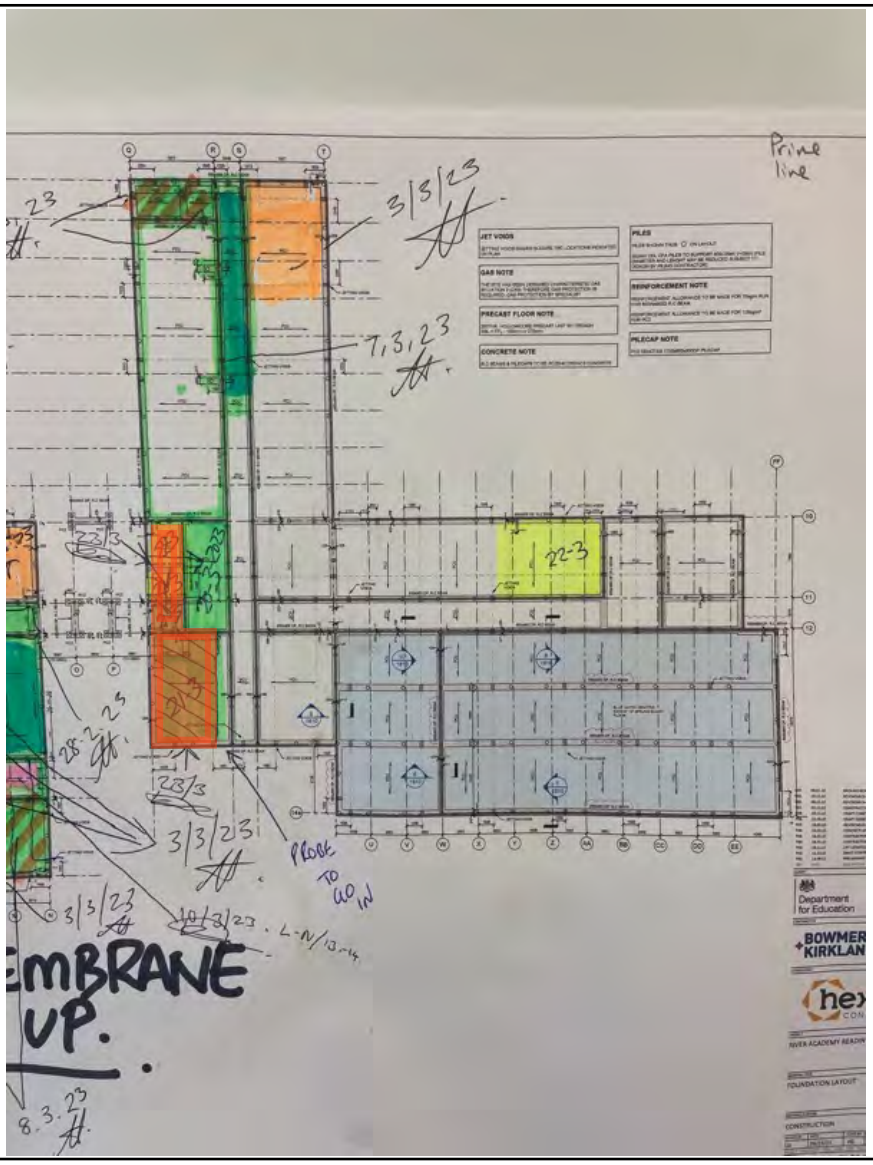
TIME: 11:00-12:40 REPORT NUMBER: 011

DATE: 23/03/2023.

ACCOMPANIED Darren - Fenton Group.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed East Block.

Highlighted red above is where t verification took place.

East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13 plus basal layer probes 3&4.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer membrane - GLs Q-Q.5/10-12

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer membrane - GLs Q-Q.5/10-12

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer- Q-R/12-13 (incomplete).

GEOSHIELD Verification Report

LIMITATIONS

SURVEY AREA: East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13

RESTRICTIONS AND LIMITATIONS: Insufficient Access-

There was insufficient access to the area requiring verification during this visit. No access was available for the work vehicle to enable non-destructive airlance integrity testing to be conducted. Alternatively, thorough pick&probe tests were conducted.



GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13

NOTES: Installation-

Juta Titan Flex has been installed across the sand blinded substrate. Overlaps between the sheets of Titan Flex have been successfully welded using a hot air tool and silicone roller in accordance to BS8485:2019 guidance.

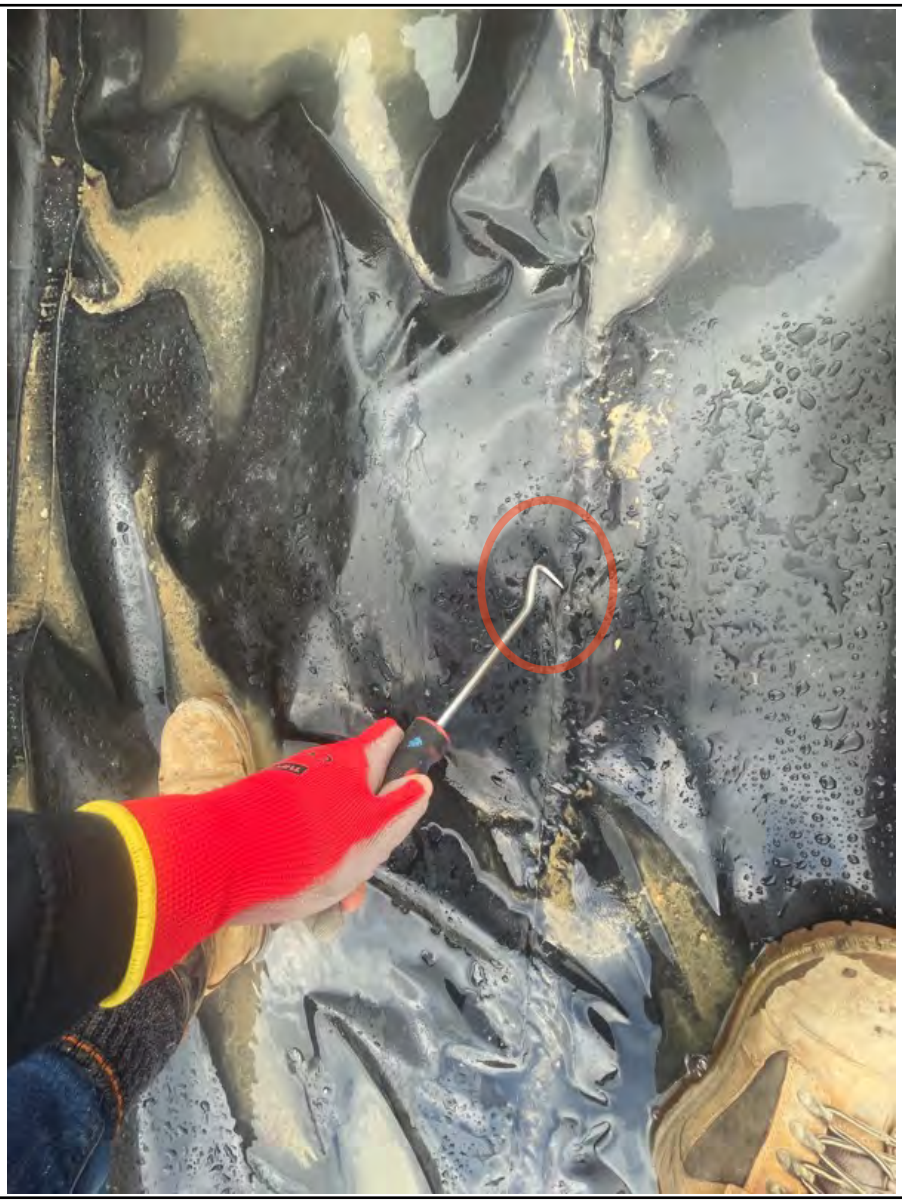




The Juta Titan Flex membrane has been lined tightly too the concrete perimeter walls as shown in the alternate overview photographs shown above.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick and probe test being conducted upon a consistently welded lap joint. Consistent welds have been achieved throughout all areas verified during this visit.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block Basal Layer- Q-R/12-13

NOTES: Pipe penetrations-

Within the area referenced a single pipe penetration required sealing to create a continuous seal across the area. The Juta Titan Flex has been cut tightly around each pipe penetration eliminating voided spaces and sealed accordingly.





The pipe penetration has been successfully sealed in accordance to manufacturers specification using Juta Titan Tank - gas resistant self adhesive membrane to a good NVQ standard. The pipe was also subjected to thorough pick&probe testing as shown in the photo above on the right. Complete adherence has been achieved throughout.

No faults identified. Tested and verified in accordance with CIRIA 735.

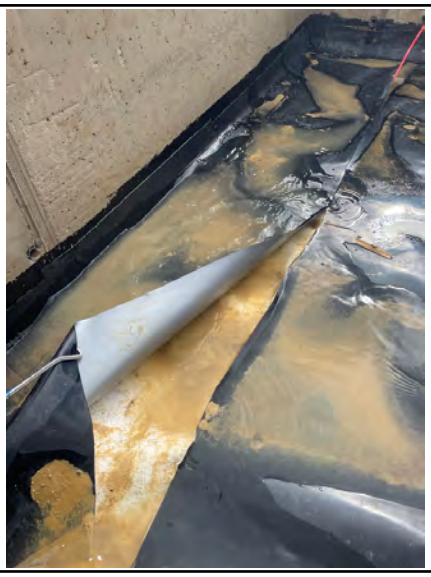
GEOSHIELD Verification Report

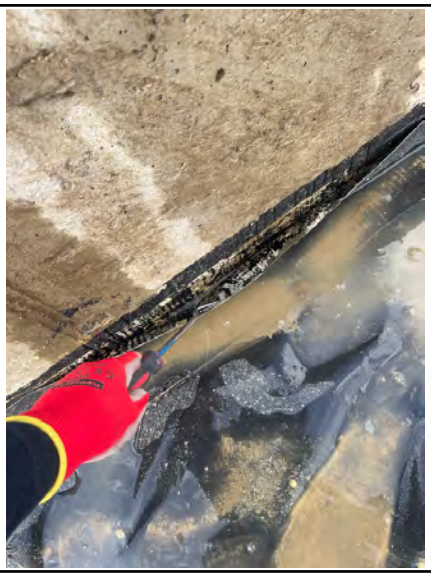
VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13

NOTES: Outstanding remediations-

Unfortunately the complete areas inspected and verified during this visit could not be completely signed off due to a number of reasons. The photograph below on the left shows the Juta Titan Flex membrane has been cut in one of the areas so the below…





…basal layer probe 3 could be installed due to being forgotten about.

The photograph above on the right shows one of several sections of retrofit perimeter detailing not sealed upon the primed perimeter due to excessive water ingress jeopardising the seal, areas will require further inspection once remediated.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block Basal Layer Probes 3 and 4.

NOTES: Installation-

The below basal layer probes have been installed within the area. The probe pipe has been buried within the soft sand blinded substrate providing adequate protection as shown in the photograph below on the left.





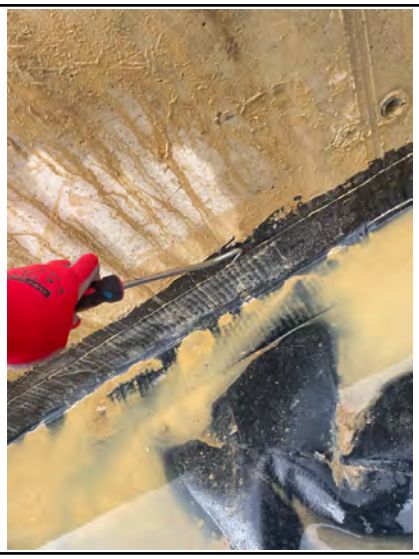
The probe positions are as per the Geoshield design drawing set out by Fentons Engineer. However, the probe pipe route has deviated a little due to the conflict with various areas of the structure. The probe pipe has returned vertically immediately outside the block in accordance to Geoshields method statement as shown on the right.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Pick&probe testing to retrofit detailing.



Pick&probe testing to retrofit detailing.



Pick&probe testing to pipe penetration.



Pick&probe testing to welded lap joint.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the 11th visit to Riverside Academy, Reading where verification was required for the installation of Juta Titan Flex membrane to East Block Basal Layer-GLs Q-Q.5/10-12 & Q-R/12-13 and below basal layer probes 3 & 4. All overlaps have been welded using a hot air tool and silicone roller. Pipe penetrations and retrofitting detail to the perimeter of the area referenced have been sealed in accordance to manufactures specification using Juta Titan Tank. All retrofitted surfaces have been primed prior to application to help aid in adherence. However have been affected by water ingress. Below basal layer probes 3 & 4 have been installed. Thorough visual pick&probe testing identified several unsealed areas and incomplete sections which require remediating and further verification.

GEOSHIELD SIGNATURE:



DATE:	23/03/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	012
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz Carey
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: East Block Basal Layer Membrane - GLs A-T/10-11

SITE CONDITIONS:

WEATHER: Overcast & showers

TEMPERATURE: 12c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

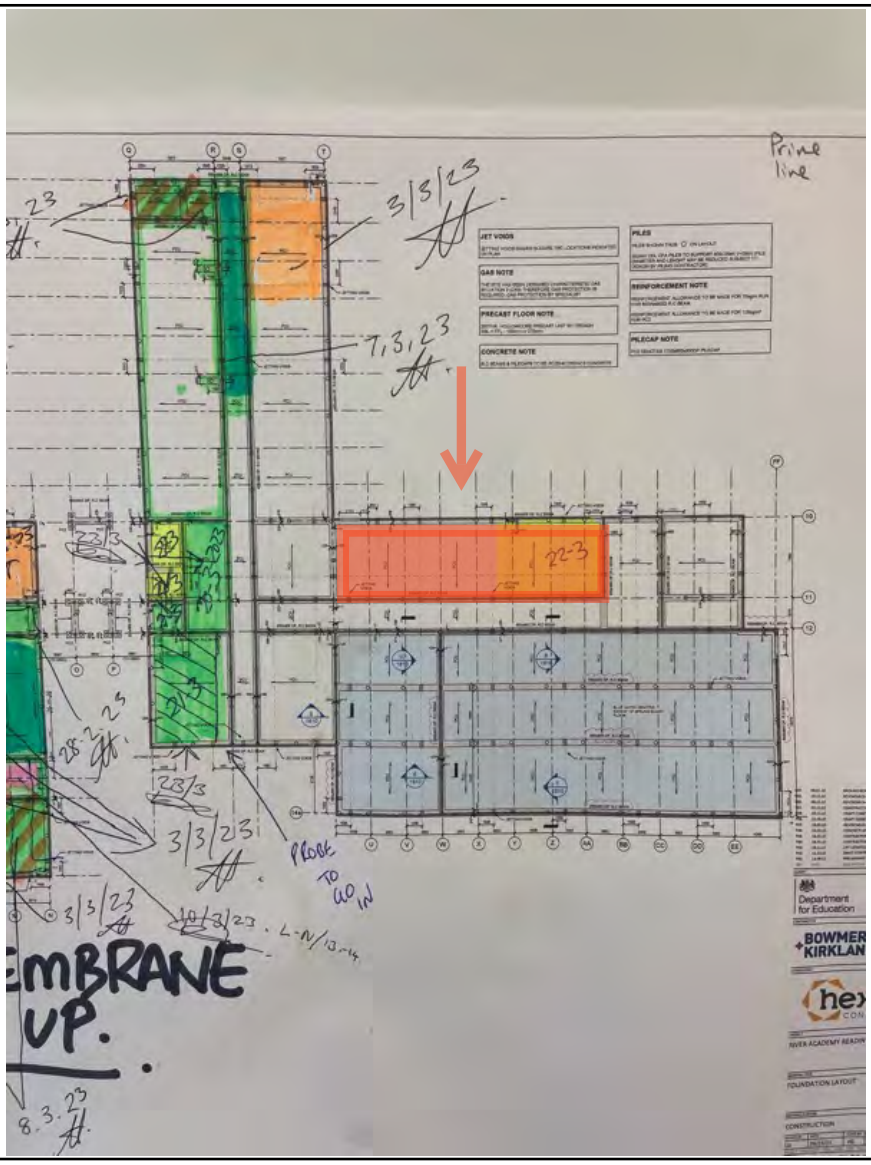
TIME: 12:45-15:30 REPORT NUMBER: 012

DATE: 28/03/2023.

ACCOMPANIED Nigel - Fenton Group and Ian Bland SWC

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed East Block.

Highlighted red above is where verification took place.

East Block Basal Layer Membrane - GLs A-T/10-11

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane - GLs A-T/10-11

GEOSHIELD Verification Report

LIMITATIONS

SURVEY AREA: East Block Basal Layer Membrane - GLs A-T/10-11

RESTRICTIONS AND LIMITATIONS: Insufficient Access-

There was insufficient access to the area requiring verification during this visit. No access was available for the work vehicle to enable non-destructive airlance integrity testing to be conducted. Alternatively, thorough pick&probe tests were conducted.



GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block Basal Layer Membrane - GLs A-T/10-11

NOTES: Installation-

Juta Titan Flex has been installed across the sand blinded substrate to another basal section of east block. All overlaps between sheets of Juta Titan Flex have been welded successfully using a hot air tool and silicone roller.





The annotations on the photograph on the left highlight consistently welded lap joints.

The photograph above on the right displays an alternate overview of the area verified.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick and probe test being conducted upon a consistently welded lap joint. Consistent welds have been achieved throughout the area verified during this visit with no faults identified.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block Basal Layer Membrane - GLs A-T/10-11

NOTES: Pipe penetrations-

Within the area referenced several pipe penetrations required sealing to create a continuous seal across the area. The Juta Titan Flex has been cut tightly around each pipe penetration eliminating voided spaces and sealed accordingly.





The pipe penetrations have been successfully sealed in accordance to manufacturers specification using Juta Titan Tank - gas resistant self adhesive membrane to a good NVQ standard following the petal and 300mm tophat sequence. The photograph on the left shows this. The photograph above on the right displays the basal layer probe pipe successfully sealed. Again, creating a continuous seal throughout the area.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The above photograph displays a mechanical point stress test being conducted upon

a successfully sealed pipe penetration detail, all pipes were subjected to the above

testing procedure and no faults or defects were identified.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

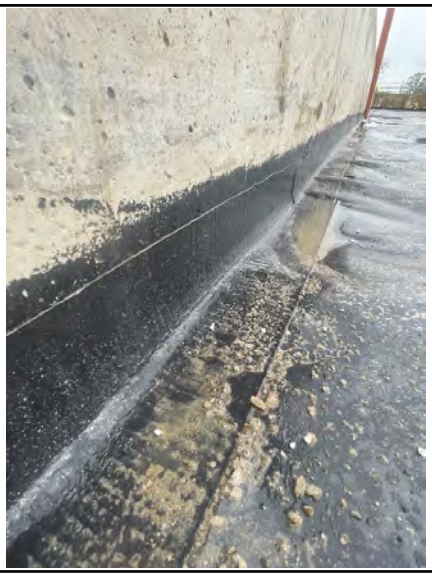
LOCATION/GRID LINE: East Block Basal Layer Membrane - GLs A-T/10-11

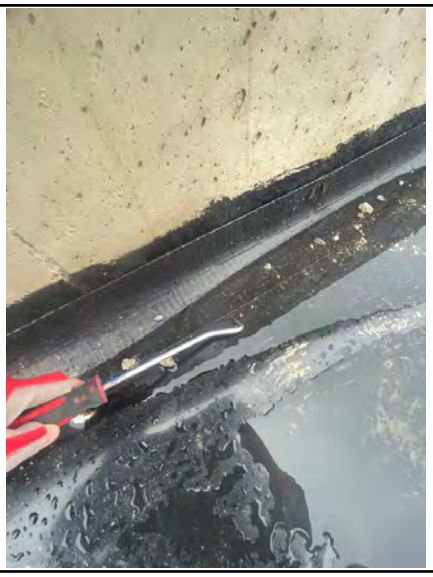
NOTES: Retrofit-

The Juta Titan Flex required terminating around the perimeter of the area referenced.

This has been achieved via retrofit detail carried out in accordance to design details

using Juta Titan Tank membrane.





Close up perspective of a successful retrofit detail shown in the photograph above on

the left, all areas have been primed prior to application to help aid in adherence.

The photograph above on the right displays a mechanical point stress test being

carried out upon a section of retrofit. No faults were identified throughout.

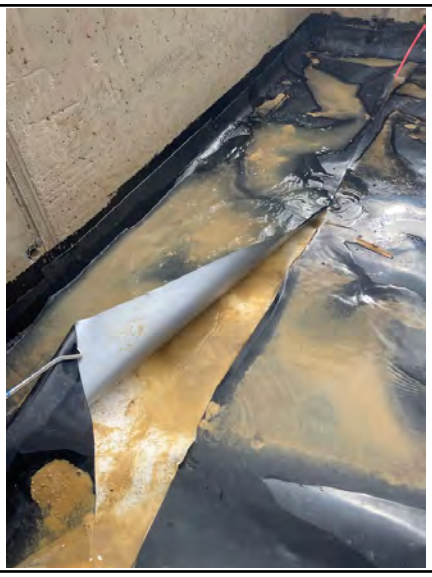
GEOSHIELD Verification Report

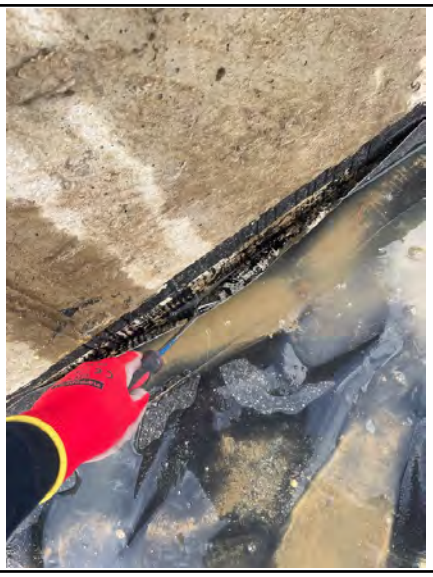
VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13

NOTES: Outstanding remediations-

Unfortunately the previous areas inspected and verified on the last visit still could not be completely signed off due to a number of reasons. The photograph below on the left shows the Juta Titan Flex membrane has been cut in one of the areas so the below…



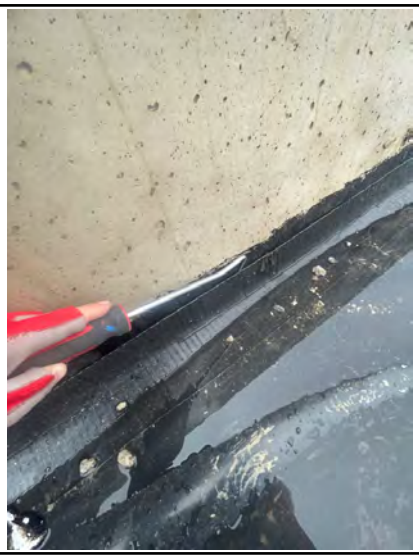


…basal layer probe 3 could be installed due to being forgotten about.

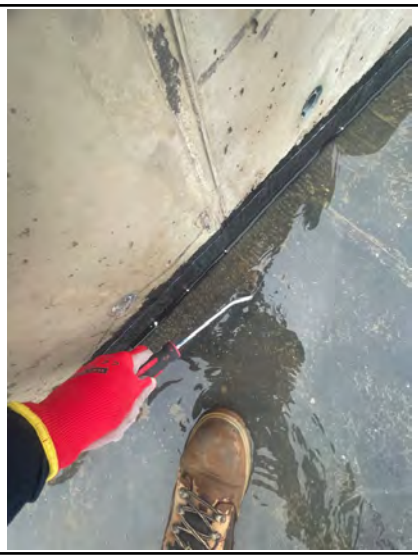
The photograph above on the right shows one of several sections of retrofit perimeter detailing not sealed upon the primed perimeter due to excessive water ingress jeopardising the seal, areas will require further inspection once remediated.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Pick&probe testing to retrofit detailing.



Pick&probe testing to retrofit detailing.



Successfully sealed pipe penetrations.



Pick&probe testing to welded lap joint.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the 12th visit to Riverside Academy, Reading where verification was required for the installation of Juta Titan Flex membrane to East Block Basal Layer- East Block Basal Layer Membrane - GLs A-T/10-11 All laps overlaps have been successfully welded using a hot air tool and silicone roller. Pipe penetrations and retrofitting detail to the perimeter of the area referenced have been sealed in accordance to manufactures specification using Juta Titan Tank. All retrofitted surfaces have been primed prior to application to help aid in adherence. All areas were subjected to thorough visual pick&probe testing due to limited access and no faults were identified. Outstanding remediations still stand within the previously verified areas - Q-Q.5/10-12 & Q-R/12-13. Verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:



DATE:	28/03/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	013
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in-accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz Carey
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: East Block Basal Layer Membrane - GLs Q-T/1-13 & S-T/12-13

East Block Below Basal Layer Probes 5,6 and 7

SITE CONDITIONS:

WEATHER: Sunshine.

TEMPERATURE: 12c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

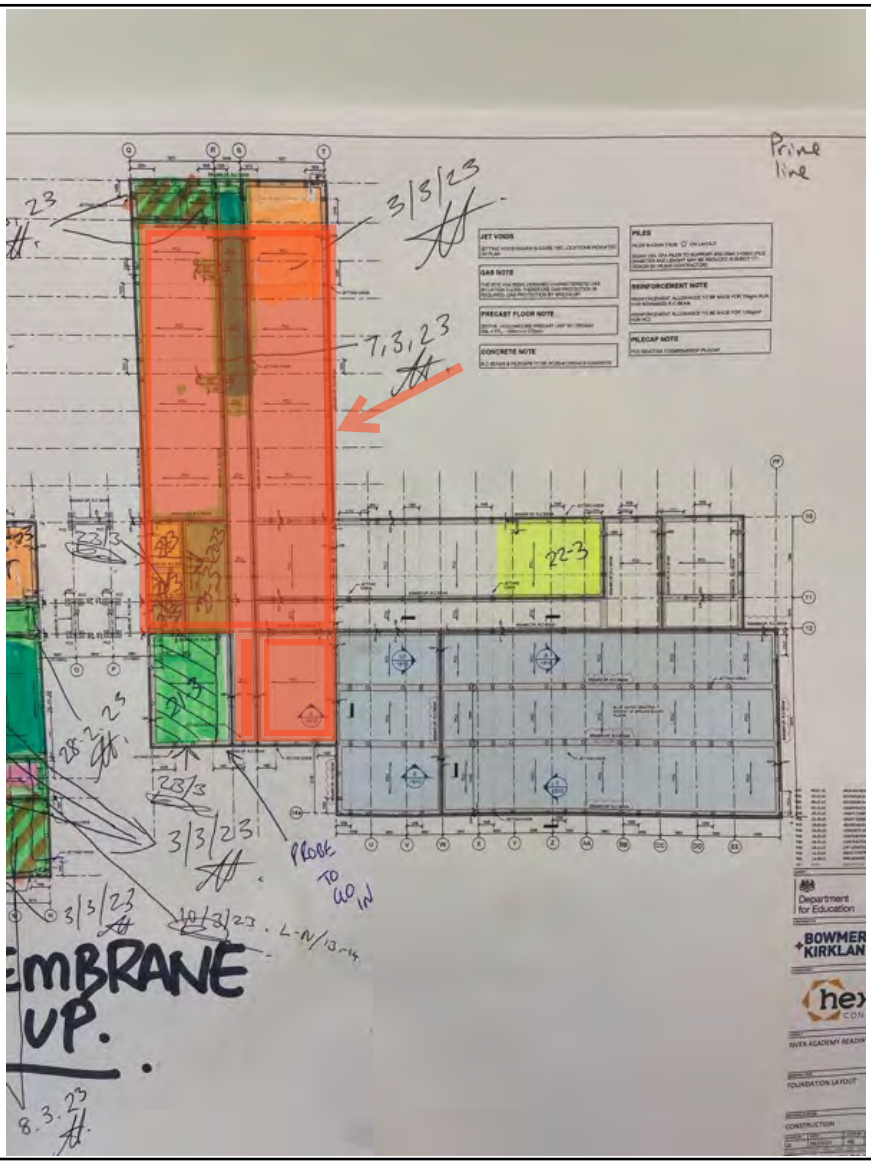
TIME: 14:00-16:00 REPORT NUMBER: 013

DATE: 04/04/2023.

ACCOMPANIED Nigel - Fenton Group & SWC installers.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed East Block.

Highlighted red above is where verification took place.

East Block Basal Layer Membrane - GLs Q-T/1-13 & S-T/12-13

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane -

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane -

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block- GLs Q-T/1-13 & S-T/12-13

NOTES: Installation-

Juta Titan Flex has been installed across the blinded substrate to another basal section within east block. All overlaps between sheets of Juta Titan Flex have been welded using using a hot air tool and silicone roller in accordance to BS8485:2019 guidelines.



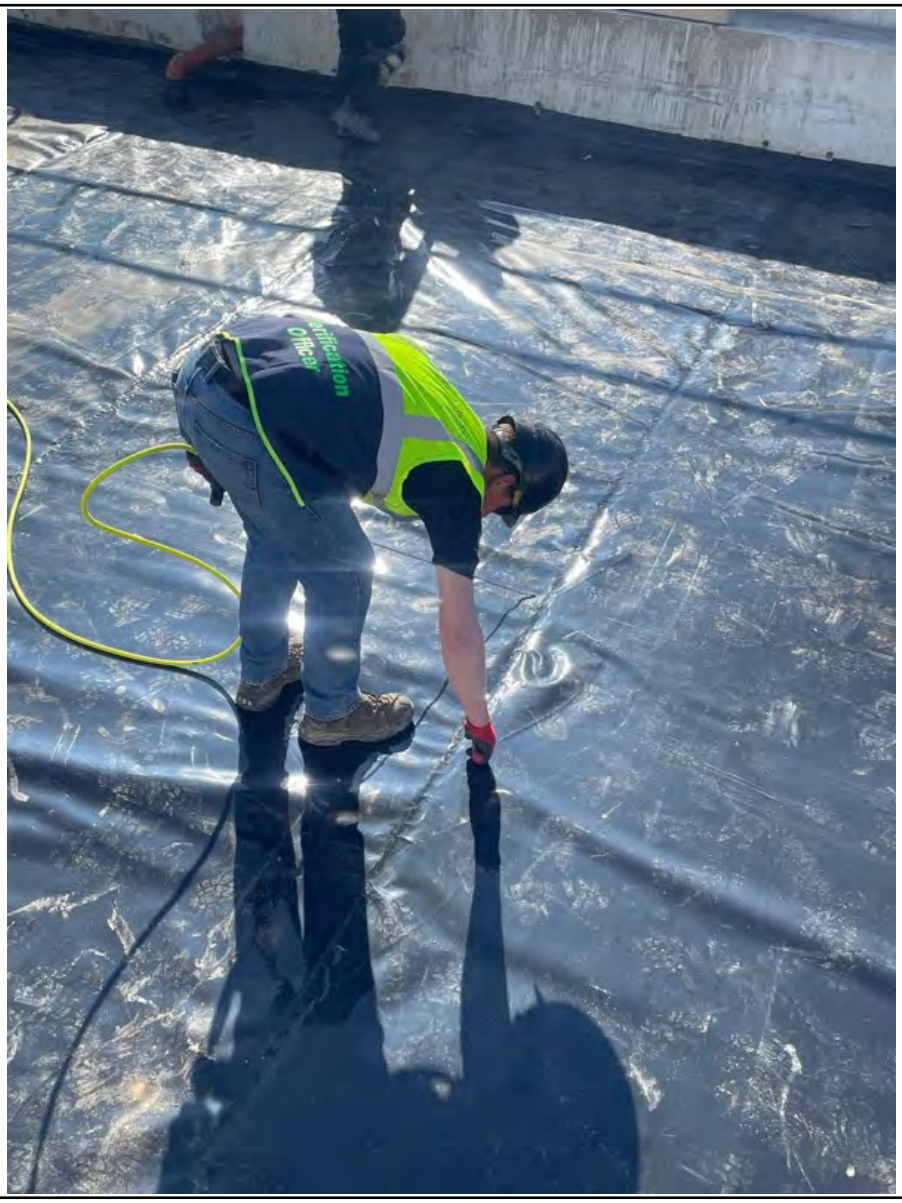


The annotations on the photograph on the left highlight consistently welded lap joints.

The photograph above on the right displays an alternate overview of the area verified.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick

and probe test being conducted upon a consistently welded lap joint.

This was one of two testing procedures carried out during this verification visit.

Tested and verified in accordance with CIRIA 735.

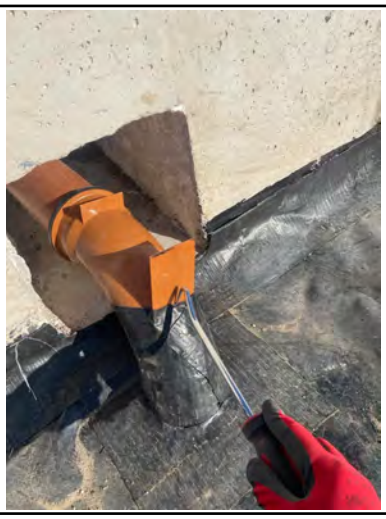
GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block- GLs Q-T/1-13 & S-T/12-13

NOTES: Pipe penetrations-

Within the area referenced several pipe penetrations required sealing to create a continuous seal throughout the areas. The Juta Titan Flex has been cut tightly around each pipe penetration eliminating voided spaces and sealed accordingly.





The pipe penetrations have been successfully sealed in accordance to manufactures specification using Juta Titan Tank - gas resistant self adhesive membrane to a good NVQ standard following the petal and 300mm tophat sequence which can be seen in the photographs above, each pipe penetration was also subjected to the pick&probe test as shown above. No faults were identified. Verified in accordance with CIRIA735.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block- GLs Q-T/1-13 & S-T/12-13

NOTES: Retrofit-

The Juta Titan Flex required terminating around the perimeter of the area referenced.

This has been achieved via a retrofit detail carried out in accordance to design details

using Juta Titan Tank membrane. All surfaces of the concrete have been primed prior…





…to application to help aid in adherence of the Juta Titan Tank.

All Juta Titan Tank works have been thoroughly heated down with rolled pressure

applied ensuring a complete seal has been achieved. The pick&probe tests carried out

to the retrofit detailing identified no faults or defects.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block Below Basal Layer Probes 5,6 and 7

NOTES: Installation-

The probes referenced above have been successfully installed by the specialists from Prestige Air. The probe centres have been marked out by Fentons Engineer as per Geoshields design. The probe pipe has been ingresses within the sand blinded…





…substrate a suitable depth so no potential damages could occur once backfilled using soft sand as shown in the photograph above on the left.

All probes have been connected upon the the probes correctly with the pipe returning externally in preparation for the monitors to be installed.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



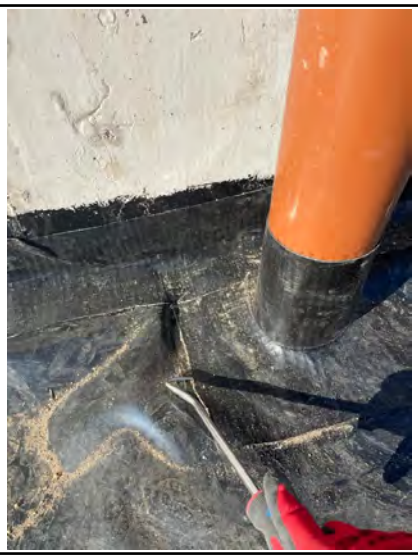
Pick&probe testing to retrofit detailing.



Pick&probe testing to retrofit detailing.



Outstanding remediations, remediated on previously verified areas.



Pick&probe testing to sealed pipe.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Fault identified.

Remediated on-site.



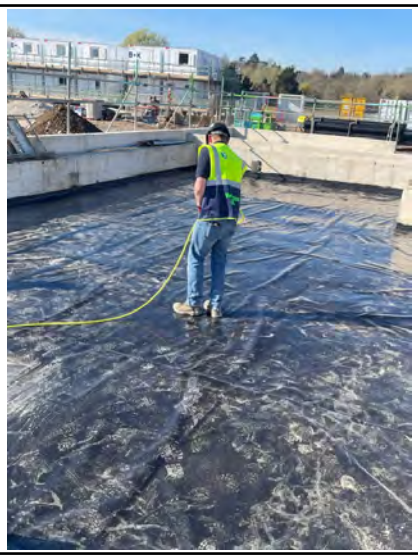
Installer carrying out patch repair

remediation.



Cut membrane remediated from

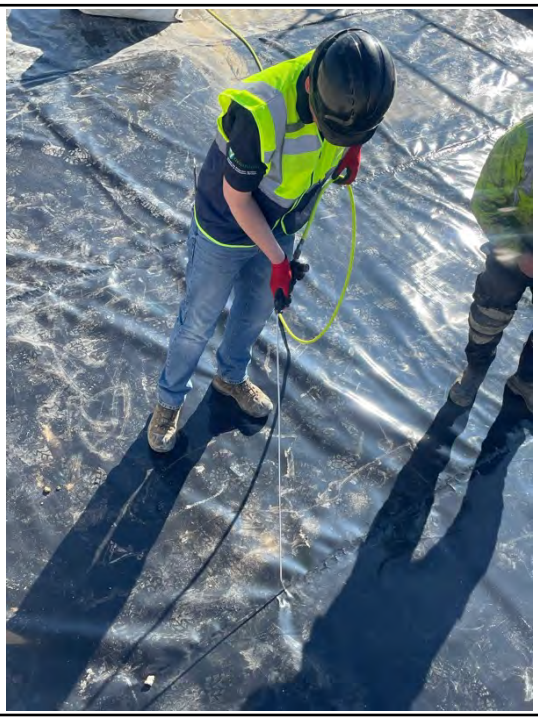
previous visit.



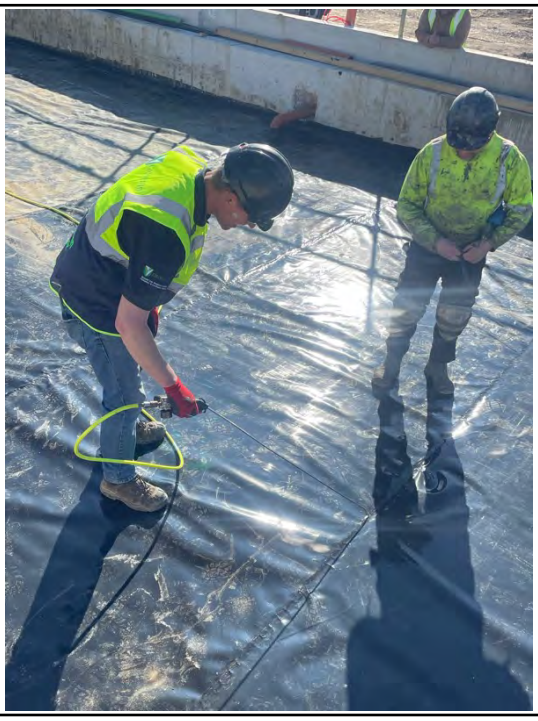
Airlance testing.

AIR LANCE INTEGRITY TESTING

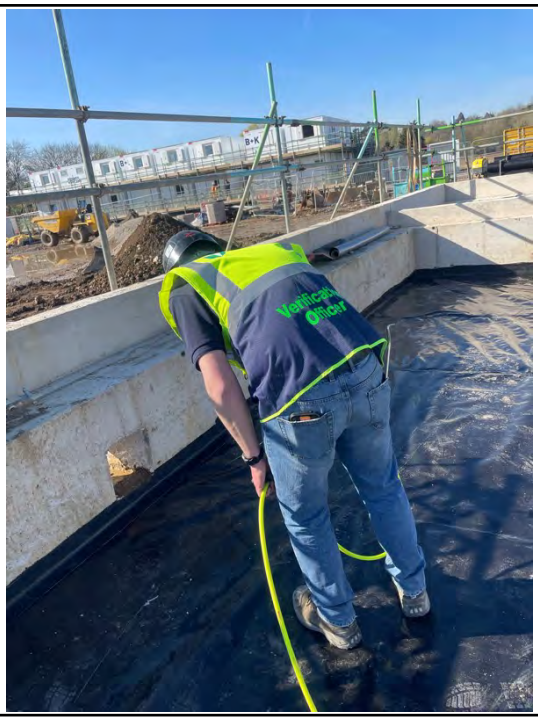
AIR LANCE TEST: ASTM D4437-08:2013 Inspects all seams for unbonded areas using a 4.8mm air nozzle held not more than 51mm away from the seam. 50 Psi is the minimum requirement. The air nozzle is directed on the upper edge seam, riffles indicate a unbonded seam. Each seam is numbered and failure marked with a F/1 F/2 classification and a description given



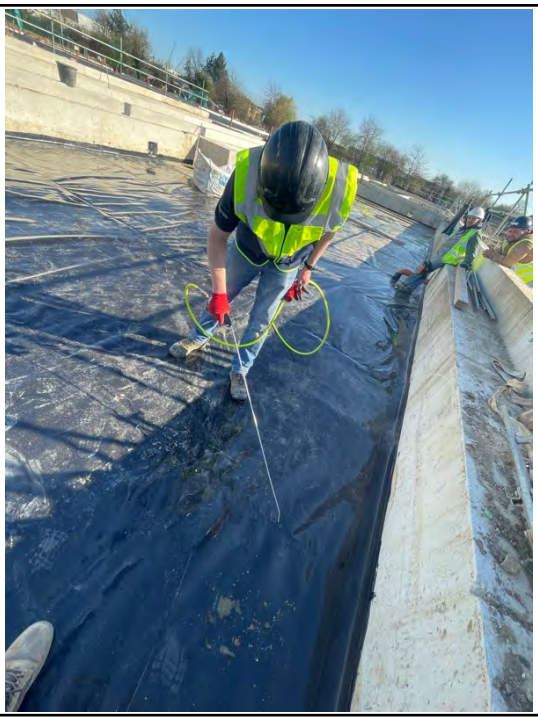
Airlance integrity testing to welded lap joint.



Airlance integrity testing to welded lap joint.



Airlance integrity testing to welded lap joint.



Airlance integrity testing to retrofit detail.

GEOSHIELD LTD
TANKING, GAS AND HYDROCARBON BARRIER SYSTEMS
QUALITY ASSURANCE PROGRAMS AND INSPECTION SERVICES

INTEGRITY TESTING RECORD

AIR LANCE INTEGRITY TESTING (cont)

Detail of the Gas Membrane	Juta Titan Flex
Detail of Tapes	Juta Titan Tank
Joints and lap design	Welded.

TEST NUMBER:	FAILED OR PASSED	DETAIL, COMMENT AND RECOMMDATIONS
Weld 1-2	Pass	One misweld identified. Remediated on-site.
Weld 3-4	Pass	Consistently welded lap joints achieved. No faults.
Weld 5-6	Pass	Two miswelds identified. Remediated on-site.
Weld 7-8	Pass	Three miswelds identified. Remediated on-site.

NOTES:

Application of Membrane to specification and conforming to manufacturing technical data

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the 13th visit to Riverside Academy, Reading where verification was required for the installation of Juta Titan Flex membrane to East Block Basal Layer- East Block- GLs Q-T/1-13 & S-T/12-13. All overlaps have been welded using a hot air tool and silicone roller. Pipe penetrations and retrofit detailing of the areas referenced have been sealed in accordance to manufactures specification and to design details using Juta Titan Tank. All retrofitted surfaces have been primed prior to application to help aid in adherence. Basal layer probes 5,6 and 7 have also been installed as per the Geoshield design details. Thorough visual pick&probe tests and airlance integrity testing identified several faults which were remediated on-site. No outstanding remediations. Verified in accordance with CIRIA 735

GEOSHIELD SIGNATURE:



DATE:	04/04/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	014
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz Carey
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: East Block Basal Layer Membrane -GLs T-W/12-13 & S-AA/11-12

East Block Above Basal Layer Probes 1,2 and 3.

SITE CONDITIONS:

WEATHER: Overcast.

TEMPERATURE: 12c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

TIME: 13:00-15:00 REPORT NUMBER: 014

DATE: 06/04/2023.

ACCOMPANIED Nigel - Fenton Group & SWC installers.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed East Block.

Highlighted red above is where verification took place.

East Block Basal Layer Membrane - GLs T-W/12-13 & S-AA/11-12

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane - GLs T-W/12-13 & S-AA/11-12

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane - GLs T-W/12-13 & S-AA/11-12

GEOSHIELD Verification Report

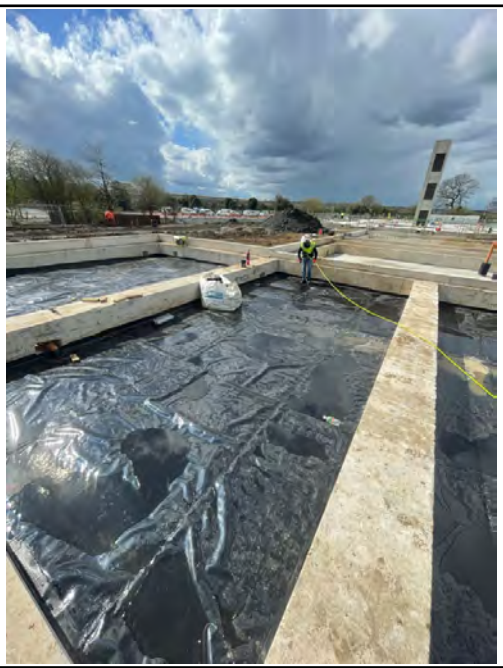
VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block- GLs T-W/12-13 & S-AA/11-12

NOTES: Installation-

Juta Titan Flex has been installed across the blinded substrate to further basal sections within east block. All overlaps between sheets of Juta Titan Flex have been welded using using a hot air tool & silicone roller upon a 150mm overlap conforming to manufacturers…





…specification. The photograph on the left highlights consistently welded lap joints.

The photograph above on the right displays an alternate overview of the area verified.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick

and probe test being conducted upon a consistently welded lap joint.

This was one of two testing procedures carried out during this verification visit.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block- GLs T-W/12-13 & S-AA/11-12

NOTES: Pipe penetrations-

Within the area referenced several pipe penetrations required sealing to create a continuous seal throughout the areas. The Juta Titan Flex has been cut tightly around each pipe penetration eliminating voided spaces and sealed accordingly.





The pipe penetrations have been successfully sealed in accordance to manufactures specification using Juta Titan Tank - gas resistant self adhesive membrane to a good NVQ standard following the petal and 300mm tophat sequence which can be seen in the photographs above, each pipe penetration was also subjected to the pick&probe test as shown above. No faults were identified. Verified in accordance with CIRIA735.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block- GLs T-W/12-13 & S-AA/11-12

NOTES: Retrofit-

The Juta Titan Flex required terminating around the perimeter of the areas referenced.

This has been achieved via a retrofit detail carried out in accordance to design details

using Juta Titan Tank membrane. All surfaces of the concrete have been primed prior…





…to application to help aid in adherence of the ‘Titan Tank’ as highlighted on the left.

All Juta Titan Tank works have been thoroughly heated down with rolled pressure

applied ensuring a complete seal has been achieved. Mechanical point stress tests

were conducted across all areas of retrofits and no faults were found.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block Above Basal Layer Probes 1,2 and 3.

NOTES: Installation-

The probes referenced above have been successfully installed by the specialists from Prestige Air. The probe centres have been marked out by Fentons Engineer as per Geoshields design. The probe pipe routes have been altered due to route disruptions.





The probe routes have been fixed upon the concrete blinding as shown in the photograph above on the left. No vicious angles were present ensuring an accurate reading is achieved. The probe pipe has been returned through pipe work externally and returned immediately horizontally as per the method statement.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Faults identified.



Faults remediated.



ABL probe pipe exit.



Pick&probe testing to sealed pipe.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Juta GP1 perimeter and internal wall installation in progress.



ABL probe fixed to engineers mark up.



Preparation for next section.



Installer carrying out remediation.

AIR LANCE INTEGRITY TESTING

AIR LANCE TEST: ASTM D4437-08:2013 Inspects all seams for unbonded areas using a 4.8mm air nozzle held not more than 51mm away from the seam. 50 Psi is the minimum requirement. The air nozzle is directed on the upper edge seam, riffles indicate a unbonded seam. Each seam is numbered and failure marked with a F/1 F/2 classification and a description given



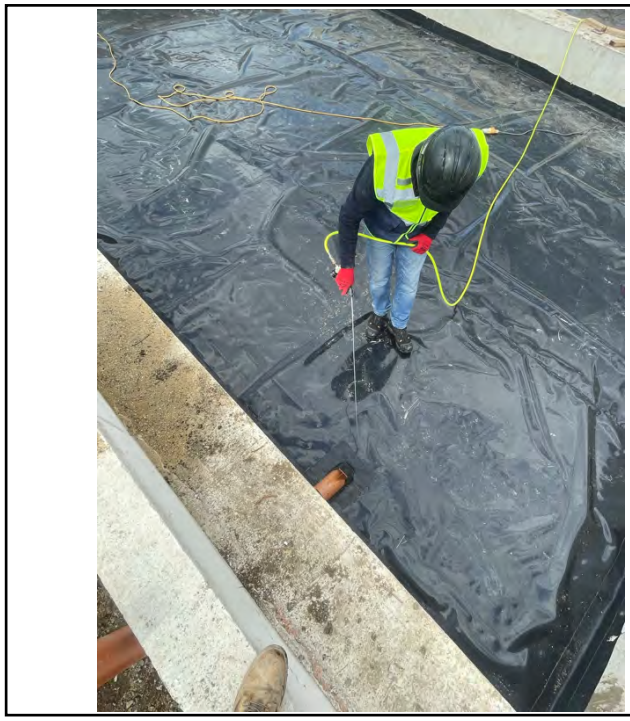
Airlance integrity testing to welded lap joint.



Airlance integrity testing to welded lap joint.



Airlance integrity testing to welded lap joint.



Airlance integrity testing to sealed pipe.

GEOSHIELD LTD
TANKING, GAS AND HYDROCARBON BARRIER SYSTEMS
QUALITY ASSURANCE PROGRAMS AND INSPECTION SERVICES

INTEGRITY TESTING RECORD

AIR LANCE INTEGRITY TESTING (cont)

Detail of the Gas Membrane	Juta Titan Flex
Detail of Tapes	Juta Titan Tank
Joints and lap design	Welded.

TEST NUMBER:	FAILED OR PASSED	DETAIL, COMMENT AND RECOMMDATIONS
Weld 1-2	Pass	Four miswelds identified. Remediated on-site.
Weld 3-4	Pass	Consistently welded lap joints achieved. No faults.
Weld 5-6	Pass	Two miswelds identified. Remediated on-site.

NOTES:

Application of Membrane to specification and conforming to manufacturing technical data

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

This was the 14th visit to Riverside Academy, Reading where verification was required for the installation of Juta Titan Flex to another section of East Block Basal Layer to GLs T-W/12-13 & S-AA/11-12. All overlaps have been welded using a hot air tool & silicone roller. Pipe penetrations and retrofit detailing to the areas referenced have been sealed in accordance to manufactures specification and to design details using Juta Titan Tank. All retrofitted surfaces have been primed prior to application to help aid in adherence. Above basal layer probes 1,2 & 3 have also been installed as per the Geoshield design details. Thorough visual pick&probe tests and airlance integrity testing identified several faults which were remediated on-site. No outstanding remediations. Verified in accordance with CIRIA 735

GEOSHIELD SIGNATURE:



DATE:	06/04/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	015
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

VERIFICATION OFFICER: Brett Hattle

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07387373167

EMAIL ADDRESS: bhattle@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☐ PROJECT: YES: ☑ NO: ☐

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz Carey
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	Robin
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: East Block Basal Layer Membrane -GLs: 10-12/BB-EE

SITE CONDITIONS:

WEATHER: Raining

TEMPERATURE: 10c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

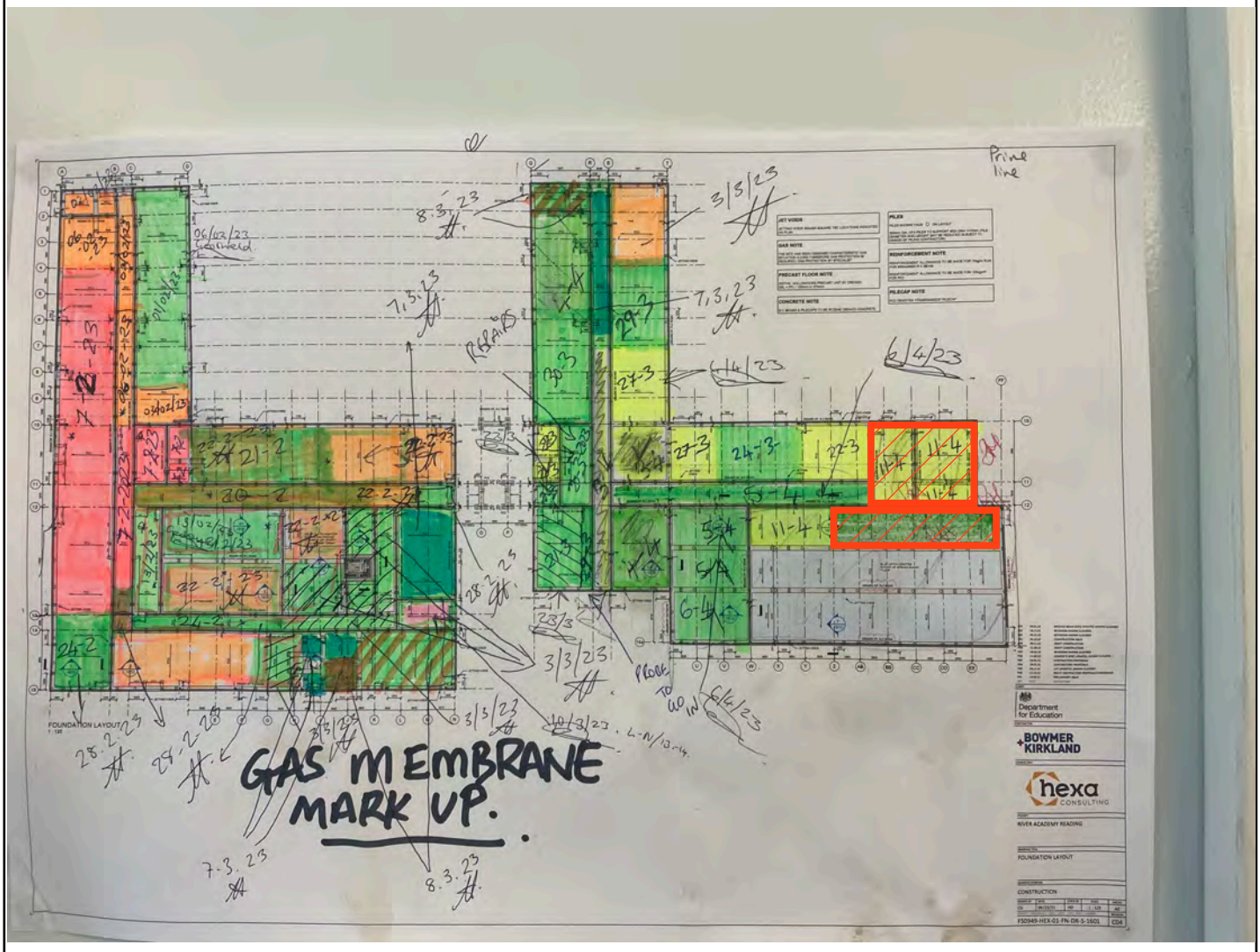
TIME: 11.15-13.45 REPORT NUMBER: 015

DATE: 12/04/2023.

ACCOMPANIED Nigel - Fenton Group & SWC installers.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed East Block.

Highlighted red above is where verification took place.

East Block Basal Layer Membrane -GLs: 10-12/BB-EE + 12/Z-EE

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane -GLs: 10-12/BB-EE + 12/Z-EE

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane -GLs: 10-12/BB-EE + 12/Z-EE

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block Basal Layer -GLs: 10-12/BB-EE + 12/Z-EE

NOTES: Installation-

Juta Titan Flex has been installed across the blinded substrate to further basal sections within east block. All overlaps between sheets of Juta Titan Flex have been welded using using a hot air tool & silicone roller upon a 150mm overlap conforming to manufactures…



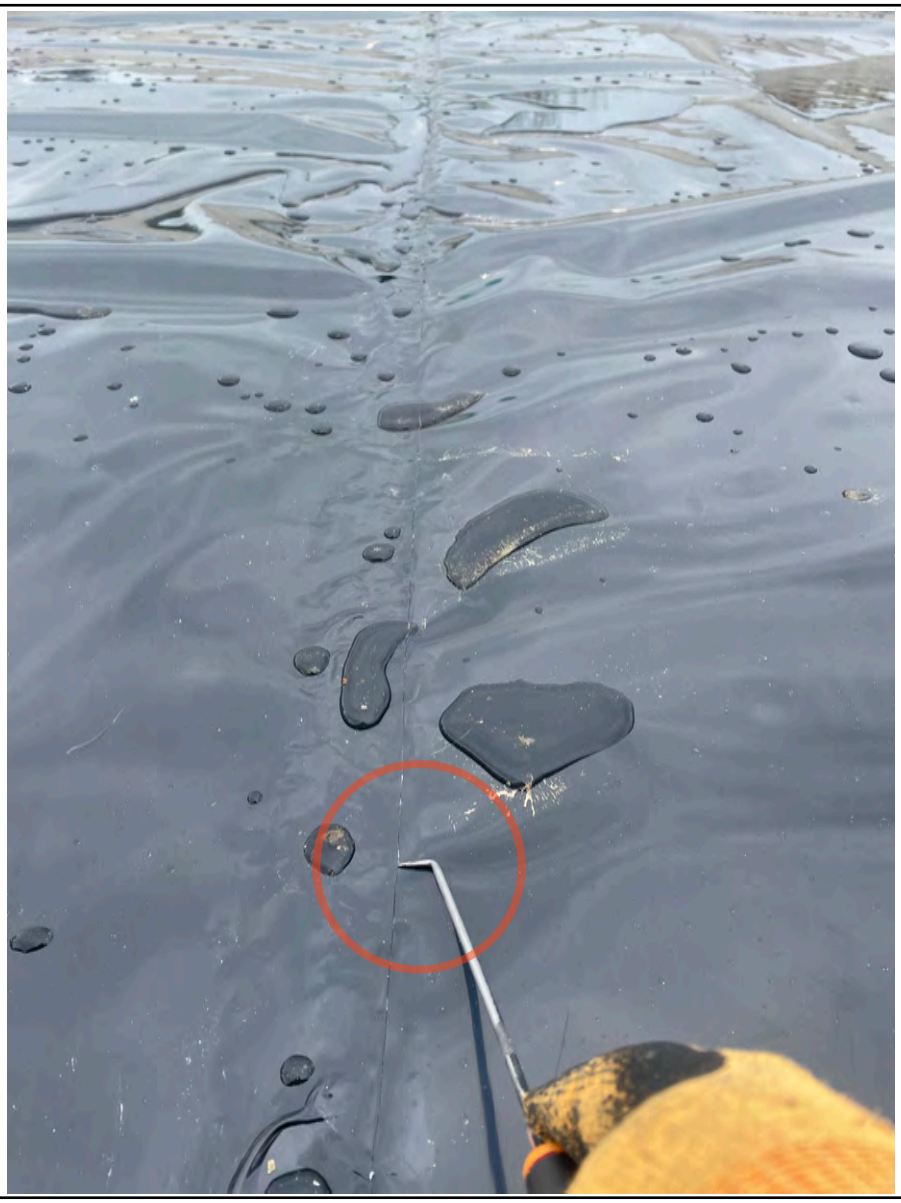


…specification. The photograph on the left highlights consistently welded lap joints.

The photograph above on the right displays an alternate overview of the area verified.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick

and probe test being conducted upon a consistently welded lap joint.

This was one of two testing procedures carried out during this verification visit.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block Basal Layer -GLs: 10-12/BB-EE + 12/Z-EE

NOTES: Pipe Penetrations -

Within the area referenced several pipe penetrations required sealing to create a continuous seal throughout the areas. The Juta Titan Flex has been cut tightly around each pipe penetration eliminating voided spaces and sealed accordingly.





The pipe penetrations have been successfully sealed in accordance to manufactures specification using Juta Titan Tank - gas resistant self adhesive membrane to a good NVQ standard following the petal and 300mm tophat sequence which can be seen in the photographs above, each pipe penetration was also subjected to the pick&probe test as shown above. No faults were identified. Verified in accordance with CIRIA735.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block Basal Layer -GLs: 10-12/BB-EE + 12/Z-EE

NOTES: Retrofit-

The Juta Titan Flex required terminating around the perimeter of the areas referenced.

This has been achieved via a retrofit detail carried out in accordance to design details

using Juta Titan Tank membrane. All surfaces of the concrete have been primed prior…





…to application to help aid in adherence of the ‘Titan Tank’ as highlighted on the left.

All Juta Titan Tank works have been thoroughly heated down with rolled pressure

applied ensuring a complete seal has been achieved. Mechanical point stress tests

were conducted across all areas of retrofits and no faults were found.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Faults identified.



Faults remediated.



Heat applied to remediated area.



Pick&probe testing to sealed pipe.

GEOSHIELD LTD
TANKING, GAS AND HYDROCARBON BARRIER SYSTEMS
QUALITY ASSURANCE PROGRAMS AND INSPECTION SERVICES

INTEGRITY TESTING RECORD

AIR LANCE INTEGRITY TESTING (cont)

Detail of the Gas Membrane	Juta Titan Flex
Detail of Tapes	Juta Titan Tank
Joints and lap design	Welded.

TEST NUMBER:	FAILED OR PASSED	DETAIL, COMMENT AND RECOMMDATIONS
Weld 1-2	Pass	Four miswelds identified. Remediated on-site.
Weld 3-4	Pass	Consistently welded lap joints achieved. No faults.
Weld 5-6	Pass	Two miswelds identified. Remediated on-site.
Weld 7-8	Pass	Two miswelds identified. Remediated on-site.

NOTES:

Application of Membrane to specification and conforming to manufacturing technical data

AIR LANCE INTEGRITY TESTING

AIR LANCE TEST: ASTM D4437-08:2013 Inspects all seams for unbonded areas using a 4.8mm air nozzle held not more than 51mm away from the seam. 50 Psi is the minimum requirement. The air nozzle is directed on the upper edge seam, riffles indicate a unbonded seam. Each seam is numbered and failure marked with a F/1 F/2 classification and a description given



Airlance integrity testing to welded lap joint.



Airlance integrity testing to welded lap joint.



Airlance integrity testing to 55psi



Airlance integrity testing to sealed pipe.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

VERIFICATION SUMMARY

Today's visit to Riverside Academy, Reading was the fifteenth verification visit required for the installation of Juta Titan Flex to another section of East Block Basel Layer Membrane -GLs: 10-12/BB-EE + 12/Z-EE. All laps have been welded using a hot air tool & silicone roller. Pipe penetrations and retrofit detailing to the areas referenced have been sealed in accordance to manufactures specification and to design details using Juta Titan Tank. All retrofitted surfaces have been primed prior to application to help aid in adherence. Two testing procedures were conducted throughout the verification visit, a thorough visual pick and probe test as well as a non destructive air lance integrity test which identified several faults which were remediated on-site. Verified in accordance with CIRIA 735

GEOSHIELD SIGNATURE:



DATE:	12/04/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	016
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

VERIFICATION OFFICER: Brett Hattle

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07387373167

EMAIL ADDRESS: bhattle@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☐ PROJECT: YES: ☑ NO: ☐

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz Carey
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	Robin
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: East Block Basal Layer Membrane -GLs: 12-13/W-FF

East Block Above Basal Layer Probes 9,10,11

SITE CONDITIONS:

WEATHER: Cloudy

TEMPERATURE: 10c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

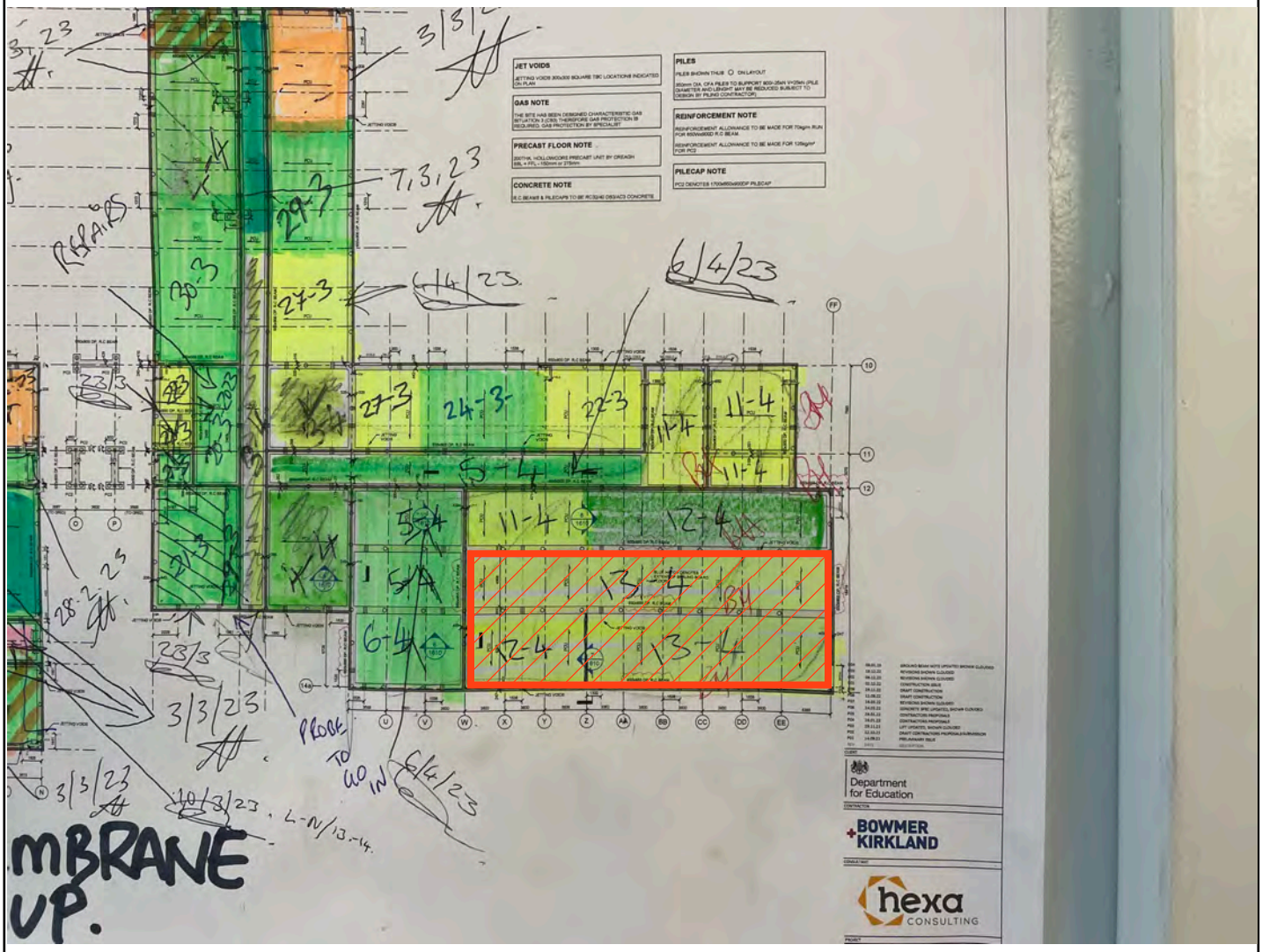
TIME: 09.15-10.45 REPORT NUMBER: 016

DATE: 14/04/2023.

ACCOMPANIED Nigel - Fenton Group & SWC installers.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of the proposed East Block.

Highlighted red above is where verification took place.

East Block Basal Layer Membrane -GLs: 12-13/W-FF

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane -GLs: 12-13/W-FF

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East Block Basal Layer Membrane -GLs: 12-13/W-FF

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block Basal Layer Membrane -GLs: 12-13/W-FF

NOTES: Installation-

Juta Titan Flex has been installed across the blinded substrate to further basal sections within east block. All overlaps between sheets of Juta Titan Flex have been welded using using a hot air leister and silicone roller with adequate pressure applied to ensure a 40mm





weld is achieved. The photograph on the left highlights a consistently welded lap joint.

The photograph above on the right displays an alternate overview of the area verified.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick

and probe test being conducted upon a consistently welded lap joint.

This was one of two testing procedures carried out during this verification visit.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block Basal Layer Membrane -GLs: 12-13/W-FF

NOTES: Pipe Penetrations -

Within the area referenced several pipe penetrations required sealing to create a continuous seal throughout the areas. The Juta Titan Flex has been cut tightly around each pipe penetration eliminating voided spaces and sealed accordingly.





The pipe penetrations have been successfully sealed in accordance to manufactures specification using Juta Titan Tank - gas resistant self adhesive membrane to a good NVQ standard following the petal and 300mm tophat sequence which can be seen in the photographs above, each pipe penetration was also subjected to the pick&probe test as shown above. No faults were identified. Verified in accordance with CIRIA735.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block Basal Layer Membrane -GLs: 12-13/W-FF

NOTES: Retrofit-

The Juta Titan Flex required terminating around the perimeter of the areas referenced.

This has been achieved via a retrofit detail carried out in accordance to design details

using Juta Titan Tank membrane. All surfaces of the concrete have been primed prior…





…to application to help aid in adherence of the ‘Titan Tank’ as highlighted on the left.

All Juta Titan Tank works have been thoroughly heated down with rolled pressure

applied ensuring a complete seal has been achieved. Mechanical point stress tests

were conducted across all areas of retrofits and no faults were found.

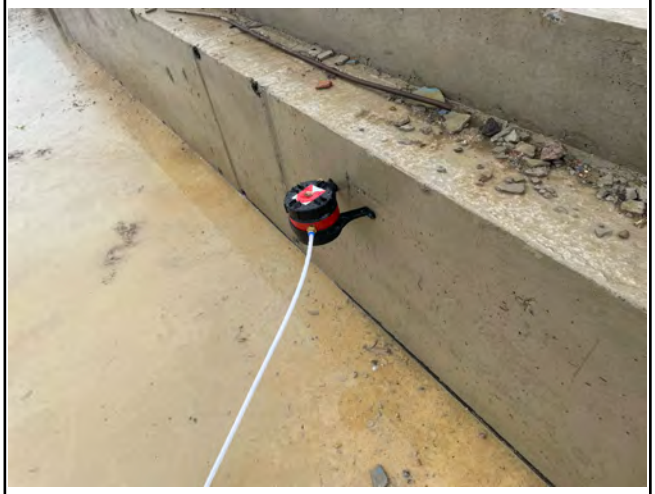
GEOSHIELD Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block Above Basal Layer Probes 9,10,11

NOTES: Installation-

The probes referenced above have been successfully installed by the specialists from Prestige Air. The probe centres have been marked out by Fentons Engineer as per Geoshields design. The probe pipe routes have been altered due to route disruptions.





The probe routes have been fixed upon the concrete blinding as shown in the photograph above on the left. No vicious angles were present ensuring an accurate reading is achieved. The probe pipe has been returned through pipe work externally and returned immediately horizontally as per the method statement.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Faults identified.



Faults remediated.



Heat applied to patch repair.



Hot air tool used on-site.

GEOSHIELD LTD
TANKING, GAS AND HYDROCARBON BARRIER SYSTEMS
QUALITY ASSURANCE PROGRAMS AND INSPECTION SERVICES

INTEGRITY TESTING RECORD

AIR LANCE INTEGRITY TESTING (cont)

Detail of the Gas Membrane	Juta Titan Flex
Detail of Tapes	Juta Titan Tank
Joints and lap design	Welded.

TEST NUMBER:	FAILED OR PASSED	DETAIL, COMMENT AND RECOMMDATIONS
Weld 1-2	Pass	Four miswelds identified. Remediated on-site.
Weld 3-4	Pass	Consistently welded lap joints achieved. No faults.
Weld 5-6	Pass	Two miswelds identified. Remediated on-site.
Weld 7-8	Pass	Two miswelds identified. Remediated on-site.

NOTES:

Application of Membrane to specification and conforming to manufacturing technical data

AIR LANCE INTEGRITY TESTING

AIR LANCE TEST: ASTM D4437-08:2013 Inspects all seams for unbonded areas using a 4.8mm air nozzle held not more than 51mm away from the seam. 50 Psi is the minimum requirement. The air nozzle is directed on the upper edge seam, riffles indicate a unbonded seam. Each seam is numbered and failure marked with a F/1 F/2 classification and a description given



Airlance integrity testing to welded lap joint.



Airlance integrity testing to welded lap joint.



Airlance integrity testing to 55psi



Airlance integrity testing to sealed pipe.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES ☐ NO ☐

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
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Gridline/Plot Sign off		
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Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

Today's visit to Riverside Academy, Reading was the sixteenth verification visit required for the installation of Juta Titan Flex to another section of East Block Basel Layer Membrane -GLs: 12-13/W-FF. All laps have been welded using a hot air tool & silicone roller. Pipe penetrations and retrofit detailing to the areas referenced have been sealed in accordance to manufactures specification and to design details using Juta Titan Tank. All retrofitted surfaces have been primed prior to application to help aid in adherence. Two testing procedures were conducted throughout the verification visit, a thorough visual pick and probe test as well as a non destructive air lance integrity test which identified several faults which were remediated on-site. Verified in accordance with CIRIA 735

GEOSHIELD SIGNATURE:



DATE:	14/04/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	017
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME: Baz Carey

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME: Robin

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: East Block Above Basal Layer Probes 6,7 and 8.

SITE CONDITIONS:

WEATHER: Cloudy

TEMPERATURE: 13c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

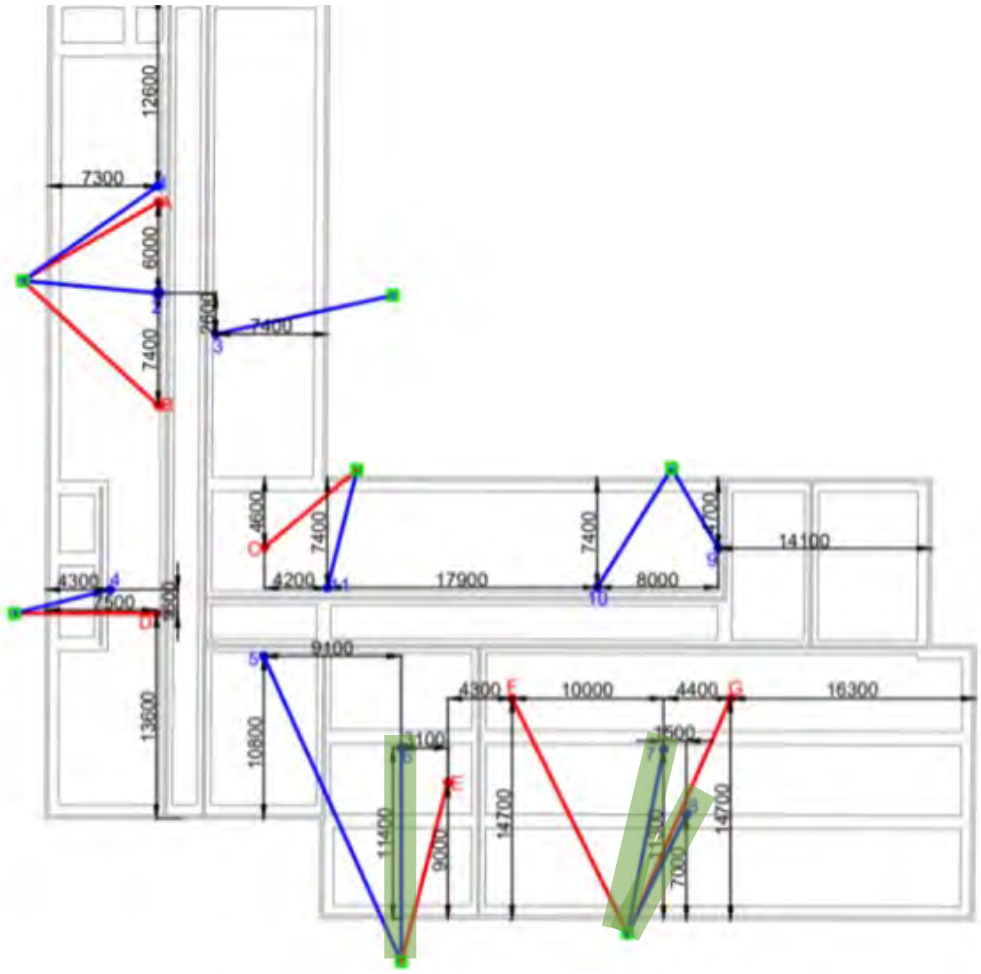
TIME: 12:00-13:00 REPORT NUMBER: 017

DATE: 17/04/2023.

ACCOMPANIED Nigel - Fenton Group

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of East Block.

The above basal layer probes highlighted green above were verified during this visit.

East Block Above Basal Layer Probes 6,7 and 8.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block Above Basal Layer Probes 6,7 and 8.

NOTES: Installation-

The remaining above nasal layer probes within the east block have now been successfully installed by the specialists Prestige Air. All monitoring probes have been installed as per Geoshields mark up. However, the probe pipe routes have differed due to obstructions.





The above photographs display the ground gas monitoring probes securely fixed upon the concrete walls.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

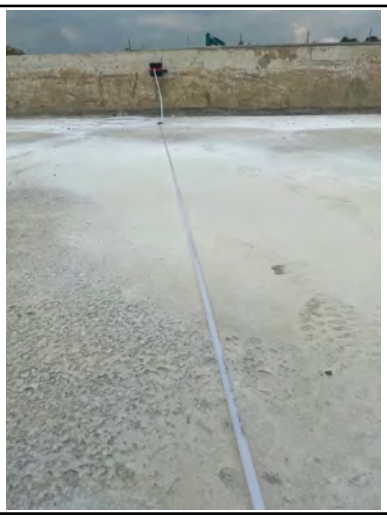
LOCATION/GRID LINE: East Block Above Basal Layer Probes 6,7 and 8.

NOTES: Probe pipe routes-

As mentioned above the probe pipe routes have been altered due to obstruction within the structure and jetting voids. This will not affect the ground gas monitoring procedures

The photographs below displays some of the probe pipe routes.





The probe pipe has been lined and installed as horizontally as possible, it has been lightly fixed upon the concrete blinding to reduce movements throughout the development. No sharp angles within the probe pipe routes were present.

A gradual gradient to each probe monitoring point was present eliminating any areas potentially creasing causing disruption during the post monitoring procedures.

GEOSHIELD Verification Report

VERIFICATION ITEM THREE



The probe pipe has been returned immediately through hard PVC pipe work

vertically up against the concrete perimeter walls in which the ground gas monitoring

works will be carried out on future visits.

Evidence of this shown above.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Probe pipe individually tagged.



Probe pipe and monitor installation.



Ground gas monitor fixed.



Ground gas monitor fixed.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES ☐ NO ☐

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

Today's visit to Riverside Academy, Reading was the seventeenth verification visit required for the installation of the remaining Probes 6,7 and 8 within the east block above basal layer. All probes and ground gas monitors have been successfully installed to the centres on Geoshields design. However, the probe pipe routes have altered due to obstruction and jetting voids. This will not affect the ground gas monitoring procedures. No sharp/aggressive angles are present within the probe pipe installation. All ground gas monitors have been suitably fixed upon the concrete walls within the void. All probe pipe has been returned encapsulated immediately vertically external to the building at the monitoring point.

Verified in accordance with CIRIA 735

GEOSHIELD SIGNATURE:



DATE:	17/04/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	018
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME: Baz Carey

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME: Robin

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

Ground gas monitoring probes.

APPLICATOR NAME:	Ben
COMPANY:	Prestige Air.
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from Prestige Air are specialists in the installation of ground

NOTES: gas protection systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and further qualifications in the installation

NOTES: of ground gas monitors, clean air blanket systems and an array of others.

GEOSHIELD Verification Report

AREA SURVEYED: East and West block internal wall and perimeter installation.

SITE CONDITIONS:

WEATHER: Sunny

TEMPERATURE: 19c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

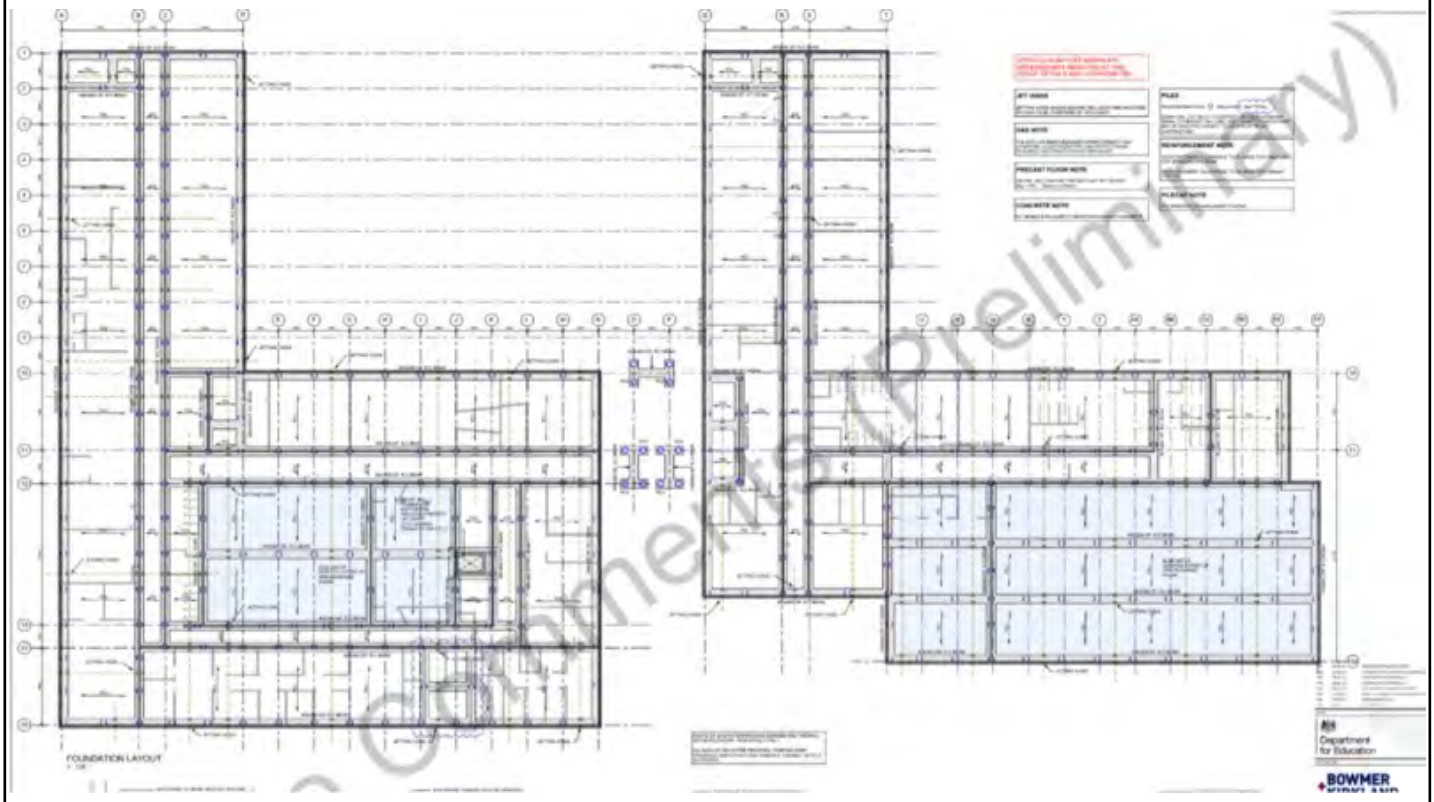
TIME: 13:30-15:30 REPORT NUMBER: 018

DATE: 24/05/2023.

ACCOMPANIED Timber frame foreman.

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of East and west block.

Juta GP1 perimeter and internal wall installation verified during this visit.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

East & West Block internal walls and perimeters.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Alternate overview photograph of the area verified during this visit.

East & West Block internal walls and perimeters.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE

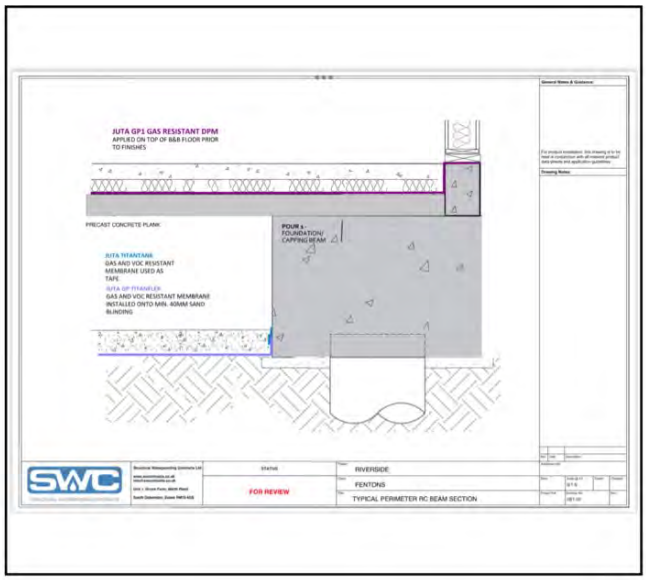
LOCATION/GRID LINE: East & West Block internal walls and perimeters.

NOTES: Installation-

Juta GP1 membrane has been installed across approximately 90% of the internal walls

and 100% of the perimeter walls of East and West block. The perimeter installation has

been installed in accordance to the proposed and accepted SWC drawing as shown in…





…the photograph above on the left. The photograph above on the right shows an alternate

overview photograph of the installation on east block prior to this verification visit.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays evidence that all timber sole plate works have been

secured via screws throughout double sided butyl tape or alternatively strips of Juta

GPSAM ensuring that the integrity of the membrane is not jeopardised via pierced areas.

This enables the thread of the screw(s) to be sealed within the Juta GP1 gas membrane.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East & West Block internal walls and perimeters.

NOTES: Outstanding works-

Throughout the Juta GP1 perimeter and internal wall installations carried out by SWC it was identified that there was several incompleted areas. It has been advised that these areas are sealed/detailed accordingly prior to any further construction works.





The photograph above on the left displays one of several steel stanchion within the Juta GP1 internal wall installation which require grouting in to slab level in order for them to be sealed within the Juta GP1 internal wall installations. The photograph above on the right displays one of all perimeter threshold areas which require sealing ensuring a continuous seal around the perimeters of both blocks referenced.

GEOSHIELD Verification Report

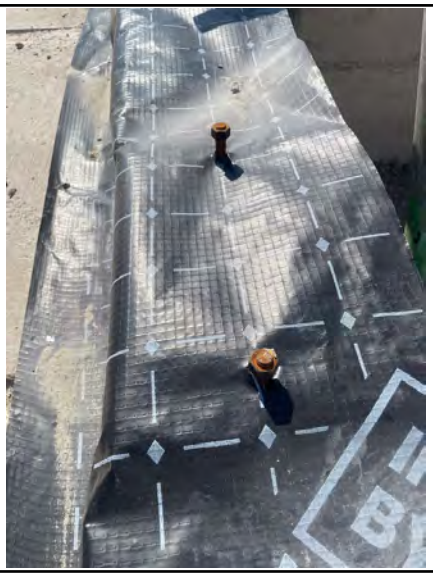
VERIFICATION ITEM THREE

LOCATION/GRID LINE: East & West Block internal walls and perimeters.

NOTES: Faults identified-

Throughout this verification visit several faults were identified which require remediation works to achieve sign off across both blocks. These works require remediation actions prior to any further internal works or Juta GP1 infill installations being carried out.





The photograph above on the left displays a corner which has only been sealed above.

The overlap between adjacent sheets has not been sealed - there was x5 areas found.

The photograph above on the right shows bolt holes around the sports hall which require sealing once the wooden base (beneath) has been removed.

GEOSHIELD Verification Report

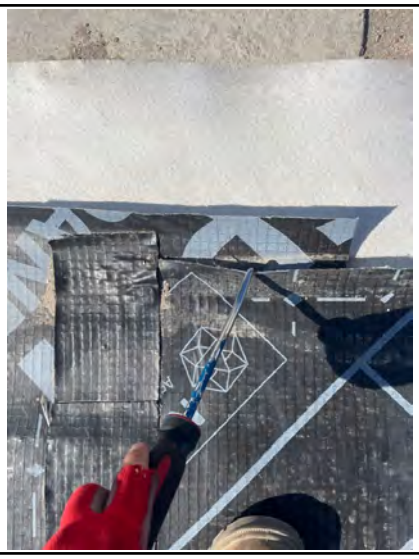
VERIFICATION ITEM THREE



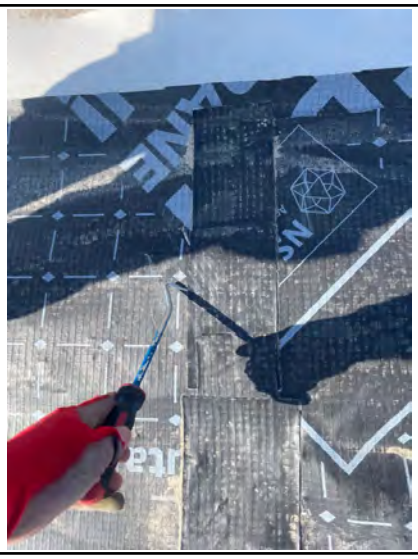
The above photograph displays an outstanding pipe penetration. The installers have been instructed to seal all pipe penetrations within the perimeter & internal walls due to further plaster board being installed prior to infill installation works which will result in inadequate sealing.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Evidence of dual taped lap joint.



Mechanical point stress testing to sealed overlap.



Outstanding threshold section.

Detail for this area to be issued.



Sealed overlap and detailing required.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Unsealed and inadequate overlap.



Evidence of GPSAM beneath soleplate.



Outstanding steel stanchion.



Outstanding steel stanchion.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	
		Pipes within internal or perimeter walls to be sealed.	
		External thresholds to be seal.	
		Bolt pins around sports hall to be sealed.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES ☐ NO ☐

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

Today's visit to Riverside Academy, Reading was the eighteenth verification visit required for the installation of Juta GP1 membrane around the perimeter & across internal walls within East and West block. The initial installation has been carried out in accordance to the proposed and accepted SWC design detail. Most over-laps have been sealed to manufactures specification. Timber sole plates have been fixed through double sided butyl tape or alternatively GP SAM enabling a continuous seal to be achieved. There is several incomplete areas throughout which require further works in order for sign off to be achieved highlighted within this report. Several faults were identified during this visit, which are also to be remediated prior to any sign off being achieved. Verified to CIRIA 735.

GEOSHIELD SIGNATURE:



DATE:	24/05/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	020
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Dumitru
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	Robin
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

AREA SURVEYED: West block internal wall installation.

SITE CONDITIONS:

WEATHER: Sunny

TEMPERATURE: 18c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

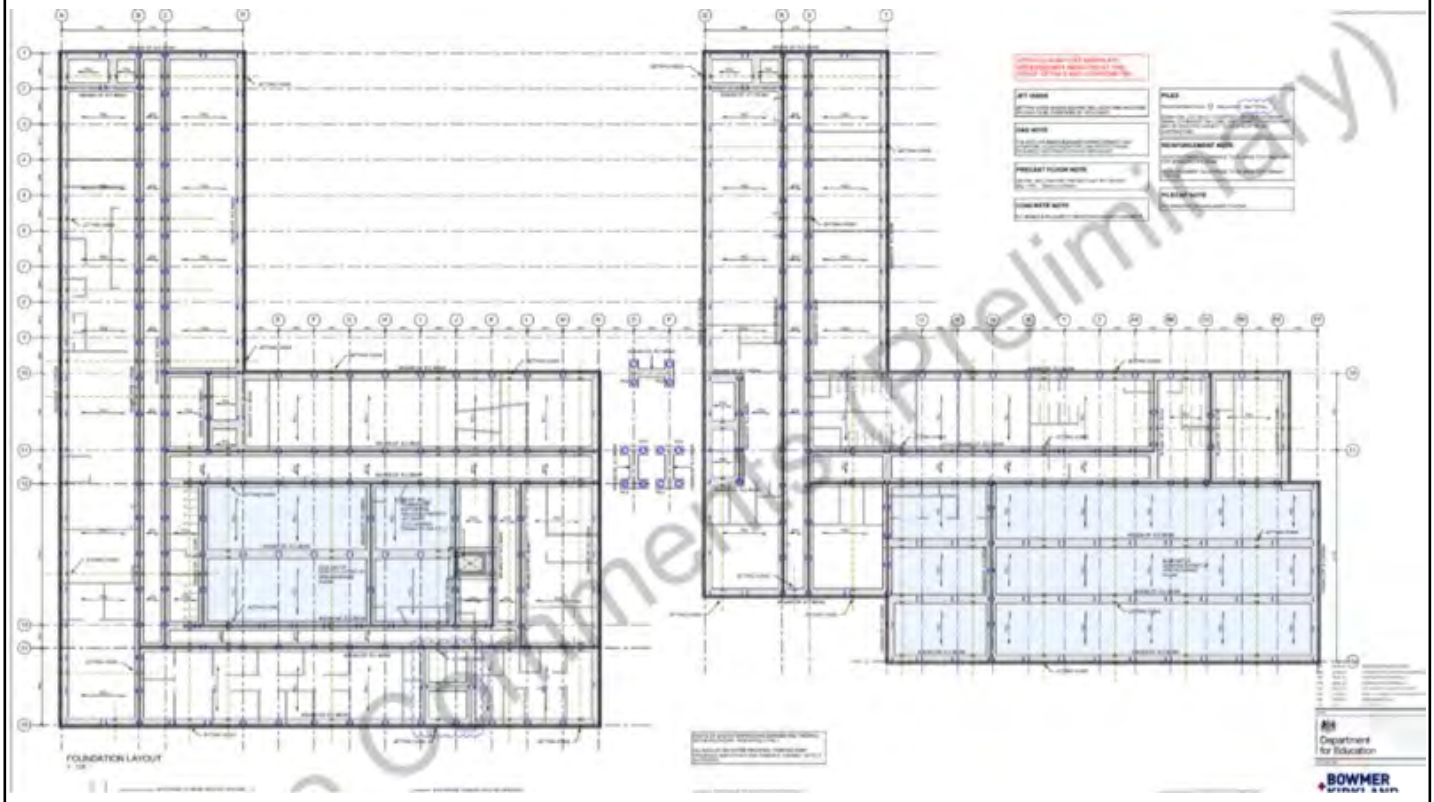
TIME: 13:30-15:00 REPORT NUMBER: 020

DATE: 31/05/2023.

ACCOMPANIED Robin- SWC

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of East and west block.

Juta GP1 internal wall installation verified during this visit.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the area verified during this visit.

West Block Internals.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Alternate overview photograph of the area verified during this visit.

West Block internal wall installation.

GEOSHIELD Verification Report

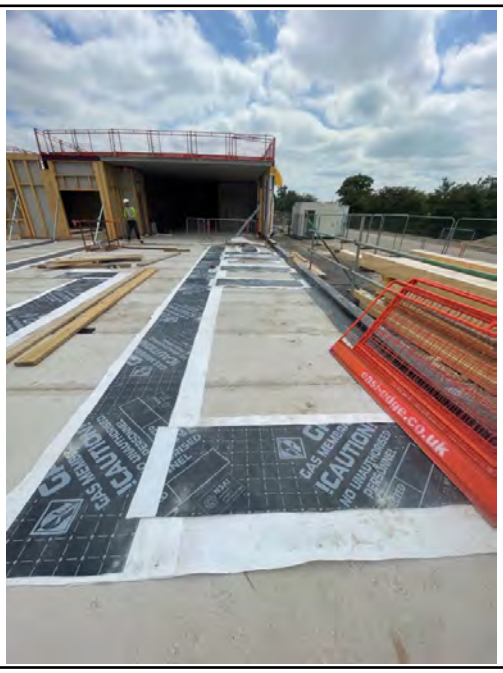
VERIFICATION ITEM ONE

LOCATION/GRID LINE: West Block internal walls.

NOTES: Installation-

Juta GP1 membrane has been installed across the remainder of the internal walls across West block which have been marked out by the engineer. All overlaps between sheets of membrane have been dual taped in accordance to manufacturers specification.





The photograph above on the left displays evidence of Juta Jointing tape in between sheets of Juta GP1 which have been lapped 100mm and over taped using Juta GPSAM.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick and probe test being conducted upon a dual taped lap joint between sheets of Juta GP1.

Complete adherence has been achieved throughout with no faults or defects identified.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: West Block internal walls.

NOTES: Sealed pipe penetrations-

Throughout the remainder of the Juta GP1 internal wall installations several integral pipe penetrations required sealing, to prevent difficulties occurring within the infill installation, remaining pipe penetrations will be sealed during the infilling process.





All pipe penetrations have been successfully sealed using Juta GPSAM which is a gas resistant self adhesive membrane. All have been successfully sealed in accordance to manufactures specification and to a good NVQ standard. All Juta GPSAM works have received adequate heat and rolled pressure ensuring the bituminous backing is activated and a continuous seal has been achieved.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO



The above photograph displays a mechanical point stress test being carried out to a

successfully sealed pipe penetration detail.

Complete adherence has been achieved throughout, with no faults identified.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East & West Block internal walls and perimeters.

NOTES: Outstanding works-

Throughout the Juta GP1 perimeter and internal wall installations carried out by SWC it was identified that there were several incompleted areas. It has been advised that these areas are sealed/detailed accordingly prior to any further construction works.





The photograph above on the left displays one of several steel stanchions within the Juta GP1 internal wall installation which require grouting in to slab level in order for them to be sealed within the Juta GP1 internal wall installations. The photograph above on the right displays one of all perimeter threshold areas which require sealing ensuring a continuous seal around the perimeters of both blocks referenced.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Dual taped lap joint evidence.



Dual taped lap joint evidence.



Mechanical point stress testing.



Alternate overview photograph.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Installer applying heat to Juta GPSAM



Evidence of butyl tape.



Alternate overview photograph.



Alternate overview photograph.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES ☐ NO ☐

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

Today's visit to Riverside Academy, Reading was the twentieth verification visit required for the installation of Juta GP1 membrane to the remaining internal walls within East and West block. All overlaps have been sealed using double sided butyl tape and overtaped using Juta GPSAM cresting dual taped lap joints. All pipes have now been successfully sealed to a good NVQ standard usage Juta GP SAM. All faults identified on previous visits have all now been remediated to a suitable standard. Thorough mechanical point stress testing and visual inspections found no further faults or defects. Details/discussion are still be made in regards to sealing the thresholds and steel stanchions. These require sealing to achieve complete sign off. Tested and verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:



DATE:	31/05/2023

GEOSHIELD Verification Report

PROJECT REFERENCE:	GEO103260
REPORT NUMBER:	021
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading,

RG1 8EQ

MEMBRANE SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions and BS8485

Juta GP1

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Dumitru
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	Robin
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GEOSHIELD Verification Report

AREA SURVEYED: Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC &

ICT2 and PE Rooms.

SITE CONDITIONS:

WEATHER: Overcast

TEMPERATURE: 18c

MEMBRANE TEMPERATURE: N/a

RELATIVE HUMIDITY: N/a

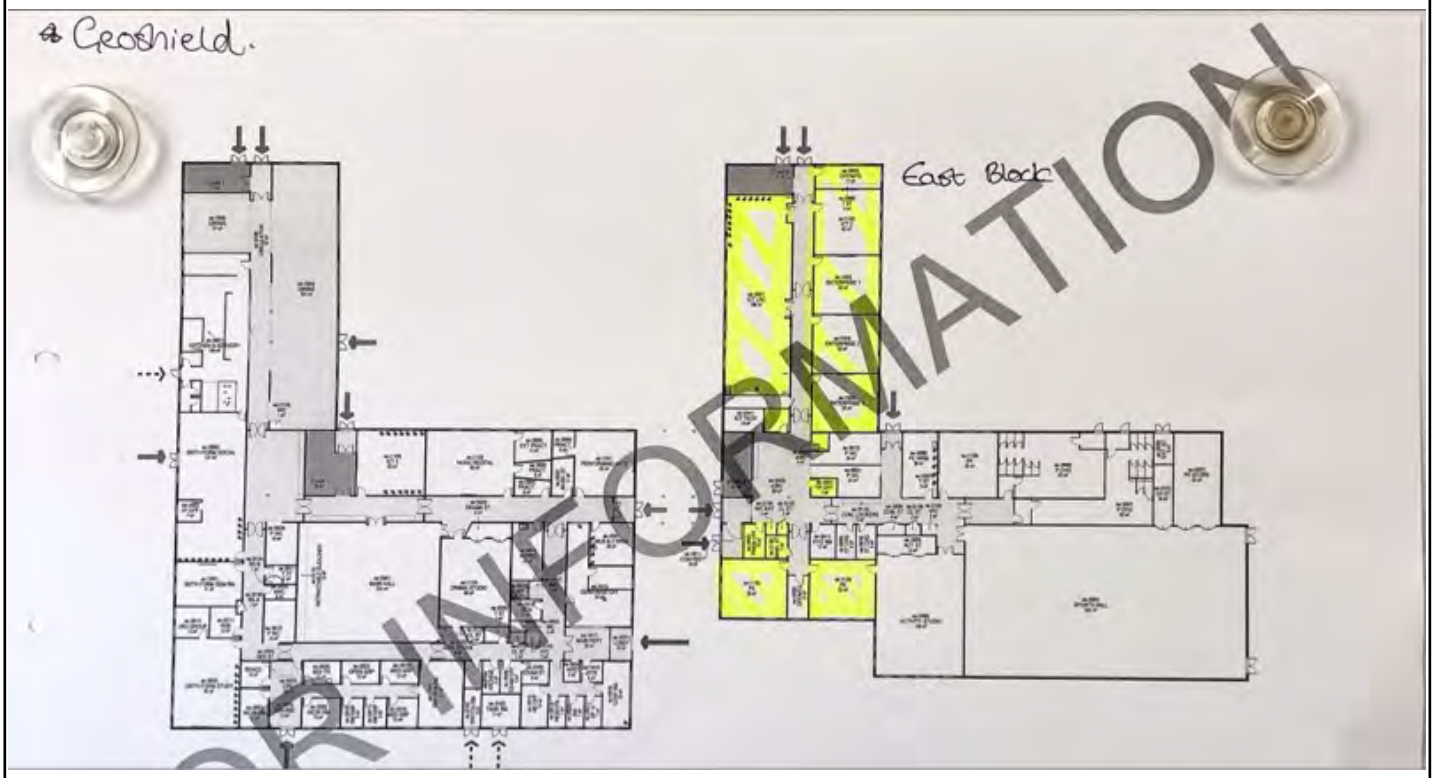
TIME: 12:00-15:00 REPORT NUMBER: 021

DATE: 18/09/2023.

ACCOMPANIED Baz - SWC

GEOSHIELD Verification Report

VERIFICATION LAYOUT



The above photograph displays a layout plan of East and west block.

Juta GP1 infill installations verified during this visit highlighted yellow above.

East Block- Enterprise rooms 1,2&3, ICT LRC & ICT 2 plus PE rooms.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Overview photograph of the block where verification took place.

East Block- Enterprise rooms 1,2&3, ICT LRC & ICT 2 plus PE rooms.

Juta GP1 infill installations.

GEOSHIELD Verification Report

OVERVIEW PHOTOGRAPHS



Internal overview photograph within the block where verification took place.

East Block- Enterprise rooms 1,2&3, ICT LRC & ICT 2 plus PE rooms.

Juta GP1 infill installations.

GeoShield Verification Report

LIMITATIONS

SURVEYED AREA: East Block (See layout).

RESTRICTIONS AND LIMITATIONS:

There was insufficient vehicular access in order for non-destructive air lance integrity testing to be carried out to the area referenced. Alternatively mechanical point stress testing was carried out to all aspects of the install.



GEOSHIELD Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block (See layout).

NOTES: Installation-

Juta GP1 gas barrier has been installed across the foot print of the rooms highlighted and

referenced upon the concrete precast planks. All overlaps between adjacent sheets of

Juta GP1 gas barrier have been lapped a minimum of 100mm as per manufactures….





…specification prior to being welded using a hot air tool and silicone roller around the

perimeter of each room and throughout the internal overlaps present.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The Juta GP1 gas barrier has returned beneath the existing Juta GP1 gas barrier

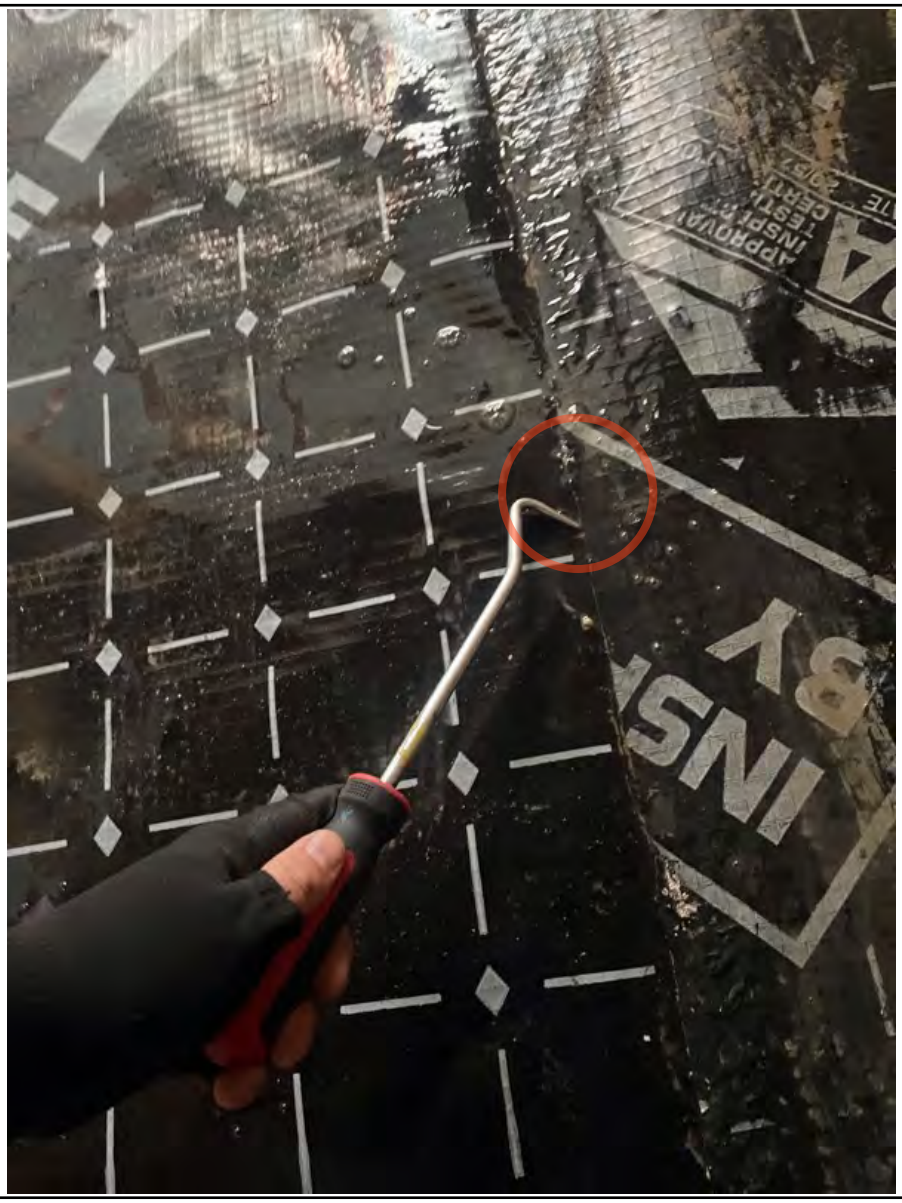
present around around the perimeter of the building and from beneath the internal stud

walls. All Juta GP1 perimeter and internal works were verified on a previous visit.

As mentioned all membranes have been welded using a hot air tool & silicone roller.

GEOSHIELD Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test also known as the pick and probe test being conducted upon a welded overlap between Juta GP1 infill and perimeter membrane. This testing procedure identified a total of 19 faults which were remediated on-site in the presence of Geoshield. Verified in accordance with CIRIA 735.

GEOSHIELD Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block (See layout).

NOTES: Detailing-

Throughout the Juta GP1 gas barrier infill installations a number of pipe penetrations and steel stanchions required sealing. The membrane has been cut tightly around each detail and successfully sealed using Juta GPSAM - gas resistant self adhesive.





The photographs above displays a evidence of the details referenced which have been sealed to a good NVQ standard following the petal formation made up of a minimum of 4 150mm patches of GPSAM and finished off with a 300mm tophat to seal the pipes. All GPSAM works have received adequate heat & rolled pressure to ensure the bitumi-nous backing of the material is activated and a complete seal has been achieved.

GEOSHIELD Verification Report

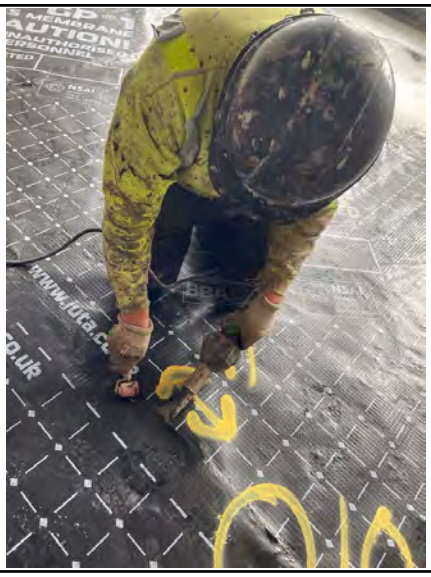
VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block (See layout).

NOTES: Faults identified-

As mentioned within this report a number of faults were identified throughout the rooms referenced within the East Block . These were identified during the visual inspections supported by the mechanical point stress test in accordance with CIRIA 735.





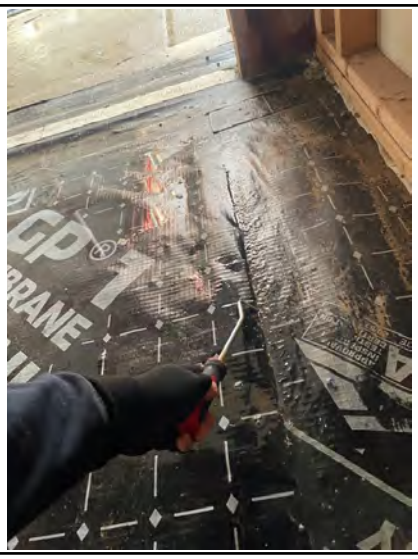
The photograph above on the left displays the typical fault identified. Miswelded lap joints around the perimeter between the new and old sheets of Juta GP1. All faults were highlighted as shown and remediated on-site in the presence of Geoshield using patches of GPSAM or re-welded as shown above on the right.

GEOSHIELD Verification Report

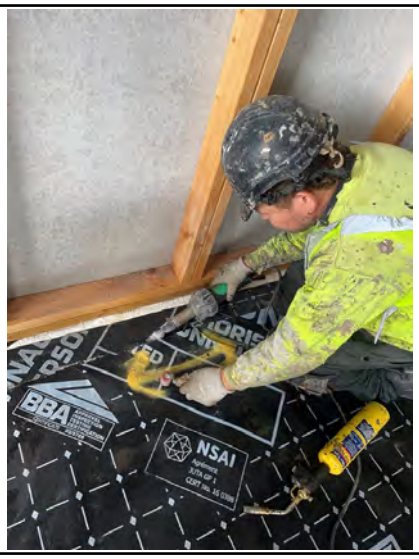
ADDITIONAL PHOTOGRAPHS



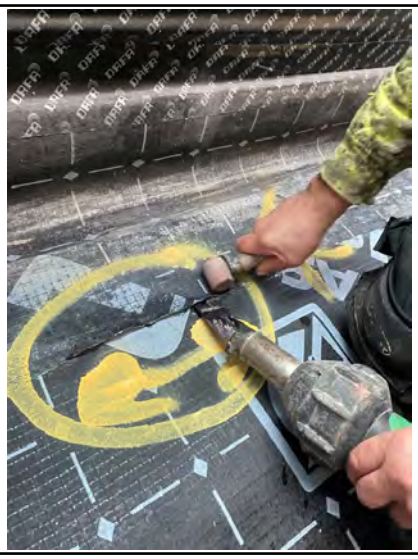
Pick&probe testing to welded lap joint.



Pick&probe testing to welded lap joint.



Re-welded remediation.



Re-welded remediation.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Internal overview photograph.



Internal overview photograph.



Internal overview photograph.



Internal overview photograph.

GEOSHIELD Verification Report

ADDITIONAL PHOTOGRAPHS



Internal overview photograph.



Internal overview photograph.



Mechanical point stress testing.



Mechanical point stress testing.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES ☐ NO ☐

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GEOSHIELD Verification Report

VERIFICATION SUMMARY

Today's visit to Riverside Academy, Reading was the twenty first verification visit required for the infill installation of Juta GP1 membrane to a selections of rooms within East block. All overlaps have between new sheets of Juta GP1 and the existing perimeter membrane have been welded using a hot air tool and silicone rolled. All outstanding pipe penetrations and steels within the rooms have been sealed to a good NVQ standard and to manufactures spec using Juta GP SAM.

Thorough mechanical point stress testing and visual inspections identified a total of 19 miswelded lap joints which were remediated on-site in the presence of Geoshield. External thresholds and steel stanchions still require sealing.

Tested and verified in accordance with CIRIA 735.

GEOSHIELD SIGNATURE:



DATE:	18/09/2023

GeoShield Verification Report 22

PROJECT REFERENCE:	GEO103260 R22
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION: Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

East Block Infill, West Block Infill,
Various Rooms (as per the site layout plan) Infills

SITE CONDITIONS:

WEATHER:

Overcast

TEMPERATURE:

17c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 08:00 - 11:00

DATE: 26.09.2023

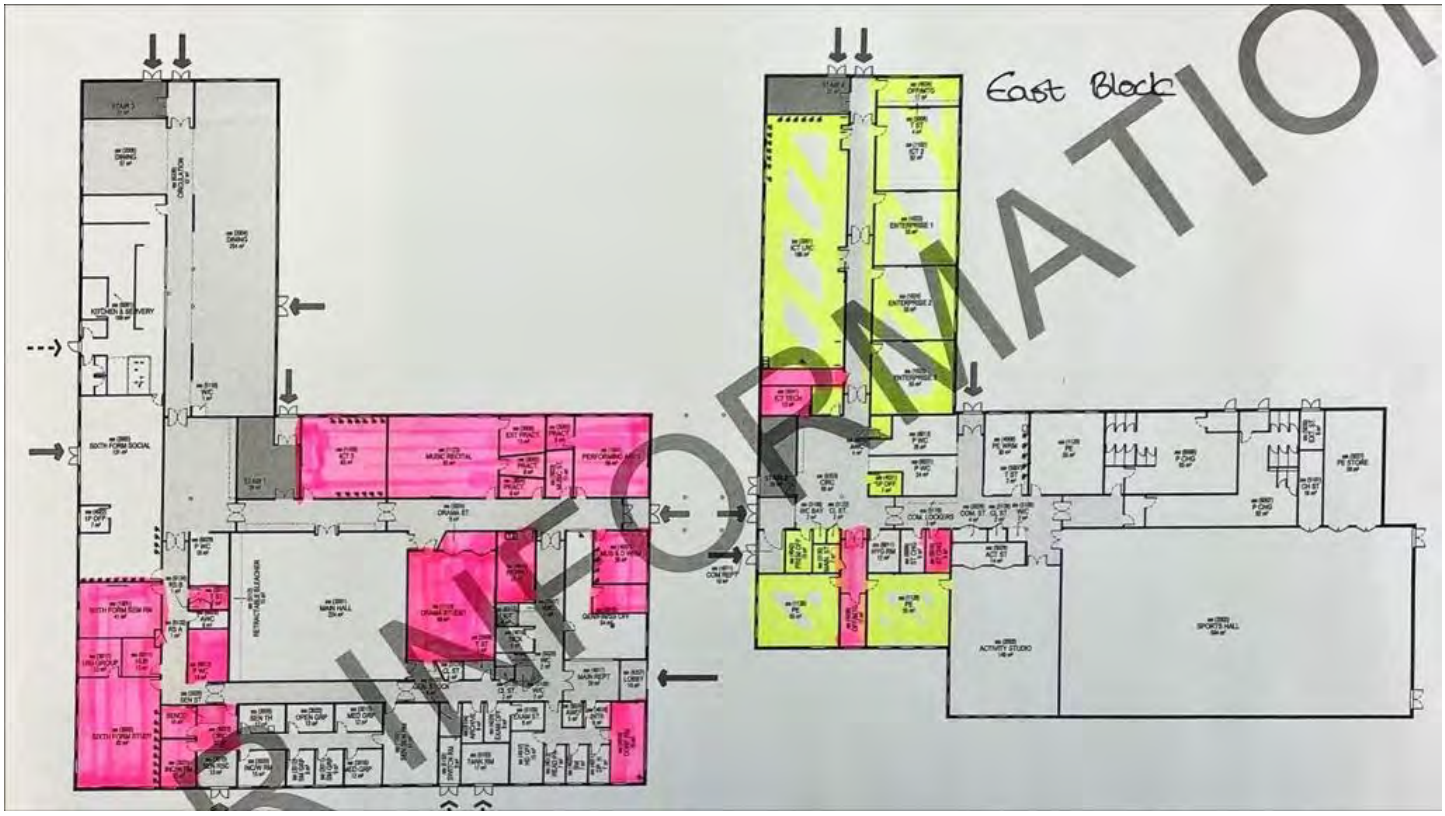
REPORT NUMBER: 022

ACCOMPANIED BY:

SWC

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The area highlighted in pink shows where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.

GeoShield Verification Report

LIMITATIONS

SURVEYED AREA: Various Rooms

RESTRICTIONS AND LIMITATIONS:

Air Lance testing could not be carried out due to insufficient access to the area requiring verification during this site visit. To mitigate this issue, thorough pick and probe and visual testing was carried out.



GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Various Room Infills

Installation of Juta GP1 Gas Barrier





NOTES:

Juta GP1 Gas Barrier has been installed to the infills of various rooms within the east and west block. The Juta GP1 Gas Barrier has been lined underneath the existing perimeter and internal wall installation. All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been lapped a minimum of 100mm and heat welded

NOTES:

using a hot air leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved throughout the installation. The first photograph above shows a successfully welded lap joint. The second photograph shows an overview of welded lap joints achieved.

GeoShield Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing. Several miswelds were identified, all of which were remediated on site in the presence of GeoShield.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Various Rooms - Infills

Sealed Details



NOTES:

Throughout the infill installation of the Juta GP1 Gas Barrier to the referenced areas, there were several details that required sealing, these were outstanding from the initial previous perimeter and internal wall installation. These details were primarily pipe penetrations and steel stanchions fixed within the Juta GP1 Gas Barrier. All



NOTES:

details have been sealed using patches of Juta GP SAM, a gas resistant self adhesive membrane. The installers have applied adequate heat and rolled pressure to the Juta GP SAM to ensure the bituminous backing is activated to achieve complete adherence between the details and the Juta GP1 Gas Barrier.

GeoShield Verification Report

VERIFICATION ITEM TWO



All sealed details throughout the installation were subjected to thorough mechanical point stress testing. No faults or defects were identified with the sealed details during the testing procedures.
Tested and verified in accordance with CIRIA 735.

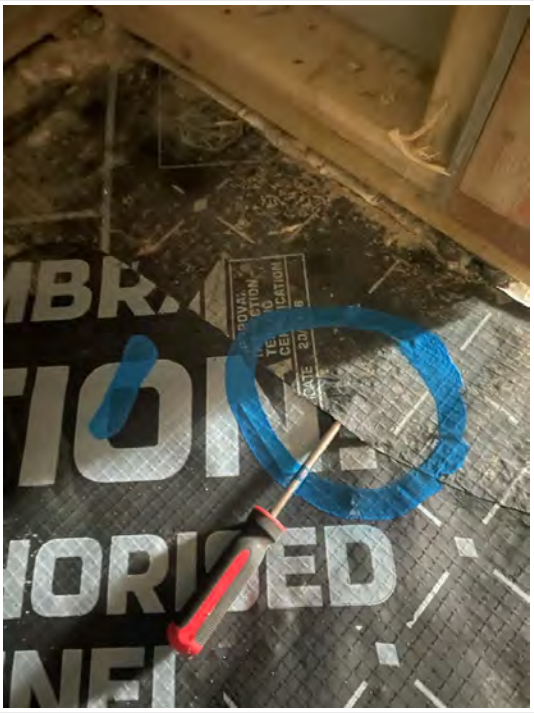
GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: Various Rooms - Infills

Faults Identified and Remediated





NOTES:

As mentioned in this report, the thorough mechanical point stress testing which supported the initial visual inspections conducted across the Juta GP1 infill installations identified several faults. These were primarily small holes or miswelded lap joints around the perimeters of the rooms. All faults were highlighted for ease

NOTES:

of identification and remediated on site in the presence of GeoShield. The specialist installers from SWC opted to apply 150mm patches of Juta GP SAM upon the affected areas, as shown in the photographs above. This has reinstated the continuous seal across the affected rooms.

GeoShield Verification Report

VERIFICATION ITEM THREE

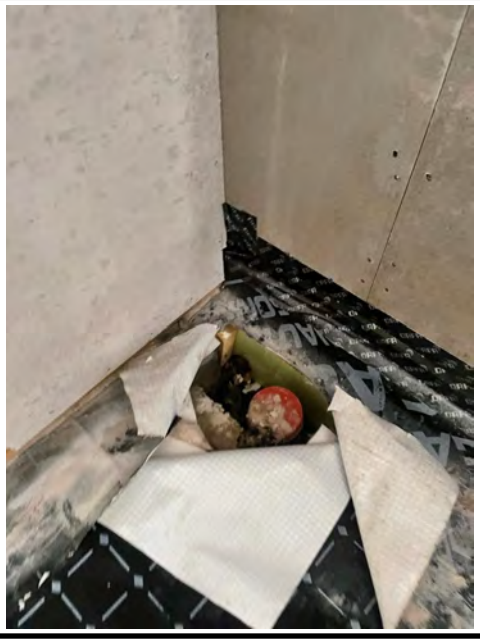


All patch repairs were subjected to thorough mechanical point stress testing. No further faults or defects were identified with the remediations during these testing procedures. Tested and verified in accordance with CIRIA 735.

VERIFICATION ITEM THREE

REMEDIATIONS:

West Wing - External Perimeters



NOTES:

There is two steel stanchions within the west block that required sealing on the external side of the perimeters. These were in the corners of the blocks. These areas will be boxed out prior to being screeded and sealed additionally and verified on the next visit.



NOTES:

There is also a pipe service penetration which requires extending, as shown in the photograph above. Again, this will be verified and passed off at the next visit but in the meantime this will be boxed out prior to screeding commencing.

ADDITIONAL PHOTOGRAPHS



A hot air leister and silicone roller used on site.



An alternate overview photograph.



A sealed pipe penetration.



An alternate overview photograph.

ADDITIONAL PHOTOGRAPHS



An alternate overview photograph.



A pick and probe testing being carried out.



A sealed steel stanchion



An alternate overview photograph.

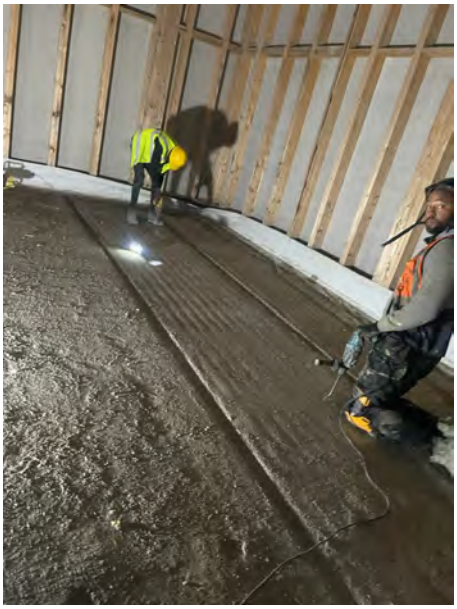
ADDITIONAL PHOTOGRAPHS



An alternate overview photograph.



A sealed corner detail.



An alternate overview photograph.



An alternate overview photograph.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES ☐ NO ☐

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block	✔
Gridline/Plot Sign off	Infill Installation - West Block	
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 22nd visit to the site where verification was required for the infill installation of the Juta GP1 Gas Barrier to various rooms within the east and west block.
All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been successfully welded using a hot air leister and silicone roller creating continuous welded joints throughout.
All details such as pipe penetrations and steel stanchions have been successfully sealed using Juta GP SAM, heated down with a hot air tool to aid in the adherence.
Thorough visual inspections were supported by mechanical point stress testing throughout the verification today. Several small holes and miswelded lap joints were identified, all of which were successfully remediated using 150mm patches of Juta GP SAM. Further pick and probe testing upon all remediated faults validated that a gas tight seal had been achieved.
Outstanding Remediations - There are two steel stanchions and a pipe service penetration within the west block that require sealing on the external side of the perimeters. These were in the corners of the blocks and will be boxed out prior to being screeded.

This was passed and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 26-Sep-2023

GeoShield Verification Report 23

PROJECT REFERENCE:	GEO103260 R23
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GEOSHIELD Verification Report

VERIFICATION OFFICER: Kavanagh Palmer-Fletcher

VERIFICATION COMPANY: GeoShield Limited

Icon Business Park, 4100 Park Approach

Thorpe Park, LEEDS

West Yorkshire

LS15 8GB

CONTACT NUMBER: 07470012812

EMAIL ADDRESS: Kpalmer-fletcher@geoshield.co.uk

ORDER NUMBER:

PER VISIT: YES: ☐ NO: ☑ PROJECT: YES: ☑ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

Infill installation- West Block; P'WC, Mainhall, SEN RSC, SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2, SEN SEM RM, Switch RM, Tank RM, Archive, Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC, INTR, CL ST.

SITE CONDITIONS:

WEATHER:

Overcast

TEMPERATURE:

17c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 08:00 - 11:00

DATE: 02.10.2023

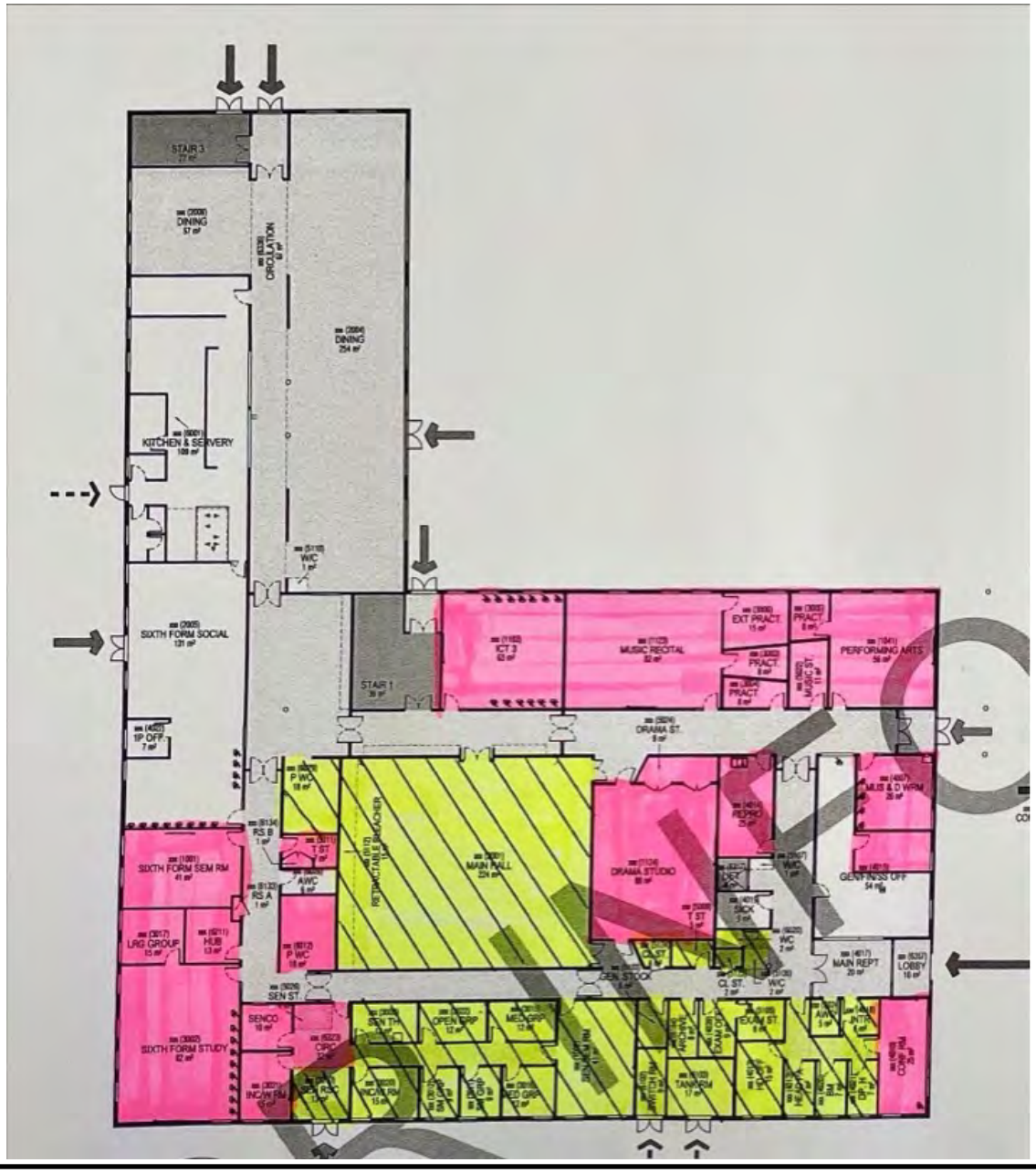
REPORT NUMBER: 023

ACCOMPANIED BY:

Baz-SWC

GeoShield Verification Report

Verification Layout



The photograph above shows a layout of the west block.
The rooms highlighted in yellow shows where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



Overview photograph of the West Block.
Where verification took place during this visit.
Juta GP1 infill installations.

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place during todays visit.
West Block.

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place during todays visit.
West Block.

GeoShield Verification Report

LIMITATIONS

SURVEYED AREA: Rooms Referenced (See Layout)

RESTRICTIONS AND LIMITATIONS:

Air Lance testing could not be carried out due to insufficient access to the area requiring verification during this site visit. To mitigate this issue, thorough pick and probe and visual testing was carried out.



GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: West Block (See layout plan)

Installation of Juta GP1 Gas Barrier-





NOTES:

Further Juta GP1 Gas Barrier infill installations have been carried out to a number of rooms within the west block. The Juta GP1 Gas Barrier has been lined underneath the existing perimeter and internal wall installation. All overlaps between the sheets of Juta GP1 have been lapped a minimum of 100mm &

NOTES:

using a hot air leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved throughout the installation.
The photographs annotated above highlight successfully welded lap joints throughout the room(s) verified during this verification visit.

GeoShield Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing. Several miswelds were identified, all of which were remediated on site in the presence of GeoShield.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: West Block (See layout plan)

Sealed Details-



NOTES:

Throughout the infill installation carried out to the referenced areas, there were several details that required sealing, these were outstanding from the initial previous perimeter and internal wall installation. These details were primarily pipe penetrations and steel stanchions fixed within the Juta GP1 Gas Barrier.



NOTES:

All details have been sealed using Juta GP SAM, a gas resistant self adhesive membrane to a good NVQ level. The installers have applied adequate heat and rolled pressure to the Juta GP SAM to ensure the bituminous backing is activated to achieve complete adherence between the details and the Juta GP1 membrane.

GeoShield Verification Report

VERIFICATION ITEM TWO



All sealed details throughout the installation were subjected to thorough mechanical point stress testing.
No faults or defects were identified with the sealed details during the testing procedures as complete adherence has been achieved throughout.
Tested and verified in accordance with CIRIA 735.

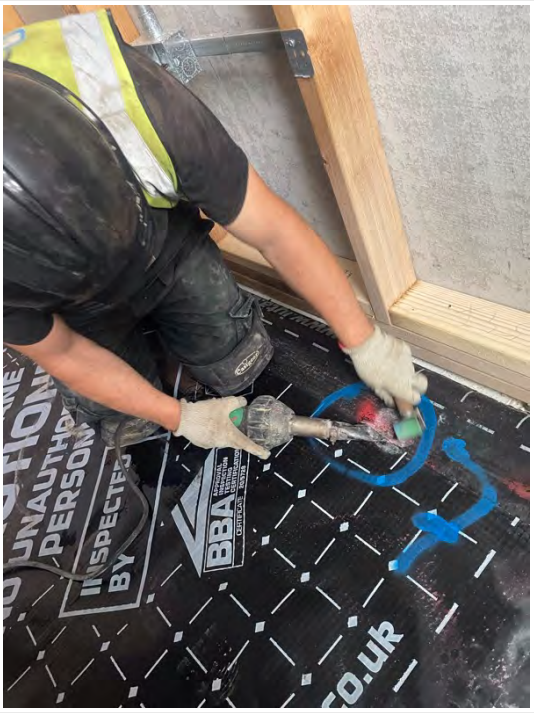
GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: West Block (See layout plan)

Faults Identified and remediated-





NOTES:

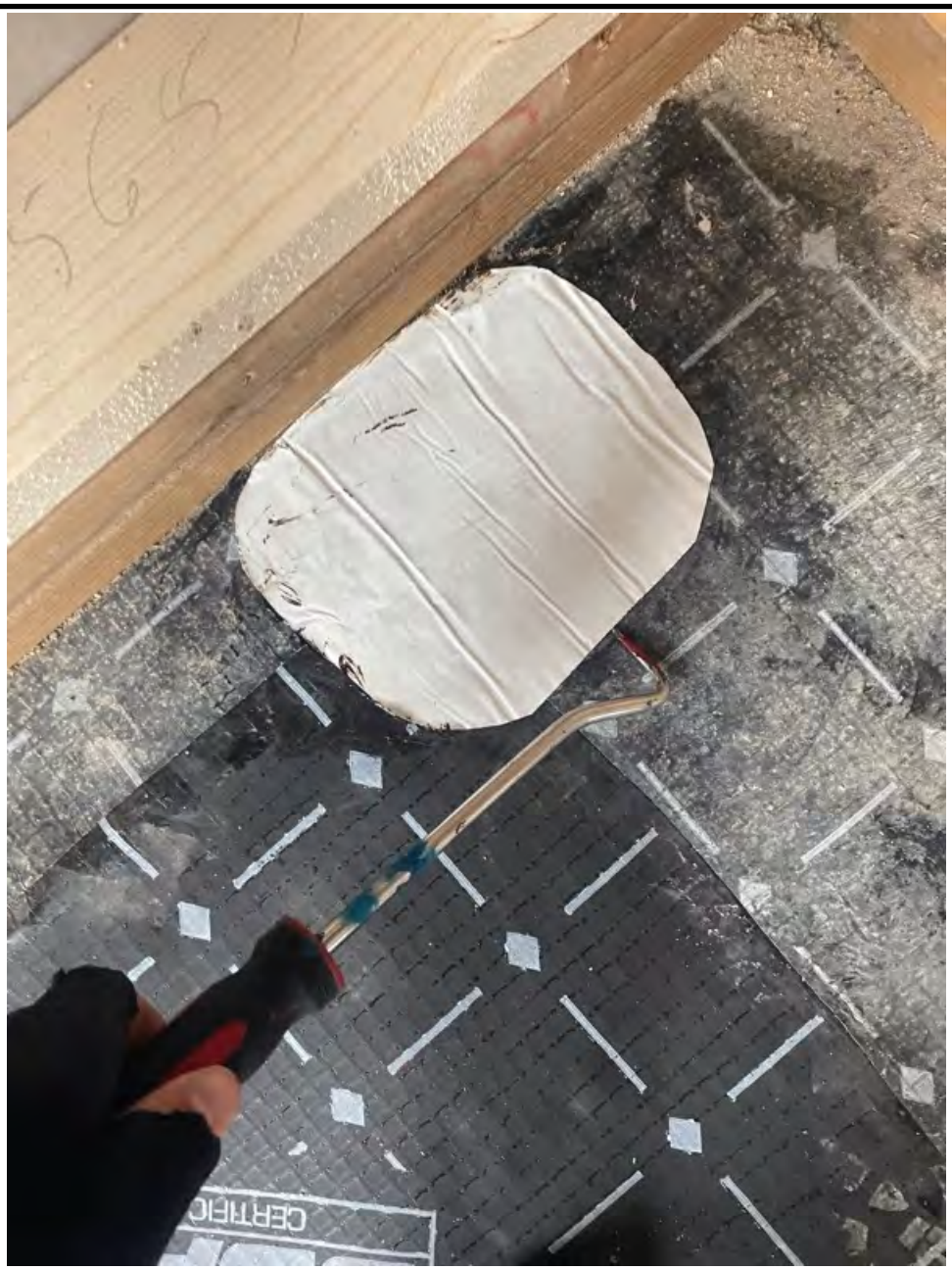
As mentioned in this report, the mechanical point stress testing supporting the initial visual inspections conducted across the Juta GP1 infill installations identified several faults. These were primarily small holes around the perimeter or miswelded lap joints, which were all highlighted for ease of identification.

NOTES:

The photograph above on the left displays a typical fault identified.
All remediations were remediated on-site in the presence of Geoshield by re-welding the mis-welds identified or alternatively applying 150mm patches of Juta GPSAM upon the affected areas reinstating a continuous seal throughout the rooms.

GeoShield Verification Report

VERIFICATION ITEM THREE



All patch repairs & remediations were subjected to thorough mechanical point stress testing.
Which identified no further faults or defects with the remediations during these testing procedures.
Tested and verified in accordance with CIRIA 735.

ADDITIONAL PHOTOGRAPHS



An alternate overview photograph.



An alternate overview photograph.



A sealed pipe penetration.

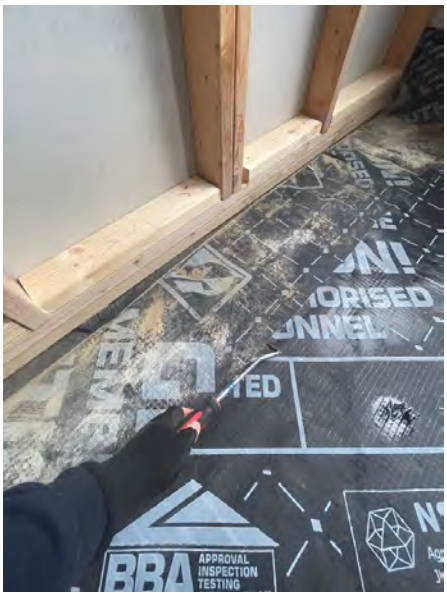


An alternate overview photograph.

ADDITIONAL PHOTOGRAPHS



An alternate overview photograph.



A pick and probe testing being carried out.



A sealed steel stanchion



An alternate overview photograph.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	
02/10/2023	23	Several miswelded lap joints & holes identified. Remediated on-site	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 23rd visit to the site where verification was required for the further infill installations of the Juta GP1 Gas Barrier to a number of rooms within the west block.
All overlaps between the adjacent sheets of Juta GP1 have now been successfully welded using a hot air leister and silicone roller creating continuous welded joints throughout.

All details such as pipe penetrations and steel stanchions have been successfully sealed using Juta GP SAM which is a gas resistant self adhesive membrane to a good NVQ standard and heated down with rolled pressure to aid in the adherence.

Thorough visual inspections were supported by mechanical point stress testing throughout the verification today. Several small holes and miswelded lap joints were identified, all of which were highlighted and successfully remediated via re-welding or alternatively using 150mm patches of Juta GP SAM reinstating a continuous seal throughout the rooms verified during this visit.

This was passed and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 02-Oct-2023

GeoShield Verification Report 24

PROJECT REFERENCE:	GEO103260 R24
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

NAME OF SURVEYOR: Brett Hattle

VERIFICATION COMPANY: GeoShield Limited

Icon Business Centre

4100 Park Approach

Thorpe Park

Leeds

CONTACT NUMBER: 07387373167

EMAIL ADDRESS: bhattle@geoshield.co.uk

ORDER NUMBER: To be confirmed

PER VISIT: YES: ✔ NO: ☐ PROJECT: YES: ✔ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Baz
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL 50%, AWC, SICK, MAIN REPT, LOBBY.
East Block - CIRC + Corridor, STAIR 2, COM REPT.

SITE CONDITIONS:

WEATHER:

Cloudy

TEMPERATURE:

17c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 08:00 - 11:00

DATE: 09.10.2023

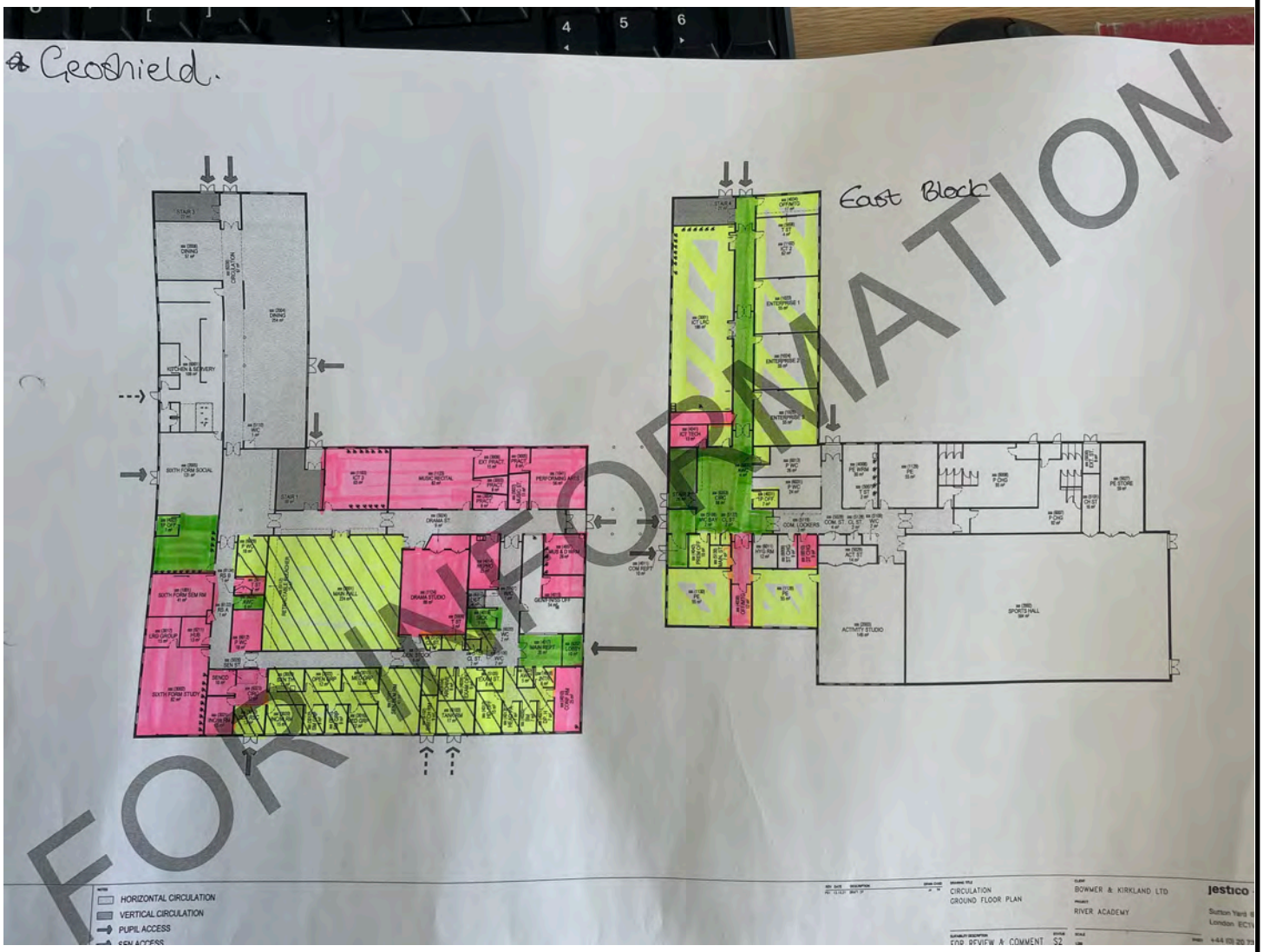
REPORT NUMBER: 024

ACCOMPANIED BY:

Baz-SWC

GeoShield Verification Report

Verification Layout



The photograph above shows a layout of the west block.
The rooms highlighted in Green shows where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



Overview photograph of the East Block.
Where verification took place during this visit.
Juta GP1 infill installations.

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place during todays visit.
East Block Corridor

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place during todays visit.
West Block.

GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East & West Block (See layout plan)

Installation of Juta GP1 Gas Barrier-





NOTES:

Juta GP1 Gas Barrier infill installations have been carried out to a number of rooms within the east & west block. The Juta GP1 Gas Barrier has been lined underneath the existing perimeter and internal wall installation. All overlaps between the sheets of Juta GP1 have been lapped a minimum of 100mm &

NOTES:

welded using a hot air leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved. The photographs annotated above highlight successfully welded lap joints throughout the room(s) verified during this verification visit.

GeoShield Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing. Several miswelds were identified, all of which were remediated on site in the presence of GeoShield.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East & West Block (See layout plan)

Sealed Details-





NOTES:

Throughout the infill installation carried out to the referenced areas, there were several details that required sealing, these were outstanding from the initial previous perimeter and internal wall installation. These details were primarily pipe penetrations and steel stanchions fixed within the Juta GP1 Gas Barrier.

NOTES:

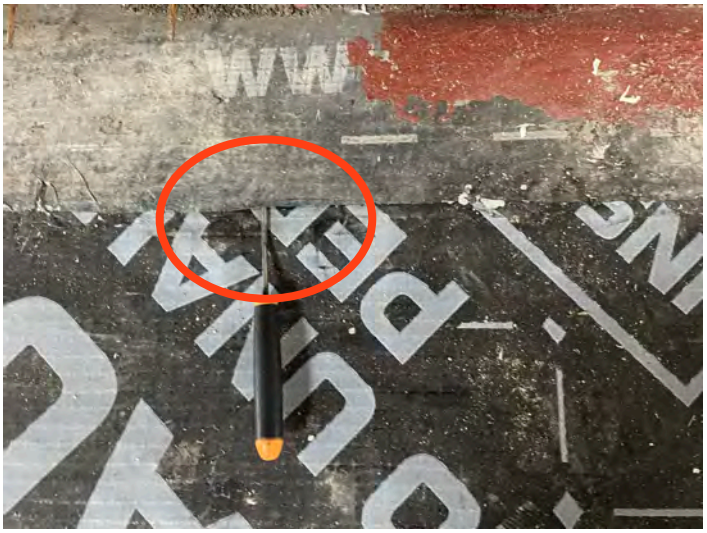
All details have been sealed using Juta GP SAM, a gas resistant self adhesive membrane to a good NVQ level. The installers have applied adequate heat and rolled pressure to the Juta GP SAM to ensure the bituminous backing is activated to achieve complete adherence between the details and the Juta GP1 membrane.

GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: West Block (See layout plan)

Faults Identified and remediated-





NOTES:

Throughout the verification visit a thorough visual pick and probe test was conducted, several mis-welds/faults were identified. The photograph above displays a mis-weld identified and highlighted with the pick and probe tool.
The faults/mis-welds identified were all remediated on-site and in the presence of

NOTES:

GeoShield by earthier rewelding or patch repairing with Juta GP SAM a gas resistant self adhesive membrane heated down over the faulted areas to ensure a gas resistant seal is achieved throughout the installation process.

GeoShield Verification Report

VERIFICATION ITEM THREE



The photograph above displays displays a mechanical point stress test being conducted upon a patch repair. A thorough visual pick and probe test was carried out upon all remediated areas, no further faults or defects were identified at the time of the inspection.

ADDITIONAL PHOTOGRAPHS



An alternate overview photograph.



An alternate overview photograph.



An alternative overview photograph.



An alternate overview photograph.

ADDITIONAL PHOTOGRAPHS



Fault identified.



Fault remediated with patch repair.



Fault identified.



Pick and probe test upon remediated patch repair.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	
02/10/2023	23	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 24th visit to the site where verification was required for the further infill installations of the Juta GP1 Gas Barrier to a number of rooms within the east & west block.
All overlaps between the adjacent sheets of Juta GP1 were welded using a hot air leister and silicone roller with adequate pressure applied to ensure a continuous weld is achieved.

All pipe penetrations have been successfully sealed using Juta GP SAM which is a gas resistant self adhesive membrane heated down with rolled pressure to aid in the adherence.

Thorough visual inspections were supported by mechanical point stress testing throughout the verification today. Several small holes and mis-welds were identified, all of which were highlighted and successfully remediated via re-welding or alternatively using 150mm patches of Juta GP SAM ensuring a continuous seal throughout the rooms verified during this visit.

This was passed and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE:	09-Oct-2023

GeoShield Verification Report 25

PROJECT REFERENCE:	GEO103260 R25
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION: Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

NAME OF SURVEYOR:	Kavanagh Palmer-Fletcher
VERIFICATION COMPANY:	GeoShield Limited
	Icon Business Centre
	4100 Park Approach
	Thorpe Park
	Leeds
CONTACT NUMBER:	07470 012813
EMAIL ADDRESS:	kpalmer-fletcher@geoshield.co.uk
ORDER NUMBER:	To be confirmed

PER VISIT:	YES:	✔	NO:		PROJECT:	YES:	✔	NO:	

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Mick
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

East Block - Internal Walls (Complete), East Block Infills, Stairwell 4, HYG RM, ST CHG West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST, W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor

SITE CONDITIONS:

WEATHER:

Rain

TEMPERATURE:

11c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 07:00 - 09:15

DATE: 19.10.2023

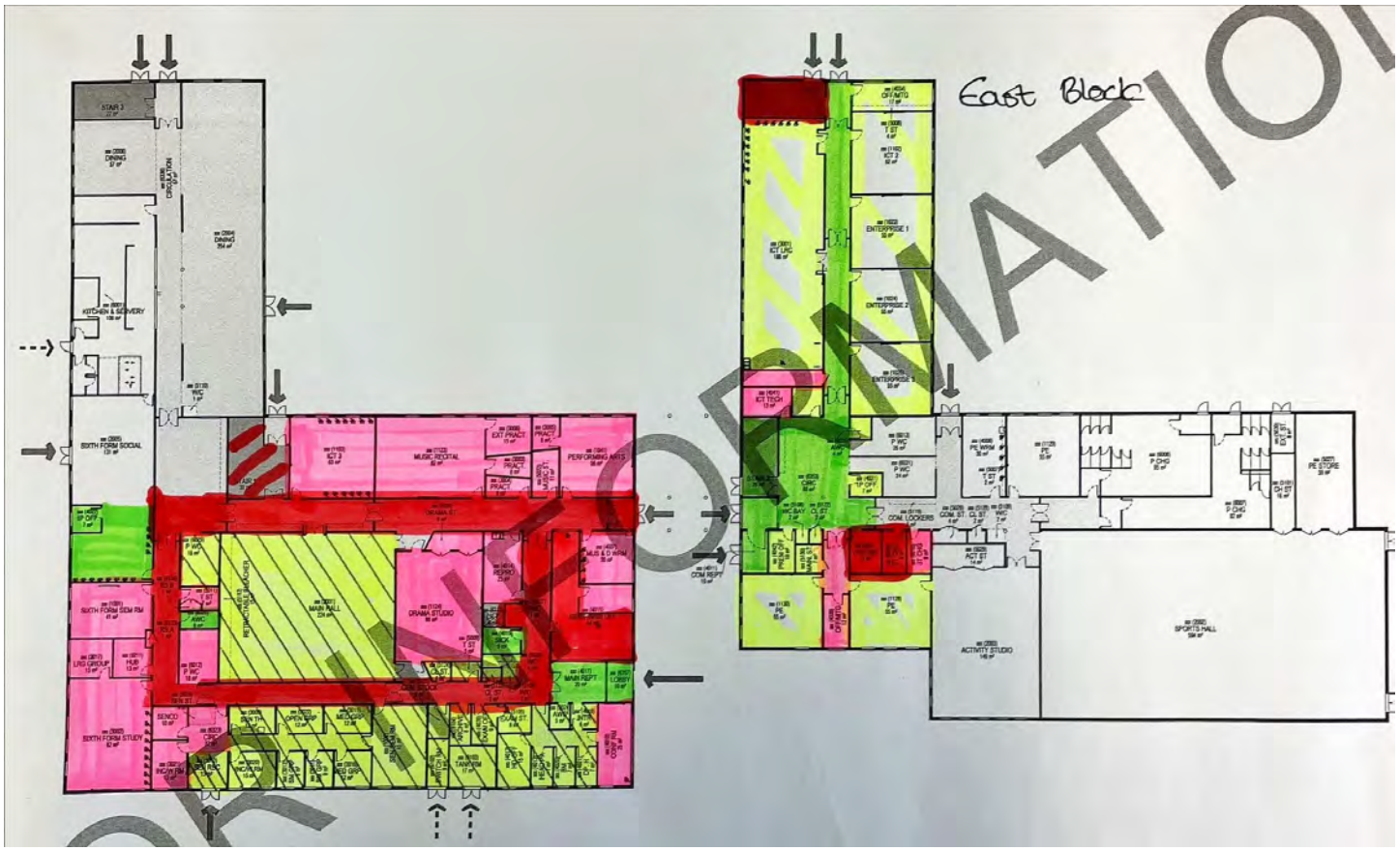
REPORT NUMBER: 025

ACCOMPANIED BY:

Mick - SWC

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The area highlighted in red shows where the verification inspection took place on site today.

GeoShield Verification Report

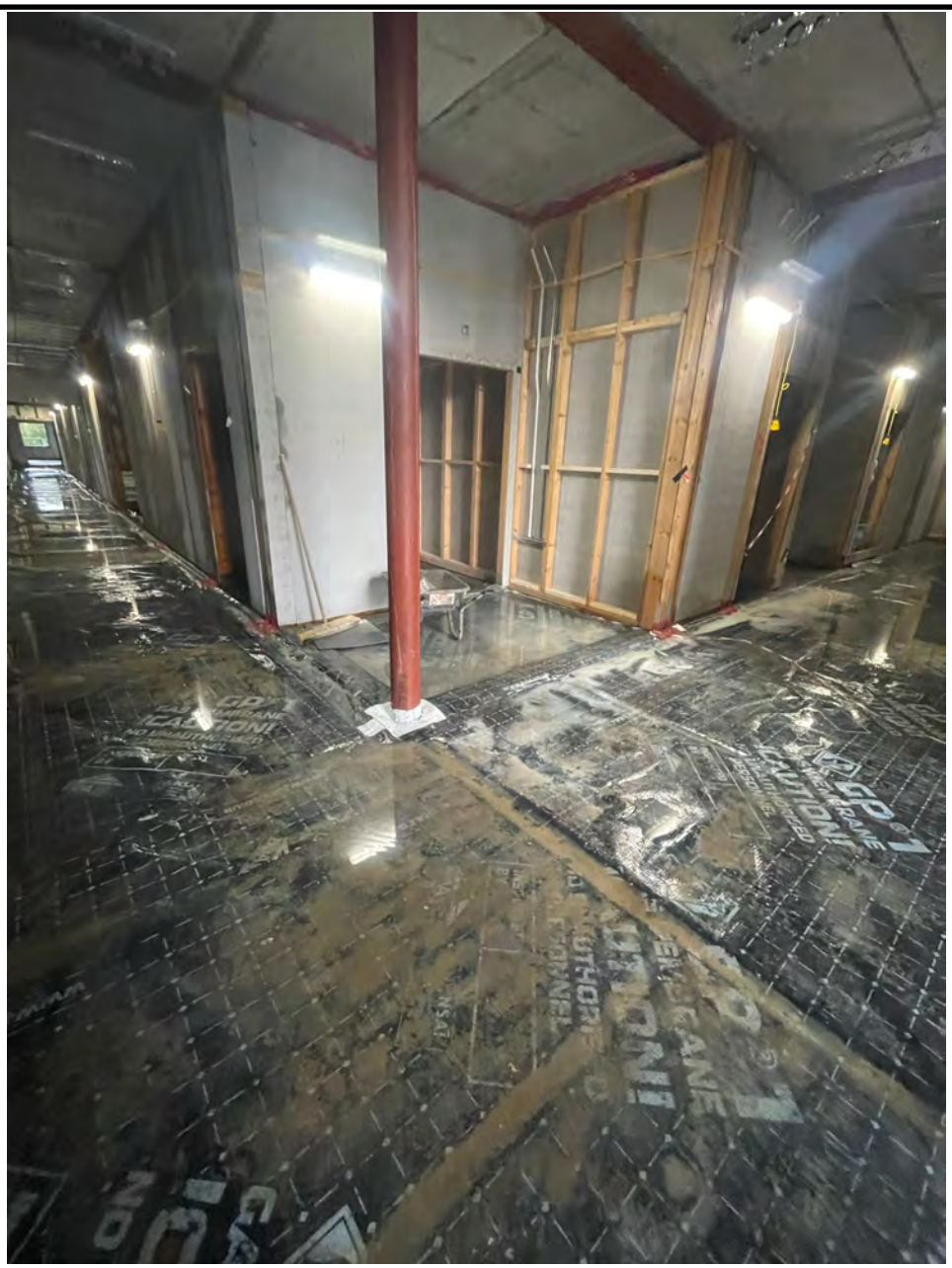
OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

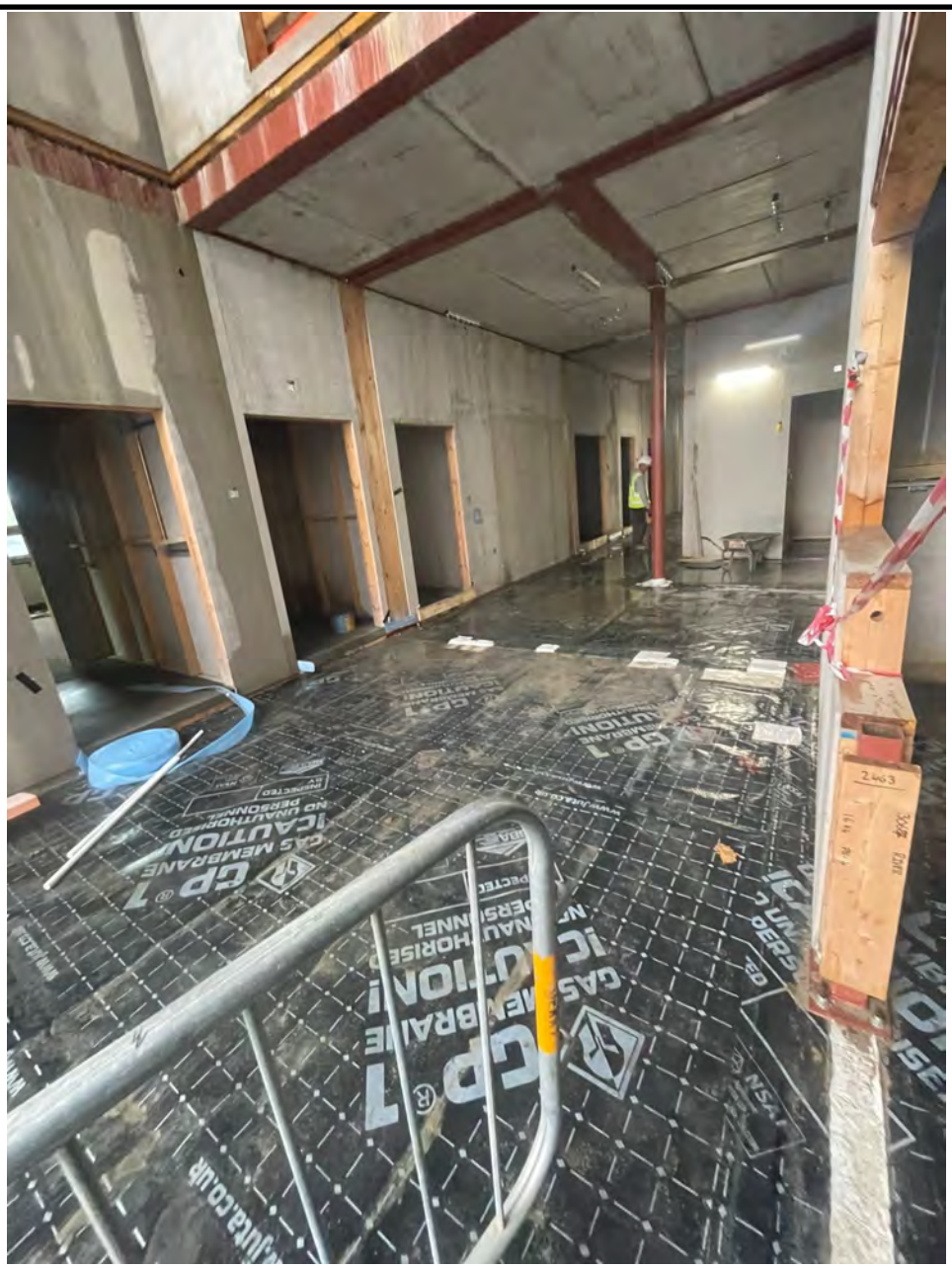
OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.

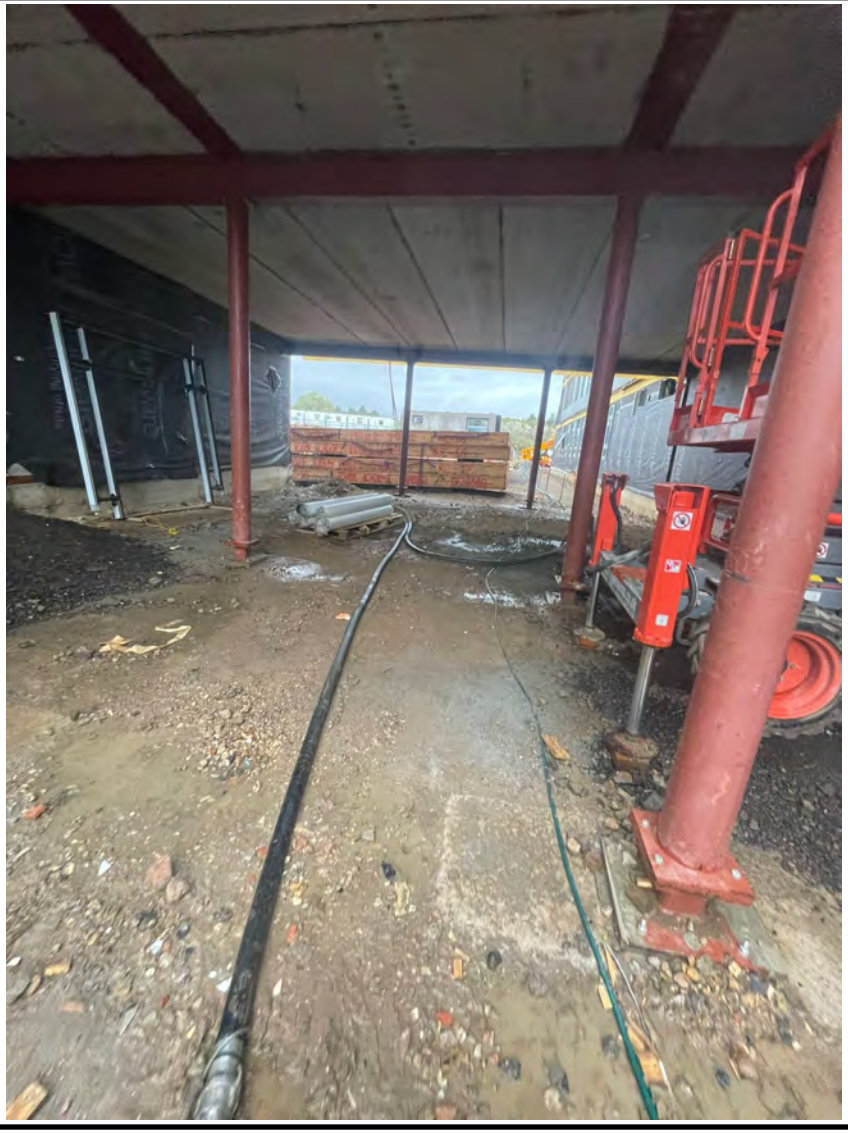
GeoShield Verification Report

LIMITATIONS

SURVEYED AREA: All areas

RESTRICTIONS AND LIMITATIONS:

Air Lance testing could not be carried out due to insufficient access to the area requiring verification during this site visit. To mitigate this issue, thorough pick and probe and visual testing was carried out.



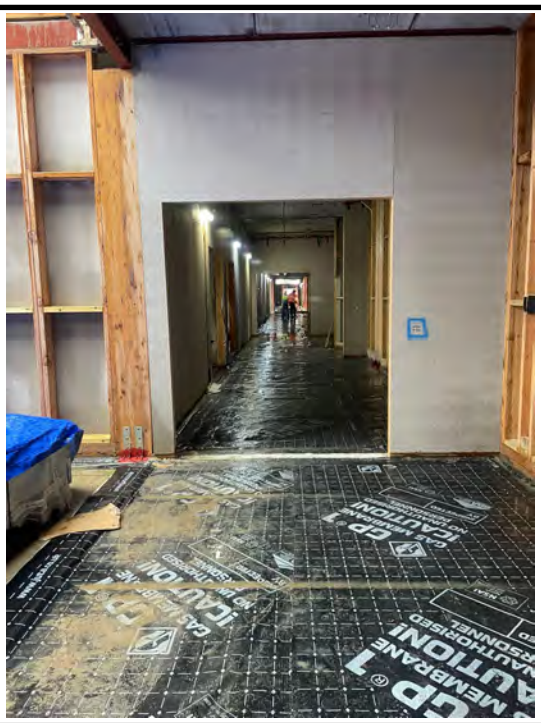
GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East & West Block

Installation of Juta GP1 Gas Barrier





NOTES:

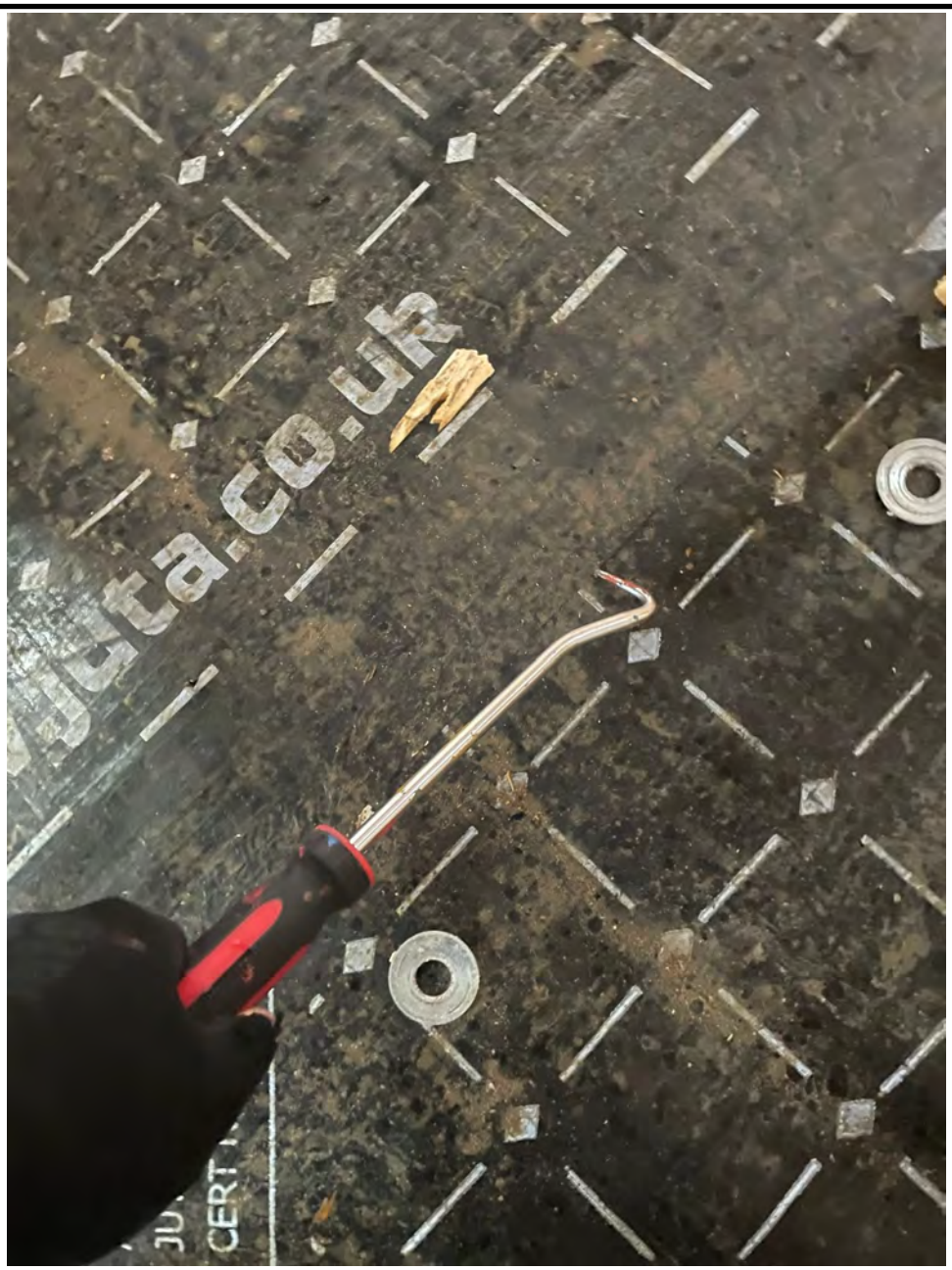
Juta GP1 Gas Barrier has been infilled to the areas referenced by the installers, SWC. The Juta GP1 Gas Barrier has been sealed to the previously installed Juta GP1 Gas Barrier to the perimeters and internal walls. All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been lapped a minimum

NOTES:

of 100mm and heat welded using a hot air leister and a silicone roller with adequate pressure applied to ensure a continuous weld is achieved. The photographs above show overviews of the welded lap joints achieved during the installation. Installed in accordance with manufacturer's specifications.

GeoShield Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing, several faults were identified, all of which were remediated on site in the presence of GeoShield.

GeoShield Verification Report

VERIFICATION ITEM TWO

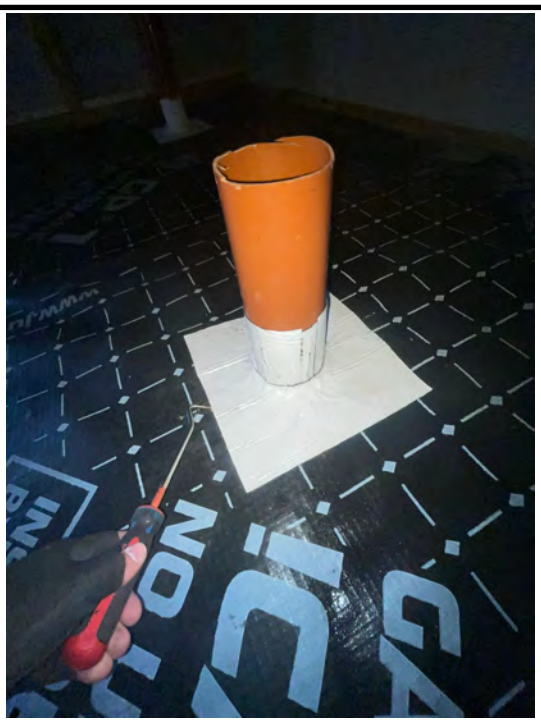
LOCATION/GRID LINE: East & West Block

Sealed Details



NOTES:

Throughout the infill installation of the Juta GP1 Gas Barrier to the referenced areas, there were a number of outstanding details that required sealing. These were primarily pipe penetrations and a couple of steel stanchions, all of which have been



NOTES:

successfully sealed to manufacturer's specifications and to a good NVQ2 standard using Juta GP SAM, which is a gas resistant self adhesive membrane. Heat and rolled pressure is applied to ensure a complete adherence is achieved between the detail and the Juta GP1 Gas Barrier.

GeoShield Verification Report

VERIFICATION ITEM TWO



Like all other aspects of the installation, the sealed details were also subjected to thorough mechanical point stress testing which identified no faults or defects. A complete adhesion has been achieved upon the details and the returns onto the Juta GP1 Gas Barrier.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East & West Block

Perimeter Installation





NOTES:

The remainder of the perimeter and internal wall installation has been carried out to the East Block. Upon verification, no faults or defects were identified however, there are several steel stanchions around the perimeter of this side of the block which require sealing, as shown in the photographs above. All overlaps between

NOTES:

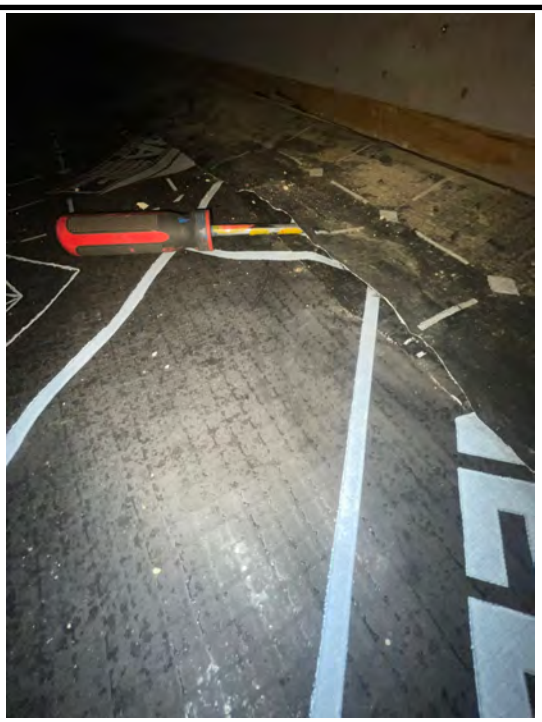
adjacent sheets of membrane within this area have been successfully dual taped using Juta double sided butyl tape and over taped using 150mm strips of Juta GP SAM. Juta GP SAM is also present underneath all sole plates ensuring that the fixings through the sole plate have been successfully sealed.

GeoShield Verification Report

VERIFICATION ITEM THREE

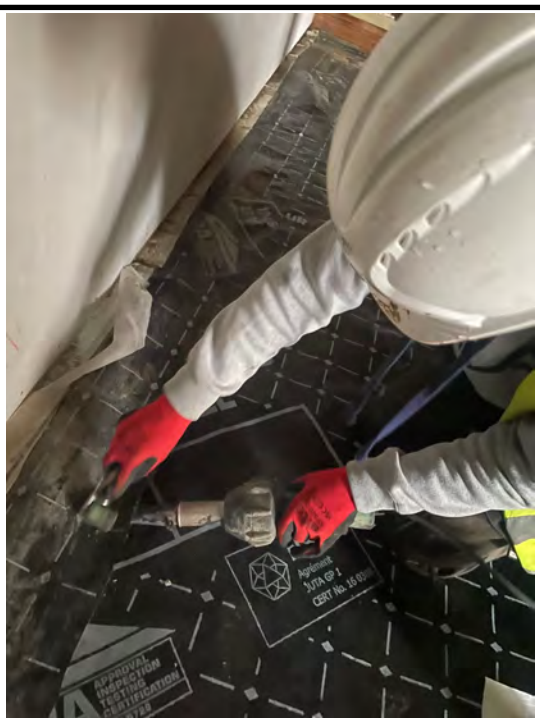
LOCATION/GRID LINE: East & West Block

Faults Identified and Remediated



NOTES:

As mentioned within this report thorough visual inspections alongside mechanical point stress testing identified several faults. These were primarily miswelded lap joints identified during the mechanical point stress testing carried out upon the welded lap joints. All faults were highlighted for ease of identification and remediated in the



NOTES:

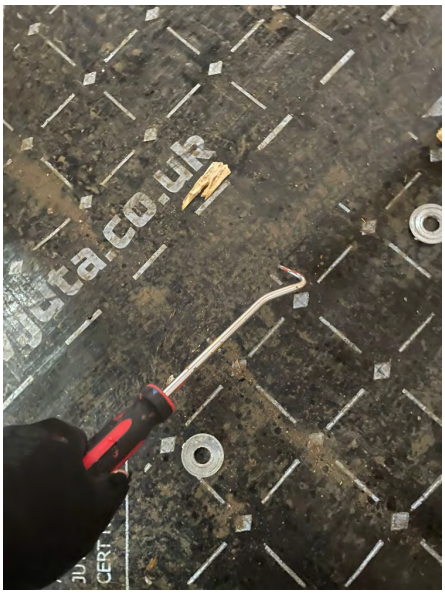
presence of GeoShield. The installers opted for re-welding the lap joints, as shown in the photograph above.
No outstanding remediations within the areas verified during this visit.

Tested and verified in accordance with CIRIA 735.

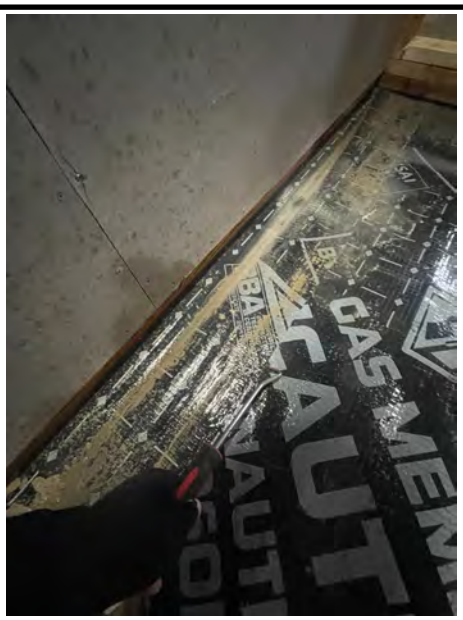
ADDITIONAL PHOTOGRAPHS



A pick and probe test being conducted upon a welded lap joint.



A pick and probe test being conducted upon a welded lap joint.



A pick and probe test being conducted upon a welded lap joint.



A pick and probe test being conducted upon a welded lap joint.

ADDITIONAL PHOTOGRAPHS



Additional overview of one of the areas inspected during this visit.



A pick and probe test being conducted upon a welded lap joint.



An overview of sealed details.



Additional overview of one of the areas inspected during this visit.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	
02/10/2023	023	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔
19/10/2023	025	1. Several faults/mis-welds identified and remediated on-site.	✔
		2. Steels around the east block (sports hall) require sealing.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off	East Block - Internal Walls (Complete)	✔
Gridline/Plot Sign off	East Block Infills, Stairwell 4, HYG RM, ST CHG	✔
Gridline/Plot Sign off	West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST,	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:	✔	DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	…W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 25th visit to the site where verification was required for the infill installation of the Juta GP1 Gas Barrier to various areas within the east and west block.
All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been successfully welded using a hot air tool and silicone roller creating continuous welded joints throughout.
All details such as pipe penetrations and steel stanchions have been successfully sealed using Juta GP SAM, heated down with a hot air tool to aid in the adherence.
Thorough visual inspections were supported by mechanical point stress testing throughout the verification today. Several faults were identified, primarily miswelded lap joints, all of which were successfully remediated using 150mm patches of Juta GP SAM. Further pick and probe testing upon all remediated faults validated that a gas tight seal had been achieved.

Outstanding Remediations - There are steel stanchions within the east block that require sealing on the external side of the perimeters.

This was passed and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 19-Oct-2023

GeoShield Verification Report 26

PROJECT REFERENCE:	GEO103260 R26
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION: Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

NAME OF SURVEYOR: Brett Hattle

VERIFICATION COMPANY: GeoShield Limited

Icon Business Centre

4100 Park Approach

Thorpe Park

Leeds

CONTACT NUMBER: 07387 373167

EMAIL ADDRESS: bhattle@geoshield.co.uk

ORDER NUMBER: To be confirmed

PER VISIT: YES: ✔ NO: ☐ PROJECT: YES: ✔ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Mick
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

West Block Rooms - Infills (Dining, Circulation, Stair 3, Kitchen & Servery, Sixth Form Social & WC)

SITE CONDITIONS:

WEATHER:

Cloudy

TEMPERATURE:

4c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 12:30 - 15:30

DATE: 30.11.2023

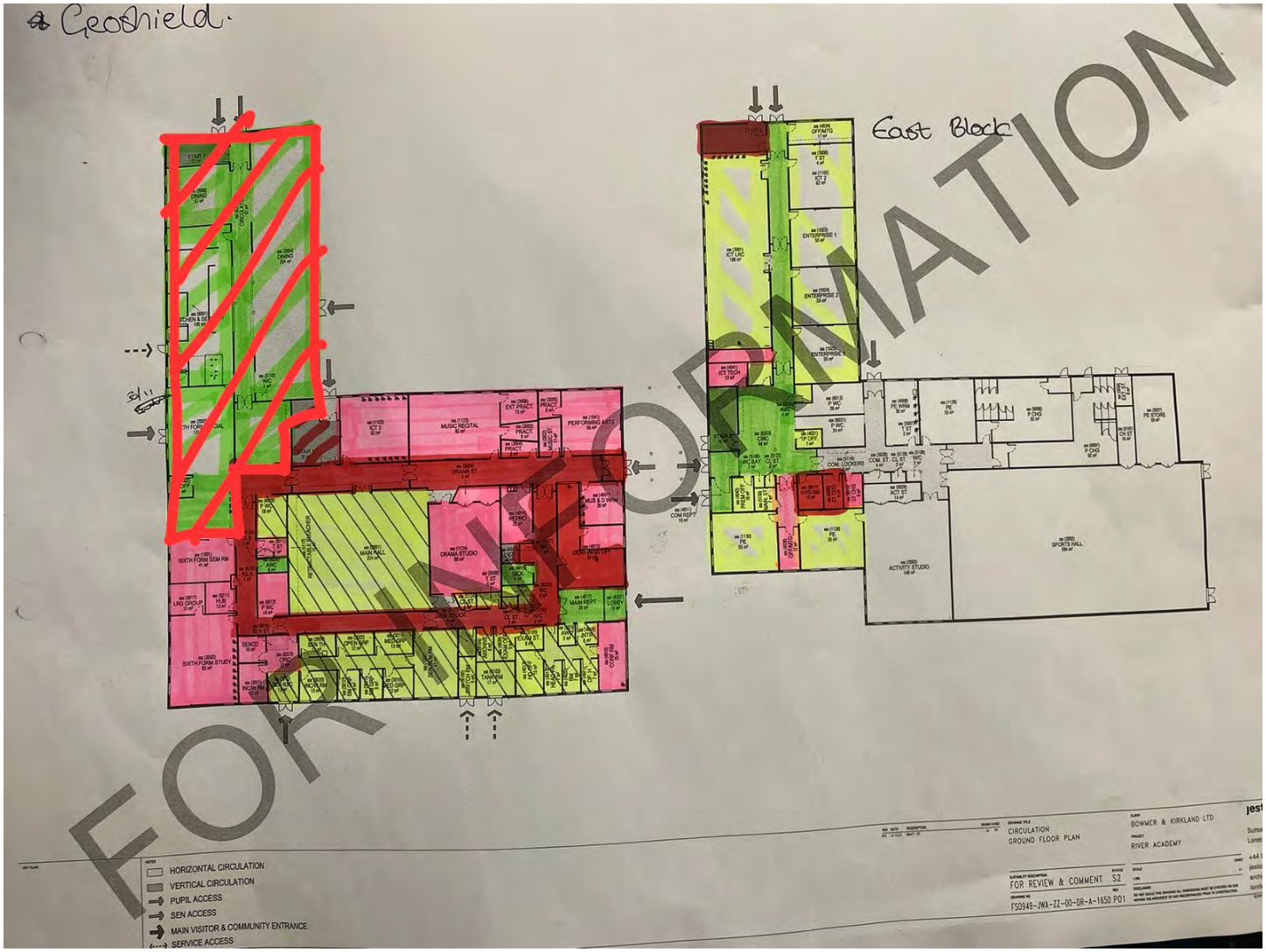
REPORT NUMBER: 026

ACCOMPANIED BY:

SWC

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The area hatched in red shows where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
West Block Rooms - Infills

GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: West Block (Various Rooms) - Infills

Installation of Juta GP1 Gas Barrier





NOTES:

Juta GP1 Gas Barrier has been infilled to the remaining various rooms within the West Block. The Juta GP1 Gas Barrier has been lined underneath the existing perimeter and internal wall installation. All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been lapped a minimum of 100mm and heat welded

NOTES:

using a hot air leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved throughout the installation. The first photograph above shows an overview of welded lap joints achieved. The second photograph shows a close up of welded lap joints.

GeoShield Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing. Several miswelds were identified, all of which were remediated on site in the presence of GeoShield.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: West Block (Various Rooms) - Infills

Sealed Details.





NOTES:

Throughout the infill installation of the Juta GP1 Gas Barrier to the referenced areas, there were several details that required sealing in accordance with manufacturer's specifications and design guidelines. This has been achieved using Juta GP SAM, which is a gas resistant self adhesive membrane, cut into patches and placed

NOTES:

intricately around each detail to ensure all gaps, joints and voids are sealed. The installers have applied adequate heat and rolled pressure to the Juta GP SAM to ensure the bitumen backing is activated to achieve complete adherence between the details and the Juta GP1 Gas Barrier.

GeoShield Verification Report

VERIFICATION ITEM TWO



All sealed details throughout the installation were subjected to thorough mechanical point stress testing. No faults or defects were identified with the sealed details during the testing procedures.
Tested and verified in accordance with CIRIA 735.

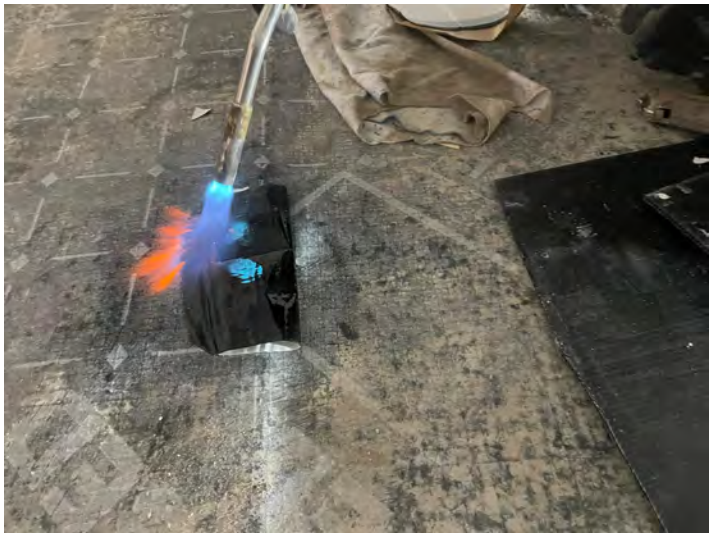
GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: West Block (Various Rooms) - Infills

Faults Identified and Remediated.





NOTES:

As mentioned in this report, the thorough mechanical point stress testing which supported the initial visual inspections conducted across the Juta GP1 infill installations identified several faults. These were primarily miswelded lap joints or damage to the gas barrier caused by follow on trades. All faults were

NOTES:

successfully remediated on site in the presence of GeoShield. The specialist installers from SWC opted to apply 150mm patches of Juta GP SAM upon the affected areas, as shown in the second photograph above. Heat and rolled pressure was applied to the remediated faults ensuring a continuous seal has been achieved.

GeoShield Verification Report

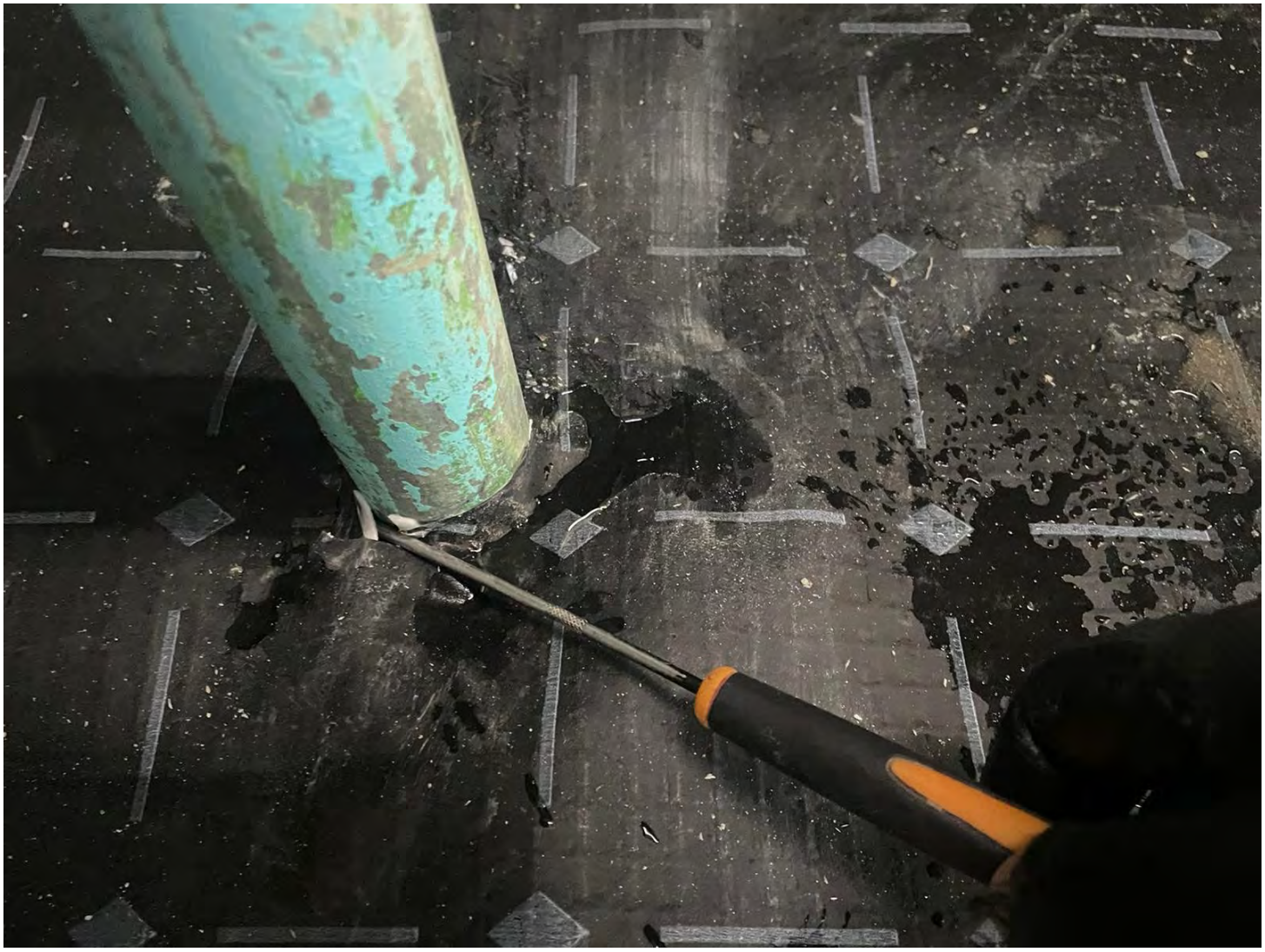
VERIFICATION ITEM THREE



All patch repairs were subjected to thorough mechanical point stress testing. No further faults or defects were identified with the remediations during these testing procedures. Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

OUTSTANDING REMEDIATIONS



In Stairway 3 scaffolding was present which the Juta GP1 Gas Barrier has been cut around. Once the scaffolding has been removed, the Juta GP1 Gas Barrier will need to be re-sealed accordingly. This will need to be inspected and verified before sign off can be achieved.

ADDITIONAL PHOTOGRAPHS



A fault identified, highlighted with the pick and probe tool.



The fault remediated using a patch of Juta GP SAM, heated down to aid in the adherence.



A fault identified, highlighted with the pick and probe tool.



The fault remediated using a patch of Juta GP SAM, heated down to aid in the adherence.

ADDITIONAL PHOTOGRAPHS



A fault identified, highlighted with the pick and probe tool.



The fault remediated using a patch of Juta GP SAM, heated down to aid in the adherence.



The hot air tool used on site.



The installer heating down a patch repair with a hot air tool.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	
02/10/2023	023	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔
19/10/2023	025	1. Several faults/mis-welds identified and remediated on-site.	✔
		2. Steels around the east block (sports hall) require sealing.	
30/11/2023	026	Remediations to the membrane to be carried out once scaffolding	
		removed from Stairwell 3 in the west block before sign off can be	
		achieved.	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off	East Block - Internal Walls (Complete)	✔
Gridline/Plot Sign off	East Block Infills, Stairwell 4, HYG RM, ST CHG	✔
Gridline/Plot Sign off	West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST,	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:	✔	DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	…W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor	✔
Gridline/Plot Sign off	West Block Rooms - Infills (Dining, Circulation, Kitchen &….	✔
Gridline/Plot Sign off	… servery, Sixth Form Social & WC)	✔
Gridline/Plot Sign off	West Block - Stairwell 3.	
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 26th visit to the site where verification was required for the infill installation of the Juta GP1 Gas Barrier to the remaining various rooms within the West Block.
All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been successfully welded using a hot air leister and silicone roller creating continuous sealed joints throughout.
All details such as pipe penetrations and steel stanchions have been successfully sealed using Juta GP SAM, heated down with a hot air tool to aid in the adherence.
Thorough mechanical point stress testing was conducted throughout the verification today. Several small holes and miswelded lap joints were identified, all of which were successfully remediated using 150mm patches of Juta GP SAM. Further pick and probe testing upon all remediated faults validated that a gas tight seal had been achieved.
Outstanding Remediations - In Stairway 3 scaffolding was present which the Juta GP1 Gas Barrier has been cut around. Once the scaffolding has been removed, the Juta GP1 Gas Barrier will need to be re-sealed accordingly. This will need to be inspected and verified before sign off can be achieved.

Tested and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE:	30-Nov-2023

GeoShield Verification Report 27

PROJECT REFERENCE:	GEO103260 R27
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

NAME OF SURVEYOR: Brett Hattle

VERIFICATION COMPANY: GeoShield Limited

Icon Business Centre

4100 Park Approach

Thorpe Park

Leeds

CONTACT NUMBER: 07387 373167

EMAIL ADDRESS: bhattle@geoshield.co.uk

ORDER NUMBER: To be confirmed

PER VISIT: YES: ✔ NO: ☐ PROJECT: YES: ✔ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Mick
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

East Block, Infills - P WC, Com Lockers, Com ST, CL ST, WC, Activity Studio, ACT ST, PE WRM, P CHG, CH ST.

SITE CONDITIONS:

WEATHER:

Cloudy

TEMPERATURE:

10c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 09:30 - 11:30

DATE: 20.12.2023

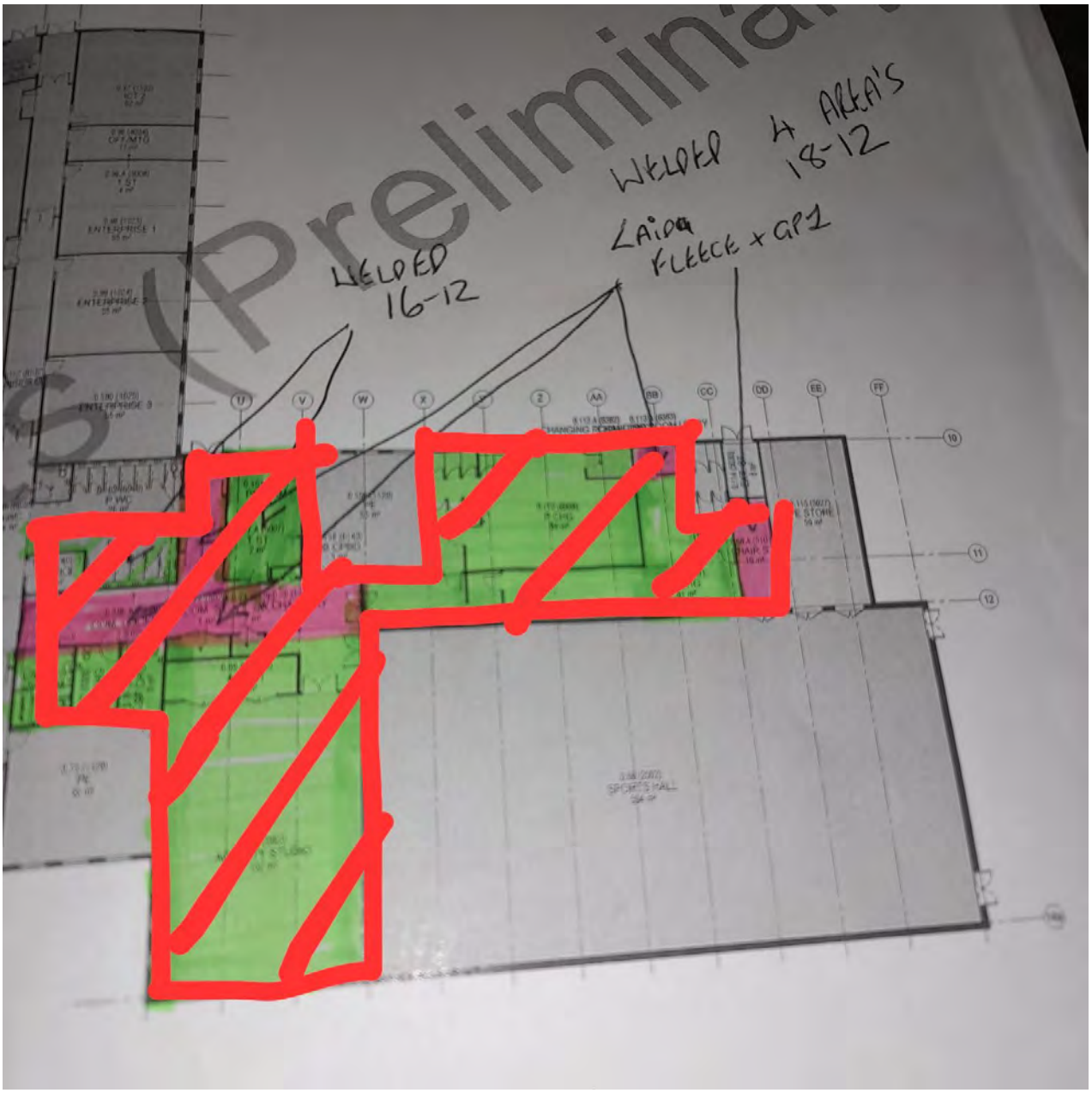
REPORT NUMBER: 027

ACCOMPANIED BY:

SWC

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The area highlighted in red shows where the verification inspection took place on site today.
East Block - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
East Block - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
East Block - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
East Block - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
East Block - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
East Block - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
East Block - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
East Block - Infills

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.
East Block - Infills

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.
East Block - Infills

GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block - Infills (Various Rooms)

Installation of Juta GP1 Gas Barrier





NOTES:

Juta GP1 Gas Barrier has been installed to the infills of various rooms within the East Block. The Juta GP1 Gas Barrier has been lined underneath the existing perimeter and internal wall installation.
All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been lapped a minimum of 100mm and heat welded

NOTES:

using a hot air leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved throughout the installation. The first photograph above shows an overview of welded lap joints achieved. The second photograph shows a close up of welded lap joints.

GeoShield Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing. A total of eight miswelds were identified, all of which were remediated on site in the presence of GeoShield.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block - Infills (Various Rooms)

Sealed Details





NOTES:

Throughout the infill installation of the Juta GP1 Gas Barrier to the various rooms, there were several details that required sealing in accordance with manufacturer's specifications and design guidelines. All details, such as pipe penetrations and steel stanchions have been sealed using Juta GP SAM, which is a gas resistant self

NOTES:

adhesive membrane, cut into patches and placed intricately around each detail to ensure all gaps, joints and voids are sealed. The installers have applied adequate heat and rolled pressure to the Juta GP SAM to ensure the bitumen backing is activated to achieve complete adherence between the details and the

GeoShield Verification Report

VERIFICATION ITEM TWO



Juta GP1 Gas Barrier. All sealed details throughout the installation were subjected to thorough mechanical point stress testing. No faults or defects were identified with the sealed details during the testing procedures.
Tested and verified in accordance with CIRIA 735.

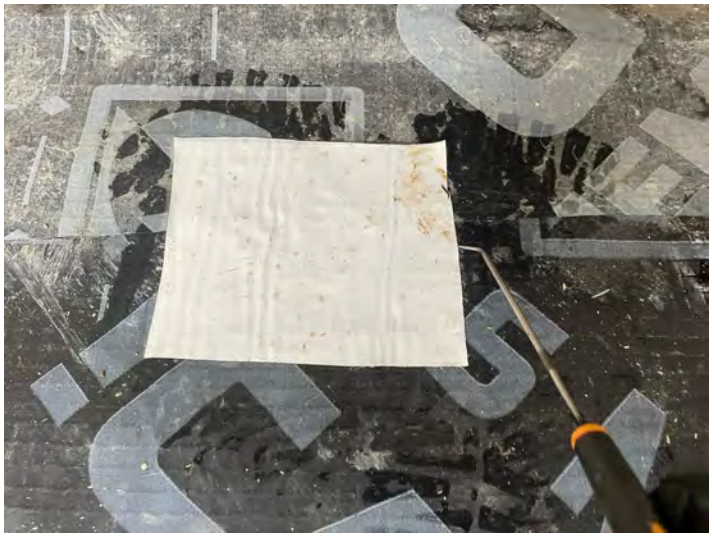
GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East Block - Infills (Various Rooms)

Faults Identified and Remediated





NOTES:

As mentioned in this report, the thorough mechanical point stress testing which supported the initial visual inspections conducted across the Juta GP1 infill installations identified eight faults. These were primarily miswelded lap joints or damage to the gas barrier caused by follow on trades. All faults were

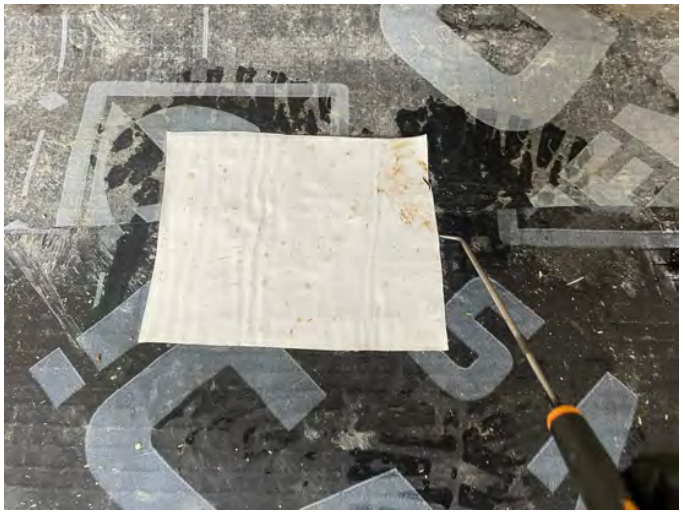
NOTES:

successfully remediated on site in the presence of GeoShield. The specialist installers from SWC opted to apply 150mm patches of Juta GP SAM upon the affected areas, as shown in the second photograph above. Heat and rolled pressure was applied to the remediated faults ensuring a continuous seal has been achieved.

ADDITIONAL PHOTOGRAPHS



A miswelded lap joint identified, highlighted using the pick and probe tool.



The fault remediated using a patch of Juta GP SAM. All remediated faults were re-tested with the pick and probe tool.



A pick and probe test being conducted upon patch repairs.



A pick and probe test being conducted upon a sealed pipe penetration.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	
02/10/2023	023	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔
19/10/2023	025	1. Several faults/mis-welds identified and remediated on-site.	✔
		2. Steels around the east block (sports hall) require sealing.	
30/11/2023	026	Remediations to the membrane to be carried out once scaffolding	
		removed from Stairwell 3 in the west block before sign off can be	
		achieved.	
20/12/2023	027	Eight miswelds were identified, all were remediated on site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off	East Block - Internal Walls (Complete)	✔
Gridline/Plot Sign off	East Block Infills, Stairwell 4, HYG RM, ST CHG	✔
Gridline/Plot Sign off	West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST,	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:	✔	DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	…W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor	✔
Gridline/Plot Sign off	West Block Rooms - Infills (Dining, Circulation, Kitchen &….	✔
Gridline/Plot Sign off	… servery, Sixth Form Social & WC)	✔
Gridline/Plot Sign off	West Block - Stairwell 3.	
Gridline/Plot Sign off	East Block, Infills - P WC, Com Lockers, Com ST, CL ST, WC,	✔
Gridline/Plot Sign off	….Activity Studio, ACT ST, PE WRM, P CHG, CH ST.	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 27th visit to the site where verification was required for the infill installation of the Juta GP1 Gas Barrier to the remaining various rooms within the East Block.

All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been successfully welded using a hot air leister and silicone roller creating continuous sealed joints throughout.

All details such as pipe penetrations and steel stanchions have been successfully sealed using Juta GP SAM, heated down with a hot air tool to aid in the adherence.

Thorough mechanical point stress testing was conducted throughout the verification today. Eight miswelded lap joints were identified, all of which were successfully remediated using 150mm patches of Juta GP SAM. Further pick and probe testing upon all remediated faults validated that a gas tight seal had been achieved.

Tested and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 20-Dec-2023

GeoShield Verification Report 28

PROJECT REFERENCE:	GEO103260 R28
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

NAME OF SURVEYOR: Brett Hattle

VERIFICATION COMPANY: GeoShield Limited

Icon Business Centre

4100 Park Approach

Thorpe Park

Leeds

CONTACT NUMBER: 07387 373167

EMAIL ADDRESS: bhattle@geoshield.co.uk

ORDER NUMBER: To be confirmed

PER VISIT: YES: ✔ NO: ☐ PROJECT: YES: ✔ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Mick
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

East Block Infills - Sports Hall, PE Store, Ext ST, PE + P WC.
Perimeter Detail - Com Rept

SITE CONDITIONS:

WEATHER:

Cloudy

TEMPERATURE:

10c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 13:30 - 15:00

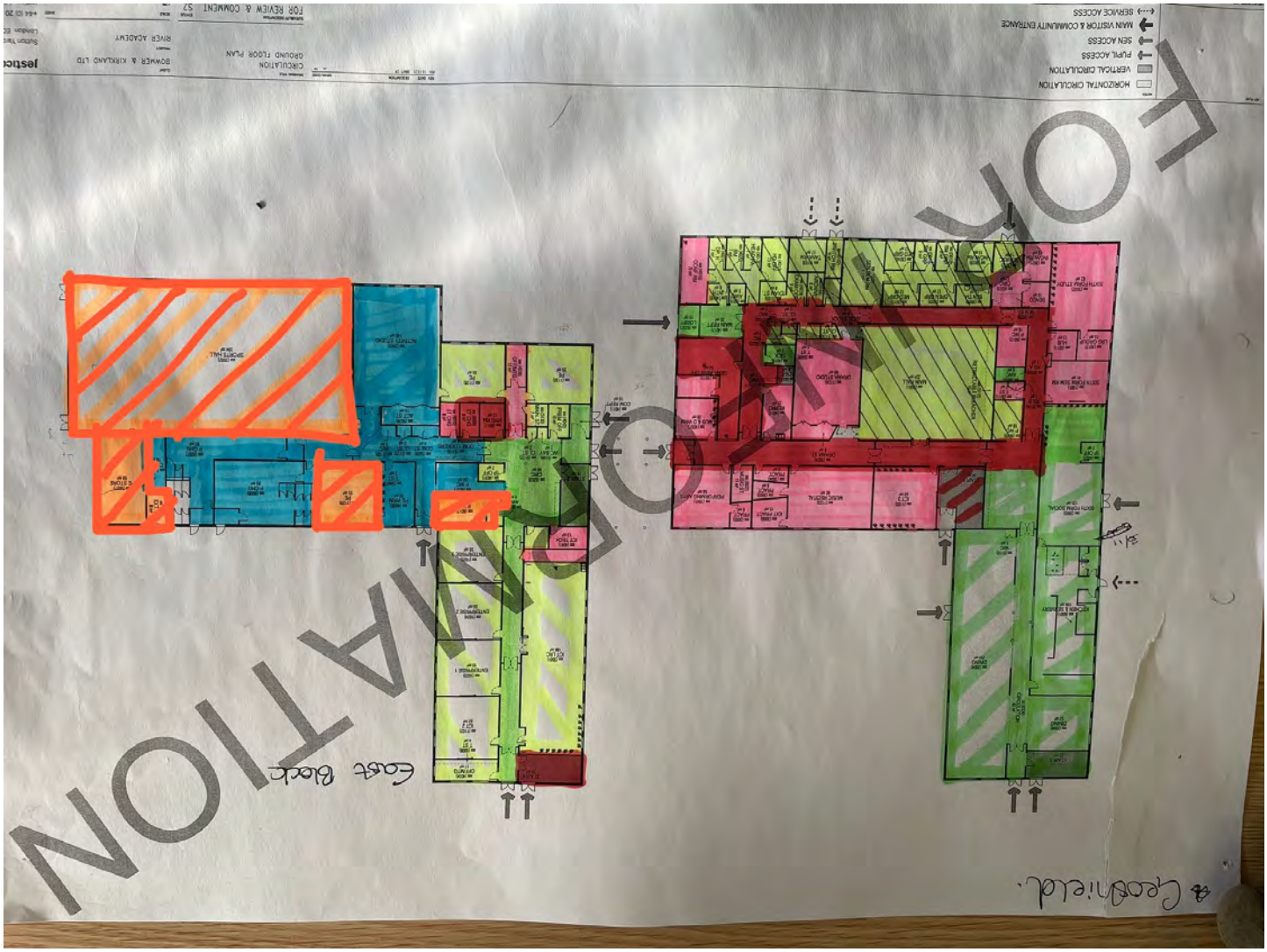
DATE: 26.01.2024

REPORT NUMBER: 028

ACCOMPANIED BY:

GeoShield Verification Report

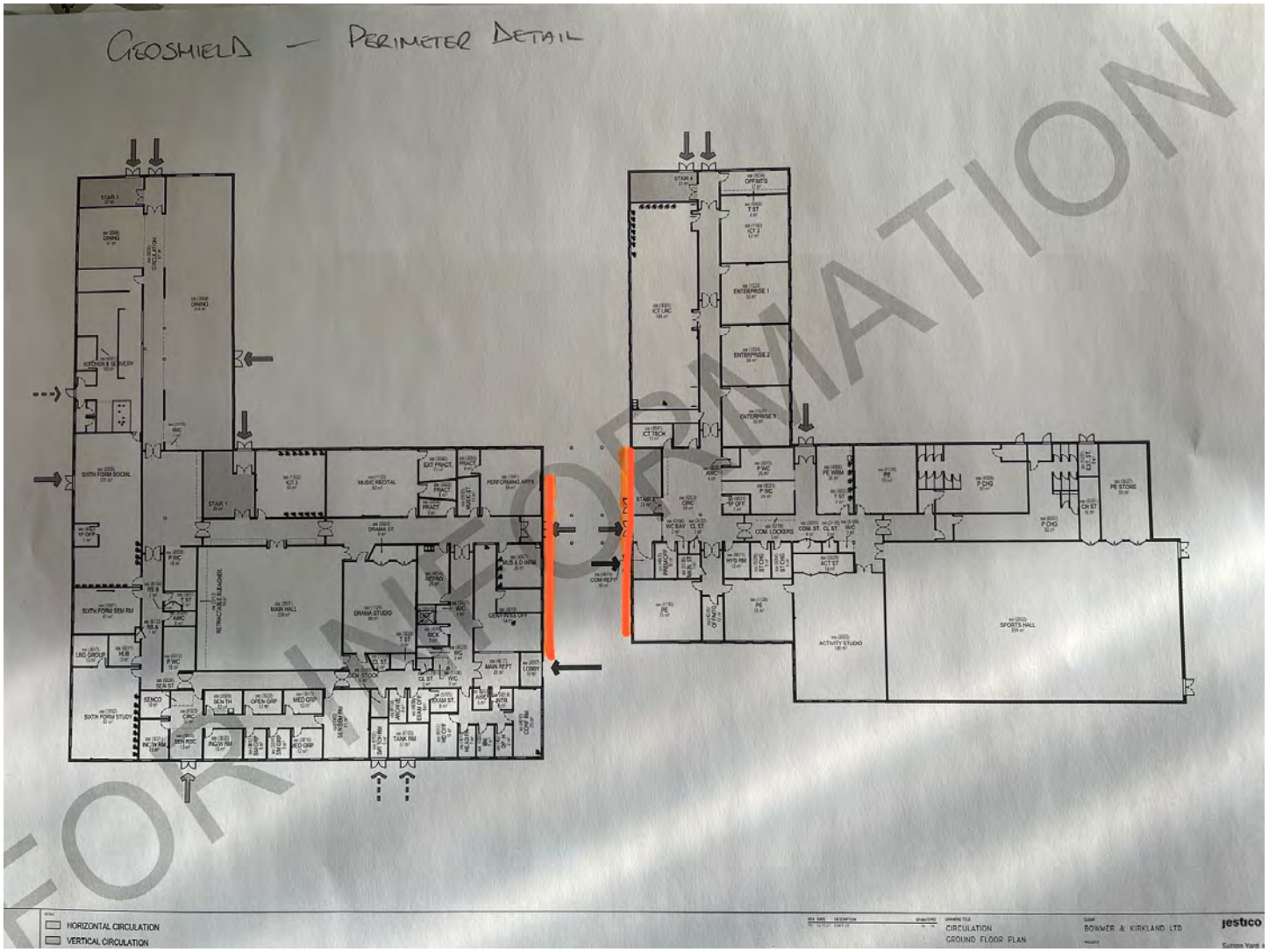
Verification Layout



The photograph above shows a plan layout of the site. The area hatched in red shows where the verification inspection took place on site today.
East Block Infills - Sports Hall, PE Store, Ext ST, PE + P WC.

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The area highlighted in red shows where the verification inspection took place on site today.
Perimeter Detailing - Com Rept

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.

GeoShield Verification Report

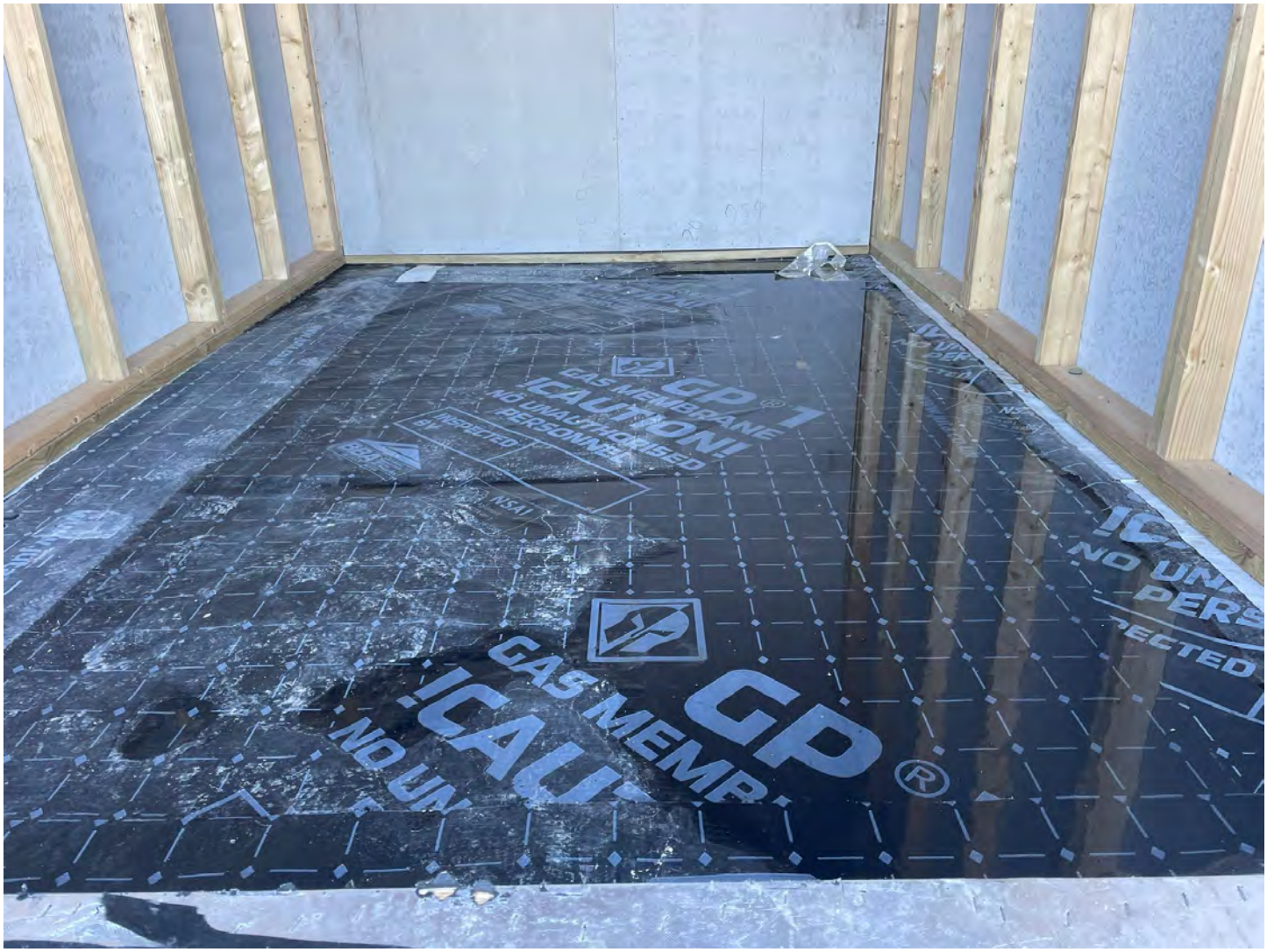
OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



An alternate overview photograph of where the verification inspection took place on site today.

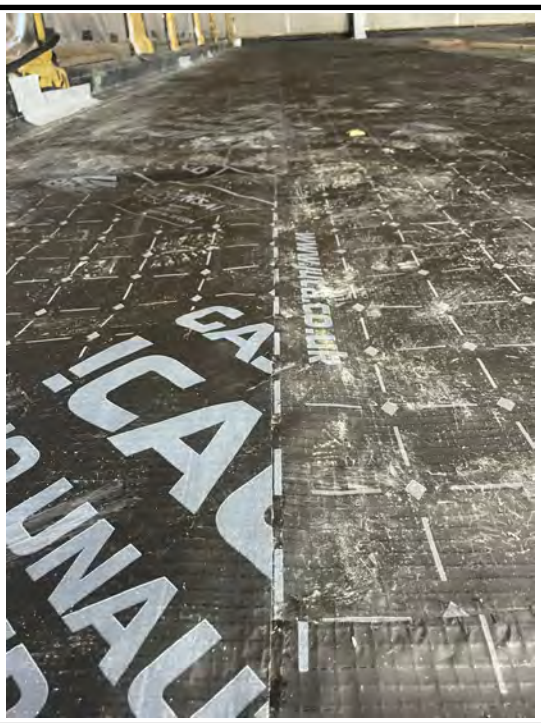
GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block - Sports Hall, PE Store, Ext ST, PE + P WC.

Installation of Juta GP1 Gas Barrier





NOTES:

Juta GP1 Gas Barrier has been installed to the infills of various rooms within the East Block. The Juta GP1 Gas Barrier has been lined underneath the existing perimeter installation. All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been lapped a minimum of 100mm and heat welded

NOTES:

using a hot air leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved throughout the installation. The first photograph above shows an overview of welded lap joints achieved. The second photograph shows a close up of a welded lap joint.

GeoShield Verification Report

VERIFICATION ITEM ONE



The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing. A total of six miswelds were identified, all of which were remediated on site in the presence of GeoShield.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East Block - Sports Hall, PE Store, Ext ST, PE + P WC.

Sealed Details





NOTES:

Throughout the infill installation of the Juta GP1 Gas Barrier to the various rooms, there were several details that required sealing in accordance with manufacturer's specifications and design guidelines. All details, such as pipe penetrations and steel stanchions have been sealed using Juta GP SAM, which is a gas resistant self

NOTES:

adhesive membrane, cut into patches and placed intricately around each detail to ensure all gaps, joints and voids are sealed. The installers have applied adequate heat and rolled pressure to the Juta GP SAM to ensure the bitumen backing is activated to achieve complete adherence between the details and the

GeoShield Verification Report

VERIFICATION ITEM TWO



Juta GP1 Gas Barrier. All sealed details throughout the installation were subjected to thorough mechanical point stress testing. No faults or defects were identified with the sealed details during the testing procedures.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: Perimeter Detailing - Com Rept

Installation of Juta Titan Flex & Juta Titan Tank





NOTES:

Juta Titanflex has been installed to the perimeter edges around the building referenced and terminated using Juta Titan Tank. Prior to the installation, all surfaces of the external perimeter upstands have been primed to help aid in the adhesion of the Juta Titan Tank upon the concrete, in accordance with manufacturer's

NOTES:

specifications. The Juta Titan Tank has been lapped down 150mm of the primed concrete upstand and returned 150mm upon the existing Juta Titan Flex Membrane as per the design details issued. The installers have applied heat to the Juta Titan Tank to activate the bitumen backing and rolled it into position

GeoShield Verification Report

VERIFICATION ITEM THREE



using a silicone roller with adequate pressure applied to ensure a continuous seal is achieved. All penetrations around the perimeter have also been sufficiently sealed with Juta Titan Tank to a good standard. All aspects of the perimeter edge detailing were subjected to thorough mechanical point stress testing which identified no faults or defects.

ADDITIONAL PHOTOGRAPHS



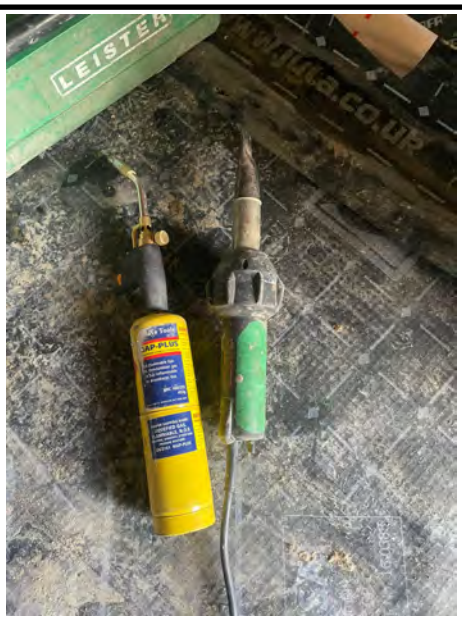
A fault identified, highlighted with the pick and probe tool.



The installer heat welding a patch repair to remediate a fault identified.



A pick and probe test being conducted upon a patch repair.



The hot air leister and hot air tool used on site.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	
02/10/2023	023	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔
19/10/2023	025	1. Several faults/mis-welds identified and remediated on-site.	✔
		2. Steels around the east block (sports hall) require sealing.	
30/11/2023	026	Remediations to the membrane to be carried out once scaffolding	
		removed from Stairwell 3 in the west block before sign off can be	
		achieved.	
20/12/2023	027	Eight miswelds were identified, all were remediated on site.	✔
26/01/2024	028	Six faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off	East Block - Internal Walls (Complete)	✔
Gridline/Plot Sign off	East Block Infills, Stairwell 4, HYG RM, ST CHG	✔
Gridline/Plot Sign off	West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST,	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:	✔	DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	…W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor	✔
Gridline/Plot Sign off	West Block Rooms - Infills (Dining, Circulation, Kitchen &….	✔
Gridline/Plot Sign off	… servery, Sixth Form Social & WC)	✔
Gridline/Plot Sign off	West Block - Stairwell 3.	
Gridline/Plot Sign off	East Block, Infills - P WC, Com Lockers, Com ST, CL ST, WC,	✔
Gridline/Plot Sign off	….Activity Studio, ACT ST, PE WRM, P CHG, CH ST.	✔
Gridline/Plot Sign off	East Block Infills - Sports Hall, PE Store, Ext ST, PE + P WC.	✔
Gridline/Plot Sign off	Perimeter Detailing - Com Rept	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 28th visit to the site where verification was required for the infill installation of the Juta GP1 Gas Barrier to various rooms within the East Block and the installation of Juta Titan Flex to the perimeter edge, retro fitted to the building with Juta Titan Tank.

All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been successfully welded using a hot air leister and silicone roller creating continuous sealed joints throughout.
All details such as pipe penetrations and steel stanchions have been successfully sealed using Juta GP SAM, heated down with a hot air tool to aid in the adherence.
The perimeter detailing has been sealed using Juta Titan Tank.

Thorough mechanical point stress testing was conducted throughout the verification today. Six miswelded lap joints were identified, all of which were successfully remediated on site. Further pick and probe testing upon all remediated faults validated that a gas tight seal had been achieved.

Tested and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 26-Jan-2024

GeoShield Verification Report 29

PROJECT REFERENCE:	GEO103260 R29
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

NAME OF SURVEYOR: Brett Hattle

VERIFICATION COMPANY: GeoShield Limited

Icon Business Centre

4100 Park Approach

Thorpe Park

Leeds

CONTACT NUMBER: 07387 373167

EMAIL ADDRESS: bhattle@geoshield.co.uk

ORDER NUMBER: To be confirmed

PER VISIT: YES: ✔ NO: ☐ PROJECT: YES: ✔ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Mick
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

East Block Infills - Remaining Room.
Perimeter Detail - External of East & West Block

SITE CONDITIONS:

WEATHER:

Cloudy

TEMPERATURE:

10c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 12:45 - 14:30

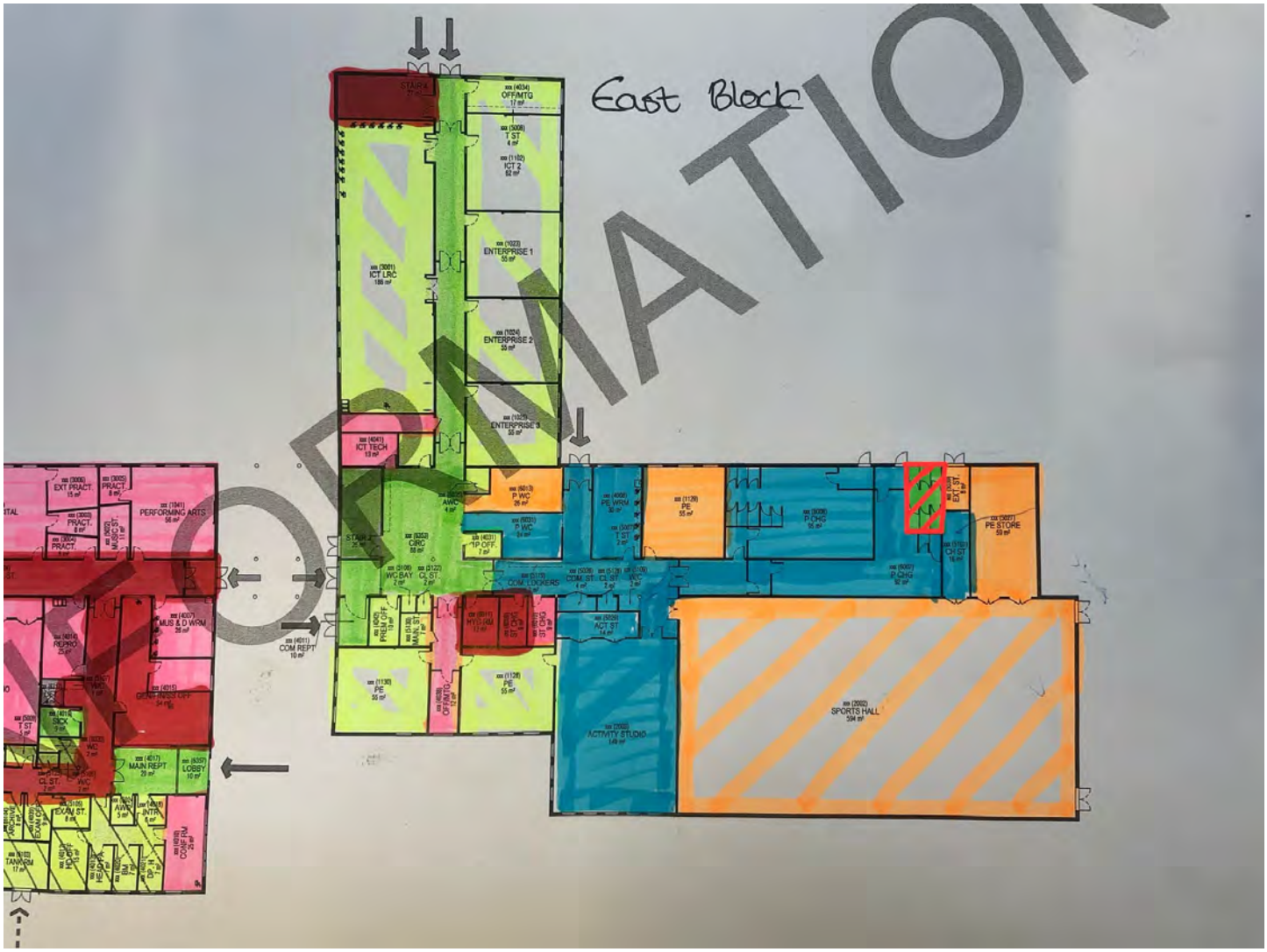
DATE: 31.01.2024

REPORT NUMBER: 029

ACCOMPANIED BY:

GeoShield Verification Report

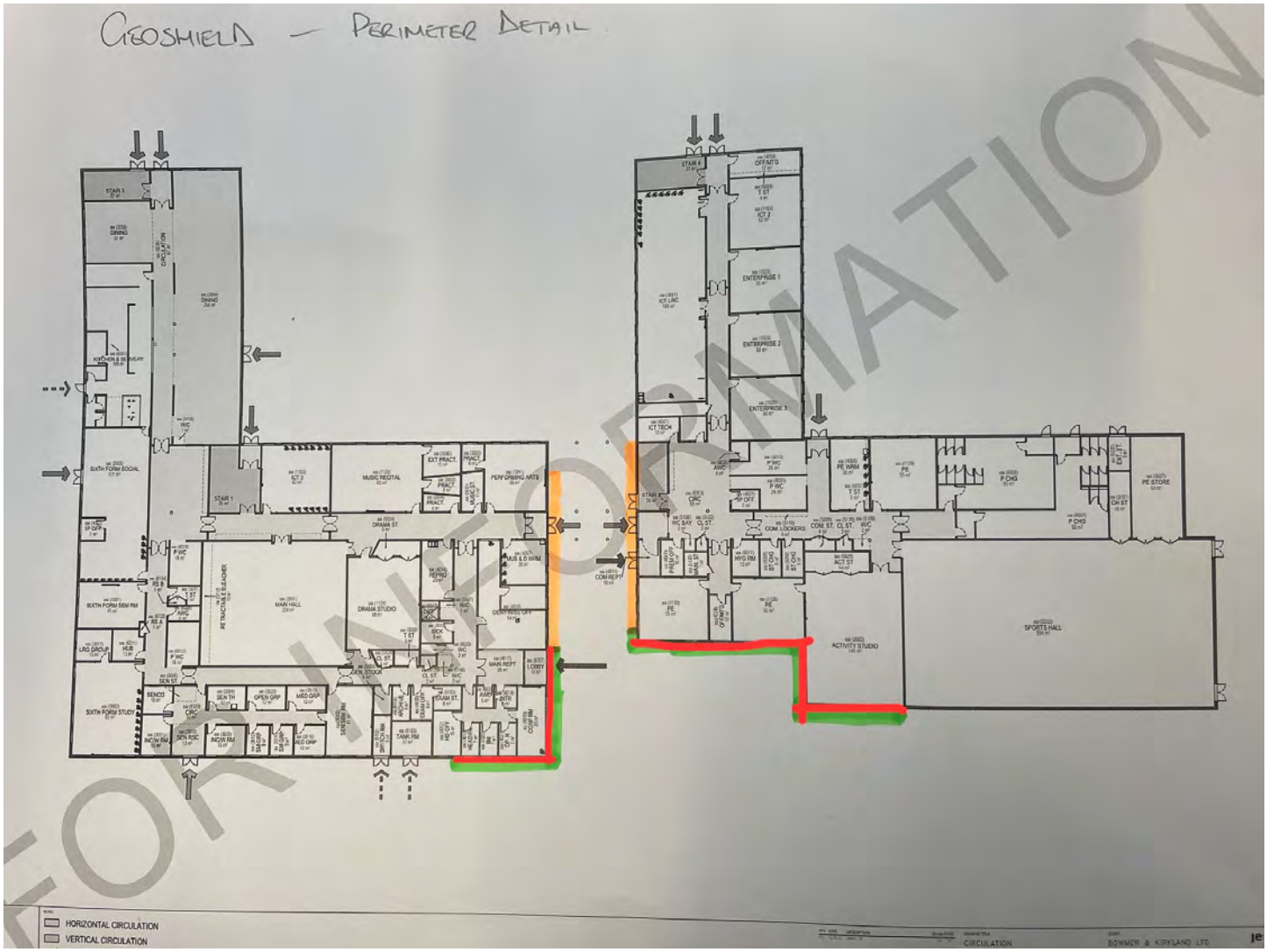
Verification Layout



The photograph above shows a plan layout of the site. The area highlighted in red shows where the verification inspection took place on site today.
East Block - Remaining Room

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The area highlighted in red shows where the verification inspection took place on site today. East Perimeter Detail - East & West Block

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East Block Infills - Remaining Room

Installation of Juta GP1 Gas Barrier





NOTES:

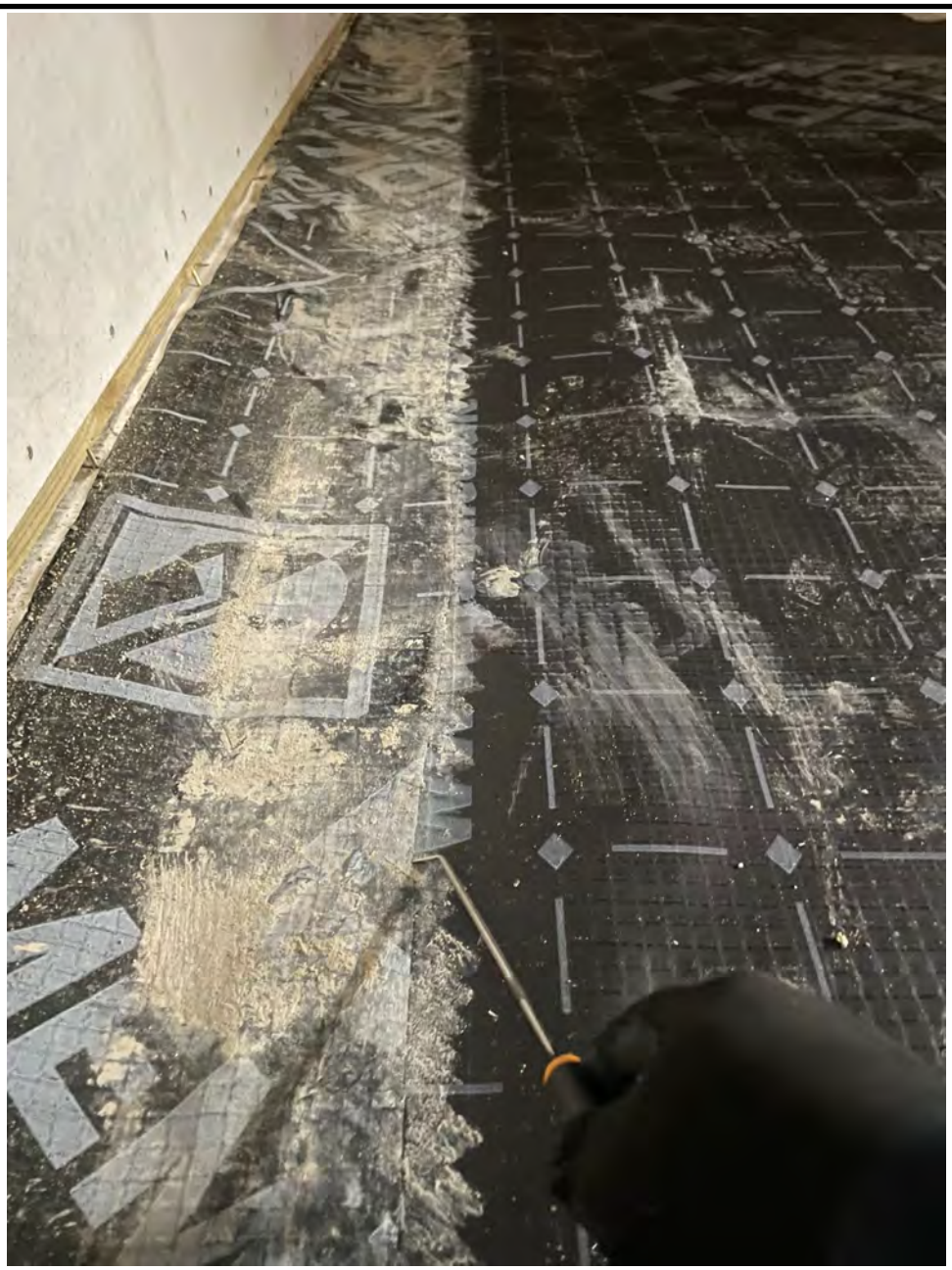
Juta GP1 Gas Barrier has been installed to the infills of the remaining room within the East Block, upon a smooth concrete bliinding. The Juta GP1 Gas Barrier has been lined underneath the existing perimeter installation. All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been lapped a minimum of

NOTES:

100mm and heat welded using a hot air leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved throughout the installation. The first photograph above shows an overview of welded lap joints achieved. The second photograph shows a close up of a welded lap joint.

GeoShield Verification Report

VERIFICATION ITEM ONE



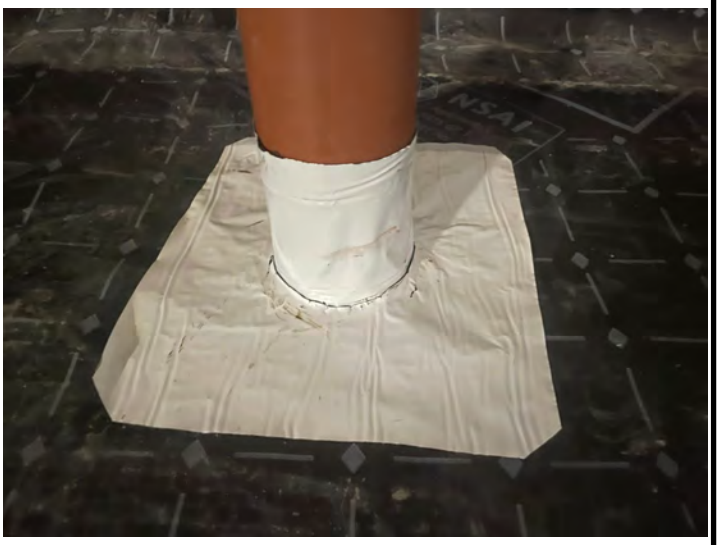
The above photograph displays a mechanical point stress test, also known as a pick and probe test, being conducted upon a welded lap joint of the Juta GP1 Gas Barrier. All lap joints throughout the installation were subjected to thorough pick and probe testing. No faults or defects were identified at the time of the inspection.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East & West Block - Infills & Perimeter Detailing

Pipe Penetrations





NOTES:

Throughout the infill installation of the Juta GP1 Gas Barrier to the remaining room, there were several pipe penetrations that required sealing in accordance with manufacturer's specifications and design guidelines. All pipe penetrations have been sealed using either Juta GP SAM, Juta GP1 SAM or Juta Titan Tank, which are all

NOTES:

gas resistant self adhesive membranes, cut into patches and placed intricately around each detail to ensure all gaps, joints and voids are sealed. The installers have applied adequate heat and rolled pressure to ensure the bitumen backing is activated to achieve complete adherence between the details and the

GeoShield Verification Report

VERIFICATION ITEM TWO



Juta GP1 Gas Barrier. All sealed pipe penetrations throughout the installation were subjected to thorough mechanical point stress testing. No faults or defects were identified with the sealed details during the testing procedures.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: East & West Block - Perimeter Detail

Installation of Juta Titan Flex & Juta Titan Tank



NOTES:

Juta Titanflex has been installed to the external perimeter edges of East & West Block and terminated using Juta Titan Tank. Prior to the installation, all surfaces of the external perimeter upstands have been primed to help aid in the adhesion of the Juta Titan Tank upon the concrete, in accordance with manufacturer's



NOTES:

specifications. The Juta Titan Tank has been lapped down 150mm of the primed concrete upstand and returned 150mm upon the existing Juta Titan Flex Membrane as per the design details issued. The installers have applied heat to the Juta Titan Tank to activate the bitumen backing and rolled it into position

GeoShield Verification Report

VERIFICATION ITEM THREE



using a silicone roller with adequate pressure applied to ensure a continuous seal is achieved. All aspects of the perimeter edge detailing were subjected to thorough mechanical point stress testing which identified no faults or defects.
Tested and verified in accordance with CIRIA 735.

ADDITIONAL PHOTOGRAPHS



The installer heating down the Juta Titan Tank.



A pick and probe test being conducted upon the perimeter detailing.



A pick and probe test being conducted upon a welded lap joint.



A pick and probe test being conducted upon a lap joint.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	✔
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	✔
02/10/2023	023	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔
19/10/2023	025	1. Several faults/mis-welds identified and remediated on-site.	✔
		2. Steels around the east block (sports hall) require sealing.	✔
30/11/2023	026	Remediations to the membrane to be carried out once scaffolding	
		removed from Stairwell 3 in the west block before sign off can be	
		achieved.	✔
20/12/2023	027	Eight miswelds were identified, all were remediated on site.	✔
26/01/2024	028	Six faults identified, all remediated on site.	✔
31/01/2024	029	No faults were identified during this visit.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off	East Block - Internal Walls (Complete)	✔
Gridline/Plot Sign off	East Block Infills, Stairwell 4, HYG RM, ST CHG	✔
Gridline/Plot Sign off	West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST,	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:	✔	DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	…W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor	✔
Gridline/Plot Sign off	West Block Rooms - Infills (Dining, Circulation, Kitchen &….	✔
Gridline/Plot Sign off	… servery, Sixth Form Social & WC)	✔
Gridline/Plot Sign off	West Block - Stairwell 3.	✔
Gridline/Plot Sign off	East Block, Infills - P WC, Com Lockers, Com ST, CL ST, WC,	✔
Gridline/Plot Sign off	….Activity Studio, ACT ST, PE WRM, P CHG, CH ST.	✔
Gridline/Plot Sign off	East Block Infills - Sports Hall, PE Store, Ext ST, PE + P WC.	✔
Gridline/Plot Sign off	Perimeter Detailing - Com Rept	✔
Gridline/Plot Sign off	East Block Infills - Remaining Room	✔
Gridline/Plot Sign off	Perimeter Detail - External of East & West Block	✔
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 29th visit to the site where verification was required for the infill installation of the Juta GP1 Gas Barrier to the remaining room within the East Block and the installation of Juta Titan Flex to the external perimeter edge of East & West Block, retro fitted to the building with Juta Titan Tank.

All overlaps between the adjacent sheets of Juta GP1 Gas Barrier have been successfully welded using a hot air leister and silicone roller creating continuous sealed joints throughout.

All pipe penetrations have been successfully sealed using either Juta GP SAM (East Block Infills), Juta GP1 SAM (East Block Perimeter Edge Detailing) or Juta Titan Tank (external perimeters of East & West Block) heated down with a hot air tool to aid in the adherence.

Thorough mechanical point stress testing was conducted throughout the verification today, where no faults or defects were identified.

Tested and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 31-Jan-2024

GeoShield Verification Report 30

PROJECT REFERENCE:	GEO103260 R30
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION:	Verified in accordance CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

INFORMATION INCLUDED

GGS2686 River Academy, Reading GGVRA Final

FS0949-ASO-XX-XX-RP-Y-0005 Remediation Strategy S3 P02

FS0949-HEX-01-FN-DR-S-1601-FOUNDATION LAYOUT_P07

SWC_RVS-Det_Version A (6 pages)

JUTA Material Specification Technical Data Sheets

Radon Maps UK - (Map 1) Site Location & (Map 2) Nearby Location

Information presented to at the pre-verification stage assumed correct

Any change client will let GeoShield know or this Pre-verification Plan will be void.

GeoShield Verification Report

NAME OF SURVEYOR: Brett Hattle

VERIFICATION COMPANY: GeoShield Limited

Icon Business Centre

4100 Park Approach

Thorpe Park

Leeds

CONTACT NUMBER: 07387 373167

EMAIL ADDRESS: bhattle@geoshield.co.uk

ORDER NUMBER: To be confirmed

PER VISIT: YES: ✔ NO: ☐ PROJECT: YES: ✔ NO: ☐

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Mick
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

Perimeter Skirt Detail

SITE CONDITIONS:

WEATHER:

Cloudy

TEMPERATURE:

10c

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 08:45 - 10:00

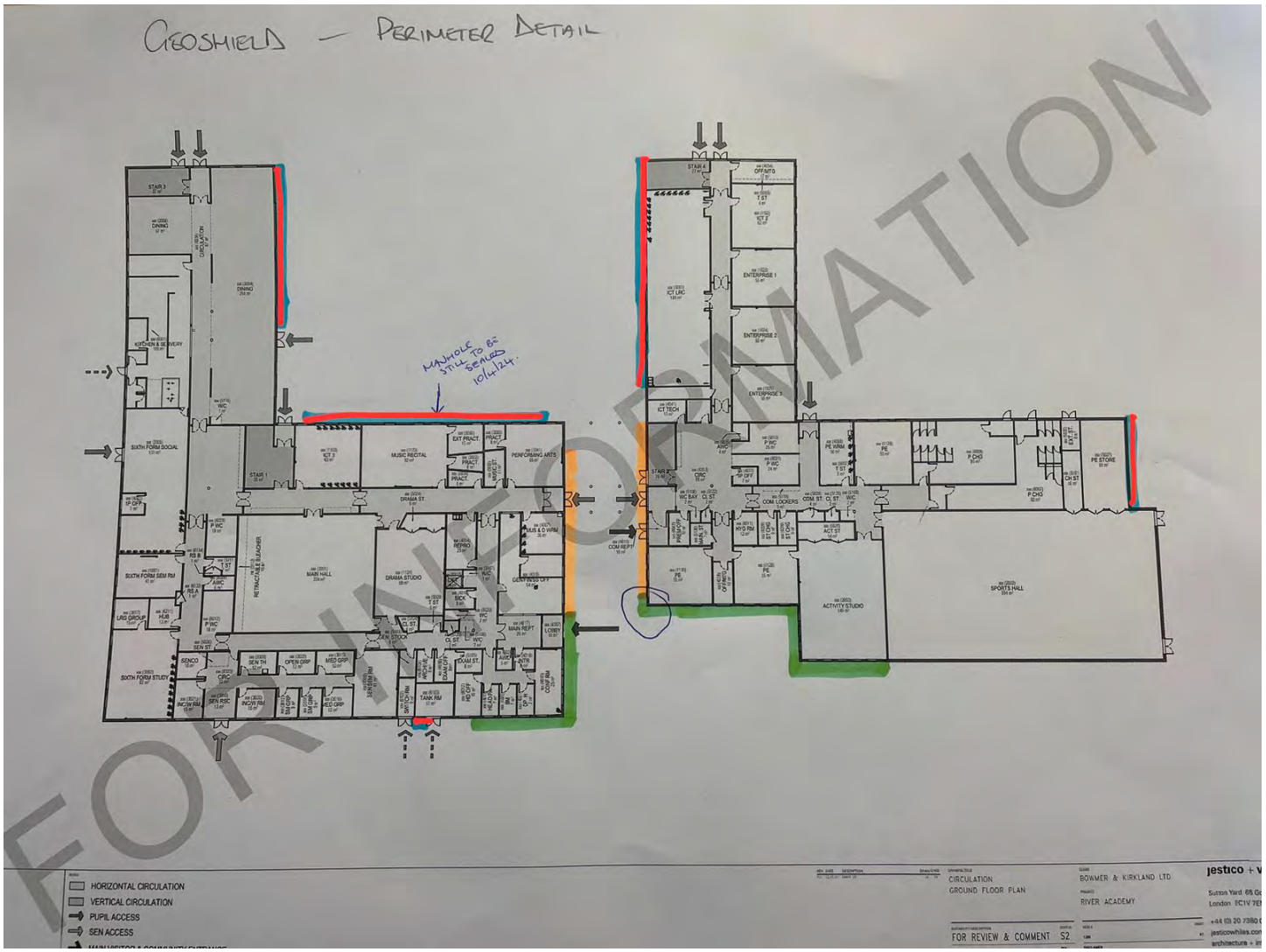
DATE: 10.04.2024

REPORT NUMBER: 030

ACCOMPANIED BY:

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The areas highlighted in red shows the perimeter skirt where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: Perimeter Skirt Detail

Installation of Juta Titanflex Gas Barrier



NOTES:

Juta Titanflex Gas Barrier has been installed to the perimeter skirt, areas referenced, upon a smooth concrete bliinding. All overlaps between the adjacent sheets of Juta Titanflex Gas Barrier have been lapped a minimum of 100mm and heat welded using a hot air



NOTES:

leister and silicone roller with adequate pressure applied to ensure continuous welds are achieved throughout the installation.
Mechanical point stress testing conducted upon the welded lap joints identified no faults or defects.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: Perimeter Skirt Detail

Retrofit Detailing



NOTES:

Juta Titanflex has been installed to the perimeter skirt and retrofittted using Juta Titan Tank, which is a self adhesive membrane. Prior to the Juta Titanflex Gas Barrier being retrofitted, all surfaces of the external perimeter upstands have been primed to aid in the adhesion of the Juta Titan Tank upon the concrete.



NOTES:

Once cured, the Juta Titan Tank has been lapped 150mm down the primed concrete upstand and returned 150mm upon the existing Juta Titan Flex Gas Barrier as per the design details issued. The installers have applied heat to the Juta Titan Tank to activate the bitumen backing and rolled it into position using a silicone

GeoShield Verification Report

VERIFICATION ITEM TWO



roller with adequate pressure applied to ensure a continuous seal is achieved. All aspects of the perimeter skirt retrofit detailing were subjected to thorough mechanical point stress testing which identified no faults or defects.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: Perimeter Skirt Detail

Corner Detailing





NOTES:

Throughout the retrofit detailing there were a couple of corners that required sealing in accordance with manufacturer's specifications and design guidelines. Where the Juta Tank has been cut to form a robust seal along the perimeter skirt, each corner junction

NOTES:

has been sealed by heating further strips of Juta Titan Tank and intricately placed into position around each corner, onto the Juta Titanflex Gas Barrier. Firm rolled pressure is applied with a silicone roller to aid in the adhesion ensuring the Juta Titan Tank has fully bonded.

GeoShield Verification Report

VERIFICATION ITEM THREE



All corners throughout the retrofit detailing were subjected to thorough mechanical point stress testing. No faults or defects were identified with the sealed corners during the testing procedures.
Tested and verified in accordance with CIRIA 735.

ADDITIONAL PHOTOGRAPHS



A pick and probe test being conducted upon a welded lap joint.



A manhole around the perimeter skirt that is still to be sealed. This will be inspected once works have been completed.



A pick and probe test being conducted upon a welded lap joint.



An overview of the retrofit detailing.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	✔
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	✔
02/10/2023	023	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔
19/10/2023	025	1. Several faults/mis-welds identified and remediated on-site.	✔
		2. Steels around the east block (sports hall) require sealing.	✔
30/11/2023	026	Remediations to the membrane to be carried out once scaffolding	
		removed from Stairwell 3 in the west block before sign off can be	
		achieved.	✔
20/12/2023	027	Eight miswelds were identified, all were remediated on site.	✔
26/01/2024	028	Six faults identified, all remediated on site.	✔
31/01/2024	029	No faults were identified during this visit.	✔
10/04/2024	030	1. No faults or defects were identified during this visit.	✔
		2. A manhole still to be sealed and verified (perimeter skirt)	

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off	East Block - Internal Walls (Complete)	✔
Gridline/Plot Sign off	East Block Infills, Stairwell 4, HYG RM, ST CHG	✔
Gridline/Plot Sign off	West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST,	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:	✔	DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	…W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor	✔
Gridline/Plot Sign off	West Block Rooms - Infills (Dining, Circulation, Kitchen &….	✔
Gridline/Plot Sign off	… servery, Sixth Form Social & WC)	✔
Gridline/Plot Sign off	West Block - Stairwell 3.	✔
Gridline/Plot Sign off	East Block, Infills - P WC, Com Lockers, Com ST, CL ST, WC,	✔
Gridline/Plot Sign off	….Activity Studio, ACT ST, PE WRM, P CHG, CH ST.	✔
Gridline/Plot Sign off	East Block Infills - Sports Hall, PE Store, Ext ST, PE + P WC.	✔
Gridline/Plot Sign off	Perimeter Detailing - Com Rept	✔
Gridline/Plot Sign off	East Block Infills - Remaining Room	✔
Gridline/Plot Sign off	Perimeter Detail - External of East & West Block	✔
Gridline/Plot Sign off	Perimeter Skirt Detail	

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 30th visit to the site where verification was required for the installation of Juta Titan Flex to the perimeter skirt.

All overlaps between the adjacent sheets of Juta Titanflex Gas Barrier have been successfully welded using a hot air leister and silicone roller creating continuous sealed joints throughout.

Prior to the Juta Titanflex Gas Barrier being retrofitted to the perimeter, all surfaces of the external perimeter upstands have been primed to aid in the adhesion of the Juta Titan Tank upon the concrete. Once cured, the Juta Titan Tank has been lapped 150mm down the primed concrete upstand and returned 150mm upon the existing Juta Titan Flex Gas Barrier. Heat and rolled pressure is applied to the Juta Titan Tank to aid in the adherence.
Thorough mechanical point stress testing was conducted throughout the inspection today, where no faults or defects were identified.

One manhole around the perimeter skirt is still to be sealed. This will be inspected at the next visit.

Tested and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 10-Apr-2024

GeoShield Verification Report 31

PROJECT REFERENCE:	GEO103260 R31
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

NAME OF SURVEYOR:	Kavanagh Palmer-Fletcher
VERIFICATION COMPANY:	GeoShield Limited
	Icon Business Centre
	4100 Park Approach
	Thorpe Park
	Leeds
CONTACT NUMBER:	07470 012813
EMAIL ADDRESS:	kpalmer-fletcher@geoshield.co.uk
ORDER NUMBER:	To be confirmed

PER VISIT:	YES:	✔	NO:		PROJECT:	YES:	✔	NO:	

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GEOSHIELD Verification Report

APPLICATION TEAM LEADERS

APPLICATOR NAME:	Mick
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

APPLICATOR NAME:	
COMPANY:	SWC
APPLICATOR TEL:	
APPLICATOR EMAIL:	

NOTES: The installers from SWC are specialists in the installation of ground gas

NOTES: and waterproofing systems. They hold NVQ level 2 qualifications in the

NOTES: installation of gas membranes and weld all lap joints, which is required

NOTES: for this project.

GeoShield Verification Report

AREA SURVEYED:

West Block Perimeter Skirt - Gridlines: 1/A-D, 10/M-N & E/10
East Block Perimeter Skirt - Gridlines: T/1-8 & 1/S-T

SITE CONDITIONS:

WEATHER:

Sunny

TEMPERATURE:

23ºc

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 07:30 - 09:00

DATE: 21.06.2024

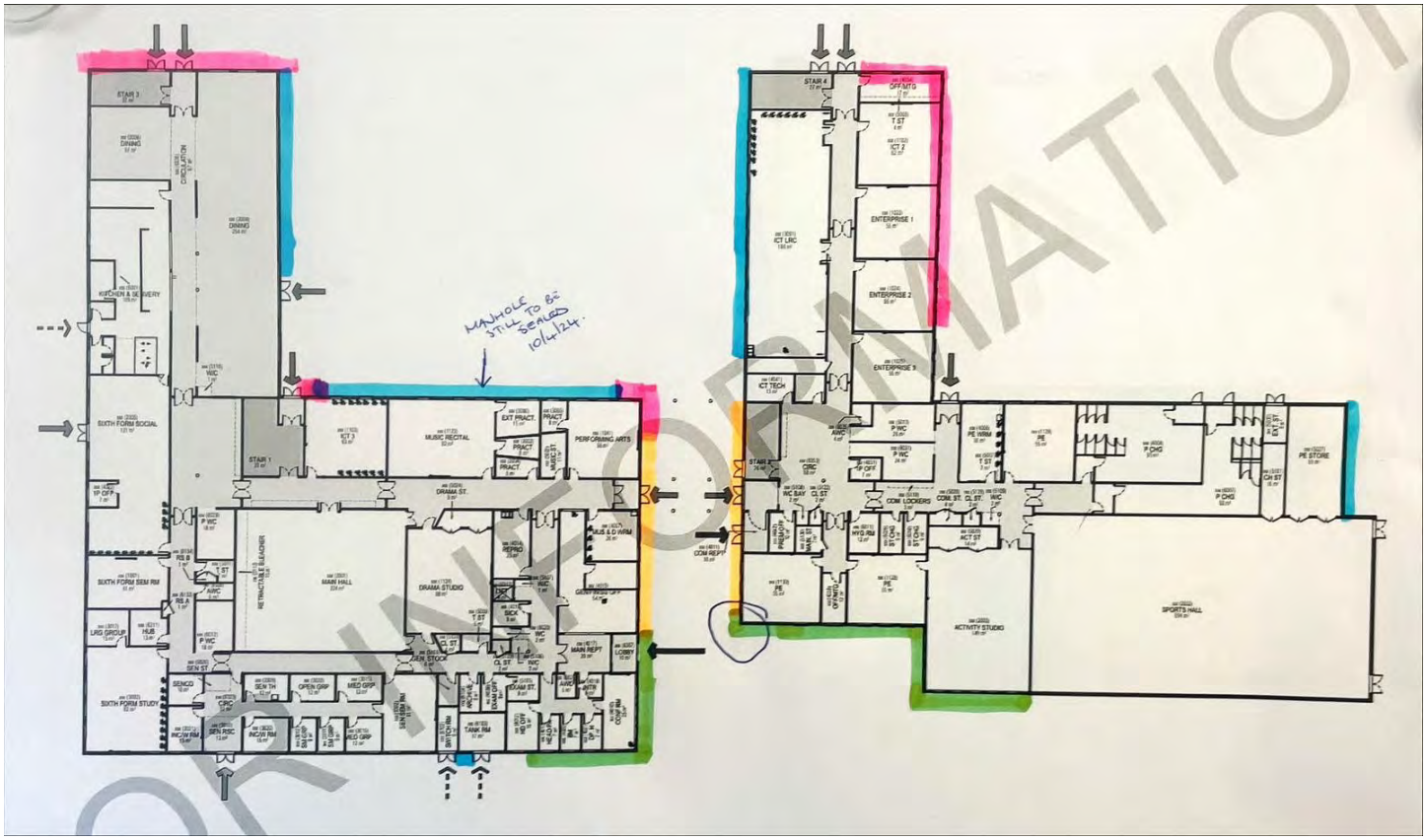
REPORT NUMBER: 031

ACCOMPANIED BY:

Bowmer & Kirkland Site Management

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The areas highlighted in pink shows the perimeter skirt in the East & West Block, where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: East & West Block - Perimeter Skirt Detail

Installation of Juta Titanflex Gas Barrier





NOTES:

Juta Titanflex Gas Barrier has been installed to further perimeter sections of both the East & West Block, gridlines referenced. The Juta Titanflex Gas Barrier has been installed upon a Geotextiled substrate, preventing any damages from occurring beneath the membrane. The Juta Titanflex Gas Barrier has been lined

NOTES:

tightly upon the perimeter membrane in preparation for retrofit detailing. All overlaps between the adjacent sheets of Juta Titanflex Gas Barrier have been lapped a minimum of 100mm, conforming to manufacturer's specifications and guidelines, and heat welded using a hot air leister and silicone roller.

GeoShield Verification Report

VERIFICATION ITEM ONE



Thorough visual inspections, supported by mechanical point stress testing was conducted upon all lap joints present throughout the referenced areas.
No faults or defects were identified.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: East & West Block - Perimeter Skirt Detail

Penetrations





NOTES:

Throughout the Juta Titanflex Gas Barrier installation a couple of penetrations required sealing. A manhole inspected during the previous visit where it was identified that further works were required, has now also been successfully sealed. All penetrations have been successfully sealed using Juta Titan Tank,

NOTES:

which is a gas resistant self adhesive membrane. Prior to being sealed, the Juta Titanflex Gas Barrier has been cut tightly around the base of each individual penetration to eliminate voided areas, with patches of Juta Titan Tank being placed onto the pipe and the Juta Titanflex Gas Barrier, as shown above.

GeoShield Verification Report

VERIFICATION ITEM TWO



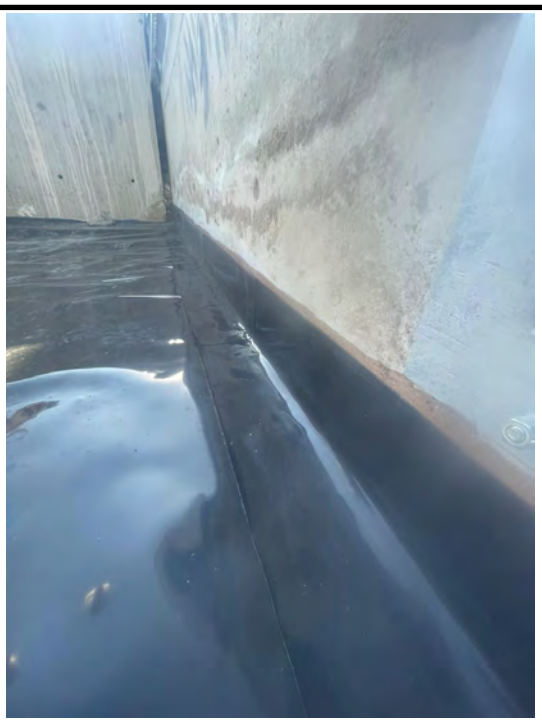
Thorough visual inspections, supported by mechanical point stress testing conducted upon the sealed penetrations identified no faults or defects. It is evident that adequate heat and rolled pressure has been applied ensuring a complete adhesion has been achieved upon the penetrations and the return onto the Juta Titanflex Gas Barrier. Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM THREE

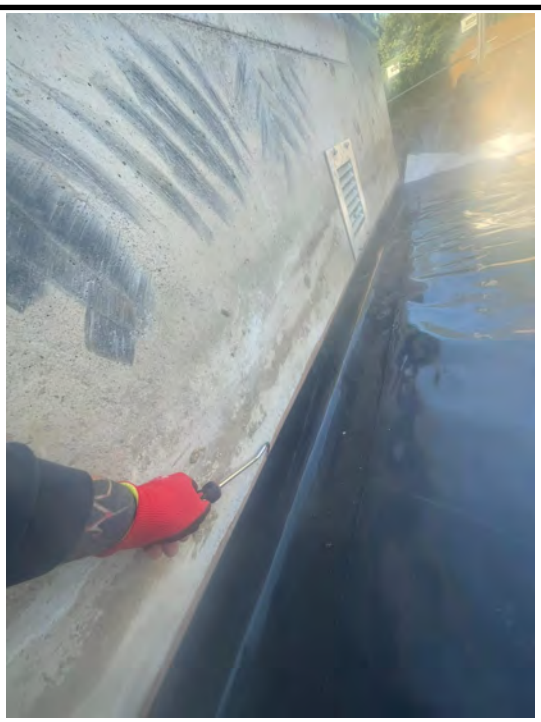
LOCATION/GRID LINE: East & West Block - Perimeter Skirt Detail

Retrofit Detailing



NOTES:

Juta Titanflex has been installed to the perimeter skirt and retrofittted using Juta Titan Tank, which is a self adhesive membrane. Prior to the Juta Titanflex Gas Barrier being retrofitted, all surfaces of the external perimeter upstands have been primed to aid in the adhesion of the Juta Titan Tank upon the concrete.



NOTES:

Once cured, the Juta Titan Tank has been lapped 150mm up the primed concrete face and returned 150mm upon the existing Juta Titan Flex Gas Barrier, as per the design details issued. The installers have applied heat to the Juta Titan Tank to activate the bitumen backing and rolled it into position using a silicone roller.

ADDITIONAL PHOTOGRAPHS



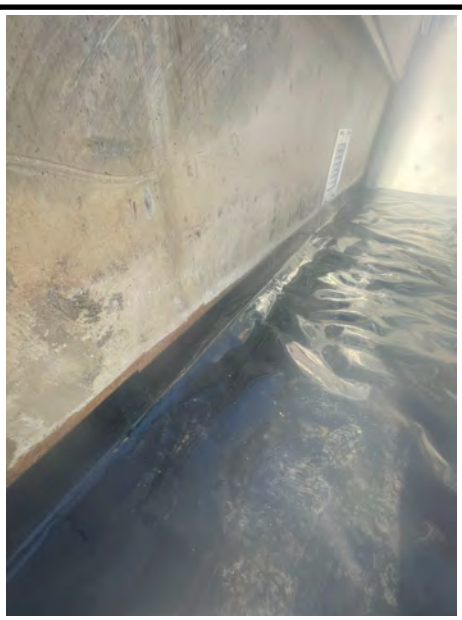
A sealed manhole.



A pick and probe test being conducted upon the retrofit detailing.

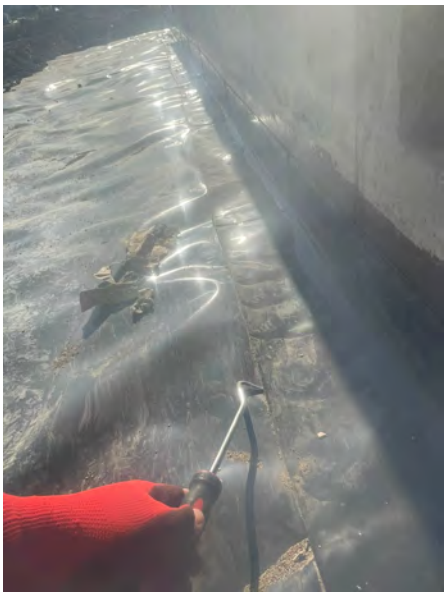


A pick and probe test being conducted upon retrofit detailing.



An overview of the retrofit detailing.

ADDITIONAL PHOTOGRAPHS



A pick and probe test being conducted upon a welded lap joint.



An overview of the retrofit detailing.



The perimeter skirt.



An overview of the retrofit detailing.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	✔
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	✔
02/10/2023	023	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔
19/10/2023	025	1. Several faults/mis-welds identified and remediated on-site.	✔
		2. Steels around the east block (sports hall) require sealing.	✔
30/11/2023	026	Remediations to the membrane to be carried out once scaffolding	
		removed from Stairwell 3 in the west block before sign off can be	
		achieved.	✔
20/12/2023	027	Eight miswelds were identified, all were remediated on site.	✔
26/01/2024	028	Six faults identified, all remediated on site.	✔
31/01/2024	029	No faults were identified during this visit.	✔
10/04/2024	030	1. No faults or defects were identified during this visit.	✔
		2. A manhole still to be sealed and verified (perimeter skirt)	✔
21/06/2024	031	No faults or defects were identified during this visit.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	✔
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off	East Block - Internal Walls (Complete)	✔
Gridline/Plot Sign off	East Block Infills, Stairwell 4, HYG RM, ST CHG	✔
Gridline/Plot Sign off	West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST,	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:	✔	DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	…W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor	✔
Gridline/Plot Sign off	West Block Rooms - Infills (Dining, Circulation, Kitchen &….	✔
Gridline/Plot Sign off	… servery, Sixth Form Social & WC)	✔
Gridline/Plot Sign off	West Block - Stairwell 3.	✔
Gridline/Plot Sign off	East Block, Infills - P WC, Com Lockers, Com ST, CL ST, WC,	✔
Gridline/Plot Sign off	….Activity Studio, ACT ST, PE WRM, P CHG, CH ST.	✔
Gridline/Plot Sign off	East Block Infills - Sports Hall, PE Store, Ext ST, PE + P WC.	✔
Gridline/Plot Sign off	Perimeter Detailing - Com Rept	✔
Gridline/Plot Sign off	East Block Infills - Remaining Room	✔
Gridline/Plot Sign off	Perimeter Detail - External of East & West Block	✔
Gridline/Plot Sign off	Perimeter Skirt Detail	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	West Block Perimeter Skirt - Gridlines: 1/A-D, 10/M-N & E/10	✔
Gridline/Plot Sign off	East Block Perimeter Skirt - Gridlines: T/1-8 & 1/S-T	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 31st visit to the site where verification was required for the installation of Juta Titanflex Gas Barrier to the perimeter skirt in the West Block, gridlines 1/A-D, 10/M-N & E/10 & to the perimeter skirt in the East Block, gridlines T/1-8 & 1/S-T.

All overlaps have achieved a minimum of 100mm between the adjacent sheets of Juta Titanflex Gas Barrier and have been successfully welded using a hot air leister and silicone roller creating continuous sealed joints throughout.

All penetrations and retrofit detailing has been completed using Juta Titan Tank, heated down to aid in the adherence.

Thorough visual inspections, supported by mechanical point stress testing conducted throughout the inspection today identified no faults or defects.

Overall, a very good standard of works conducted to a good NVQ 2 standard.

Tested and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 21-Jun-2024

GeoShield Verification Report 32

PROJECT REFERENCE:	GEO103260
PROJECT:	Riverside Academy
PROJECT ADDRESS:	Riverside Academy

Reading

RG1 8EQ

SPECIFICATION:	Verified in accordance with CIRIA 735.

Design in accordance with BS8485 2015 + 2019 for Methane and Carbon Dioxide.

Substrate prepared in accordance with manufacturers instructions

Juta GP1 Gas Barrier

Juta GP SAM

Juta Titan Flex (Basal layer membrane)

Juta Titan Tank (Basal layer membrane)

GeoShield Verification Report

NAME OF SURVEYOR:	Mark Chapman
VERIFICATION COMPANY:	GeoShield Limited
	Icon Business Centre
	4100 Park Approach
	Thorpe Park
	Leeds
CONTACT NUMBER:	07387 373167
EMAIL ADDRESS:	mchapman@geoshield.co.uk
ORDER NUMBER:	To be confirmed

PER VISIT:	YES:	✔	NO:		PROJECT:	YES:	✔	NO:	

GeoShield Verification Report

CLIENT DETAILS

CLIENT CONTACT:	James Hay
CONTACTS ROLE:	Commercial Director
MOBILE PHONE:	07507 560 728
EMAIL ADDRESS:	jameshay@swcontracts.co.uk

CLIENT CONTACT:	
CONTACTS ROLE:	
MOBILE PHONE:	
EMAIL ADDRESS	
NOTES:	

GeoShield Verification Report

APPLICATOR'S DETAILS

APPLICATOR NAME: Roy

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

APPLICATOR NAME:

COMPANY: SWC

APPLICATOR TEL:

APPLICATOR EMAIL:

NOTES: The installers from SWC are specialists in the installation of ground gas and waterproofing systems. They hold NVQ level 2 qualifications in the installation of gas membranes and weld all lap joints, which is required for this project.

GeoShield Verification Report

AREA SURVEYED:

South West Elevation - Perimeter Skirt Detailing

SITE CONDITIONS:

WEATHER:

Overcast

TEMPERATURE:

17ºc

RELATIVE HUMIDITY:

N/A

MEMBRANE TEMPERATURE:

N/A

TIME: 10:20 - 11:20

DATE: 25.07.2024

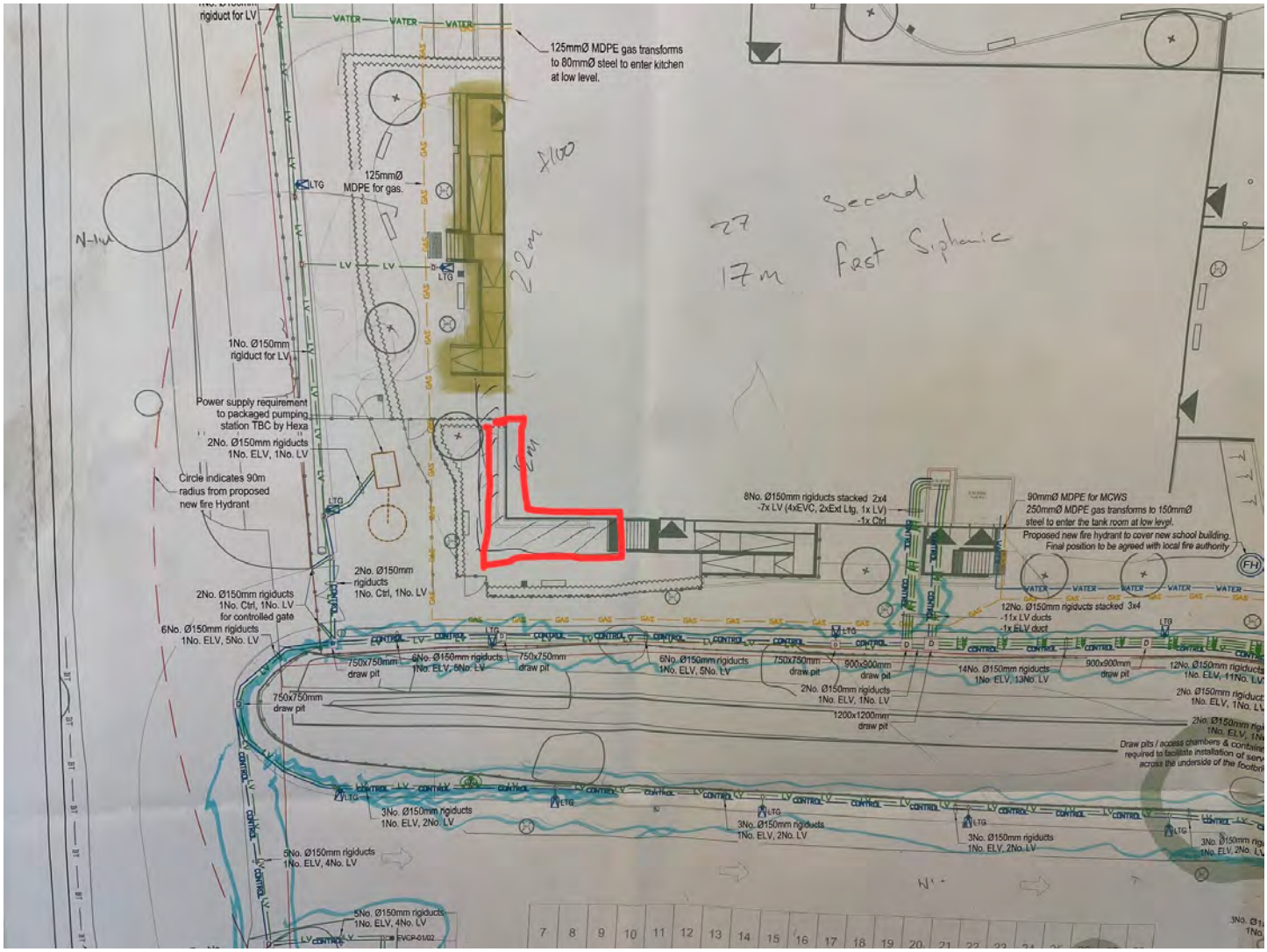
REPORT NUMBER: 032

ACCOMPANIED BY:

Roy - Site Groundworker

GeoShield Verification Report

Verification Layout



The photograph above shows a plan layout of the site. The area highlighted in red shows the south west elevation where the verification inspection took place on site today.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

OVERVIEW



The photograph above displays an overview of the area where today's verification inspection took place on site.

GeoShield Verification Report

VERIFICATION ITEM ONE

LOCATION/GRID LINE: South West Elevation - Perimeter Skirt Detailing

Installation of Juta Titanflex Gas Barrier





NOTES:

Juta Titanflex Gas Barrier has been installed to further perimeter sections of the South West Elevation. The Juta Titanflex Gas Barrier has been lined upon a Geotextile fleece surface, preventing any damages from occurring beneath the membrane. The Juta Titanflex Gas Barrier has been lined tightly to the perimeter

NOTES:

wall in preparation for retrofit detailing. All lap joints between the adjacent sheets of Juta Titanflex Gas Barrier have been overlapped a minimum of 100mm, conforming to manufacturer's specifications and guidelines, and heat welded using a hot air leister. Adequate pressure applied with a silicone roller

GeoShield Verification Report

VERIFICATION ITEM ONE



ensured that the welded overlaps of the Juta Titanflex Gas Barrier were fully bonded. Thorough visual inspections, supported by mechanical point stress testing was conducted upon all lap joints present throughout the referenced areas.
No faults or defects were identified.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM TWO

LOCATION/GRID LINE: South West Elevation - Perimeter Skirt Detailing

Penetrations (Manholes)





NOTES:

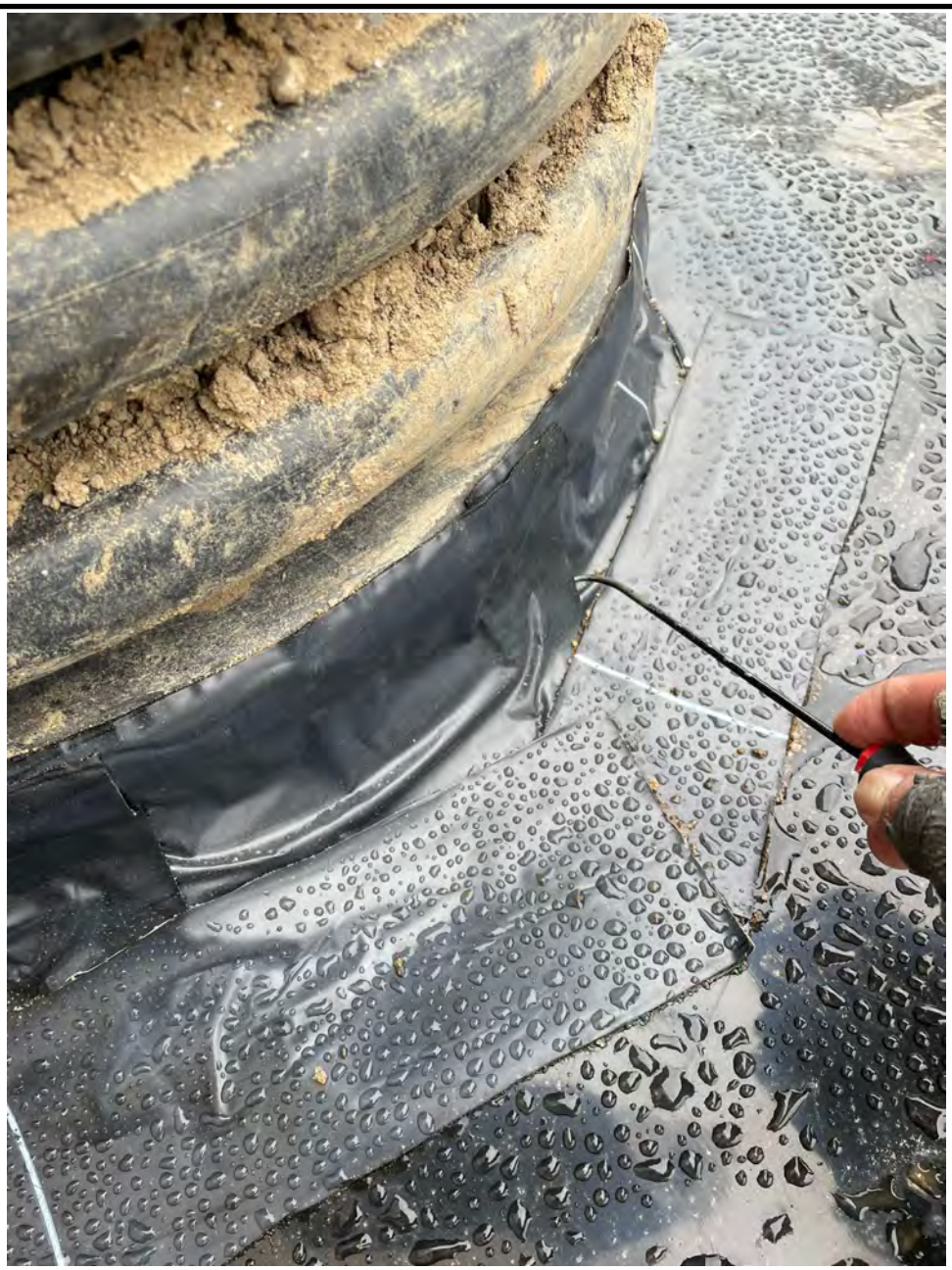
Throughout the Juta Titanflex Gas Barrier installation a couple of manholes required sealing. Both manholes have been successfully sealed using Juta Titan Tank, which is a gas resistant self adhesive membrane. Prior to being sealed, the Juta Titanflex Gas Barrier has been cut tightly around the base of each individual

NOTES:

manholes to eliminate voided areas, with patches of Juta Titan Tank being placed intricately onto the base of the manhole and the Juta Titanflex Gas Barrier, as shown in the photographs above. Heat applied to the Juta Titan Tank, along with firm rolled pressure using a silicone roller ensured that the material had fully bonded.

GeoShield Verification Report

VERIFICATION ITEM TWO



Thorough visual inspections, supported by mechanical point stress testing conducted upon the sealed manholes identified no faults or defects. It is evident that adequate heat and rolled pressure has been applied ensuring a complete adhesion has been achieved upon the manholes and the return onto the Juta Titanflex Gas Barrier.
Tested and verified in accordance with CIRIA 735.

GeoShield Verification Report

VERIFICATION ITEM THREE

LOCATION/GRID LINE: South West Elevation - Perimeter Skirt Detailing

Retrofit Detailing



NOTES:

Juta Titanflex has been installed to the perimeter skirt and retrofittted using Juta Titan Tank, which is a self adhesive membrane. Prior to the Juta Titanflex Gas Barrier being retrofitted, all surfaces of the external perimeter upstands have been primed to aid in the adhesion of the Juta Titan Tank upon the concrete.



NOTES:

Once cured, the Juta Titan Tank has been lapped 150mm up the primed concrete face and returned 150mm upon the existing Juta Titan Flex Gas Barrier, as per the design details issued. The installers have applied heat to the Juta Titan Tank to activate the bitumen backing and rolled it into position using a silicone roller.

GeoShield Verification Report

VERIFICATION ITEM THREE



Thorough visual inspections, supported by mechanical point stress testing conducted upon the retrofit detailing identified no faults or defects. A complete adhesion has been achieved upon the primed concrete upstand and the return onto the Juta Titanflex Gas Barrier.

Tested and verified in accordance with CIRIA 735.

ADDITIONAL PHOTOGRAPHS



An alternative overview of the perimeter skirt installation.



A pick and probe test being conducted upon a welded lap joint.



The Juta Titanflex Gas Barrier retrofitted to the perimeter using Juta Titan Tank.



A close up perspective of the retrofit detailing.

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
27/01/2023	001	Probe 1 6.5 metres from centre & probe 2 5.8 metres from centre.	✔
		- The above has been confirmed it doesn't affect the ground gas	✔
		monitoring. However, centres are now to be followed as per design.	✔
06/02/2023	002	Six miswelded lap joints identified. Remediated on-site.	✔
15/02/2023	003	Six miswelded lap joints identified. Remediated on-site.	✔
17/02/2023	004	Membrane to be repaired and verified where basal layer probe 3	✔
		has been installed.	✔
22/02/2023	005	Zone B & C Above Basal Layer 3	✔
		Below Basal probe 4 needs membrane re installed.	✔
28/02/2023	006	No faults identified	✔
01/03/2023	007	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
03/03/2023	008	Block B, D & E and Extension to Probe 5 BBL.	✔
08/03/2023	009	Block B, D & E.	✔
10/03/2023	010	No faults or defects were identified.	✔
23/03/2023	011	Inconsistent seal around retrofit detailing see locations above.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
28/03/2023	012	No faults or defects were identified.	✔
04/04/2023	013	Several miswelds identified and remediated on-site.	✔
06/04/2023	014	Several miswelds identified and remediated on-site.	✔
12/04/2023	015	X12 mis-welds identified and remediated on-site.	✔
14/04/2023	016	X6 faults identified and remediated on-site.	✔
17/04/2023	017	No faults or defects were identified.	✔
24/05/2023	018	X5 inadequately or (un)sealed overlaps.	✔
		Pipes within internal or perimeter walls to be sealed.	✔
		External thresholds to be sealed.	✔
		Bolt pins around sports hall to be sealed.	✔
25/05/2023	019	Further unsealed overlaps identified.	✔
31/05/2023	020	X1 unsealed overlap. Remediatedon-site.	✔
		Internal steel stanchions (east&west) to be sealed.	✔
18/09/2023	021	19 miswelds identified. Remediated on-site.	✔
26/09/2023	022	1. Several faults identified, all remediated on site.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
		2. Steel stanchions within the west block that require sealing on	
		the external side of the perimeters.	✔
02/10/2023	023	Several miswelded lap joints & holes identified. Remediated on-site	✔
09/10/2023	024	Several faults/mis-welds identified and remediated on-site.	✔
19/10/2023	025	1. Several faults/mis-welds identified and remediated on-site.	✔
		2. Steels around the east block (sports hall) require sealing.	✔
30/11/2023	026	Remediations to the membrane to be carried out once scaffolding	
		removed from Stairwell 3 in the west block before sign off can be	
		achieved.	✔
20/12/2023	027	Eight miswelds were identified, all were remediated on site.	✔
26/01/2024	028	Six faults identified, all remediated on site.	✔
31/01/2024	029	No faults were identified during this visit.	✔
10/04/2024	030	1. No faults or defects were identified during this visit.	✔
		2. A manhole still to be sealed and verified (perimeter skirt)	✔
21/06/2024	031	No faults or defects were identified during this visit.	✔

GEOSHIELD Verification Report

REMEDIATION LOG

Date	Nr	Remediation Description	Y/N
25/07/2024	032	No faults or defects were identified during this visit.	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES		NO	✔

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Zone A - Below Basal Layer - Probes 1 and 2.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/1-10, A-B/1-2 & B-C/1-6.	✔
Gridline/Plot Sign off	Membrane Basal Layer. GL's; C-D/10-11, C-D 12-14, A-B/5-13	✔
Gridline/Plot Sign off	B-C/6-13 & C-H/12-12.5	✔
Gridline/Plot Sign off	Below Basal Layer - Probe 3	✔
Gridline/Plot Sign off	Above Basal Layer - Probes 1 & 2.	✔
Gridline/Plot Sign off	Zone B & C / Below Basel 4 and Above Basel 3.	✔
Gridline/Plot Sign off	Zone C & D	✔
Gridline/Plot Sign off	Probes 4,8 & 9 ABL / Probes 5 & 6 BBL	✔
Gridline/Plot Sign off	Block B, D & E and Extension to Probe 5 BBL.	✔
Gridline/Plot Sign off	Block B, D & E.	✔
Gridline/Plot Sign off	Membrane Basal Layer membrane - Gridlines; L-N/13-14	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES		NO	✔	DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	
Testing checklist attached:				YES		NO			

Gridline/Plot Sign off

Gridline/Plot Sign off	Below Basal Layer Probe - 7.	✔
Gridline/Plot Sign off	East Block Basal Layer- GLs Q-Q.5/10-12 & Q-R/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probe 3&4	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs A-T/10-11	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs Q-T/1-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-T/12-13	✔
Gridline/Plot Sign off	East Block Below Basal Layer Probes 5,6 and 7	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs T-W/12-13	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane - GLs S-AA/11-12	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 1,2 and 3.	✔
Gridline/Plot Sign off	East Block Basal Layer -GLs: 10-12/BB-EE	✔
Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12/Z-EE	✔

GEOSHIELD Verification Report

GAS MEMBRANE TESTING

VISUAL:	YES	✔	NO		SMOKE TEST:	YES		NO	✔
COMPRESSED AIR:	YES	✔	NO		DILECTIC	YES		NO	✔
DESTRUCTIVE:	YES		NO	✔	OTHER:	YES	✔	NO	

Testing checklist attached: YES NO

Gridline/Plot Sign off

Gridline/Plot Sign off	East Block Basal Layer Membrane -GLs: 12-13/W-FF	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 9,10,11	✔
Gridline/Plot Sign off	East Block Above Basal Layer Probes 6,7 and 8.	✔
Gridline/Plot Sign off	West Block perimeter and internal walls.	✔
Gridline/Plot Sign off	East Block perimeter and internal walls.	✔
Gridline/Plot Sign off	Infill installation- East Block; Enterprise rooms 1,2&3, ICT LRC	✔
Gridline/Plot Sign off	Infill Installation- East Block; ICT2 and PE Rooms.	✔
Gridline/Plot Sign off	Infill Installation - East Block; ICT Tech, OFF/MTG, ST CHG	✔
Gridline/Plot Sign off	Infill Installation- West Block; 6th From Study, LRG Group…	✔
Gridline/Plot Sign off	…Hub, T'ST, P'WC, Semco, INC'WRM, SEN RSC, ICT3…	✔
Gridline/Plot Sign off	…Music Retical, Pract x3, Music St, Performing Arts, …	✔
Gridline/Plot Sign off	…Drama St, Repro, Mus'D, WRM, Conf RM.	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	Infill installation- West Block; P'WC, Mainhall, SEN RSC…	✔
Gridline/Plot Sign off	…SEN'TH, INC/W RM, Open GRP, SM GRP x2, MED GRP x2	✔
Gridline/Plot Sign off	…OPEN GRP, SEN SEM RM, Switch RM, Tank RM, Archive…	✔
Gridline/Plot Sign off	…Exam Off*, Exam St, HD Off, Head PA, BM, DP.H, AWC …	✔
Gridline/Plot Sign off	…INTR CL ST.	✔
Gridline/Plot Sign off	Infill installation - west block - 1P OFF, SIXTH FORM SOCIAL.	✔
Gridline/Plot Sign off	…50%, AWC, SICK, MAIN REPT, LOBBY. East Block - CIRC .	✔
Gridline/Plot Sign off	… + Corridor, STAIR 2, COM REPT.	✔
Gridline/Plot Sign off	East Block - Internal Walls (Complete)	✔
Gridline/Plot Sign off	East Block Infills, Stairwell 4, HYG RM, ST CHG	✔
Gridline/Plot Sign off	West Block Infills, RSA, RSB,SEN ST, GEN STK, CL ST,	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:	✔	DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	…W/C Corridor, GEN/FIN,SS OFF, Stair 1, Drama ST Corridor	✔
Gridline/Plot Sign off	West Block Rooms - Infills (Dining, Circulation, Kitchen &….	✔
Gridline/Plot Sign off	… servery, Sixth Form Social & WC)	✔
Gridline/Plot Sign off	West Block - Stairwell 3.	✔
Gridline/Plot Sign off	East Block, Infills - P WC, Com Lockers, Com ST, CL ST, WC,	✔
Gridline/Plot Sign off	….Activity Studio, ACT ST, PE WRM, P CHG, CH ST.	✔
Gridline/Plot Sign off	East Block Infills - Sports Hall, PE Store, Ext ST, PE + P WC.	✔
Gridline/Plot Sign off	Perimeter Detailing - Com Rept	✔
Gridline/Plot Sign off	East Block Infills - Remaining Room	✔
Gridline/Plot Sign off	Perimeter Detail - External of East & West Block	✔
Gridline/Plot Sign off	Perimeter Skirt Detail	✔

GeoShield Verification Report

GAS MEMBRANE TESTING

VISUAL /PICK & PROBE:	✔	SMOKE TEST:	
AIR LANCING:		DILECTIC:	
DESTRUCTIVE:		OTHER:	
INERT GAS TEST:		SPECIFY:	

Testing checklist attached: YES ✔ NO

Gridline/Plot Sign off

Gridline/Plot Sign off	West Block Perimeter Skirt - Gridlines: 1/A-D, 10/M-N & E/10	✔
Gridline/Plot Sign off	East Block Perimeter Skirt - Gridlines: T/1-8 & 1/S-T	✔
Gridline/Plot Sign off	South West Elevation - Perimeter Skirt Detailing	✔
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		
Gridline/Plot Sign off		

GeoShield Verification Report

VERIFICATION SUMMARY

This was the 32nd visit to the site where verification was required for the installation of Juta Titanflex Gas Barrier to the perimeter skirt in the South West Elevation.

All overlaps have achieved a minimum of 100mm between the adjacent sheets of Juta Titanflex Gas Barrier and have been successfully welded using a hot air leister and silicone roller creating continuous sealed joints throughout.

All penetrations (manholes) and retrofit detailing has been completed using Juta Titan Tank, heated down to aid in the adherence.

Thorough visual inspections, supported by mechanical point stress testing conducted throughout the inspection today identified no faults or defects.
Overall, a very good standard of works conducted to a good NVQ 2 standard.

This project is ready for handover.

Tested and verified in accordance with CIRIA 735 and installed to BS8485:2015+2019.

GEOSHIELD SIGNATURE:



DATE: 25-Jul-2024

Appendix J
Hexa General Notes Drawing

DRAINAGE NOTES :-

All work is to be carried out in accordance with the current British Standards, Codes of Practice and Building Regulations.

The exact position, level, size and use of existing sewers must be confirmed on site by the main contractor. Any discrepancies from the design drawings must be reported to Hexa prior to the commencement of works.

All uncovered and shallow pipework to be protected against construction traffic as part of the contractor's temporary works requirements.

All connections to road gullies and channels shall be 150mm nominal bore pipework.

Pipe bends to be provided to suit direction of flow.

All pipework entering and exiting manholes to be connected with pipe soffits level unless stated otherwise on design drawings.

Pre-formed channels to be used at all manholes.

High strength concrete benching to be steel trowelled to a dense smooth face neatly shaped and finished to all branch connections.

All manhole covers and frames to BS EN 124 unless otherwise noted.

Proprietary linear drainage or storage systems are to be installed as per manufacturer's installation details.

First flexible joint in pipes adjacent to a manhole shall be 600mm max. from inside face of manhole, connecting to rocker pipe. for pipe diameters 150mm - 450mm the rocker pipe length shall be 500mm - 750mm and for pipe diameters 451mm - 675mm the rocker pipe length shall be 750mm - 1000mm.

All soft spots encountered in the trench formation to be removed and replaced with graded granular material unless instructed otherwise.

All pipework below road and car parking with less than 1200mm cover must be protected with a suitable slab/concrete surround.

The contractor is obliged to apply for a Section 106 connection to the Water Authority when connecting directly or indirectly to the public sewerage network. Complete applications should be made a minimum of three weeks prior to the planned outfall construction date.

All buried concrete must cater for the sulphates condition specified within the project-specific phase II ground investigation report.

All buried pipework to be U-PVC type in accordance with WIS 4-35-01 unless otherwise noted. As an alternative to U-PVC, buried pipework up to and including 150mm dia. may be 28kn/m strength clayware to BS EN 295; 1991. As an alternative to U-PVC, buried pipework above 150mm dia. up to and including 300mm dia. may be 36kn/m strength clayware to BS EN 295; 1991. As an alternative to U=PVC, buried pipework above 300mm dia. may be Class 120 (SRPC) concrete pipes to BS 5911 with spigot and socket flexible joints.

The design of any temporary works required shall be the responsibility of the contractor.

EXTERNAL WORKS NOTES :-

Pavement:

All proprietary products to be installed in accordance with the manufacturer's instructions.

All material within 450mm of the road surface shall be non-frost susceptible as required by Specification for Highway Works (SHW) Series 700, subject to confirmation of the mean annual frost index (MFAI) by the Met Office.

Subgrade to be prepared in accordance with SHW Series 600.

Where full new pavement construction is to be provided, a single CBR value has been assumed for the site for the purposes of pavement foundation design. This has been based on the results of site investigation (SI) or, in the absence of SI, other knowledge of the site conditions. Refer to the external works drawings for further details on the assumed CBR value.

In areas where full new pavement construction is to be provided, CBR values at formation level are to be tested to ensure the design CBR values are achieved. Details of testing are specified in the SHW. Following confirmation of CBR values at formation level, pavement build-ups are to be reviewed in accordance with pavement foundation table provided. Where CBR values less than 2% are achieved, the build-up is to be revisited and increased accordingly.

The precise nature of the work within the existing pavements and surfaces including trimming, excavation depths and step-ins shall be determined on site.

Limestone aggregate shall not be used in any bituminous surfacing or binder course materials in carriageway construction. Limestone aggregate may only be used in base material.

Regulatory materials shall be in accordance with BS EN 13108.

A polymer modified bond coat, in accordance with SHW Clause 920, shall be applied to all exposed bituminous surfaces prior to laying subsequent bituminous layers. Prior to laying subsequent layers of bituminous material the surface shall be thoroughly cleaned and a polymer modified bond coat shall be applied at a rate of 0.35 kg/m².

All soft deposits shall be excavated and replaced with acceptable Type 1 sub-base material or 6F2 granular fill.

for soft landscaping details and soil build-ups refer to landscape architects drawings.

Kerbing:

All precast concrete units to be hydraulically pressed and shall comply with BS EN 1340:2003.

Purpose-made units of the correct description to be used for all right angle corners.

All kerbs, edgings and channel blocks are to be cut and laid in accordance with the SHW Series 1100.

Concrete backing to kerbs shall be type C16/20 concrete in accordance with the SHW Sries 2600.

Where concrete bed and surround are cast separately, a 13mm thick 3:1 sand cement mortar bed and 2 No.150 x20mm mild steel dowel bars per kerb are to be provided.

Radii of 0.45m or less should be made up of appropriate quadrants or angled kerbs.

Tansition kerbs to be used between adjacent kerb types. Dopper kerbs to be in accordance with BS EN 1340:2003.

No kerb unit shall be cut to a length less than one third of its original length.

For kerb radii less than 12m, precast curve units are to be used. For kerb radii greater than 12m, precast straight units are to be used.

PILING NOTES :-

In the absence of a project specific Piling Specification the base specification for piling works shall be the Specification for Piling and Embedded Retaining Walls published by ICE and BS EN 1997-1 Eurocode 7 'Geotechnical Design, General Rules'.

For details of ground conditions refer to the Ground Investigation Report prepared by REC dated November 2018

The Specialist Piling Sub Contractor shall be responsible for the design of the piling system and shall be deemed to have taken due account of the proposed loads and any effects on adjacent structures or features.

Due regard shall be taken of all relevant information noted within the ground investigation report for the design of the piling system. Should the Piling Sub Contractor consider the information contained within the report to be inconclusive or deficient in any way then the tender must include for any additional ground investigation considered necessary.

The nature, extent and level of the piling platform shall be agreed with the Principal Contractor.

Setting out dimensions, as indicated on this drawing, relate to the centre of piles unless otherwise noted.

Refer to drawing for pile cut-off levels.

The method of breaking down piles shall be approved by the Engineer prior to the commencement of work on site.

Following 'breaking down' pile reinforcement shall be bent into the supported structure a minimum of 500mm.

Pile loads (working/characteristic loads) are as follows:-

Vertical	900kN
Horizontal	25kN
Moments	20kNm
Uplift	25kN

All loads are assumed maximum and TBC by piling contractor.

All piles shall be capable of supporting additional forces due to the effects of setting out and rake tolerances ect. The Piling Sub Contractor shall allow, within their design, for the effect of any negative skin friction due to ground conditions.

The Principal Contractor is responsible for removing any known obstructions prior to piling and backfilling resultant excavations as directed by the Engineer. Should unknown obstructions be encountered the Engineer shall be informed immediately so that he may consider any necessary remedial work. The Engineer shall also be notified immediately of any broken piles.

Pile testing to be undertaken as follows:-

Static Load testing	3No.
Dynamic testing	10%
Integrity testing	100% of piles

The Engineer and Principal Contractor to select piles to be tested. Precast driven piles with joints relying wholly or partly upon adhesives are not acceptable.

Where trees are located in close proximity to buildings ect, design precautions are to be taken in accordance with the 'N.H.B.C' standards (refer to Engineer for further advise).

REINFORCED CONCRETE NOTES :-

The base Specification for Reinforced Concrete shall be BS EN 1992 Eurocode 2 'Design of Concrete Structures' and the National Structural Concrete Specification. Drawing to be read in conjunction with main Hexa specification.

The following concrete mixes are to be used in accordance with BS8500) :-

Location	Mix Reference	Details
Ground beams	RC 32/40	DS3/AC3
Pilecaps	RC 32/40	DS3/AC3

The surface finish to concrete faces shall be as follows:-

Location	Face	Finish
Ground beams	Exposed external face	Plain
Ground beams	All other faces	Ordinary

All reinforcement to BS EN 10080 u.o.n

Minimum cover to reinforcement to be 75mm. UNO

Location of daywork joints and details to be agreed with the Engineer prior to commencement of the works on site.

Abbreviations:-

H. High yield type 2 deformed bar.
B. Bottom.
T. Top.
NF. Near face.
FF. Far face.
EF. Each face.
ABR. Alternate bars reversed.
ABS. Alternate bars staggered.

All concrete mix certificates and the cube testing programme shall be approved by the Engineer prior to commencement of the works on site.

50mm concrete blinding to be incorporated below all ground beams etc. to provide a suitable platform for fixing reinforcement.

PRECAST CONCRETE FLOOR & STAIR NOTES :-

The floor shall be designed in such a way that it meets the full requirements of BS EN 1992 Eurocode 2 'Design of Concrete Structures', the Building Regulations, the National Structural Concrete Specification for Building Construction, the Precast Flooring Federation's Publication "General & Technical information" & the Development Specification.

The Design, Manufacture & installation of the units shall address inter alia, strength, deflection, noise transmission, vibration, durability, serviceability, fire resistance, density & thermal requirement of the completed floor with due regard to the end use of the development.

Subject to project specific guidance from the Precast Concrete Sub Contractor, the following unit depth/span criteria must not be exceeded for unscreeded floors:-

PCU depth	Centre line of supporting beams
150mm	6m
200mm	7m
250mm	8m

For screeded floors, refer to the Precast Concrete Sub Contractor for project specific guidance.

The width of floor units shall be 1200mm, units less than 1200mm width will be considered subject to specific design & the full provision of side shear keys.

The direction of the precast floor unit span shall be as indicated on the Engineers drawings, marked thus

Loading Schedule (in addition to the self weight of the precast units.)

Refer to innovare drawings for loading information and schedule

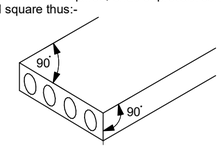
Refer to Architects details for fire rating and all penetration requirements.

The Precast Sub Contractor shall allow for all grouting, insitu infill, reinforcement etc to provide a complete structural floor.

All temporary works and propping shall be the responsibility of the Precast Sub Contractor unless otherwise agreed.

All precast concrete floor units containing voids must be manufactured with drainage holes. Upon erection of the units all drainage holes are to be inspected & thoroughly cleared if blocked.

Unless otherwise required, ends of precast concrete floor units must be formed square thus:-



The following concrete mixes are to be used in accordance with BS8500.

Location	Mix Reference
Infill Strips	C32
Grouting	
Stairs	To be specified by the Specialist Sub Contractor

The Precast Sub Contractor shall allow for infilled ends to units as indicated on the Engineers' drawings and Principal Contractors Tender information.

Prior to commencement of work, the Precast Sub Contractor shall submit and agree a design, drawing manufacture, delivery and erection programme with the Principle Contractor. A method statement for erection shall also be agreed with the Principal Contractor prior to commencement of work on site.

All site work is to be undertaken in accordance with best current practice and Health & Safety Legislation. For further advise reference should be made to the 'Code of Practice for the Safe Erection Precast Concrete Flooring'.

The precast concrete stair units and associated floor units shall be erected and fixed together in such a way that no instability can occur during either the temporary or permanent conditions.

Ceiling and services to be supported by proprietary fixings approved by the 'Precast Floor Manufacturer'. Safe loads for fixings not to be exceeded.

Structural screeds to be designed by the Precast Concrete Subcontractor. Non structural screeds to be designed by the Architect.

REV	DATE	DESCRIPTION
P06	24.02.22	CONCRETE SPEC UPDATED, SHOWN CLOUDED
P05	04.02.22	CONCRETE FINISH REVISED
P04	04.02.22	CONCRETE FINISH REVISED
P03	28.01.22	CONTRACTORS PROPOSALS
P02	12.10.21	DRAFT CONTRACTORS PROPOSALS SUBMISSION
P01	14.09.21	PRELIMINARY ISSUE

CLIENT

Department for Education

CONTRACTOR

BOWMER + KIRKLAND

CONSULTANT -

hexa CONSULTING

PROJECT

RIVER ACADEMY READING

DRAWING TITLE

GENERAL NOTES

DRAWING PURPOSE

CONTRACTORS PROPOSALS

DRAWN BY	DATE	CHK'D BY	SCALE	MEDIA
LSJ	14.09.21	HD	1 : 1	A2

PROJECT - ORIGINATOR - ZONE - LEVEL - TYPE - ROLE - NUMBER | REVISION

FS0949-HEX-XX-XX-DR-C-0001 | P06

Appendix K
Concrete Mix Design

CERTIFICATE OF CONCRETE COMPOSITION

Certificate No: 1986301533 01.11.2022 Page 1 of 1
Dated: 01.11.2022

Contractor:
G M Piling Ltd
Victory Park
ATTLEBOROUGH
Norfolk NR17 1ZA
UNITED KINGDOM

Site address:
{Richfield Avenue}
Richfield Avenue
READING RG1 8EQ
UNITED KINGDOM

Your Reference:

Customer Service Centre
One Marlborough Court
SYSTON, LEICESTER
Leicestershire
LE7 1AD
UNITED KINGDOM

Order : 03301234633
Sales : 03301234633
www.hanson.co.uk

Supplying plant: 3423 MCP UK Q SIMEM MMX 5000

MATERIAL	DESCRIPTION	SUPPLIER	SOURCE	ADMIXTURE UNITS
CEMENT	CEMI	CASTLE CEMENT LIMITED	KETTON WORKS	
ADDITION1	GGBS	CIVIL AND MARINE LIMITED	PORT TALBOT WORKS	
Aggregate 1	LIMESTONE 20	HANSON UK	WHATLEY QUARRY	
Aggregate 2	LIMESTONE 10	HANSON UK	WHATLEY QUARRY	
Aggregate 3	SAND MARINE 4	HANSON UK	DAGENHAM WHARF	
ADMIXTURE 1	P190	SIKA LTD		l/100 kg cement

MIX SPECIFICATIONS

Quote Line ID	10	60		
MAT ID				
MIX/GRADE	C25/30	C32/40		
DC/CL CLASS	DC1	DC3		
ADD DESC		PILING		
MAX AGG SIZE	20	20		
CEMENT TYPE	CIIIA+SR	CIIIB+SR		
CONSISTENCE	S4	S3		
MCC		340		
MAX W/C		0.50		

SSD CONCRETE COMPOSITION kg/cubic metre

CEMENT	131	122	
ADDITION1	160	284	
Aggregate 1	605	573	
Aggregate 2	403	382	
Aggregate 3	837	753	
WATER	179	186	

ADMIXTURE DOSAGES (SEE UNITS ABOVE)

Admix 1 & 2	0.700		0.570					
Admix 3 & 4								
Admix 5 & 6								
Admix 7 & 8								
W/C Ratio	0.62		0.46					
Alkali kg	1.32		1.22					
Cl % SO4 %	0.20	2.67	0.15	2.11				

Material sources and proportions may change subject to quality and availability. Concrete is supplied in accordance with the requirements of the current edition of BS8500-2.

THE QUALITY SCHEME FOR READY MIXED CONCRETE 009

All orders are made on Hansons Standard Conditions of Sale, a copy of which are available at www.hanson.co.uk.

Signed.....

Hanson Concrete

Appendix L
Derry Building Services Memo

derry building services

a: Head Office
The Old Hospital, London Road, Newark, Notts, NG24 1JP
t: 01636 614 300

a: Birmingham Office
Suite 418, Fort Dunlop, Fort Parkway, Birmingham, B24 9FD
t: 0121 7304 880

a: Newcastle Office
The Corner, 26 Mosley Street, Newcastle upon Tyne, NE1 1DF
t: 0191 248 0220

e: info@derry-bs.co.uk
w: www.derry-bs.com
@derry_bs

14th August 2024.

Bowmer + Kirkland Ltd

1230 Arlington Business Park,
Theale,
Reading, RG7 4SA

Re: - River Academy, Reading.

We write to confirm that the incoming MCWS feed that runs underground from the boundary meter to the intake Tank Room has been installed in barrier pipe and is compliant with the OS specification & the requirements of Thames Water.

We trust that the enclosed is to your satisfaction.

Yours sincerely

Dean O'Neill

Contracts Manager

t: 01636 615 432

m: 07702 254 757

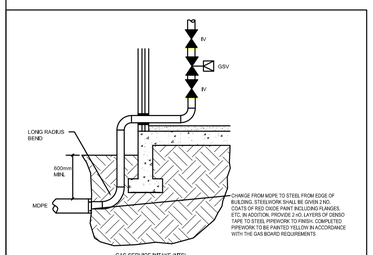
Appendix M
CPW Site Wide Utility Layout

THIS DRAWING IS AN INDICATIVE LAYOUT ONLY, DEMONSTRATING THE CONCEPTUAL REQUIREMENTS CORRELATING WITH THE AGREED SCHEMATIC SOLUTIONS. THE PURPOSE OF THIS DRAWING IS TO DEMONSTRATE DESIGN INTENT, FOR FURTHER DEVELOPMENT BY THE RELEVANT SERVICES DESIGNER ONLY.

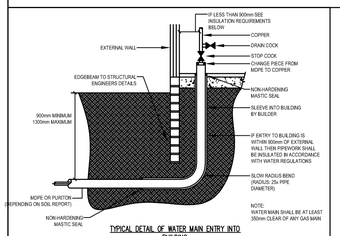
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE PERFORMANCE SPECIFICATION & ALL RELEVANT ARCHITECTURAL & ENGINEERING DRAWINGS, DETAILED & FULLY COORDINATED INSTALLATION DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATION.

PLEASE NOTE:
THIS DRAWING SHOULD BE PRINTED IN COLOUR TO FULLY DEFINE THE SERVICES SHOWN WITHIN

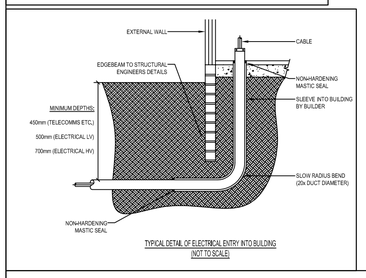
NOTES:
IN ACCORDANCE WITH THE GROUND GAS REMEDIATION STRATEGY, ALL TRENCHES ARE TO BE OVER EXCAVATED BY 300mm DEPTH AND ALSO 300mm WIDTH.
WHEREVER SERVICES PENETRATE THE VAPOUR RESISTANT MEMBRANE, SEALS SHOULD BE MADE TO SERVICE DUCTS.
CONTINUOUS SERVICES DUCTS ARE TO BE SEALED.
WHERE TRENCHES ENTER AN AREA PROTECTED FROM GROUND GAS OR EXIT THE SITE, A TRENCH DAM IS TO BE FORMED OF LOW PERMEABILITY CLAY.
REFER TO FS0949-ASO-XX-XX-RP-Y-0005 FOR FULL REMEDIATION STRATEGY.



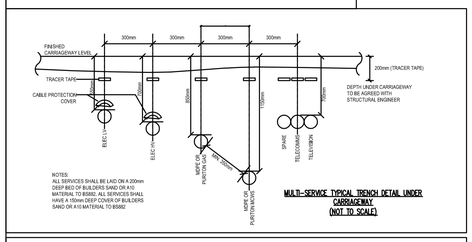
GAS SERVICE INTAKE (NTS)



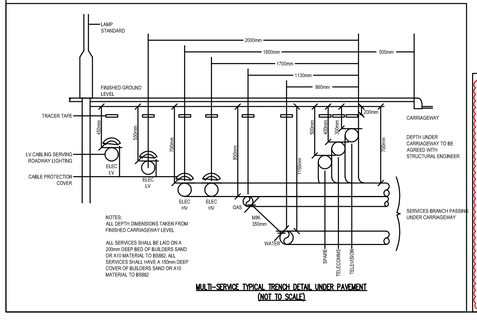
TYPICAL DETAIL OF WATER MAIN ENTRY INTO BUILDING
(NOT TO SCALE)



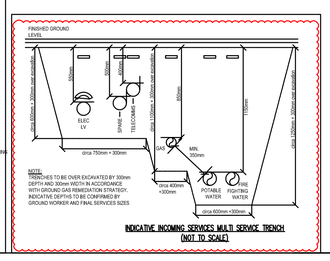
TYPICAL DETAL OF ELECTRICAL ENTRY INTO BUILDING
(NOT TO SCALE)



MULTI-SERVICE TYPICAL TRENCH DETAIL UNDER CARRIAGEWAY
(NOT TO SCALE)



MULTI-SERVICE TYPICAL TRENCH DETAIL UNDER PAVEMENT
(NOT TO SCALE)



INDICATIVE INCOMING SERVICES MULTI SERVICE TRENCH
(NOT TO SCALE)

BT AND VM DUCT ROUTE TO BE TRENCHED INTO G/F SERVER ROOM

TEMPORARY LOW VOLTAGE SUPPLY TO SERVE TEMPORARY TOILET ACCOMMODATION FOR PHASE 1 HANDOVER. FINAL POSITION TBC.

CAT 5 WATER SUPPLY FROM KITCHEN TO BIN STORE TO SERVE BIB-TAP.

TEMPORARY BOOSTED COLD WATER FROM KITCHEN TO SERVE TEMPORARY TOILET ACCOMMODATION FOR PHASE 1 HANDOVER. FINAL POSITION TBC. DOMESTIC WATER AND DRAINAGE PROVISION FOR 16no WCs AND 7no WHBs.

NEW INCOMING LOW PRESSURE GAS ENTERS KITCHEN

NEW INCOMING LOW PRESSURE GAS AND MAINS COLD WATER ENTER THE PROPOSED NEW BUILDING VIA THE GROUND FLOOR TANK ROOM.
NEW LV SERVICES FROM METER HOUSING ADJACENT TO NEW HV SUB STATION AND NEW CONTINUOUS EMPTY DUCT SYSTEMS FOR INCOMING TELECOM LINES ENTER GROUND FLOOR SWITCH ROOM.

GREEN CIRCLE INDICATES 90m RADIUS FROM PROPOSED NEW FIRE HYDRANT

EXISTING OVERHEAD BT CABLE CABLE

PROPOSED LOCATION FOR NEW GAS METER HOUSING AT BOUNDARY

PROPOSED POINT OF CONNECTION TO EXISTING LOW PRESSURE GAS INFRASTRUCTURE IN RICHFIELD AVENUE

LOW VOLTAGE AND COMMS ROUTE TO AUTOMATED HEIGHT BARRIER

DRAW PITS / ACCESS CHAMBERS AND CONTAINMENT REQUIRED TO FACILITATE INSTALLATION OF SERVICES ACROSS FOOTBRIDGE

EMPTY CONTINUOUS DUCTING AND DRAW PITS ONLY SHALL BE PROVIDED TO MUGA'S. FUTURE CABLING AND LIGHTING BY OTHERS

PROPOSED NEW FIRE HYDRANT TO COVER NEW SCHOOL BUILDING. FINAL POSITION TO BE AGREED WITH LOCAL FIRE AUTHORITY.

PROPOSED NEW SERVICES ENTER SITE VIA ACCESS BRIDGE.
WATER SERVICES TO BE INSULATED AND TRACE HEATED

PROPOSED 4X4M LV CT CHAMBER. UTILITY SUPPLIERS METER AND SITE WIDE SWITCH PANEL HOUSING.
EVC DB INSTALLED WITHIN SAME

PROPOSED 4X4M SUB STATION HOUSING

PROPOSED HV CABLE CONNECTION INTO EXISTING HV RING ADJACENT TO LEISURE CENTRE TO THE EAST

PROPOSED NEW WATER METER AT SITE BOUNDARY

PROPOSED POINT OF CONNECTION TO EXISTING MAINS COLD WATER SYSTEM INFRASTRUCTURE IN RICHFIELD AVENUE. FOR METERED SUPPLY TO SCHOOL AND UNMETERED SUPPLY TO NEW HYDRANT

SUITABLY RATED POWER SUPPLY TO PACKAGED PUMPING STATION

IMPORTANT NOTE

THIS DRAWING IS FOR INFORMATION ONLY. THIS INFORMATION MUST NOT BE RELIED UPON IN THE EVENT OF EXCAVATION OR OTHER WORKS CARRIED OUT IN THE VICINITY OF ELECTRICAL PLANT. NO LIABILITY OF ANY KIND, WHATSOEVER, IS ACCEPTED BY CPW LLP FOR ANY ERROR OR OMISSION IN RESPECT OF INFORMATION CONTAINED ON THIS DRAWING.

THE ACTUAL POSITION OF THE UNDERGROUND SERVICES MUST BE VERIFIED AND ESTABLISHED ON SITE BEFORE ANY INTRUSIVE WORKS BEGIN.

A NUMBER OF UTILITY SERVICES PASS THROUGH THE SITE THAT MAY NOT REQUIRE DIVERTING/HAVE EASEMENTS. THE UTILITY SERVICES PROVIDERS WILL NEED TO EVALUATE THE ACTUAL POSITION OF THESE SERVICES.

ANY WORKS NEAR ELECTRICAL PLANT SHOULD BE UNDERTAKEN IN ACCORDANCE WITH THE HEALTH AND SAFETY EXECUTIVE GUIDANCE HSG46 - AVOIDING DANGER FROM UNDERGROUND SERVICES.

ALL SCALED DIMENSIONS TAKEN FROM THIS DRAWING ARE TO BE VERIFIED ON SITE

LEGEND

- PLANNING LINE BOUNDARY
- PROPOSED NEW BUILDING/DEVELOPMENT
- EXISTING HV CABLE ROUTE
- PROPOSED HV CABLE ROUTE
- EXISTING LV CABLE ROUTE
- PROPOSED LV CABLE ROUTE
- EXISTING BT CABLE ROUTE
- 2NR PROPOSED TELECOMS DUCTS
- 2NR PROPOSED TELECOMS DUCTS
- PROPOSED COMMS DUCT ROUTE
- EXISTING MAINS GAS SUPPLY INFRASTRUCTURE
- NEW GAS SUPPLY INFRASTRUCTURE
- EXISTING MAINS COLD WATER SUPPLY INFRASTRUCTURE
- NEW MAINS COLD WATER INFRASTRUCTURE
- BOOSTED COLD WATER TO EXTERNAL POSITIONS
- ELECTRICITY METER
- GAS METER
- COMBINED WATER METER
- EXISTING FIRE HYDRANT
- PROPOSED NEW FIRE HYDRANT
- TP/N ISOLATOR

REV	DATE	DESCRIPTION
P13	05/07/2022	UPDATED DUCT ROUTE-INCOMING TELECOM POSITION MOVED
P12	19/05/2022	TRENCH DETAIL ADDED
P11	05/05/2022	REVISED IN LINE WITH A.T COMMENTS
P10	29/04/2022	REVISED IN LINE WITH TA COMMENTS
P09	17/03/2022	CP ISSUE - ISOLATOR SHOWN FOR DRAINAGE PUMP
P08	15/03/2022	CP ISSUE - REVISED EXTERNAL LANDSCAPE DWG
P07	02/03/2022	CP ISSUE - REVISED IN LINE WITH A.T COMMENTS
P06	22/02/2022	CP ISSUE - REVISED IN LINE WITH A.T COMMENTS
P05	03/02/2022	CP ISSUE - REVISED IN LINE WITH A.T COMMENTS
P04	28/01/2022	CP ISSUE
P03	12/11/2021	REVISED INLINE WITH DFE COMMENTS
P02	21/10/2021	DRAFT CP ISSUE - REVISED PROPOSED LANDSCAPE DWG
P01	15/10/2021	DRAFT CP ISSUE

CLIENT

Department for Education

CONTRACTOR

BOWMER KIRKLAND

CONSULTANT ORIGINATOR REFERENCE

www.cpwp.com
Address
St Johns House
30 East Street, Leicester
LE1 6NB
Phone
+ 44 (0) 116 255 7397
Email
leicester@cpwp.com

PROJECT

RIVER ACADEMY, READING

DRAWING TITLE

PROPOSED SITE WIDE UTILITY LAYOUT

DRAWING PURPOSE

CONTRACTORS PROPOSALS

DRAWN BY	DATE	CHK'D BY	SCALE	MEDIA
AH/MA	SEPT 2021	MW	1:500	A1

CONTRACT DRAWING REFERENCE (AS REQUIRED)

PROJECT - ORIGINATOR - ZONE - LEVEL - TYPE - ROLE - NUMBER	REVISION
FS0949-CPW-ZZ-XX-DR-N-9002	P13

Appendix N
Groundworks Photographs

NH001

BandK River Academy

Remediation Strategy Photos

Fenton
Civil Engineering Ltd.





























NH002

BandK River Academy

Remediation Strategy Photos

Fenton
Civil Engineering Ltd.


EPZ


Thank You
For Visiting!




Fenton
CAUTION
CABLE



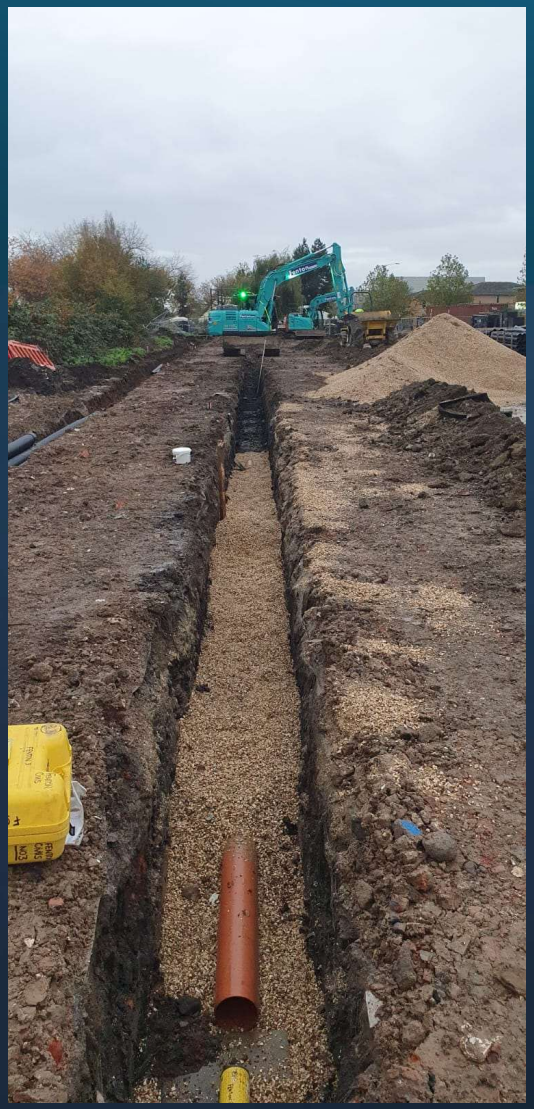







Fenton



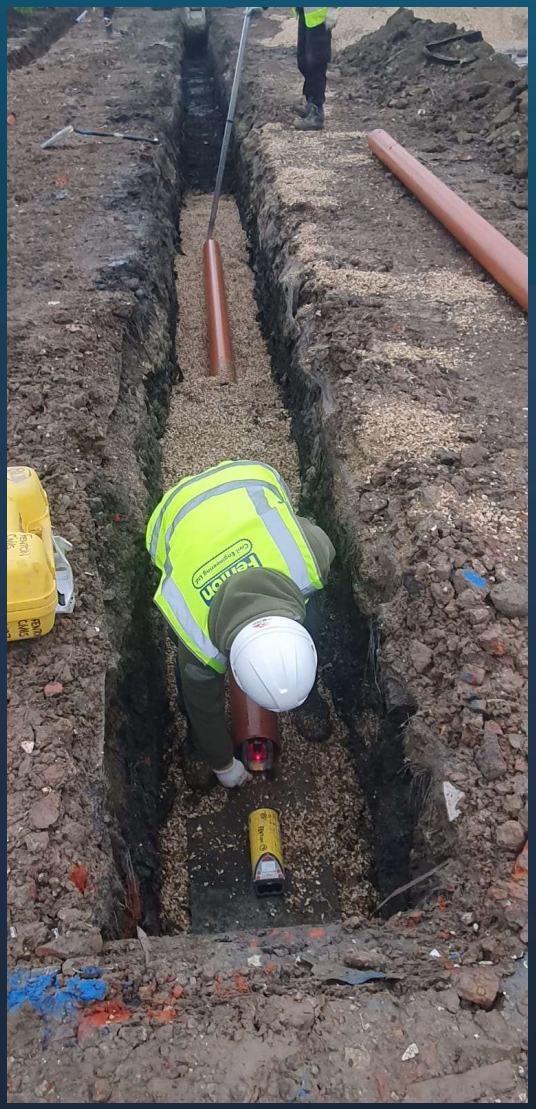


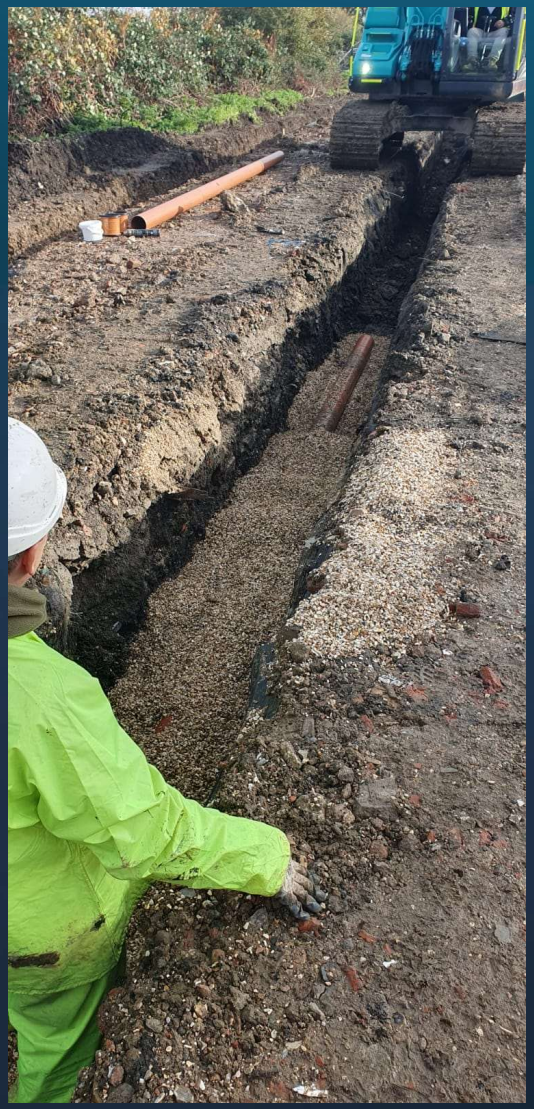


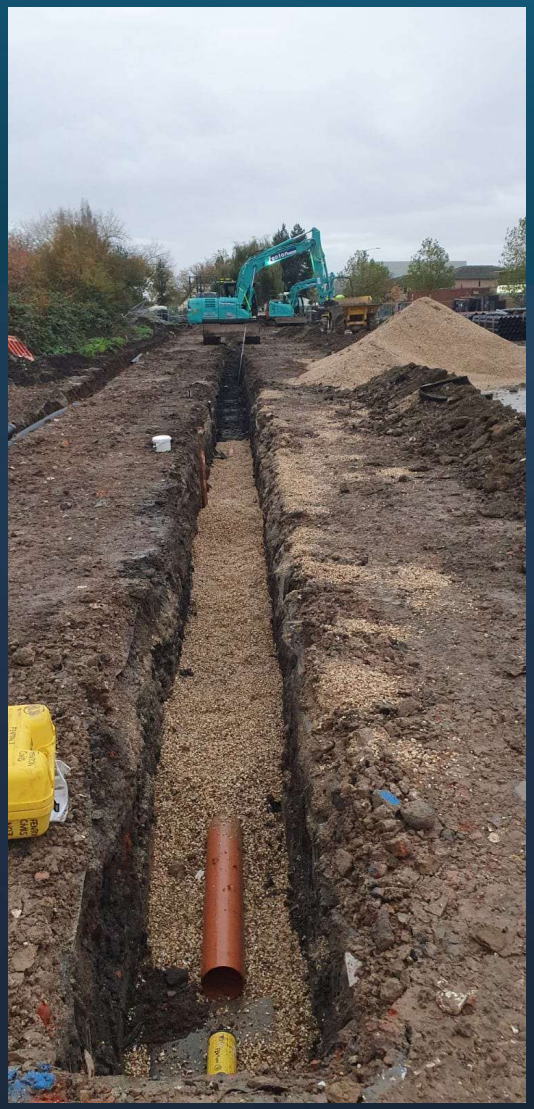

GROUT MASTER

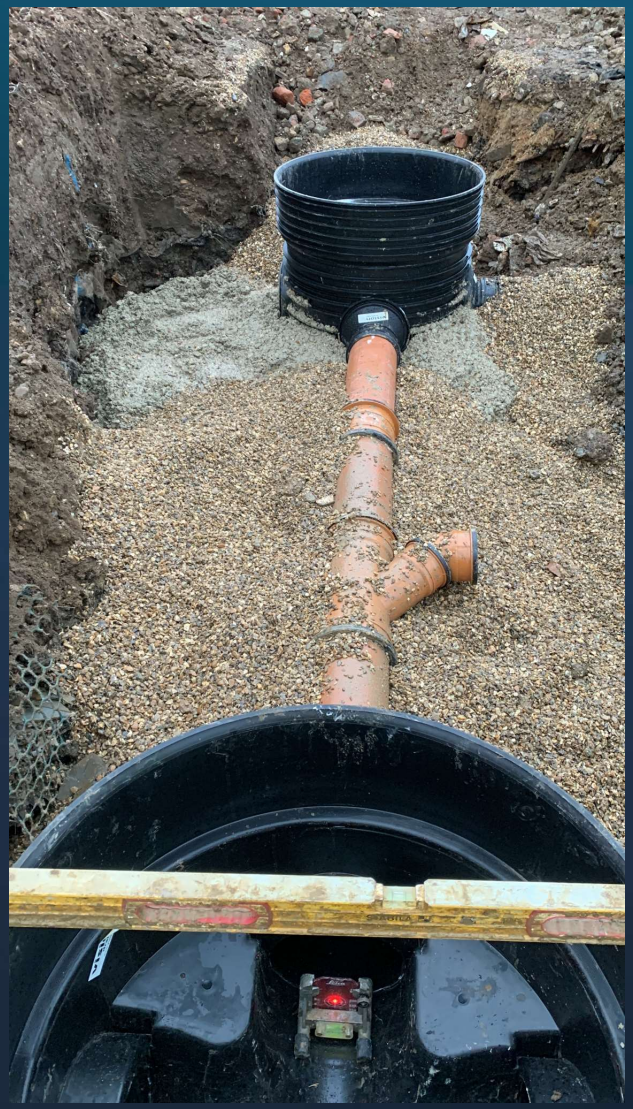










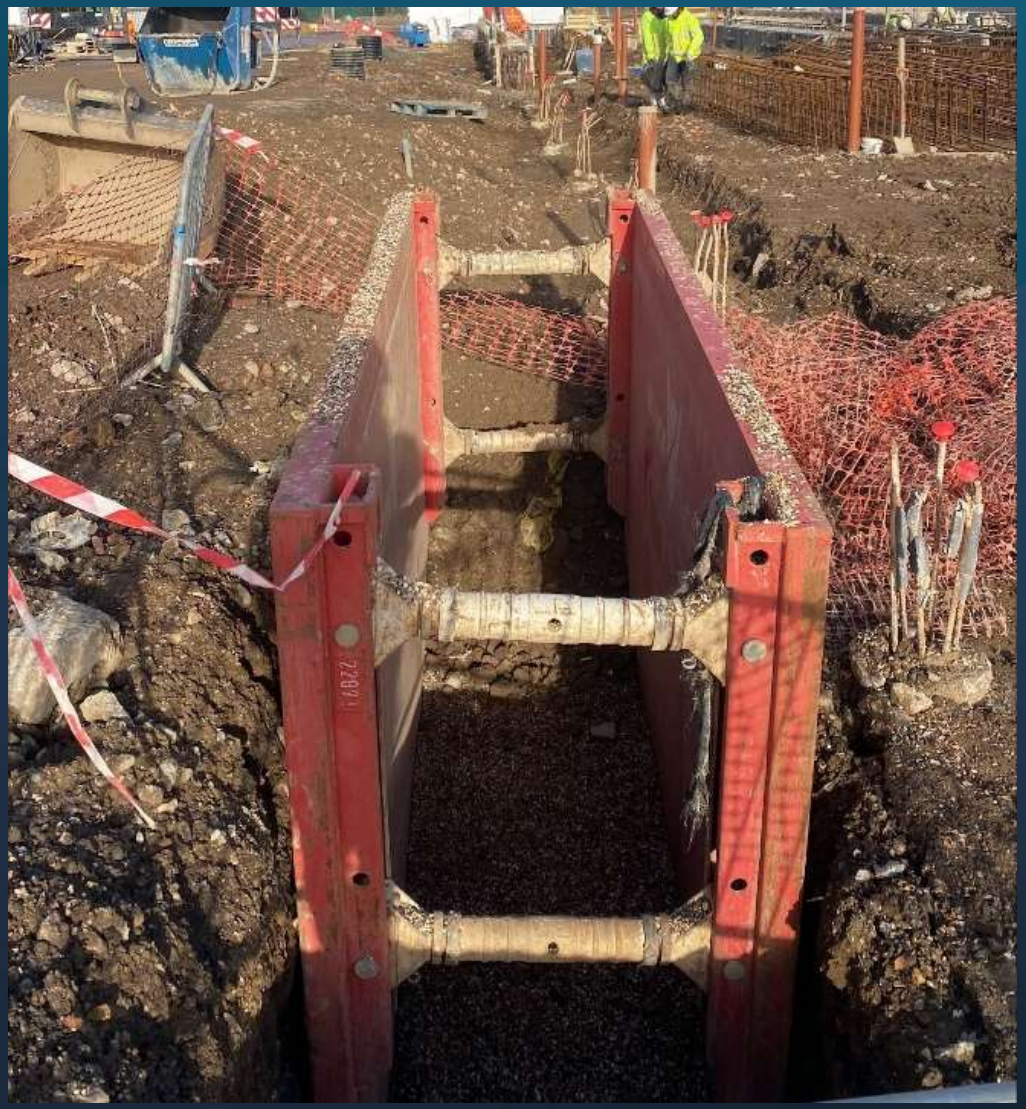

























Fenton




CAUTION
CAUTION











Appendix O
Site Waste Management Plan

SMARTWASTE

Site Waste Management Plan for River Academy

Date:Mon Jul 08 16:42:32 BST 2024

Site Waste Management Plan Progress

Step		Completed
1.	Responsibilities	✓
2.	Waste minimisation	✓
3.	Forecast	
4.	Waste management options	✓
5.	Duty of care	
6.	Training / Communication	✓
7.	Actual versus Forecast waste	✓
8.	Ongoing review of implementation	
9.	Completion review	✓

Project Details

Project reference	68088
Project name	River Academy
Project address	South West RG1 8EQ
Project use class	High Schools (Education)
Actual start date	17/10/2022
End date	29/7/2024
Project cost (estimated)	£ 45,000,000.00
Floor area	39900.0 m2
Description of site location	Demolition of existing Golf Driving Range, Ground remediation and construction of 3 storey school with car park, playing fields, hard & soft landscaping.
Client	Department for Education - Kerry Stevenson
Principal Contractor	Bowmer + Kirkland

Responsibilities

	Name	Company	Company Type	Contact details
Who is responsible for drafting the SWMP?	Hayley Nickolay	Bowmer + Kirkland	Principal contractor	h.nickolay@bandk.co.uk
Who is responsible for implementing the SWMP?	Keith McGinness	Bowmer + Kirkland	Principal contractor	k.mcginness@bandk.co.uk
Who is the waste champion?	Keith McGinness	Bowmer + Kirkland	Principal contractor	k.mcginness@bandk.co.uk
Who is the person in charge of the project?	Keith McGinness	Bowmer + Kirkland	Principal contractor	k.mcginness@bandk.co.uk
Who is the client?	Kerry Stevenson	Department for Education	Client	Kerry.STEVENSON@education.gov.uk
Who is the principal contractor?	Bowmer + Kirkland	Bowmer + Kirkland	Principal contractor	p.goodhew@bandk.co.uk

Where will this SWMP will be kept? (a copy should be kept onsite)

1) Electronic document	Viewpoint 4P
2) Paper based document	Bowmer + Kirkland Site Office (River Academy)

Declaration statement: The Client and Principal contractor will take reasonable steps to ensure waste duty of care is complied with, materials are handled efficiently and waste is managed appropriately.
Tick box to agree: ✓

Client signature:	**Print name:**	**Date:**
Contractor signature:	**Print name:**	**Date:**

Waste minimisation decisions

Type of waste minimisation decision	Waste minimisation decision taken	At what RIBA plan of works stage has this been considered	By whom	Intended results	Carried out by	Comments	Decision status

Forecast of waste types and amounts

Work Package	Subcontractor	Waste type	Waste Sub Type	Estimate amount (m3)	Estimate amount (tonnes)	Likely cause	Notes
Asbestos removal	Hill Demolition LLP	Hazardous waste*	Construction materials containing asbestos (17 06 05*)	~ 0.3	0.1	Demolition	
Completion activities		Packaging materials (15 01 06)	Other plastic packaging (15 01 02)	~ 2.3	0.5	Packaging	
Construction		Inert (17 01 07)	Stone (17 05 04)	~ 0.1	0.1	Standardised materials	
Construction		Plasterboard / Gypsum (17 08 02)	Plasterboard (17 08 02)	~ 3.0	1.0	Other	Off cuts
Construction		Timber (17 02 01)	Wood other than that mentioned in 20 01 37 (20 01 38)	~ 5.3	1.0	Other	Off cuts & stillage protections
Construction		Floor coverings (soft) (20 01 11)	Vinyl (17 02 03)	~ 0.4	0.1		Off cuts
Construction	Kipling Contracts UK	Plasterboard / Gypsum (17 08 02)	Plaster (17 08 02)	~ 0.3	0.1		Spillages & extra-over
Construction		Plasterboard / Gypsum (17 08 02)	Ceiling tiles (17 08 02)	~ 0.2	0.1		Off cuts
Construction		Metals (17 04 07)	Iron and steel (17 04 05)	~ 0.5	0.2		Off cuts, ductwork, tray, trunking, studding and the like
Construction		Canteen/Office/Adhoc waste (20 03 01)	Adhoc waste (20 03 01)	~ 4.8	1.0		General office, kitchen & canteen waste
Construction	Courdec UK	Waste paint & varnish (non-hazardous) (08 01 12)	Waste adhesives and sealants other than those mentioned in 08 04 09* (08 04 10)	~ 0.0	0.0		Paint tubs & mastic tubes
Roofing							Off cuts,

Work Package	Subcontractor	Waste type	Waste Sub Type	Estimate amount (m3)	Estimate amount (tonnes)	Likely cause	Notes
		Other waste	Waste not otherwise specified (16 07 99)	~ 0.8	0.1		singly ply membrane & roof insulation
Construction		Insulation materials (non hazardous) (17 06 04)		~ 0.2	0.1		Off cuts, roof insulation, lagging & floor
Remediation		Hazardous waste*	Other C&D wastes containing dangerous substances (17 09 03*)	0.0	1,000.0		
Remediation		Soil and stones other than those mentioned in 17 05 03 (17 05 04)		0.0	10,000.0	Remediation	
Groundworks & excavation		Soil and stones other than those mentioned in 17 05 03 (17 05 04)		0.0	10,000.0	Excavation	
Total				**18.1**	**21,004.4**		

Waste management options

Supporting documents uploaded (evidence of procedures etc.): 6669152_sl_Pre-demo-Audit_CEMP_H-S-Plan.zip

Waste type		Reduce (%)	Reuse (%)	Direct Recycle (%)	Recovery (%)	Energy Recovery (%)	Landfilled/ Disposal (%)	Container type	Waste Management contractor	Exemptions
Insulation materials (non hazardous) (17 06 04)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Soil and stones other than those mentioned in 17 05 03 (17 05 04)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Stone (17 05 04)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Iron and steel (17 04 05)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Plasterboard (17 08 02)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Ceiling tiles (17 08 02)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Plaster (17 08 02)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Vinyl (17 02 03)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Adhoc waste (20 03 01)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Construction	onsite	0%	0%	0%	0%	0%	0%			

Waste type		Reduce (%)	Reuse (%)	Direct Recycle (%)	Recovery (%)	Energy Recovery (%)	Landfilled/ Disposal (%)	Container type	Waste Management contractor	Exemptions
materials containing asbestos (17 06 05*)	offsite	0%	0%	0%	0%	0%	0%			
Other C&D wastes containing dangerous substances (17 09 03*)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Other plastic packaging (15 01 02)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Waste adhesives and sealants other than those mentioned in 08 04 09* (08 04 10)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Waste not otherwise specified (16 07 99)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Wood other than that mentioned in 20 01 37 (20 01 38)	onsite	0%	0%	0%	0%	0%	0%			
	offsite	0%	0%	0%	0%	0%	0%			
Overall target		0%	0%	0%	0%	0%	0%			

Duty of care

Waste Management Contractor Name	Waste carrier license number	Issue date	Expiry date	Waste Transfer notes storage location
COLLARD ENVIRONMENT LTD				
Waste site name			**Recycling rates added**	
			generic	**product specific**
READING WASTE IN			✓	✓
European Metal Recycling Limited	CBDU188448	15/8/2023	21/8/2026	Section 8 of Viewpoint for Projects
Waste site name			**Recycling rates added**	
			generic	**product specific**
European Metal Recycling - Edmonton	EPR/HB3604TQ/T001	21/8/2019	✗	✗
Hill Demolition	CBDU78812	4/1/2022	3/2/2025	
John Mould	CBDU173096	6/4/2023	29/4/2026	Reading Quarry
Waste site name			**Recycling rates added**	
			generic	**product specific**
Cambridge Transfer Station	EPR/AP3495EC	6/2/2017	✓	✗
John Mould - Reading Quarry	EPR/HP3097LJ	10/1/2011	✓	✓
Sutton Courtenay Landfill Site	EPR/BV7001IK	23/2/2010	✓	✗
Witcham Meadlands Landfill Site	EPR/LP3996ND	20/6/2017	✓	✗
Oran Transport	CBDU180726	16/5/2023	29/5/2026	
Waste site name			**Recycling rates added**	
			generic	**product specific**
FCC Sutton Courtenay	EPR/BV7001IK	23/2/2010	✓	✗
R Collard Ltd (Collard Environmental)	EPR/QP3490EA	4/3/2022	23/3/2025	
Waste site name			**Recycling rates added**	
			generic	**product specific**

Waste Management Contractor Name	Waste carrier license number	Issue date	Expiry date	Waste Transfer notes storage location
R Collard Ltd (Collard Environmental) - Reading	EPR/EB3500KB	11/10/2016	✓	✓
R. Collard Special Waste Transfer Station	EPR/QP3490EA/V002	8/12/2011	✓	✗
SOIL & WATER SOLUTIONS LIMITED	CBDU127229	15/9/2022	8/10/2025	

Waste site name			Recycling rates added	
			generic	product specific
Wexham Park Golf Club - A25 : Deposit of waste to land as a recovery operation	EPR/JB3102FY	3/2/2021	✓	✓

Please note, there is no longer a requirement for any premises in England to register with the Environment Agency, even if they produce or store over 500kg of hazardous waste per year.

Have you registered with Natural Resources Wales (NRW) as a hazardous waste producer?

If so, please provide your hazardous waste registration number:

Date of issue: Date of expiry:

Training / Communication

Training

Everyone on site should receive relevant training which should include:

- The SWMP
- Roles and responsibilities
- Waste procedures on site
- Hazardous waste
- Duty of care / responsibilities
- Materials storage.

The following types of training are being undertaken:

Induction : ✓
Tool box talks : ✓
Workshops :
Other : ✓ Weekly Internal Site Team Meetings

The training log is kept at: Jean Harries, B+K Southern Regional Secretary, j.harries@bandk.co.uk

This table can also be used as a training log

Name	Company	Date	Who trained by	Type of training	Date next training due

Communication

The plan is being communicated by:

Meetings : ✓
Posters :
Feedback from staff :
other, please state :

SMARTWASTE

Site Waste Management Plan for River Academy

Date:Mon Jul 08 16:42:32 BST 2024

Waste Data

If you have entered any waste data then it will be summarised below.

Tonnage		
Total waste generated to date		19,412.6 t
Percentage segregated		90%
Project - waste per 100m^2 of floor area (t /100m^2)		48.7
Project - waste per £100K of project cost (t /£100K)		43.1
Reused on site		0.0 t
Reused off site		9,732.1 t
Total reused	9,732.1 t	50.1%
Recycled on site		0.0 t
Recycled off site		3,041.2 t
Total recycled	3,041.2 t	15.7%
Recovered on site		0.0 t
Total recovered off site at licensed facilities		132.4 t
Total recovered	132.4 t	0.7%
Energy Recovered on site		0.0 t
Total Energy recovered off site at licensed facilities		1.0 t
Total Energy recovered	1.0 t	0.0%
Disposed off site		0.0 t
Disposed from licensed facilities		6,505.8 t
Total disposed	6,505.8 t	33.5%
Total waste diverted from landfill	12,906.8 t	66.5%

SMARTWASTE

Site Waste Management Plan for River Academy

Date:Mon Jul 08 16:42:32 BST 2024

Waste types and routes

Project Performance	Tonnage	Mixed	Segregated	Waste management routes percentages					tonnes/100m^2	tonnes / £100k
	(tonnes)	(%)	(%)	Reuse	Recovery	Recycle	Disposal	Energy Recovery		
Bricks (17 01 02)	0.00	0	100	-	-	-	-	-	0.0	0.0
Tiles and Ceramics (17 01 03)	0.00	0	100	-	-	-	-	-	0.0	0.0
Concrete (17 01 01)	129.08	0	100	100	0	0	0	0	0.3	0.3
Inert (17 01 07)	4464.86	1	99	48	1	52	0	0	11.2	9.9
Insulation materials (non hazardous) (17 06 04)	0.00	0	100	-	-	-	-	-	0.0	0.0
Metals (17 04 07)	179.94	98	2	0	1	99	0	0	0.5	0.4
Packaging materials (15 01 06)	0.60	100	0	0	100	0	0	0	0.0	0.0
Plasterboard / Gypsum (17 08 02)	99.00	3	97	97	3	0	0	0	0.2	0.2
Binders (17 01 01)	0.00	0	100	-	-	-	-	-	0.0	0.0
Plastic (excluding packaging waste) (17 02 03)	0.18	100	0	0	100	0	0	0	0.0	0.0
Timber (17 02 01)	37.61	16	84	84	16	0	0	0	0.1	0.1
Floor coverings (soft) (20 01 11)	0.25	100	0	0	100	0	0	0	0.0	0.0
Electrical and electronic equipment (non hazardous) (20 01 36 or 16 02 14)	0.00	0	100	-	-	-	-	-	0.0	0.0
Bulky waste / Furniture (20 03 07)	0.00	0	100	-	-	-	-	-	0.0	0.0
Canteen/Office/Adhoc waste (20 03 01)	0.85	100	0	0	99	0	0	1	0.0	0.0
Liquids (16 10 02)	0.00	0	100	-	-	-	-	-	0.0	0.0
Waste paint & varnish (non-hazardous) (08 01 12)	0.00	0	100	-	-	-	-	-	0.0	0.0

Project Performance	Tonnage	Mixed	Segregated	Waste management routes percentages					tonnes/100m^2	tonnes / £100k
	(tonnes)	(%)	(%)	Reuse	Recovery	Recycle	Disposal	Energy Recovery		
Oils (13 01 13*)	0.00	0	100	-	-	-	-	-	0.0	0.0
Soil and stones other than those mentioned in 17 05 03 (17 05 04)	12958.09	0	100	57	0	4	39	0	32.5	28.8
Bituminous mixtures (non hazardous e.g. asphalt) (17 03 02)	0.00	0	100	-	-	-	-	-	0.0	0.0
Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation) (19 02)	0.00	0	100	-	-	-	-	-	0.0	0.0
Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified (19 12)	3.23	100	0	0	100	0	0	0	0.0	0.0
Wastes from soil and groundwater remediation (19 13)	0.00	0	100	-	-	-	-	-	0.0	0.0
Hazardous waste*	1409.97	100	0	0	1	0	99	0	3.5	3.1
Other waste	1.73	9	91	91	9	0	0	0	0.0	0.0
Mixed construction and/or demolition waste (17 09 04)	127.20	100	0	0	66	0	33	1	0.3	0.3

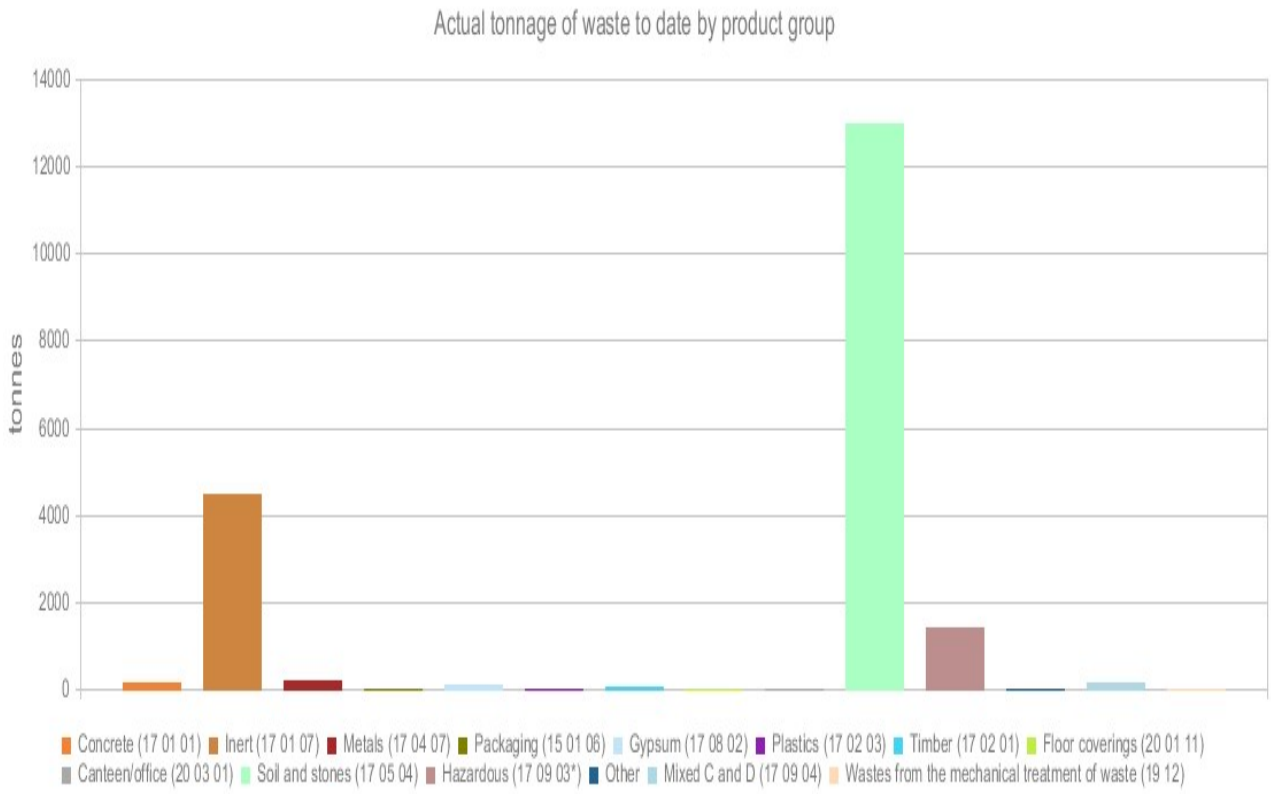
SMARTWASTE

Site Waste Management Plan for River Academy

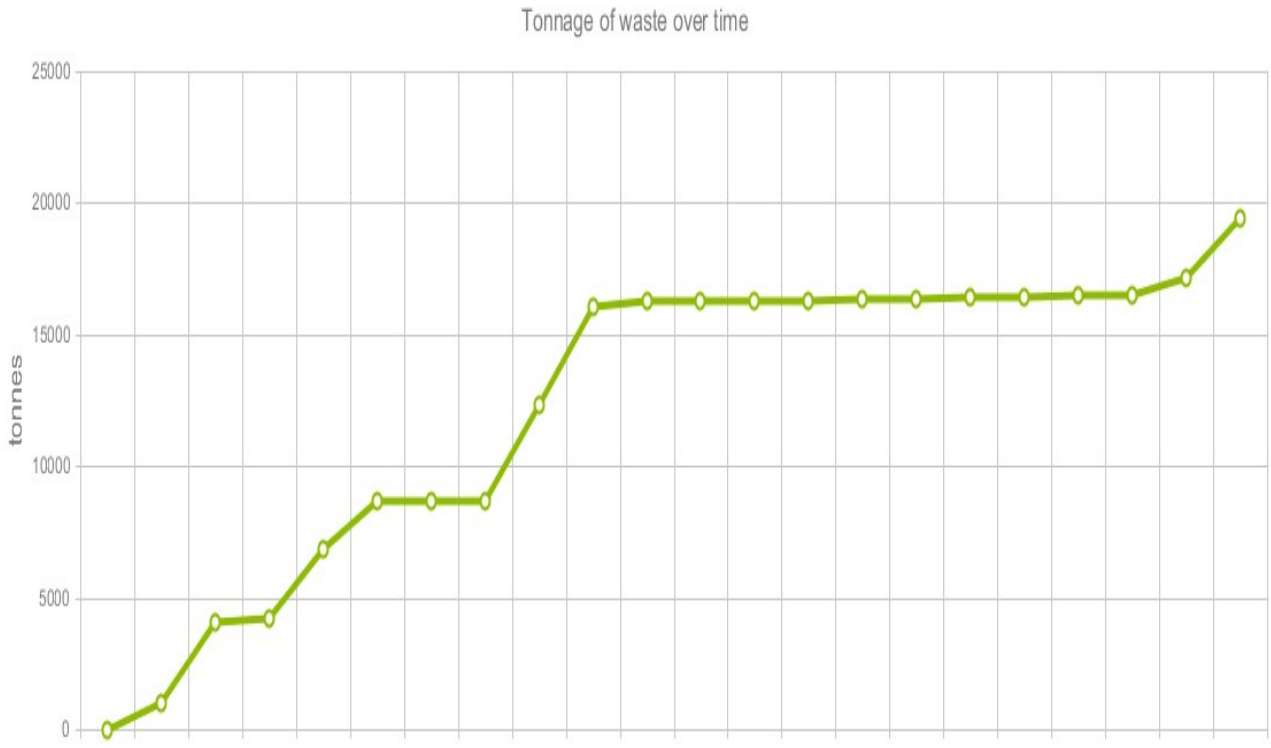
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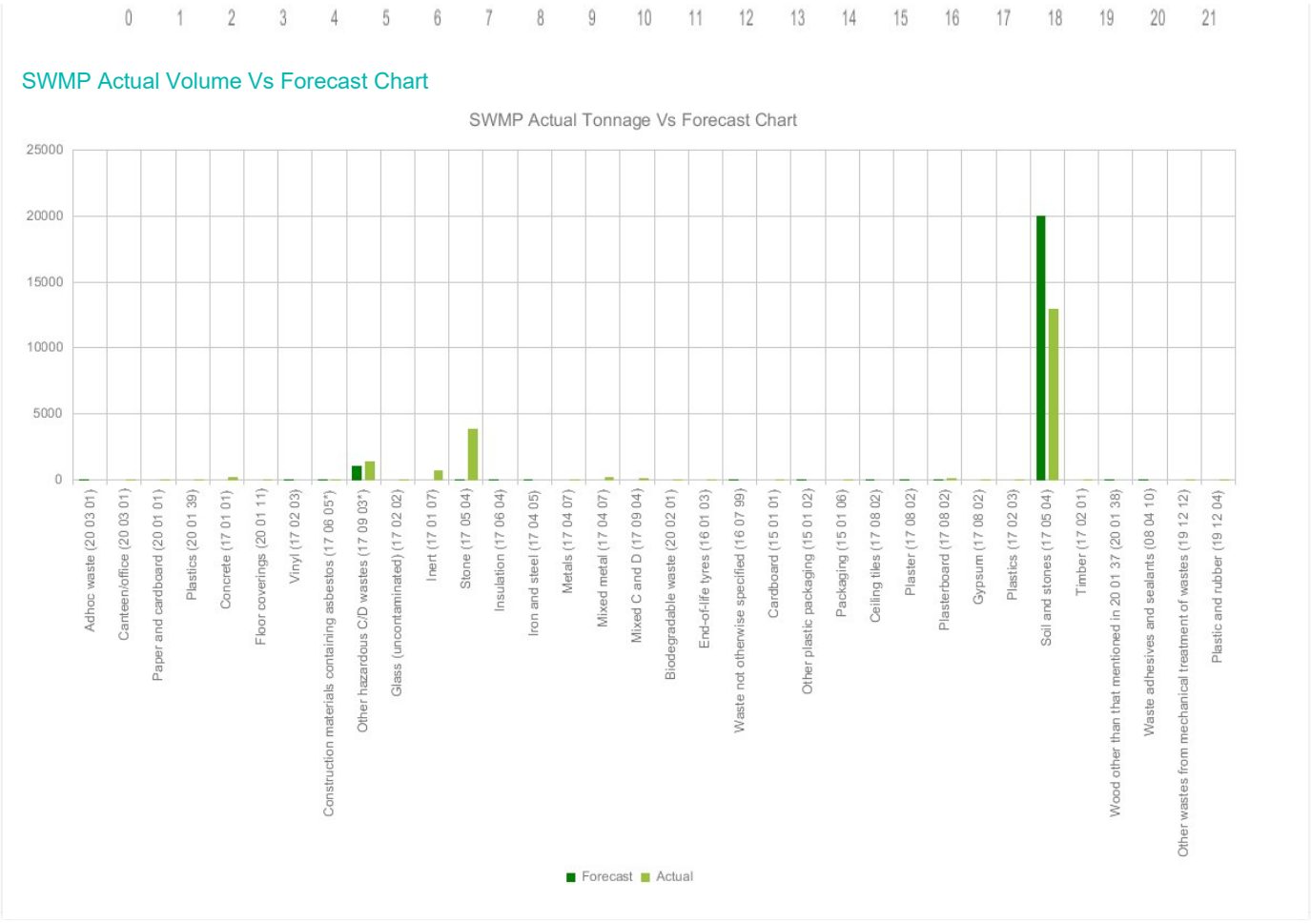
Summary Charts

Actual tonnage of waste to date by product group



Tonnage of waste over time





SWMP Actual Volume Vs Forecast Chart

SMARTWASTE

Site Waste Management Plan for River Academy

Date:Mon Jul 08 16:42:32 BST 2024

Current actual waste quantities versus forecasted quantities

Waste type	Waste Sub Type	Forecast quantity (tonnes)	Actual (tonnes)	Difference	% Difference
Canteen/Office/Adhoc waste (20 03 01)	Adhoc waste (20 03 01)	1.0	0.0	1.0	-100.0
Canteen/Office/Adhoc waste (20 03 01)		0.0	0.1	-0.06	-
Canteen/Office/Adhoc waste (20 03 01)	Paper and cardboard (20 01 01)	0.0	0.7	-0.69	-
Canteen/Office/Adhoc waste (20 03 01)	Plastics (20 01 39)	0.0	0.1	-0.1	-
Concrete (17 01 01)		0.0	129.1	-129.08	-
Floor coverings (soft) (20 01 11)		0.0	0.3	-0.25	-
Floor coverings (soft) (20 01 11)	Vinyl (17 02 03)	0.1	0.0	0.1	-100.0
Hazardous waste*	Construction materials containing asbestos (17 06 05*)	0.1	10.0	-9.9	9900.0
Hazardous waste*	Other C&D wastes containing dangerous substances (17 09 03*)	1000.0	1400.0	-399.97	40.0
Inert (17 01 07)	Glass (uncontaminated) (17 02 02)	0.0	0.2	-0.24	-
Inert (17 01 07)		0.0	680.0	-679.99	-
Inert (17 01 07)	Stone (17 05 04)	0.1	3784.6	-3784.53	3784530.0
Insulation materials (non hazardous) (17 06 04)		0.1	0.0	0.05	-100.0
Metals (17 04 07)	Iron and steel (17 04 05)	0.2	0.0	0.2	-100.0
Metals (17 04 07)		0.0	1.0	-0.96	-
Metals (17 04 07)	Mixed metal (17 04 07)	0.0	179.0	-178.98	-
Mixed construction and/or demolition waste (17 09 04)		0.0	127.2	-127.2	-
Other waste	Biodegradable waste (20 02 01)	0.0	0.2	-0.15	-
Other waste	End-of-life tyres (16 01 03)	0.0	1.6	-1.58	-
Other waste	Waste not otherwise specified (16 07 99)	0.1	0.0	0.15	-100.0
Packaging materials (15 01 06)	Cardboard (15 01 01)	0.0	0.6	-0.57	-
Packaging materials (15 01 06)	Other plastic packaging (15 01 02)	0.5	0.0	0.5	-100.0

Waste type	Waste Sub Type	Forecast quantity (tonnes)	Actual (tonnes)	Difference	% Difference
Packaging materials (15 01 06)		0.0	0.0	-0.03	-
Plasterboard / Gypsum (17 08 02)	Ceiling tiles (17 08 02)	0.1	0.0	0.05	-100.0
Plasterboard / Gypsum (17 08 02)	Plaster (17 08 02)	0.1	0.0	0.1	-100.0
Plasterboard / Gypsum (17 08 02)	Plasterboard (17 08 02)	1.0	96.0	-94.96	9496.0
Plasterboard / Gypsum (17 08 02)		0.0	3.0	-3.04	-
Plastic (excluding packaging waste) (17 02 03)		0.0	0.2	-0.18	-
Soil and stones other than those mentioned in 17 05 03 (17 05 04)		20000.0	12958.1	7041.91	-35.21
Timber (17 02 01)		0.0	37.6	-37.61	-
Timber (17 02 01)	Wood other than that mentioned in 20 01 37 (20 01 38)	1.0	0.0	1.0	-100.0
Waste paint & varnish (non-hazardous) (08 01 12)	Waste adhesives and sealants other than those mentioned in 08 04 09* (08 04 10)	0.0	0.0	0.02	-100.0
Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified (19 12)	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (19 12 12)	0.0	3.0	-3.03	-
Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified (19 12)	Plastic and rubber (19 12 04)	0.0	0.2	-0.2	-

		Forecast %	Actual %		
Reuse		0	50.1		
Direct recycle		0	15.7		
Recovery		0	0.7		
Energy Recovery		0	0.0		
Landfilled/Disposal		0	33.5		

Ongoing review of implementation

This table logs any changes that may have been made to the SWMP.
Snapshots captured (Can be viewed in SmartWaste)

Date	Name	Summary/ Actions carried out
7/2/2024	Hayley Nickolay	All latest waste data via the on-site skips (supplied by Collard Environmental) uploaded to SmartWaste, which is up to & including 02.02.2024. SWMP up to date as at 05.02.2024. The latest version of the SWMP has been issued to the River Academy site team for info purposes. Also available on Viewpoint 4P.
20/5/2024	Hayley Nickolay	All latest waste data for B+K, Fenton Civil Engineering and Kipling Contracts uploaded to SmartWaste, which is up to & including 16.05.2024. All waste taken from site is currently via skips as supplied by Collard Environmental. SWMP up to date as at today's date (20.05.2024). HN in regular contact with all Sub-Contractors to ensure that all waste info for River Academy is provided; and continuing to check the skip provider's online portal for all latest B+K Tickets / WTNs. The latest version of the SWMP has been issued to the River Academy site team for info purposes, and is also available on Viewpoint 4P.
8/7/2024	Hayley Nickolay	'J Mould' are currently in the process of removing waste from the triangular section at the front of the site, which is in preparation for handover to Festival Republic for the next Reading Festival; and also for handover of the project overall. Some of the loads contain a very slight percentage of Asbestos (generally <0.1%), and although on the WTNs they are classed as non-hazardous, the disposal / tipping site are unable to remove the Asbestos and therefore cannot reuse or recycle. As a result, the loads are going to landfill. This is general muck away / soil & stone. I have added a note against each relevant WTN entry on SmartWaste stating the same. All 'J Mould' waste data has been uploaded to SmartWaste, which is up to & including 28.06.2024. All other waste from site is via the skips (supplied by Collard Environmental), and all latest skip waste data has been uploaded to SmartWaste, which is up to & including 01.07.2024. SWMP is up to date as at today's date (08.07.2024). The latest version of the SWMP has been issued to the River Academy site team for info purposes. Also available on Viewpoint 4P.

Completion review

This section must be filled in within 3 months of the work being completed on this project (i.e. project finish):

We confirm that the plan has been monitored on a regular basis to ensure that work was progressing to the plan and the plan was updated:

Signature

Print name

Date

This stage is designed to help you evaluate the success of your SWMP, and to identify key ‘lessons learnt’ to use on your future project, it is helping you strive for continual improvement.

Please review how successful you believe the implementation of the SWMP was:
SUCCESSFUL

Please explain any deviation from the original plan:
NONE

Estimate of cost savings achieved: £0

Action planned for next project:
NONE

Please provide a comparison of the estimated quantities of each waste type against the actual quantities.
If you have used SmartWaste for measuring waste on this project, the data supplied in step 9 will help with this)
NONE

SMARTWASTE

Site Waste Management Plan for River Academy

Date:Mon Jul 08 16:42:32 BST 2024

Snapshot of Actual versus Forecast waste on 7/5/2024

Waste type	Forecast (tonnes)	Actual (tonnes)	% Difference	Comments
Adhoc waste (20 03 01)	1.0	0.0	-100.0	
Biodegradable waste (20 02 01)	0.0	0.2	-	
Canteen/Office/Adhoc waste (20 03 01)	0.0	0.1	-	
Cardboard (15 01 01)	0.0	0.6	-	
Ceiling tiles (17 08 02)	0.1	0.0	-100.0	
Concrete (17 01 01)	0.0	116.5	-	
Construction materials containing asbestos (17 06 05*)	0.1	10.0	9,900.0	
End-of-life tyres (16 01 03)	0.0	1.6	-	
Floor coverings (soft) (20 01 11)	0.0	0.3	-	
Glass (uncontaminated) (17 02 02)	0.0	0.2	-	
Inert (17 01 07)	0.0	680.0	-	
Insulation materials (non hazardous) (17 06 04)	0.1	0.0	-100.0	
Iron and steel (17 04 05)	0.2	0.0	-100.0	
Metals (17 04 07)	0.0	1.0	-	
Mixed construction and/or demolition waste (17 09 04)	0.0	108.5	-	
Mixed metal (17 04 07)	0.0	177.8	-	
Other C&D wastes containing dangerous substances (17 09 03*)	1,000.0	1,400.0	40.0	
Other plastic packaging (15 01 02)	0.5	0.0	-100.0	
Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (19 12 12)	0.0	3.0	-	
Packaging materials (15 01 06)	0.0	0.0	-	
Paper and cardboard (20 01 01)	0.0	0.7	-	
Plaster (17 08 02)	0.1	0.0	-100.0	
Plasterboard (17 08 02)	1.0	8.6	764.0	
Plasterboard / Gypsum (17 08 02)	0.0	3.0	-	
Plastic (excluding packaging waste) (17 02 03)	0.0	0.2	-	
Plastic and rubber (19 12 04)	0.0	0.2	-	
Plastics (20 01 39)	0.0	0.1	-	
Soil and stones other than those mentioned in 17 05 03 (17 05 04)	20,000.0	12,119.4	-39.4	

Waste type	Forecast (tonnes)	Actual (tonnes)	% Difference	Comments
Stone (17 05 04)	0.1	1,706.0	1,705,870.0	
Timber (17 02 01)	0.0	32.1	-	
Vinyl (17 02 03)	0.1	0.0	-100.0	
Waste adhesives and sealants other than those mentioned in 08 04 09* (08 04 10)	0.0	0.0	-100.0	
Waste not otherwise specified (16 07 99)	0.1	0.0	-100.0	
Wood other than that mentioned in 20 01 37 (20 01 38)	1.0	0.0	-100.0	
Totals:	**21,004.4**	**16,369.9**	-22.1	

Confirmation (within 3 months)

Confirmation (within 3 months) :

Signature

Print name

Date

This plan should be kept at either the principal contractor's place of business or at the site of the project for 2 years

Appendix

Appendix 1: Cost data

Cost data is summarised below

Summary information	
Total cost of waste removal	£0.00
Waste cost/£100K	£0.00
Waste cost/100m^2	£0.00
Waste cost as % of project cost	0.0%
Waste cost/tonne	£0.00

Waste types and routes	
Cost of non-hazardous waste / tonne	£0.00
Cost of inert waste / tonne	£0.00
Cost of hazardous waste / tonne	£0.00

Hazardous waste removal cost as a % of total waste removal cost	0%
Segregated waste removal cost as a % of total waste removal cost	0%
Mixed waste removal cost as a % of total waste removal cost	0%
Inert waste removal cost as a % of total waste removal cost	0%
Active waste removal cost as a % of total waste removal cost	0%

Appendix 2: Subcontractors

- Courdec UK
- Derry Building Services
- Fenton Civil Engineering
- Hill Demolition LLP
- Innovare Offsite
- Kipling Contracts UK
- Marksman Roofing + Cladding
- Toureen Contractors

Appendix 3: Users

- Alina Sacalus
- Hayley Nickolay
- Jason Lester
- Keith McGinness

- Kerri Summerfield
- Max Nugent
- Neil Loveys
- Nick Hills
- Paul Wills
- Perry Goodhew

Appendix P

Example Waste Transfer Notes and EA Documentation

Certificate of Registration under the Waste (England and Wales) Regulations 2011

Regulation authority

Name	Environment Agency
Address	National Customer Contact Centre 99 Parkway Avenue Sheffield S9 4WF
Telephone number	03708 506506

The Environment Agency certify that the following information is entered in the register which they maintain under regulation 28 of the Waste (England and Wales) Regulations 2011.

Carriers details

Name of registered carrier	John Mould trading as J Mould (Reading)
Business name (if applicable)	J Mould (Reading)
Registered as	An upper tier waste carrier, broker and dealer
Registration number	CBDU173096
Address of place of business	J MOULD (READING) HYDECRETE PIT BURGHFIELD BRIDGE BURGHFIELD READING RG30 3XN
Telephone number	(01189) 512222
Date of registration	6 April 2023
Expiry date of registration (unless revoked)	29 April 2026

Making changes to your registration

Your registration will last 3 years and will need to be renewed after this period. If any of your details change, you must notify us within 28 days of the change.

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

John Mould

Reading Quarry Landfill
Berry`s Lane
Burghfield Bridge
Pingewood
Reading
Berkshire
RG30 3XA

Permit number

EPR/HP3097LJ

Reading Quarry Landfill
Permit Number EPR/HP3097LJ

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

Reading Quarry is a disused sand and gravel quarry located adjacent to the M4 motorway at grid ref SU 679 699. The proposal is to fill the quarry void with inert waste. The site area is six hectares.

The site will be filled in a progressive sequence from east to west within 3 phases.

The Western part of the site will be retained as an infiltration lagoon.

The status log of the permit sets out the permitting history, including any changes to the permit reference number

Status Log of the permit		
Detail	**Date**	**Comments**
Application EPR/HP3097LJ/A001	Duly made 02/06/10	
Additional Information Received	21/11/10	E mail re noise, gas, and stability,
	06/12/10	E mail re groundwater quality results
Permit determined	10/01/11	

End of Introductory Note

The Environmental Permitting (England and Wales) Regulations 2010

Permit

Permit number
EPR/HP3097LJ

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

John Mould ("the operator"),

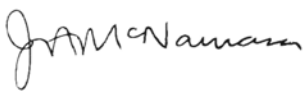
Of

1 Pingewood Close
Burghfield Bridge
Reading
Berkshire
RG30 3XT

to operate *waste operations* at

Reading Quarry Landfill
Berry`s Lane
Burghfield Bridge
Pingewood
Reading
Berkshire
RG30 3XA

to the extent authorised by and subject to the conditions of this permit.

Name Jane McNamara	Date
	**10/01/11**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.1.4 The operator shall comply with the requirements of an approved competence scheme

1.2 Finance

1.2.1 No activities authorised by this Permit shall be commenced unless the Operator has entered into an Agreement with the Agency to secure financial provision for meeting the obligations under this Permit and has provided the provision.

1.2.2 The Operator shall give prior notice to the Agency of its intention to commence operations at the site.

1.2.3 The Financial Provision provided under condition 1.2.1 above shall thereafter be maintained by the Operator throughout the subsistence of the Permit and the Operator shall produce evidence of such provision whenever required by the Agency.

1.2.4 The operator shall ensure that the charges it makes for the disposal of waste in the landfill cover all of the following:

(a) the costs of setting up and operating the landfill;

(b) the costs of the financial provision required by condition 1.2.1; and

(c) the estimated costs for the closure and aftercare of the landfill.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit

2.3 Operating techniques

2.3.1 (a) the activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

(b) If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan specified in schedule 1, table S1.2 or otherwise required under this permit, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.4 Preoperational Conditions

2.4.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4A have been completed.

2.5 Landfill Engineering

2.5.1 No construction of any new cell shall commence until the operator has submitted construction proposals and the Environment Agency has confirmed that it is satisfied with the construction proposals.

2.5.2 The construction of a new cell shall take place only in accordance with the approved construction proposals unless:

(a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or

(b) a change has otherwise been agreed in writing by the Environment Agency.

2.5.3 The operator shall prepare a CQA Validation Report to cover every six month period of construction of the new cell. The operator shall submit the CQA validation report to the Environment Agency as soon as practicable.

2.5.4 No construction of landfill infrastructure shall commence until the operator has submitted relevant construction proposals or a written request to use previous construction proposals and the Environment Agency has confirmed that it is satisfied with the construction proposals.

2.5.5 The construction of the landfill infrastructure shall take place only in accordance with the approved construction proposals unless:

(a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or

(b) a change has otherwise been agreed in writing by the Environment Agency.

2.5.6 The operator shall submit a CQA Validation Report as soon as practicable following the construction of the landfill infrastructure.

2.5.7 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.5.4 and 2.5.5 do not apply and the relevant landfill infrastructure may be constructed, provided that the construction proposals are submitted to the Environment Agency as soon as practicable.

2.5.8 For the purposes of conditions 2.5.1, 2.5.3 and 2.5.4, the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the relevant construction proposals or CQA Validation Report, either:

(a) confirmed whether or not it is satisfied; or

(b) informed the operator that it requires further information.

2.5.9 Where the Environment Agency has required further information under condition 2.5.8(a), the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the further information, either:

(a) confirmed whether or not it is satisfied; or

(b) informed the operator that it requires further information.

2.6 Waste acceptance

2.6.1 Wastes shall only be accepted for disposal if:

(a) they are listed in schedule 2, and

(b) they are inert waste, and

(c) they are not liquid waste (including waste waters but excluding sludge), and

(d) all the relevant waste acceptance procedures have been completed, and

(e) they fulfil the relevant waste acceptance criteria, and

(f) they have not been diluted or mixed solely to meet the relevant waste acceptance criteria, and

(g) they are wastes which have been treated, except for wastes for which treatment is not technically feasible.

2.6.2 The operator shall visually inspect:

(a) without unloading it, waste that is not in an enclosed container or enclosed vehicle on arrival at the landfill; and

(b) waste at the point of deposit;

and shall satisfy itself that it conforms to the basic characterisation documentation submitted by the holder

2.6.3 Where the operator has taken samples to establish that the waste is in conformity with the documentation submitted by the holder then the samples taken shall be retained for at least one month and results of any analysis for at least two years.

2.6.4 The operator on accepting each delivery of waste shall provide a receipt to the person delivering it.

2.6.5 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on the drawing as required under the preoperational condition of Schedule 1 Table S1.4A Ref 1

2.6.6 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in schedule 1 table S1.5.

2.6.7 The operator shall maintain and implement a system which ensures that a record is made of the quantity, characteristics, date of delivery and, where practicable, origin of any waste that is received for disposal or recovery and of the identity of the producer, or in the case of multiple collection vehicles, of the collector of such waste. Any information regarded by the operator as commercially confidential shall be clearly identified in the record.

2.7 Closure and aftercare

2.7.1 The operator shall maintain a closure and aftercare management plan.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3, tables 3.2, 3.5 and 3.7

3.1.2 Final trigger levels for surface water shall be set in agreement with the Environment Agency for the following determinands: chloride, ammoniacal nitrogen and sulphate. The final trigger levels shall replace those interim levels speciied in Schedule 3 Table 3.5 and shall not be exceeded.

3.1.3 The limits for landfill gas arising from the facility set out in schedule 3, tables S3.3 shall not be exceeded.

3.1.4 The limits for particulate matter arising from the facility set out in schedule 3, table S3.7, shall not be exceeded.

3.1.5 The operator shall submit to the Environment Agency a review of the Hydrogeological Risk Assessment:

(a) between nine and six months prior to the sixth anniversary of the granting of the permit, and

(b) between nine and six months prior to every subsequent six years after the sixth anniversary of the granting of the permit.

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan;

(b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Noise and vibration

3.3.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.3.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Monitoring

3.4.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring and any other actions for the parameters specified in the following tables in schedule 3 to this permit:

(a) Point source emissions specified in Schedule 3

(b) Groundwater specified in table S3.2 and S3.6

(c) Landfill gas specified in table S3.3 and S3.4

(d) Surface water specified in table S3.5

(e) Particulate matter specified in table S3.7

3.4.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.4.3 A topographical survey of the site referenced to Ordnance Datum shall be carried out:

(a) annually, or prior to the disposal of waste in any new cell or new development area of the landfill whichever is the shorter period, and

(b) following closure of the landfill or part of the landfill.

The topographical survey shall be used to produce a plan of a scale adequate to show the surveyed features of the site.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) the results of groundwater monitoring;

(ii) landfill gas monitoring;

(iii) waste types and quantities;

(iv) the specification and as built drawings of the basal and sidewall engineering systems

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

(a) a review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the risk assessments submitted in relation to this facility and any agreed amendments thereto;

(b) the topographical surveys required by condition 3.4.3 other than those submitted as part of a CQA validation report;

(c) the volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographical survey i.e. the additional volume of the landfill void that is occupied by waste;

(d) an assessment of the settlement behavior of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;

(e) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey;

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

(a) in respect of the parameters and emission points specified in schedule 4 table S4.1;

(b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.3; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 Within one month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

4.3 Notifications

4.3.1 The Environment Agency shall be notified without delay following the detection of:

(a) any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution;

(b) the breach of a limit specified in the permit; or

(c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

(a) any change in the operator's trading name, registered name or registered office address; and

(b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

In any other case:

(a) the death of any of the named operators (where the operator consists of more than one named individual);

(b) any change in the operator's name(s) or address(es); and

(c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "without delay", in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities	
Description of activities	**Limits of activities**
D1: Deposit into or on to land Landfill for inert waste (landfill classification under the Landfill Regulations 2002)	The deposit of inert waste into or onto land. Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in conditions 2.6, as an integral part of landfilling. Or for temporary deposits The storage of inert waste on land prior to disposal for a period greater than 1 year. Or The storage of inert waste on land prior to recovery or treatment for a period greater than 3 years.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to questions 2.1, 2.2, 2.3, 2.4 and 2.5 in Part B of the application form and the Procedures Manual and Hydrogeological Risk Assessment	02/06/10
Additional Information	All additional Information received by email	21/11/10 and 6/12/10

Table S1.4A Pre-operational measures	
Reference	**Pre-operational measures**
1.	The operator shall submit to the Agency a drawing showing the agreed presettlement levels for the site.
2	The operator shall submit a report containing additional information regarding the elevated concentrations of methane present within boreholes BH07/3A, BH07/3B and BH07/ 4 and the elevated concentrations of carbon dioxide within the perimeter boreholes, especially boreholes BH07/02a, BH07/08 and BH07/10. This report shall include information regarding potential sources for the gas and shall determine whether the movement of this gas may be adversely affected by the infilling of Reading Quarry. Monitoring of gas flow rates shall be undertaken where appropriate. The report shall also consider the potential of this gas to migrate into the proposed landfill including details of any additional mitigation measures required to minimise such migration.

Table S1.5 Annual waste input limits	
Category	**Limit Tonnes/ Year**
Inert Waste	**99,000**

Schedule 2 - List of permitted wastes

Table S2.1 Permitted waste types and quantities that may be accepted without testing at a landfill for inert waste	
Maximum quantity	**Total Inert Waste Limit Tonnes/ Year 99,000**
Waste code	**Description Restrictions**
10 11	**wastes from manufacture of glass and glass products**
10 11 03	waste glass based fibrous materials (only without organic binders)
15 01	**packaging (including separately collected municipal packaging waste)**
15 01 07	glass packaging
17 01	**concrete bricks tiles and ceramics**
17 01 01	concrete Selected C&D waste only(2)
17 01 02	bricks Selected C&D waste only(2)
17 01 03	tiles and ceramics Selected C&D waste only(2)
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06 Selected C&D waste only(2)
17 02	**wood, glass and plastic**
17 02 02	glass
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 04	soil [1] and stones other than those mentioned in 17 05 03 excluding topsoil, peat; excluding soil and stones from contaminated sites.
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 05	glass
20 01	**separately collected fractions (except 15 01)**
20 01 02	glass (Separately collected glass only)
20 02	**garden and park wastes (including cemetery waste)**
20 02 02	soil [1] and stones Only from garden and parks waste; excluding top soil and peat

[1] For the purpose of waste acceptance, soil includes naturally occurring sands and clays

[2] Selected building and demolition waste (C & D waste): with low contents of other types of materials (like metals, plastic, organics, wood, rubber, etc). The origin of the waste must be known.

No C & D waste from buildings, polluted with inorganic or organic dangerous substances, e.g. because of production processes in the construction, soil pollution, storage and usage of pesticides or other dangerous substances,etc, unless it is made clear that the demolished construction was not significantly polluted.

No C & D waste from buildings, treated, covered or painted with materials, containing dangerous substances in significant amounts.

Table S2.2 Permitted waste types and quantities that may be accepted after testing at a landfill for inert waste	
Maximum quantity	Total Inert Waste Limit Tonnes/ Year 99,000
Waste code	**Description**
01 01	**wastes from mineral excavation**
01 01 02	wastes from mineral non metalliferous excavation
01 03	**wastes from physical and chemical processing of metalliferous minerals**
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05
01 04	**wastes from physical and chemical processing of non-metalliferous minerals**
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	waste sand and clays

Table S2.2 Permitted waste types and quantities that may be accepted after testing at a landfill for inert waste	
Maximum quantity	Total Inert Waste Limit Tonnes/ Year 99,000
Waste code	**Description**
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned 01 04 07 and 01 04 11
10 01	**wastes from power stations and other combustion plants (except 19)**
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
10 12	**wastes from manufacture of ceramic goods, bricks, tiles and construction products**
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)
17 09	**other construction and demolition waste**
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 09	minerals (for example sand, stones)

Schedule 3 – Emissions and monitoring

Table S3.2 Trigger levels for emissions into groundwater and monitoring requirements					
Monitoring point reference. Drawing No 2	**Parameter**	**Limit (including unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
Borehole 7/02A	Sulphate	250 mg/l	Spot Sample	Quarterly	Agency guidance 'Monitoring of Landfill Leachate, Groundwater and Surface Water' to the Agency's Monitoring Certification Scheme (MCERTS)
	Chloride	340 mg/l			
	Ammoniacal nitrogen	0.84 mg/l			
	Benzene	0.001 mg/l			
Borehole 7/02B	Sulphate	250 mg/l			
	Chloride	340 mg/l			
	Ammoniacal nitrogen	0.84 mg/l			
	Benzene	0.001 mg/l			
Borehole 7/03A	Sulphate	250 mg/l			
	Chloride	340 mg/l			
	Ammoniacal nitrogen	4.9 mg/l			
	Benzene	0.001 mg/l			
Borehole 7/03B	Sulphate	Not set			
	Chloride	340 mg/l			
	Ammoniacal nitrogen	0.96 mg/l			
	Benzene	0.001 mg/l			

Table S3.3 Landfill gas in external monitoring boreholes – limits and monitoring requirements

Monitoring point Ref. /description	Parameter	Limit (including units)*	Monitoring frequency	Monitoring standard or method
Perimeter monitoring boreholes	Oxygen		Quarterly	In accordance with Environment Agency Guidance LFTGN03 Guidance on the Management of Landfill Gas
	Atmospheric pressure	no limit		
	Meteorological data	no limit		
	Methane. Carbon Dioxide	Methane Carbon Dioxide		
BH07/01a BH07/ 01b BH07/02a BH07/02b BH07/03a BH07/03b BH07/04 BH07/06 BH07/07 BH07/08 BH07/09 BH07/10 BH07/11		No trigger levels set.. This is because there are already high gas levels within certain boreholes This is subject to investigation as a requirement of preoperational condition Schedule 1 Table S1.4 A Ref 2.		

Table S3.4 Landfill gas – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
In-waste monitoring boreholes shall be installed to monitor for landfill gas. (Drawing No ESID 3 .0 as installed)	Methane Carbon Dioxide Oxygen Atmospheric pressure Differential pressure Meteorological Data	Quarterly	In accordance with Environment Agency Guidance LFTGN03 Guidance on the Management of Landfill Gas	Gas monitoring shall be carried out on a quarterly basis on completion of the retrospectively drilled boreholes.

Table S3.5 Surface water – other monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Limit (including units) mg/l**	**Monitoring frequency**	**Monitoring standard or method**
SW1 as shown on ESID 3.0	Chloride, Ammoniacal nitrogen. Benzene Sulphate Electrical conductivity, pH	340 mg/l [1] 0.86 mg/ [1] 0.001 mg/l 250 mg/l [1] None set None set	Quarterly	In accordance with Environment Agency Guidance "Monitoring of Landfill Leachate Groundwater and Surface Water"

[1] Interim levels subject to condition 3 .1. 2

Table S3.6 Groundwater – other monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
All monitoring Boreholes **Up hydraulic gradient** BH 07/01A, , BH07/01B. **Down hydraulic gradient** BH7/02A and BH07/02B BH7/03A and BH07/03B	Groundwater level, electrical conductivity, Chloride, Ammoniacal nitrogen, pH.	Quarterly	As specified in Agency Guidance 'Monitoring of Landfill Leachate, Groundwater and Surface Water'	
	BOD, COD, TOC Sulphate, Total Alkalinity, TON, Sodium, Potassium, Calcium, Magnesium, Iron, Manganese, Cadmium, Chromium, Copper, Mercury, Nickel, Lead, Zinc, Nitrate, Nitrite, Arsenic	Six monthly		
	Hazardous substance screen as per Hydrogeological Risk Asssessment	6 yearly prior to HRA REVIEW		

Table S3.7 Particulate matter dust in ambient air - limits and monitoring requirements					
Monitoring Point Ref. /Description	**Parameter**	**Limit (Including Unit)**	**Reference Period**	**Monitoring Frequency**	**Monitoring Standard or Method**
At any point 1.5m above the site perimeter	Total inhalable dust	2mg of dust per m^3 of air when measured as the ambient concentration of dust	Maximum Daily Mean	Quantitative monitoring to be undertaken if it is identified that problems are being caused and to demonstrate conformance with condition 3.1.4	As agreed in writing with the Environment Agency

Schedule 4 - Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to water Parameters as required by condition 3.4.1			
Groundwater Parameters as required by Schedule 3 Tables S3.2 and S3.6	Boreholes **Up hydraulic gradient** BH 07/01A, , BH07/01B. **Down hydraulic gradient** BH7/02A and BH07/02B BH7/03A and BH07/03B.	Quarterly	10/01/11
Surface water monitoring Parameters as required by Schedule 3 Tables S3.2 and S3.5	SW 1 (as shown on Drawing ESID 3)	Quarterly	10/01/11
Emissions to land Parameters as required by condition 3.4.1			
Landfill gas lateral migration Parameters as required by Schedule 3 Tables S3.3	Perimeter monitoring boreholes BH07/01a, BH07/ 01b, BH07/02a, BH07/02b, BH07/03a, BH07/03b, BH07/04, BH07/06, BH07/07, BH07/08, BH07/09, BH07/10 BH07/11	Quarterly	10/01/11
Other Landfill gas monitoring Parameters as required by Schedule 3 Table S3.4	All in-waste monitoring boreholes Drawing No. ESID 3 Revision 1 dated November 2010	Quarterly	From date of borehole installation
Emissions to air/land Parameters as required by condition 3.4.1			
Particulate matter Parameters as required by Schedule 3 Table S3.7	Site Boundary	Annuallly	10/01/11
Noise /Vibration	Noise sensitive properties off-site. Quantitative monitoring to be undertaken in the event of complaints and to demonstrate conformance with condition 3.3.2	Annually	10/01/11

Table S4.3 Reporting forms		
Media/parameter	**Reporting Format**	**Date of Form**
Controlled water	Form water 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY
Groundwater	Form groundwater 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY
Landfill gas	Form Gas 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY
Particulate matter/ dust	Form Particulate 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY
Waste Return	Waste Return Form RATS2E	DD/MM/YY
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with the Environment Agency	DD/MM/YY

Schedule 5 - Notification

This page outlines the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and Time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	**Notification period**

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B to be supplied as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of *John Mould*

Schedule 6 - Interpretation

"accident" means an accident that may result in pollution.

"annually" means once every year.

"application" means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

"emissions to land" includes emissions to groundwater.

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"emissions of substances not controlled by emission limits" means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit..

"groundwater" means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

"MCERTS" means the Environment Agency's Monitoring Certification Scheme.

"quarter" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"year" means calendar year ending 31 December.

"authorised officer" means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

"Construction Proposals";

- for new cells, means written information at a level of detail appropriate to the complexity and pollution risk, on stability assessment (where relevant) and the construction quality assurance (CQA) programme in relation to the new cell.

- for landfill infrastructure, means the design, specifications of materials selected, stability assessment (where relevant) and the construction quality assurance (CQA) programme in relation to the landfill infrastructure.

"CQA Validation Report" means the final "as built" construction and engineering details of the new cell or of the Landfill Infrastructure. It must provide a comprehensive record of the construction and must include, where relevant:

- The results of all testing required by the CQA programme - this must include the records of any failed tests with a written explanation, details of the remedial action taken, referenced to the appropriate secondary testing;
- Plans showing the location of all tests;
- "As-built" plans and sections of the works;

- Copies of the site engineer's daily records;
- Records of any problems or non-compliance and the solution applied;
- Any other site specific information considered relevant to proving the integrity of the new cell or Landfill Infrastructure;
- Validation by a qualified person that all of the construction has been carried out in accordance with the construction proposals.

"Landfill Infrastructure" means any specified element of the:

- surface water drainage systems;
- groundwater monitoring boreholes;
- landfill gas monitoring boreholes;

within the Site.

"Liquids" means any liquid other than leachate within the landfill.

"New Cell" means any new cell, part of a cell or other similar new area of the Site where waste deposit is to commence after issue of this permit and can comprise:

- groundwater under-drainage system;
- sub-grade;
- artificially established geological barriers;
- cell or area surface water drainage system;
- side wall subgrade and containment systems;

for the new cell.

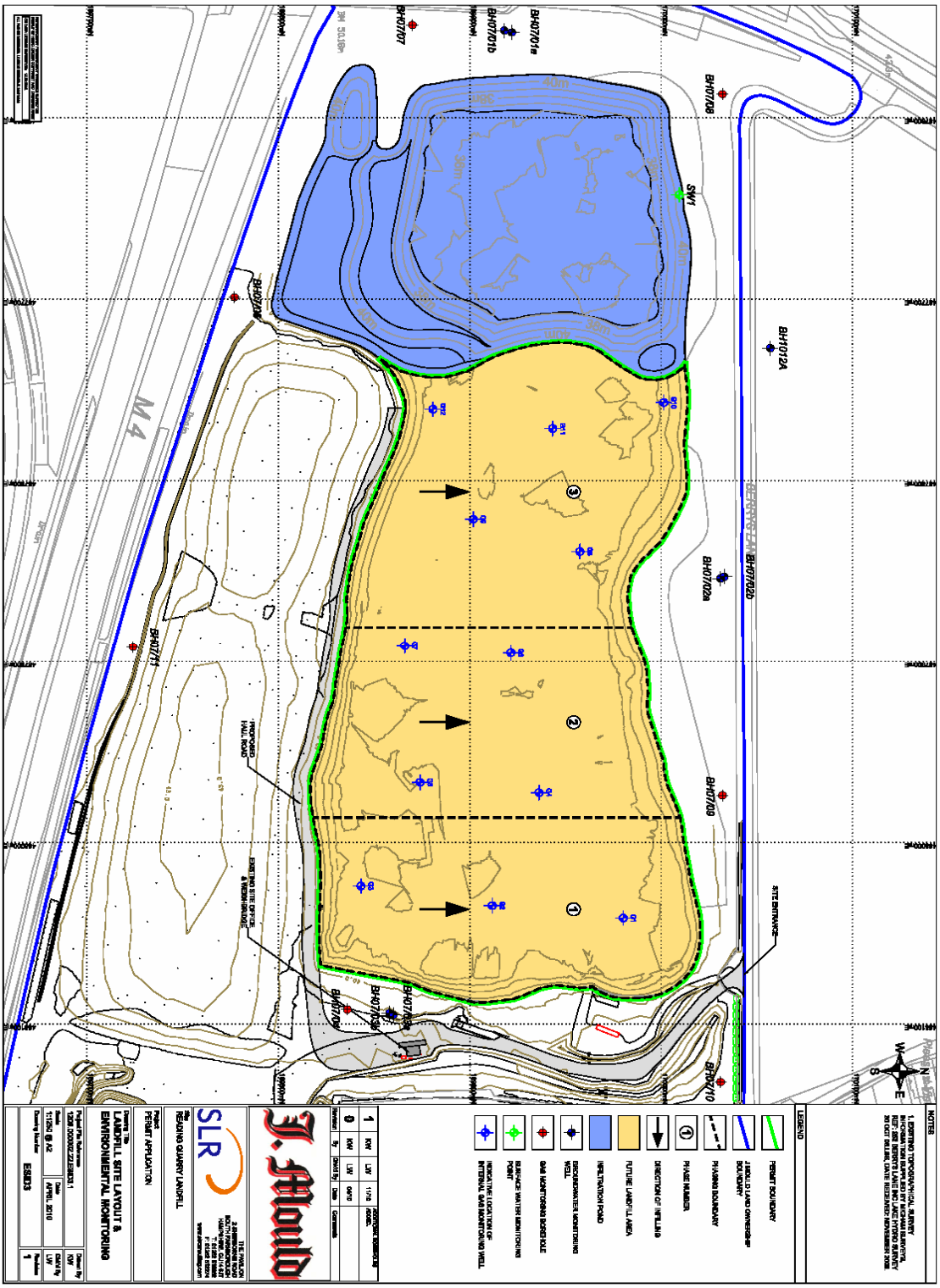
"*No impact*" means that the change made to the construction process will not alter the agreed design criteria, specification or performance in a way that has a negative effect.

"Waste code" means the six digit code referable to a type of waste in accordance with the List of Wastes (England)Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less then the limit.

Schedule 7 - Site plan

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Permit Number: EPR/HP3097LJ Operator: John Mould
Facility: Reading Quarry Landfill Form Number: Water1 / DD/MM/YY

Reporting of emissions to surface water for the period from DD/MM/YYYY **to** DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
SW1	Chloride,	340 mg/l [1]					
"	Ammoniacal nitrogen.	0.86 mg/l [1]					
"	Benzene	0.001 mg/l					
"	Sulphate	250 mg/l [1]					
"	Electrical conductivity	Not set					
"	pH	Not set					

[1] Interim Trigger levels

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed …… Date……..
(Authorised to sign as representative of Operator)

Permit Number: EPR/HP3097LJ Operator: John Mould

Facility: Reading Quarry Landfill Form Number: Groundwater1 / DD/MM/YY

Reporting of groundwater monitoring for the period from DD/MM/YYYY **to** DD/MM/YYYY

Monitoring Point	Substance / Parameter	Trigger level	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
Up hydraulic gradient BH 07/01A, , BH07/01B.	As per Schedule 3 Table S3.6						
Down hydraulic gradient	As per Schedule 3 Table S3.6	Sulphate trigger level does not apply for borehole 7/03B					
	Benzene	0.001 mg/l					
	Sulphate	250 mg/l					
	Chloride	340 mg/l					
	Ammoniacal nitrogen						
BH7/02A		0.84 mg/l					
BH07/02B		0.84 mg/l					
BH7/03A		4.9 mg/l					
BH07/03B.		0.96 mg/l					

[5] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[6] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[7] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[8] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed …… Date……..
(Authorised to sign as representative of Operator)

Permit Number: EPR/HP3097LJ Operator: John Mould
Facility: Reading Quarry Landfill Form Number: LFG1 / DD/MM/YY

Reporting of landfill gas monitoring for the period from DD/MM/YYYY **to** DD/MM/YYYY

Monitoring Point	Substance / Parameter	Compliance limit	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]

Monitoring Point	Substance / Parameter	Compliance limit	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
BH07/01a, BH07/ 01b, BH07/02a, BH07/02b, BH07/03a, BH07/03b, BH07/04, BH07/06, BH07/07, BH07/08, BH07/09, BH07/10, BH07/11	methane	Not set	Quarterly				
BH07/01a, BH07/ 01b, BH07/02a, BH07/02b, BH07/03a, BH07/03b, BH07/04, BH07/06, BH07/07, BH07/08, BH07/09, BH07/10, BH07/11	carbon dioxide	Not set	Quarterly				

Monitoring Point	Substance / Parameter	Compliance limit	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
BH07/01a, BH07/01b, BH07/02a, BH07/02b, BH07/03a, BH07/03b, BH07/04, BH07/06, BH07/07, BH07/08, BH07/09, BH07/10, BH07/11	oxygen	-					

[9] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[10] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.

[11] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

[12] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed ……. Date……..

(Authorised to sign as representative of Operator)

Permit Number: EPR/HP3097LJ Operator: John Mould

Facility: Reading Quarry Landfill Form Number: Particulate1 / DD/MM/YY

Reporting of particulates for the period from DD/MM/YYYY **to** DD/MM/YYYY

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method [2]	Sample Date and Times [3]	Uncertainty [4]
A1	Particulate Matter	2mg/m^3	Continuous		BS EN 15267-3		
A1	Particulate Matter	2mg/m^3	1 hour period		BS EN 13284-1		

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
[4] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed …… Date……..
(Authorised to sign as representative of Operator)

J Mould Reading
Reading Quarry
Berrys Lane
Burghfield

Conveyance/Delivery Note

Carrier Licence: CBDU173096
VAT Reg: GB-844 6704 12
Permit No: EPR/JB3132AR

Account No. BOWMBALP

Site Address:

BOWMER AND KIRKLAND LTD
HIGH EDGE COURT
HEAGE
BALPER
DE56 2BW

B & K SITE OFFICES
GATE HOUSE
RICHFIELD AVENUE/
COW LANE
READING
RG1 8EQ

Ticket No:	395176	**Date:**	10/06/2024
Ref:	3819	**Order No:**	68088/278337R1
SIC Code:	41201		
EWC Code:	17 05 04		
Vehicle Reg:	JM23JOD		
Vehicle Type:	Tipper		

Qty	Unit	Product Type	Gross (KG)	Tare (KG)	Net (KG)
1.00	Load	Granular Muck Away	31300	12700	18600

Weighbridge			Date	Time		KG
Weighbridge Operator	**Ticket No:**	395176	10/06/2024	11:16:44	**Gross**	31300
Barry Harvey			21/02/2024	00:00:00	**Tare**	12700
					Net	18600

Notes

Tablet MUST be signed by a Bowmer and Kirkland member of staff

Producer / Carrier		**Customer**			
Driver Name	Barry Harvey	**Print Name**	Chris	**W/b Op Name**	Colin
Signature		**Signature**		**Signature**	

Tipped Information

Location: Reading Quarry Wash Plant In
Berrys Lane
Pingewood
Reading
RG30 3XA

Tipped Ticket: 397180

Licence Number: EPR/JB3132AR

Tipped Ticket:

I, the producer/holder/transferor, confirm that I have fullfilled my duty to apply the waste hierarchy as requested by regulation 12 of the Waste (England and Wales) Regulations 2011.

J Mould Reading
Reading Quarry
Berrys Lane
Burghfield

Conveyance/Delivery Note

Carrier Licence: CBDU173096
VAT Reg: GB-844 6704 12
Permit No: EPR/JB3132AR

Account No. BOWMBALP

Site Address:

BOWMER AND KIRKLAND LTD
HIGH EDGE COURT
HEAGE
BALPER
DE56 2BW

B & K SITE OFFICES
GATE HOUSE
RICHFIELD AVENUE/
COW LANE
READING
RG1 8EQ

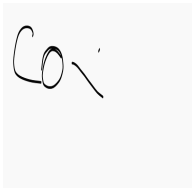
Ticket No:	395786	**Date:**	10/06/2024
Ref:	3819	**Order No:**	68088/278337R1
SIC Code:	41201		
EWC Code:	17 05 04		
Vehicle Reg:	JM23JOD		
Vehicle Type:	Tipper		

Qty	Unit	Product Type	Gross (KG)	Tare (KG)	Net (KG)
1.00	Load	Granular Muck Away	31960	12700	19260

Weighbridge			Date	Time		KG
Weighbridge Operator	**Ticket No:**	395786	10/06/2024	08:19:44	**Gross**	31960
Barry Harvey			21/02/2024	00:00:00	**Tare**	12700
					Net	19260

Notes

DW for Non Haz with Asbestos DW2235658

Producer / Carrier		**Customer**			
Driver Name	Barry Harvey	**Print Name**	Chris	**W/b Op Name**	Colin
Signature		**Signature**		**Signature**	

Tipped Information

Location: Reading Quarry Wash Plant In
Berrys Lane
Pingewood
Reading
RG30 3XA

Tipped Ticket: 397078

Licence Number: EPR/JB3132AR

Tipped Ticket:

I, the producer/holder/transferor, confirm that I have fullfilled my duty to apply the waste hierarchy as requested by regulation 12 of the Waste (England and Wales) Regulations 2011.

J Mould Reading
Reading Quarry
Berrys Lane
Burghfield

Conveyance/Delivery Note

Carrier Licence: CBDU173096
VAT Reg: GB-844 6704 12
Permit No: EPR/JB3132AR

Account No. BOWMBALP

Site Address:

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HIGH EDGE COURT
HEAGE
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DE56 2BW

B & K SITE OFFICES
GATE HOUSE
RICHFIELD AVENUE/
COW LANE
READING
RG1 8EQ

Ticket No:	395168	**Date:**	10/06/2024
Ref:	3819	**Order No:**	68088/278337R1
SIC Code:	41201		
EWC Code:	17 05 04		
Vehicle Reg:	JM23JOD		
Vehicle Type:	Tipper		

Qty	Unit	Product Type	Gross (KG)	Tare (KG)	Net (KG)
1.00	Load	Granular Muck Away	31220	12700	18520

Weighbridge			Date	Time		KG
Weighbridge Operator	**Ticket No:**	395168	10/06/2024	10:16:34	**Gross**	31220
Barry Harvey			21/02/2024	00:00:00	**Tare**	12700
					Net	18520

Notes

Tablet MUST be signed by a Bowmer and Kirkland member of staff

Producer / Carrier		**Customer**			
Driver Name	Barry Harvey	**Print Name**	Chris	**W/b Op Name**	Colin
Signature		**Signature**		**Signature**	

Tipped Information

Location: Reading Quarry Wash Plant In
Berrys Lane
Pingewood
Reading
RG30 3XA

Tipped Ticket: 397137

Licence Number: EPR/JB3132AR

Tipped Ticket:

I, the producer/holder/transferor, confirm that I have fullfilled my duty to apply the waste hierarchy as requested by regulation 12 of the Waste (England and Wales) Regulations 2011.

Certificate of Registration under the Waste (England and Wales) Regulations 2011

Regulation authority

Name	Environment Agency
Address	National Customer Contact Centre 99 Parkway Avenue Sheffield S9 4WF
Telephone number	03708 506506

The Environment Agency certify that the following information is entered in the register which they maintain under regulation 28 of the Waste (England and Wales) Regulations 2011.

Carriers details

Name of registered carrier	COLLARD ENVIRONMENTAL LIMITED
Registered as	An upper tier waste carrier and dealer
Registration number	CBDU232795
Address of place of business	R COLLARD LTD UNIT 4 EVERSLEY HAULAGE PARK BRICKHOUSE HILL EVERSLEY HOOK RG27 0PZ
Date of registration	27 March 2024
Expiry date of registration (unless revoked)	3 April 2027

This certificate was created on 3 April 2024. These details are correct at the time of certificate generation.

This copy has been issued under Regulation 6 of Waste (England and Wales) Amendment Act 2014 by the Environment Agency. This is copy number 2 of the certificate.

Making changes to your registration

Your registration will last 3 years and will need to be renewed after this period. If any of your details change, you must notify us within 28 days of the change.

Notice of transfer with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

R. Collard Limited

R. Collard Limited
128 Cardiff Road
Reading
Berkshire
RG1 8PQ

Transfer application number

EPR/EB3500KB/T001

Permit number

EPR/EB3500KB

R. Collard Limited

Permit number EPR/EB3500KB

Introductory note

This introductory note does not form a part of the notice.

The following notice gives notice of the transfer of an environmental permit to a new operator (the transferee).

The name of the site also changes from M. Collard Waste Management Services Ltd to R. Collard Limited.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	**Date**	**Comments**
Permit determined EPR/EP3893VZ	11/02/2010	Original permit issued to M. Collard Waste Management Services Ltd.
Variation determined EPR/EP3893VZ	09/07/2010	
Application EPR/EB3500KB/T001 (full transfer of permit EPR/EP3893VZ)	Duly made 04/10/2016	Application to transfer the permit in full to R. Collard Limited.
Transfer determined EPR/EB3500KB	11/10/2016	Full transfer of permit complete.

End of introductory note

Notice of transfer

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 21 of the Environmental Permitting (England and Wales) Regulations 2010 transfers

Permit number

EPR/EP3893VZ

to

R. Collard Limited ("the operator")

whose registered office is

Victoria House
Victoria Road
Farnborough
Hampshire
GU14 7PG

company registration number 03002310

to operate a regulated facility at

R. Collard Limited
128 Cardiff Road
Reading
Berkshire
RG1 8PQ

from M. Collard Waste Management Services Ltd.

The notice shall take effect from 11/10/2016

The number of the new permit granted to R. Collard Limited is EPR/EB3500KB

Name	Date
Rebecca Geden	**11/10/2016**

Authorised on behalf of the Environment Agency

COLLARD
DEMOLISH | DISPOSE | RECYCLE

COLLARD ENVIRONMENTAL LTD
Eversley Haulage Park
Brickhouse Hill, Eversley, RG27 0PZ

Waste Transfer Note
Carrier Licence: CBDU232795
GB 927 529 006

Customer
Bowmer and Kirkland Limited

Site Address
RIVER ACADEMY, RICHFIELD AVENUE
RICHFIELD AVENUE, READING, RG1 8EQ

Contact Info
Gabi 07450297865

Ticket No. 1445965
Date 26-June-2024
Account No. BOW002ENV
Payment Method Acct
Order Number 1PH/ 3431 / 68088
Movement Type **EXCHANGE**

Area	Vehicle Reg	Driver
Reading	KY19JRU	Joe Beazley

Skip Size	Waste Type	EWC Code
12 Yard Skip	Wood	17 02 01

SIC Code 38110

Special Instructions
ACCESS OPPOSITE BRANDON TOOL HIRE GO IN & TURN RIGHT

Time On Site: 15:17 Time Start: Time Stop: Time Complete: 15:17

Additional Items Supplied with Skip
0.00 £0.00

Warning - Under the Duty of Care Environmental Protection Act 1990, the hirer is responsible for informing the driver of the contents of the skip.

THE FOLLOWING CAN BE PUT INTO A SKIP WITH PRIOR ARRANGMENT ONLY
Asbestos, Gas Bottles, Fridges, Fertilisers or their empty containers, Aerosols of any kind, containers that have had any in, Oil Drums - Full or Empty, Paint Tins - Full or Empty, Batteries, any form of hazardous chemicals, Gripfill Tubes - Full or Empty, Plasterboard, Flourescent Tubes, Freezers, Pesticides, Televisions or Tyres.
Should any of these items be found in a skip when tipped you will be contacted and asked to collect the items from the recycling centre. If the items are not collected by 3:30pm on the same day, then we reserve the right to charge you per item and the Environment Agency will be informed
TERMS AND CONDITIONS - It is an offence to overload skips or to set fire to materials in the skip. Any damage caused to skips/roros will be charged to the hirer, any costs related will be at the sole discretion of Collard Environmental Ltd and is final. The skip hirer is resonsible for the lighting of a skip on a licence and safety of the cones and lights. Hirers ordering vehicles off the public hireway do so

SKIPS WILL NOT BE REMOVED FROM SITE IF THEY HAVE BEEN MOVED OR LOADED ABOVE THE SIDES.

ALL WASTE HAS BEEN CONSIDERED IN THE CONTEXT OF THE WASTE HIERARCY AND HAS BEEN DEALT WITH AS APPROPRIATE. SIC CODE 38.11/0

I agree that the waste transfered is as stated above and I confirm that I have fulfilled my duty to apply the waste hierarchy by Regulation 12 of the Waste (England and Wales) Regulations 2011. For and on behalf of the customer:

Signature: 

Print Name: J

For Office

DISPOSAL POINT	READING WASTE IN
Waste Disposal Licence No:	EPR/EB3500KB/V002
Gross Weight:	11300
Tare Weight:	10400
Net Weight:	900
Ticket No:	1446721

HAULIER

Waste Carrier Signature: 

Print Name: Joe Beazley

Date: 26-June-2024

An electronic copy of this Waste Transfer Note is available on request. Product CE Marks are available from our website.



COLLARD
DEMOLISH | DISPOSE | RECYCLE

COLLARD ENVIRONMENTAL LTD
Eversley Haulage Park
Brickhouse Hill, Eversley, RG27 0PZ

Waste Transfer Note
Carrier Licence: CBDU232795
GB 927 529 006

Customer
Bowmer and Kirkland Limited

Site Address
RIVER ACADEMY, RICHFIELD AVENUE
RICHFIELD AVENUE, READING, RG1 8EQ

Contact Info
Gabi 07450297865

Ticket No.	1449748
Date	01-July-2024
Account No.	BOW002ENV
Payment Method	Acct
Order Number	1PH/ 3431 / 68088
Movement Type	**EXCHANGE**

Area	**Vehicle Reg**	**Driver**
Reading	KS21 UBL	RICHARD FERRIS

Skip Size	12 Yard Skip	**Waste Type**	General Waste	**EWC Code**	17 09 04
				SIC Code	38110

Special Instructions
ACCESS THROUGH THE LEISURE CENTRE

Time On Site: 08:09 Time Start: Time Stop: Time Complete: 08:09

Additional Items Supplied with Skip
0.00 £0.00

Warning - Under the Duty of Care Environmental Protection Act 1990, the hirer is responsible for informing the driver of the contents of the skip.

THE FOLLOWING CAN BE PUT INTO A SKIP WITH PRIOR ARRANGMENT ONLY
Asbestos, Gas Bottles, Fridges, Fertilisers or their empty containers, Aerosols of any kind, containers that have had any in, Oil Drums - Full or Empty, Paint Tins - Full or Empty, Batteries, any form of hazardous chemicals, Gripfill Tubes - Full or Empty, Plasterboard, Flourescent Tubes, Freezers, Pesticides, Televisions or Tyres.
Should any of these items be found in a skip when tipped you will be contacted and asked to collect the items from the recycling centre. If the items are not collected by 3:30pm on the same day, then we reserve the right to charge you per item and the Environment Agency will be informed
TERMS AND CONDITIONS - It is an offence to overload skips or to set fire to materials in the skip. Any damage caused to skips/roros will be charged to the hirer, any costs related will be at the sole discretion of Collard Environmental Ltd and is final. The skip hirer is resonsible for the lighting of a skip on a licence and safety of the cones and lights. Hirers ordering vehicles off the public hireway do so

SKIPS WILL NOT BE REMOVED FROM SITE IF THEY HAVE BEEN MOVED OR LOADED ABOVE THE SIDES.

ALL WASTE HAS BEEN CONSIDERED IN THE CONTEXT OF THE WASTE HIERARCY AND HAS BEEN DEALT WITH AS APPROPRIATE. SIC CODE 38.11/0

I agree that the waste transfered is as stated above and I confirm that I have fulfilled my duty to apply the waste hierarchy by Regulation 12 of the Waste (England and Wales) Regulations 2011. For and on behalf of the customer:

Signature: 

Print Name: R

For Office

DISPOSAL POINT	READING WASTE IN	**HAULIER**	
Waste Disposal Licence No:	EPR/EB3500KB/V002	**Waste Carrier Signature:**	
Gross Weight:	11760	**Print Name:**	RICHARD FERRIS
Tare Weight:	10260	**Date:**	01-July-2024
Net Weight:	1500		
Ticket No:	1450468		

An electronic copy of this Waste Transfer Note is available on request. Product CE Marks are available from our website.



Appendix Q
Ashfield Groundwater Monitoring Data

Inorganic Monitoring Criteria				MW I.D.	ASMW1	ASMW1	ASMW1	ASMW1	ASMW2	ASMW2	ASMW2	ASMW2	ASMW2	ASMW2	ASMW2	ASMW2	ASMW2	ASMW3	ASMW3	ASMW3
				Round No.	Round 1	Round 2	Round 3	Round 4	Round 4	Round 7	Round 8	Round 9	Round 10	Round 11	Round 12	Round 13	Round 14	Round 15	Round 1	Round 2	Round 3
Substance	Units	Category	Groundwater	Stage	Pre-Construction Baseline			Pile Mat Construction	Pile Mat Construction	Ground Beams Construction	Ground Beams Construction	Ground Beams Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Pre-Construction Baseline		
				Sample Depth	Not Recorded	6	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	6.5	Not Recorded
				Date Sampled	28/07/2022	18/08/2022	14/09/2022	07/11/2022	07/11/2022	09/01/2022	30/01/2023	13/02/2023	02/03/2023	26/04/2023	28/06/2023	06/09/2023	24/10/2023	24/01/2024	28/07/2022	18/08/2022	14/09/2022
Arsenic	µg/l	Baseline	<1 to 5		0.21	0.73	1.50	0.64	0.43	0.31	0.32	0.20	0.24	0.13	<0.5	<0.1	<0.1	<0.1	0.42	0.48	0.30
		Watchpoint	5 to 60																		
		Action Required	60 to 100																		
Cadmium	µg/l	Baseline	<0.07 to 0.2		<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.5	<0.1	<0.1	<0.1	<0.07	<0.07	<0.07
		Watchpoint	0.2 to 1.0																		
		Action Required	1.0 to 2.0																		
Total Chromium	µg/l	Baseline	<0.2 to 0.5		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2
		Watchpoint	0.5 to 10																		
		Action Required	10 to 50																		
Chromium VI	µg/l	Baseline	<0.2 to 0.5		<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.0015	<1.5	<1	<10	<10
		Watchpoint	0.5 to 10																		
		Action Required	10 to 50																		
Copper	µg/l	Baseline	<1 to 10		1.5	2.5	0.9	2.2	1.8	1.0	<0.4	<0.4	0.60	1.30	1.50	<0.6	<0.6	0.80	0.5	0.4	<0.4
		Watchpoint	10 to 25																		
		Action Required	25 to 50																		
Lead	µg/l	Baseline	<0.2 to 1.0		<0.2	<0.2	<0.2	<0.2	<0.2	1.0	<0.2	<0.2	<0.2	<0.2	<0.5	<0.6	<0.6	<0.6	<0.2	<0.2	<0.2
		Watchpoint	1 to 10																		
		Action Required	10 to 25																		
Mercury	µg/l	Baseline	<0.01		<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.05	<0.05	<0.05	<0.05	<0.008	<0.008	<0.008
		Watchpoint	0.01 to 0.1																		
		Action Required	0.1 to 2																		
Nickel	µg/l	Baseline	1 to 15		3.5	9.9	8.8	8.4	3.3	6.5	3.3	6.5	5.80	3.90	1.40	0.50	1.10	1.10	2.6	3.4	0.9
		Watchpoint	15 to 25																		
		Action Required	25 to 75																		
Selenium	µg/l	Baseline	<0.1 to 2		0.08	0.09	0.14	0.15	0.13	0.10	<0.07	<0.07	<0.07	0.07	33.00	<1.2	<1.1	<1.1	0.28	0.17	0.27
		Watchpoint	2 to 15																		
		Action Required	15 to 25																		
Zinc	µg/l	Baseline	1 to 10		<1	<1	2	<1	<1	<1	<1	<1	10.00	<1	<1.2	<3.5	<3.2	<3.2	<1	<1	2
		Watchpoint	10 to 50																		
		Action Required	50 to 200																		
Free Cyanide	µg/l	Baseline	<5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
		Watchpoint	5 to 10																		
		Action Required	10 to 20																		
pH	µg/l	Baseline	6.5 to 8.0		6.9	6.9	7.4	7.1	7.2	7.7	8.1	8.3	7.80	7.60	7.70	7.70	7.40	6.80	6.9	7.1	7.3
		Watchpoint	5.5 to 6.5 or 8.0 to 9.0																		
		Action Required	<5.5 or >9.0																		
Sum BTEX	µg/l	Baseline	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1
		Watchpoint	2 to 5																		
		Action Required	5 to 20																		
Sum PAH-17	µg/l	Baseline	2 to 10		<1.6	<1.6	3.8	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	2.20	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
		Watchpoint	10 to 20																		
		Action Required	20 to 50																		
Total Phenols	µg/l	Baseline	1 to 20		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Hydrocarbon Sheen / Films / Product	µg/l	Baseline	Absent		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
		Watchpoint	Sheens																		
		Action Required	Trace product																		
Sum TPH Aliphatics Except ASMW-1/5 (see below)	µg/l	Baseline	1 to 10		N/A	N/A	N/A	N/A	<1	<1	<2	<1	<1	5.00	<1	<1	<10	<10	<1	<1	11
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Sum TPH Aliphatics ASMW-1 & MW-5	µg/l	Baseline	10 to 100		1	48	23	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Watchpoint	100 to 250																		
		Action Required	250 to 500																		
Sum TPH Aromatics Except MW-1/5 (see below)	µg/l	Baseline	1 to 20		N/A	N/A	N/A	N/A	<1	13	<1	169	<1	<1	<1	<1	<10	<10	8	10	18
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Sum TPH Aromatics ASMW-1 & MW-5	µg/l	Baseline	10 to 1,000		18	970	34	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Watchpoint	1,000 to 1,250																		
		Action Required	1,250 to 2,000																		

Inorganic Monitoring Criteria				MW I.D.	ASMW3	ASMW3	ASMW3	ASMW3	ASMW3	ASMW3	ASMW3	ASMW3	ASMW3	ASMW3	ASMW3	ASMW4	ASMW4	ASMW4	ASMW4	ASMW4	ASMW4
				Round No.	Round 4	Round 5	Round 7	Round 8	Round 9	Round 10	Round 11	Round 12	Round 13	Round 14	Round 15	Round 1	Round 2	Round 3	Round 4	Round 5	Round 7
Substance	Units	Category	Groundwater	Stage	Pile Mat Construction	During Piling	Ground Beams Construction	Ground Beams Construction	Ground Beams Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Pre-Construction Baseline			Pile Mat Construction	During Piling	Ground Beams Construction
				Sample Depth	Not Recorded	7.02	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	6.5	Not Recorded	7	6.91	Not Recorded
				Date Sampled	07/11/2022	28/11/2022	09/01/2023	30/01/2023	13/02/2023	02/03/2023	26/04/2023	28/06/2023	28/06/2023	24/10/2023	24/01/2024	28/07/2022	18/08/2022	14/09/2022	07/11/2022	28/11/2022	09/01/2023
Arsenic	µg/l	Baseline	<1 to 5		0.32	0.30	0.35	0.46	0.23	0.33	0.35	<0.5	<0.1	<0.1	0.29	0.41	0.18	0.14	0.16	0.13	0.19
		Watchpoint	5 to 60																		
		Action Required	60 to 100																		
Cadmium	µg/l	Baseline	<0.07 to 0.2		<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.5	<0.1	<0.1	<0.1	0.16	<0.07	<0.07	<0.07	<0.07	<0.07
		Watchpoint	0.2 to 1.0																		
		Action Required	1.0 to 2.0																		
Total Chromium	µg/l	Baseline	<0.2 to 0.5		<0.2	0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	0.8	<0.2
		Watchpoint	0.5 to 10																		
		Action Required	10 to 50																		
Chromium VI	µg/l	Baseline	<0.2 to 0.5		<10	<10	18	<10	<10	<10	<10	<10	<10	<0.0015	<1.5	<1	<10	<10	<10	<10	18
		Watchpoint	0.5 to 10																		
		Action Required	10 to 50																		
Copper	µg/l	Baseline	<1 to 10		1.9	1.2	1.1	1.3	<0.4	0.6	2.50	<0.5	<0.6	<0.6	<0.6	0.6	0.4	<0.4	0.6	<0.4	1.1
		Watchpoint	10 to 25																		
		Action Required	25 to 50																		
Lead	µg/l	Baseline	<0.2 to 1.0		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.6	<0.6	<0.6	0.4	<0.2	<0.2	<0.2	<0.2	<0.2
		Watchpoint	1 to 10																		
		Action Required	10 to 25																		
Mercury	µg/l	Baseline	<0.01		<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.05	<0.05	<0.05	<0.05	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
		Watchpoint	0.01 to 0.1																		
		Action Required	0.1 to 2																		
Nickel	µg/l	Baseline	1 to 15		3.9	5.7	5.5	4.4	2.4	5.6	4.70	2.80	1.20	1.10	1.40	0.8	1.2	<0.5	<0.5	1.7	5.5
		Watchpoint	15 to 25																		
		Action Required	25 to 75																		
Selenium	µg/l	Baseline	<0.1 to 2		0.15	0.12	0.08	0.12	<0.07	0.09	0.12	20.00	<1.2	<1.1	<1.1	0.91	0.85	1.16	1.48	1.21	0.08
		Watchpoint	2 to 15																		
		Action Required	15 to 25																		
Zinc	µg/l	Baseline	1 to 10		<1	<1	1	12	<1	12.0	238.00	149.00	13.00	19.00	35.00	7	<1	1	<1	<1	<1
		Watchpoint	10 to 50																		
		Action Required	50 to 200																		
Free Cyanide	µg/l	Baseline	<5		<5	Not-tested	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	Not-tested	<5
		Watchpoint	5 to 10																		
		Action Required	10 to 20																		
pH	µg/l	Baseline	6.5 to 8.0		7.5	7.8	7.6	8.1	8.0	7.9	8.20	8.30	8.00	8.00	7.00	6.9	6.9	7.3	7.4	7.7	7.6
		Watchpoint	5.5 to 6.5 or 8.0 to 9.0																		
		Action Required	<5.5 or >9.0																		
Sum BTEX	µg/l	Baseline	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2
		Watchpoint	2 to 5																		
		Action Required	5 to 20																		
Sum PAH-17	µg/l	Baseline	2 to 10		<1.6	<1.6	<1.6	4	<1.6	<1.6	1.90	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
		Watchpoint	10 to 20																		
		Action Required	20 to 50																		
Total Phenols	µg/l	Baseline	1 to 20		<10	779	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Hydrocarbon Sheen / Films / Product	µg/l	Baseline	Absent		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
		Watchpoint	Sheens																		
		Action Required	Trace product																		
Sum TPH Aliphatics Except ASMW-1/5 (see below)	µg/l	Baseline	1 to 10		<1	<1	<1	23	5	<1	73.00	<1.0	<1.0	<10	<10	4	2	26	<1	<1	<1
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Sum TPH Aliphatics ASMW-1 & MW-5	µg/l	Baseline	10 to 100		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Watchpoint	100 to 250																		
		Action Required	250 to 500																		
Sum TPH Aromatics Except MW-1/5 (see below)	µg/l	Baseline	1 to 20		<1	<1	16	158	88	<1	15.00	<1.0	<1.0	<1.0	<10	<1	22	5	<1	<1	36
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Sum TPH Aromatics ASMW-1 & MW-5	µg/l	Baseline	10 to 1,000		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Watchpoint	1,000 to 1,250																		
		Action Required	1,250 to 2,000																		

Inorganic Monitoring Criteria				MW I.D.	ASMW4	ASMW4	ASMW4	ASMW4	ASMW4	ASMW5	ASMW5	ASMW5	ASMW5	ASMW5	ASMW5	ASMW5	ASMW5	ASMW5	ASMW5
				Round No.	Round 8	Round 9	Round 10	Round 11	Round 12	Round 1	Round 2	Round 3	Round 5	Round 7	Round 8	Round 9	Round 10	Round 11	Round 12	Round 13	Round 14
Substance	Units	Category	Groundwater	Stage	Ground Beams Construction	Ground Beams Construction	Foundation Construction	Foundation Construction	Foundation Construction	Pre-Construction Baseline			During Piling	Ground Beams Construction	Ground Beams Construction	Ground Beams Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction
				Sample Depth	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	5.5	Not Recorded	7.29	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
				Date Sampled	30/01/2023	13/02/2023	02/03/2023	26/04/2023	28/06/2023	28/07/2022	18/08/2022	14/09/2022	28/11/2022	09/01/2023	30/01/2023	13/02/2023	02/03/2023	26/04/2023	28/06/2023	06/09/2023	24/10/2023
Arsenic	µg/l	Baseline	<1 to 5		0.23	0.18	0.34	0.10	<0.5	0.11	0.15	0.15	0.15	0.53	0.28	0.2	0.27	0.15	<0.5	<0.1	<0.1
		Watchpoint	5 to 60																		
		Action Required	60 to 100																		
Cadmium	µg/l	Baseline	<0.07 to 0.2		<0.07	<0.07	<0.07	<0.07	0.50	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.5	<0.1	<0.1
		Watchpoint	0.2 to 1.0																		
		Action Required	1.0 to 2.0																		
Total Chromium	µg/l	Baseline	<0.2 to 0.5		<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	0.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5
		Watchpoint	0.5 to 10																		
		Action Required	10 to 50																		
Chromium VI	µg/l	Baseline	<0.2 to 0.5		<10	<10	<10	<10	<10	<1	<10	<10	<10	13	<10	<10	<10	<10	<10	<10	<0.0015
		Watchpoint	0.5 to 10																		
		Action Required	10 to 50																		
Copper	µg/l	Baseline	<1 to 10		0.9	<0.4	<0.4	0.50	<0.5	0.6	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.80	<0.5	<0.6	<0.6
		Watchpoint	10 to 25																		
		Action Required	25 to 50																		
Lead	µg/l	Baseline	<0.2 to 1.0		<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.6	<0.6
		Watchpoint	1 to 10																		
		Action Required	10 to 25																		
Mercury	µg/l	Baseline	<0.01		<0.008	<0.008	<0.008	<0.008	<0.05	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.05	<0.05	<0.05
		Watchpoint	0.01 to 0.1																		
		Action Required	0.1 to 2																		
Nickel	µg/l	Baseline	1 to 15		5.8	<0.5	1.50	0.50	<0.5	0.8	0.8	<0.5	1.4	4.4	0.9	<0.5	1.9	0.90	1.40	<0.5	<0.4
		Watchpoint	15 to 25																		
		Action Required	25 to 75																		
Selenium	µg/l	Baseline	<0.1 to 2		0.87	1.35	1.18	1.31	15.00	0.82	0.81	0.96	0.51	0.39	0.40	0.4	0.4	0.35	10.00	<1.2	<1.1
		Watchpoint	2 to 15																		
		Action Required	15 to 25																		
Zinc	µg/l	Baseline	1 to 10		<1	<1	11.0	<1	<1.2	<1	<1	1	<1	<1	<1	<1	6.0	<1	<1.2	<3.5	<3.2
		Watchpoint	10 to 50																		
		Action Required	50 to 200																		
Free Cyanide	µg/l	Baseline	<5		<5	<5	<5	<5	<5	<5	<5	<5	Not-tested	<5	<5	<5	<5	<5	<5	<5	<5
		Watchpoint	5 to 10																		
		Action Required	10 to 20																		
pH	µg/l	Baseline	6.5 to 8.0		8.2	7.9	7.90	7.70	7.90	7.0	7.0	7.4	7.9	7.7	8.2	7.8	7.6	7.80	7.70	7.70	8.10
		Watchpoint	5.5 to 6.5 or 8.0 to 9.0																		
		Action Required	<5.5 or >9.0																		
Sum BTEX	µg/l	Baseline	<2		<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2
		Watchpoint	2 to 5																		
		Action Required	5 to 20																		
Sum PAH-17	µg/l	Baseline	2 to 10		<1.6	2.1	2.60	2.40	<1.60	<1.6	<1.6	<1.6	<1.6	<2	<1.6	<1.6	<1.6	2.80	<1.6	<1.6	<1.6
		Watchpoint	10 to 20																		
		Action Required	20 to 50																		
Total Phenols	µg/l	Baseline	1 to 20		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Hydrocarbon Sheen / Films / Product	µg/l	Baseline	Absent		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
		Watchpoint	Sheens																		
		Action Required	Trace product																		
Sum TPH Aliphatics Except ASMW-1/5 (see below)	µg/l	Baseline	1 to 10		<1	5	<1	39.00	<1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Sum TPH Aliphatics ASMW-1 & MW-5	µg/l	Baseline	10 to 100		N/A	N/A	N/A	N/A	N/A	2	5	10	<1	<1	<1	2.0	<1	30.00	<1	<1	<10
		Watchpoint	100 to 250																		
		Action Required	250 to 500																		
Sum TPH Aromatics Except MW-1/5 (see below)	µg/l	Baseline	1 to 20		10	48	<1	10.00	<1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Sum TPH Aromatics ASMW-1 & MW-5	µg/l	Baseline	10 to 1,000		N/A	N/A	N/A	N/A	N/A	25	374	14	<1	18	<1	69.0	<1	<1	<1	<1	<10
		Watchpoint	1,000 to 1,250																		
		Action Required	1,250 to 2,000																		

Inorganic Monitoring Criteria				MW I.D.	ASMW5	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH01	RECBH06	RECBH06	RECBH06
				Round No.	Round 15	Round 1	Round 2	Round 3	Round 4	Round 7	Round 8	Round 9	Round 10	Round 11	Round 12	Round 13	Round 14	Round 15	Round 1	Round 2	Round 3
Substance	Units	Category	Groundwater	Stage	Foundation Construction	Pre-Construction Baseline			Pile Mat Construction	Ground Beams Construction	Ground Beams Construction	Ground Beams Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Pre-Construction Baseline		
				Sample Depth	Not Recorded	Not Recorded	5.5	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	4.5	Not Recorded
				Date Sampled	24/01/2024	28/07/2022	18/08/2022	14/09/2022	07/11/2022	09/01/2023	30/01/2023	13/02/2023	02/03/2023	26/04/2023	28/06/2023	06/09/2023	24/10/2023	24/01/2024	28/07/2022	18/08/2022	14/09/2022
Arsenic	µg/l	Baseline	<1 to 5		0.15	0.59	0.74	1.85	0.80	0.40	0.24	0.18	0.57	<0.06	<0.5	<0.1	<0.1	0.19	0.42	0.62	3.34
		Watchpoint	5 to 60																		
		Action Required	60 to 100																		
Cadmium	µg/l	Baseline	<0.07 to 0.2		<0.1	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.5	<0.1	<0.1	0.14	<0.07	<0.07	<0.07
		Watchpoint	0.2 to 1.0																	<0.07	<0.07
		Action Required	1.0 to 2.0																	<0.07	<0.07
Total Chromium	µg/l	Baseline	<0.2 to 0.5		<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2
		Watchpoint	0.5 to 10																		
		Action Required	10 to 50																		
Chromium VI	µg/l	Baseline	<0.2 to 0.5		<1.5	<1	<10	<10	<10	23	<10	<10	<10	<10	<10	<10	<0.0015	<1.5	<1	<10	<10
		Watchpoint	0.5 to 10																		
		Action Required	10 to 50																		
Copper	µg/l	Baseline	<1 to 10		<0.6	0.6	<0.4	<0.4	4.9	2.9	0.8	<0.4	0.5	<0.4	0.8	<0.6	<0.6	<0.6	<0.4	<0.4	<0.4
		Watchpoint	10 to 25																		
		Action Required	25 to 50																		
Lead	µg/l	Baseline	<0.2 to 1.0		<0.6	<0.2	<0.2	<0.2	0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.6	<0.6	<0.6	<0.2	<0.2	<0.2
		Watchpoint	1 to 10																		
		Action Required	10 to 25																		
Mercury	µg/l	Baseline	<0.01		<0.05	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.05	<0.05	<0.05	<0.05	<0.008	<0.008	<0.008
		Watchpoint	0.01 to 0.1																		
		Action Required	0.1 to 2																		
Nickel	µg/l	Baseline	1 to 15		0.50	7.8	10.4	5.3	0.6	11.4	6.3	5.9	7.0	0.7	3.2	1.2	1.5	2	4.6	4.7	2.4
		Watchpoint	15 to 25																		
		Action Required	25 to 75																		
Selenium	µg/l	Baseline	<0.1 to 2		<1.1	0.17	0.13	0.20	0.48	0.15	0.10	0.1	0.25	<0.07	8	<1.2	<1.1	<1.1	<0.07	<0.07	0.09
		Watchpoint	2 to 15																		
		Action Required	15 to 25																		
Zinc	µg/l	Baseline	1 to 10		<3.2	<1	1	1	<1	3	<1	<1	47	<1	2.2	<3.5	<3.2	<3.2	<1	<1	1
		Watchpoint	10 to 50																		
		Action Required	50 to 200																		
Free Cyanide	µg/l	Baseline	<5		<5	<5	<5	<5	<5	5.4	<5	<5	<5	13	<5	<5	<5	<5	<5	<5	<5
		Watchpoint	5 to 10																		
		Action Required	10 to 20																		
pH	µg/l	Baseline	6.5 to 8.0		6.80	7.1	7.1	7.6	7.7	7.9	8.2	7.8	8	7.8	8.1	7.6	7.6	6.7	6.9	7.0	7.5
		Watchpoint	5.5 to 6.5 or 8.0 to 9.0																		
		Action Required	<5.5 or >9.0																		
Sum BTEX	µg/l	Baseline	<2		<2	<2	<2	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
		Watchpoint	2 to 5																		
		Action Required	5 to 20																		
Sum PAH-17	µg/l	Baseline	2 to 10		<1.6	<1.6	<1.6	5.8	<1.6	<1.6	<1.6	2.6	<1.6	2	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	7.4
		Watchpoint	10 to 20																		
		Action Required	20 to 50																		
Total Phenols	µg/l	Baseline	1 to 20		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Hydrocarbon Sheen / Films / Product	µg/l	Baseline	Absent		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
		Watchpoint	Sheens																		
		Action Required	Trace product																		
Sum TPH Aliphatics Except ASMW-1/5 (see below)	µg/l	Baseline	1 to 10		N/A	<1	<1	<1	<1	<1	<1	2	<1	27	<1	<1	<10	<10	<1	<1	<1
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Sum TPH Aliphatics ASMW-1 & MW-5	µg/l	Baseline	10 to 100		<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Watchpoint	100 to 250																		
		Action Required	250 to 500																		
Sum TPH Aromatics Except MW-1/5 (see below)	µg/l	Baseline	1 to 20		N/A	3	<1	19	<1	<1	1	36	<1	<1	<1	<1	<10	<10	6	<1	41
		Watchpoint	20 to 100																		
		Action Required	100 to 200																		
Sum TPH Aromatics ASMW-1 & MW-5	µg/l	Baseline	10 to 1,000		<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Watchpoint	1,000 to 1,250																		
		Action Required	1,250 to 2,000																		

Substance	Units	Category	Surface Water
Arsenic	µg/l	Baseline	<1 to 5
		Watchpoint	5 to 60
		Action Required	60 to 100
Cadmium	µg/l	Baseline	<0.07 to 0.1
		Watchpoint	0.1 to 0.3
		Action Required	0.3 to 1.0
Total Chromium	µg/l	Baseline	0.1 to 1
		Watchpoint	1 to 10
		Action Required	10 to 50
Chromium VI	µg/l	Baseline	0.1 to 1
		Watchpoint	1 to 10
		Action Required	10 to 50
Copper	µg/l	Baseline	<1 to 10
		Watchpoint	10 to 25
		Action Required	25 to 50
Lead	µg/l	Baseline	<0.2 to 1.0
		Watchpoint	1 to 5
		Action Required	5 to 20
Mercury	µg/l	Baseline	<0.01
		Watchpoint	0.01 to 0.1
		Action Required	0.1 to 1
Nickel	µg/l	Baseline	1 to 10
		Watchpoint	10 to 25
		Action Required	25 to 50
Selenium	µg/l	Baseline	0.3 to 1
		Watchpoint	1 to 10
		Action Required	10 to 20
Zinc	µg/l	Baseline	10 to 30
		Watchpoint	30 to 75
		Action Required	75 to 200
Free Cyanide	µg/l	Baseline	<5
		Watchpoint	5 to 10
		Action Required	10 to 20
pH	µg/l	Baseline	6.5 to 8.0
		Watchpoint	5.5 to 6.5 or 8.0 to 9.0
		Action Required	<5.5 or >9.0
Sum BTEX	µg/l	Baseline	<2
		Watchpoint	2 to 5
		Action Required	5 to 10
Sum PAH-17	µg/l	Baseline	2 to 10
		Watchpoint	10 to 20
		Action Required	20 to 50
Total Phenols	µg/l	Baseline	1 to 20
		Watchpoint	20 to 100
		Action Required	100 to 200
Hydrocarbon Sheen / Films / Product	µg/l	Baseline	Absent
		Watchpoint	-
		Action Required	Sheens / Trace Product
Sum TPH Aliphatics	µg/l	Baseline	1 to 10
		Watchpoint	10 to 50
		Action Required	50 to 100
Sum TPH Aromatics	µg/l	Baseline	1 to 50
		Watchpoint	50 to 100
		Action Required	100 to 200

Round No.	Round 2	Round 4	Round 5	Round 7	Round 8	Round 9	Round 10	Round 11	Round 12	Round 13	Round 14	Round 15	Round 1	Round 2	Round 4	Round 5	Round 7	Round 8	Round 9	Round 10	Round 11	Round 12	Round 13	Round 14	Round 15
Stage	Pre-Construction Baseline	Pile Mat Construction	During Piling	Ground Beams Construction	Ground Beams Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Pre-Construction Baseline	Pre-Construction Baseline	Pile Mat Construction	During Piling	Ground Beams Construction	Ground Beams Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction	Foundation Construction
Sample Depth	0.2	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	0.6	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
Date Sampled	18/08/2022	07/11/2022	28/11/2022	09/01/2023	30/01/2023	13/02/2023	02/03/2023	26/04/2023	28/06/2023	08/09/2023	24/10/2023	24/01/2024	28/07/2022	18/08/2022	07/11/2022	28/11/2022	09/01/2023	30/01/2023	13/02/2023	02/03/2023	26/04/2023	28/06/2023	08/09/2023	24/10/2023	24/01/2024
	1.41	1.36	0.64	6.44	0.71	1.0	0.55	0.57	1.20	0.45	0.60	0.68	0.89	1.56	0.59	0.93	6.87	0.74	2.78	0.62	0.54	<0.5	<0.5	1.02	0.72
	<0.07	<0.07	<0.07	<0.07	<0.07	0.1	<0.07	<0.07	<0.5	<0.1	<0.1	<0.1	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.16	<0.07	<0.07	<0.5	<0.5	<0.1	<0.1
	0.4	2.4	2.8	11.3	0.5	<0.2	0.50	0.50	<0.5	<0.5	<0.5	1.00	0.3	0.4	<0.2	0.6	10.9	0.5	<0.2	<0.2	0.5	<0.5	<0.5	<0.5	<0.5
	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.0015	<1.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.0015	<1.5
	5.3	3.8	5.2	45.5	2.2	17.8	1.30	3.50	0.70	<0.6	0.70	4.10	0.8	5.7	2.1	1.6	44.0	2.2	4.80	0.50	3.8	0.6	0.6	2.6	2.8
	<0.2	0.8	0.9	1.9	<0.2	0.3	<0.2	0.70	<0.5	<0.6	<0.6	<0.6	0.4	0.2	<0.2	<0.2	2.8	<0.2	0.80	<0.2	<0.008	<0.5	<0.5	<0.6	<0.6
	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.05	<0.05	<0.05	<0.05	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.7	<0.05	<0.05	<0.05	<0.05
	4.7	2.9	1.8	21.4	2.7	3.3	6.30	0.80	2.60	0.70	2.90	2.50	3.8	4.7	8.9	3.2	23.5	2.7	3.90	7.10	0.12	3.8	3.8	2.1	2.8
	0.36	0.45	0.18	1.70	1.25	0.7	0.27	0.13	6.00	<1.2	<1.1	<1.1	0.63	0.35	0.19	0.34	1.89	1.20	0.63	0.30	9	5.00	5.00	<1.1	<1.1
	13	26	35	168	17	23.0	13.00	15.00	<1.2	<3.5	<3.2	26.00	12	21	<1	8	163	18	13.00	21.00	<5	<1.2	<1.2	<3.2	<3.2
	<5	<5	Not Tested	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	Not Tested	<5	<5	<5	<5	7.9	<5	<5	<5	<5
	7.2	7.9	7.8	7.4	8.3	8.4	7.90	8.2	8.30	7.70	7.70	7.20	7.5	7.2	7.7	7.9	7.3	8.2	8.40	8.10	<2	8.1	8.1	8.2	7.4
	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1.6	<2	<2	<2	<2
	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	3.00	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	2.7	2.20	<1.6	<10	<1.6	<1.6	<1.6	<1.6
	<10	<10	<10	<0.1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	18	<0.1	<10	<10	<10	Absent	<10	<10	<10	<10
	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	43	Absent	Absent	Absent	Absent
	<1	<1	<1	<1	<1	6.0	<1	<10	<1	<1	<1	<10	<1	<1	<1	2465	26	<1	6.00	<1	19	<1	<1	<10	<10
	<1	<1	<1	<1	<1	78.0	<1	<10	<1	<1	<1	<10	41	<1	<1	556	<1	<1	107.00	<1	19.00	<1	<1	<10	<10

COLLARD
DEMOLISH | DISPOSE | RECYCLE

COLLARD ENVIRONMENTAL LTD
Eversley Haulage Park
Brickhouse Hill, Eversley, RG27 0PZ

Waste Transfer Note
Carrier Licence: CBDU232795
GB 927 529 006

Customer
Bowmer and Kirkland Limited

Site Address
RIVER ACADEMY, RICHFIELD AVENUE
RICHFIELD AVENUE, READING, RG1 8EQ

Contact Info
Nick 07827 823882

Ticket No. 1435490
Date 19-June-2024
Account No. BOW002ENV
Payment Method Acct
Order Number 1PH/ 3431 / 68088
Movement Type **EXCHANGE**

Area	Vehicle Reg	Driver
Reading	KU20YWZ	TERRY LONG

Skip Size	Waste Type	EWC Code
12 Yard Skip	General Waste	17 09 04

SIC Code 38110

Special Instructions
ACCESS THROUGH THE LEISURE CENTRE 07450 297865 GABI

Time On Site: 15:08 Time Start: Time Stop: Time Complete: 15:29

Additional Items Supplied with Skip
0.00 £0.00

Warning - Under the Duty of Care Environmental Protection Act 1990, the hirer is responsible for informing the driver of the contents of the skip.

THE FOLLOWING CAN BE PUT INTO A SKIP WITH PRIOR ARRANGMENT ONLY
Asbestos, Gas Bottles, Fridges, Fertilisers or their empty containers, Aerosols of any kind, containers that have had any in, Oil Drums - Full or Empty, Paint Tins - Full or Empty, Batteries, any form of hazardous chemicals, Gripfill Tubes - Full or Empty, Plasterboard, Flourescent Tubes, Freezers, Pesticides, Televisions or Tyres.
Should any of these items be found in a skip when tipped you will be contacted and asked to collect the items from the recycling centre. If the items are not collected by 3:30pm on the same day, then we reserve the right to charge you per item and the Environment Agency will be informed
TERMS AND CONDITIONS - It is an offence to overload skips or to set fire to materials in the skip. Any damage caused to skips/roros will be charged to the hirer, any costs related will be at the sole discretion of Collard Environmental Ltd and is final. The skip hirer is resonsible for the lighting of a skip on a licence and safety of the cones and lights. Hirers ordering vehicles off the public hireway do so

SKIPS WILL NOT BE REMOVED FROM SITE IF THEY HAVE BEEN MOVED OR LOADED ABOVE THE SIDES.

ALL WASTE HAS BEEN CONSIDERED IN THE CONTEXT OF THE WASTE HIERARCY AND HAS BEEN DEALT WITH AS APPROPRIATE. SIC CODE 38.11/0

I agree that the waste transfered is as stated above and I confirm that I have fulfilled my duty to apply the waste hierarchy by Regulation 12 of the Waste (England and Wales) Regulations 2011. For and on behalf of the customer:

Signature: 

Print Name: Gabi

For Office

DISPOSAL POINT	READING WASTE IN
Waste Disposal Licence No:	EPR/EB3500KB/V002
Gross Weight:	11580
Tare Weight:	10340
Net Weight:	1240
Ticket No:	1438745

HAULIER

Waste Carrier Signature: 

Print Name: TERRY LONG

Date: 19-June-2024

An electronic copy of this Waste Transfer Note is available on request. Product CE Marks are available from our website.


YCLE
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Appendix R

Ashfield Long Term Management and Maintenance Plan

ASHFIELD
SOLUTIONS GROUP

Thank you

for using Ashfield Solutions

Head Office:
Cwm Cynon Business Centre,
Cwm Cynon Business Park,
Mountain Ash, RCT, CF45 4ER

ashfieldsolutions.com
+44 (0)1443 803 540