

12517/RJH

07 November 2025

Cardo Group (formerly LCB Group LTD)  
Unit 1 & 2  
Stuart Close Trade Estate  
Cardiff  
CF11 8QF  
**For the attention of Wayne Keen**

Dear Sirs,

**Constables Close, Newport – Imported Soil Validation Placement within Private and Soft Landscaping Areas.**  
**Planning Reference Number 20/0140.**

Intégral Géotechnique were appointed by Cardo Group (formerly LCB Group LTD) to attend site and carry out the imported soils clean cover validation inspections to private gardens and soft landscaped areas within the Constables Close, Newport redevelopment and prepare a series of validation reports for submission to the Local Authority to discharge planning condition 17.

This report (including all appendices to it and any subsequent addendums or correspondence) has been prepared for the sole benefit, use and information of Cardo Group (formerly LCB Group LTD) and no third party is entitled or permitted to rely on it. This report may not be used, reproduced or circulated (in whole or part) for any purpose without the written consent of Intégral Géotechnique (Wales) Limited. Intégral Géotechnique (Wales) Limited shall not be liable to any third party who does not have such express written permission to rely on the report for any losses they may suffer.

## ***Background***

The site is located at Constables Close, approximately 1.0 km south of Newport City Centre, at a National Grid Reference of 331690, 186810, see Figure 1.

The site is irregular in shape and occupies an area of approximately 0.63 hectares. The boundaries of the site are defined by Potter Street to the north, Clarence Street to the northeast, existing residential properties off Clarence Street, Church Street and within St Michael's Court to the East, Commercial Road to the west and Church Street to the south. See Figure 1.

We understand that select properties at the development have been demolished and the site layout reconfigured to ease anti-social issues that have been prevalent within the area.

Linc Cymru Housing Association are proposing the part redevelopment of a site at Constables Close in Newport for residential end use. LCB Group have been appointed by Linc Cymru to undertake the required demolition, and future re-construction works within the site boundaries.

The remediation strategy proposed for the redevelopment of the site called for selected properties of private gardens and landscape areas affected by the redevelopment of the site to be prepared to a standard suitable for the proposed residential end use. This requirement for these private gardens and soft landscape areas will require provision of a clean capping/cover system in order to break the link between future site end-users and any residual contamination within the underlying made ground.

The capping system should therefore, be in the form of a minimum thickness of 600mm of clean imported subsoil and topsoil, placed on top of a hi-vis geotextile separation/alert membrane in all areas of soft landscaping and private gardens.

The following past reports have been produced by Intégral Géotechnique (Wales) Limited:

- Geotechnical Report Desk Study report referenced 7012/C, completed on behalf of Glamorgan and Gwent Housing Association Limited and dated October 1996,
- Site Investigation Factual Report referenced 7686/C/A, completed on behalf of Glamorgan and Gwent Housing Association Limited and dated October 1999,
- Site Investigation Report completed on behalf of Linc Cymru Housing Association referenced 12517/GNS/SI/19, dated October 2019,
- Constables Close, Newport – Ground Gas Risk Assessment Report referenced 12517/LP, dated 19<sup>th</sup> February 2024.

Reference should be made to these reports in order to gain a full understanding of the site and the findings of the previous investigations.

This report has been produced to detail the requirements for demonstrating and validation of the chemistry and thickness of the proposed 600mm thick capping layer to be placed within private gardens and landscaped areas and validation of the hi-vis geotextile separation/alert membrane layer at the base of the capping soils in accordance with 'Requirements for the Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems prepared by Welsh Land Contamination Working Group dated May 2014', a copy of which is presented in Appendix A.

### ***Chemical Testing of Imported Soil Materials***

We understand the imported topsoil for use in soft private gardens and landscaped areas has been imported from a current new build private development, Enzo's Homes, Phase 1 Abbey Woods Llantarnam, Cwmbran, NP44 3GB. The imported subsoil for use in the private and landscaped areas has been supplied by a commercial soil supplier, Countryside Recycling, Ty Mawr Farm, St Brides Wentlooge, Newport, South Wales, NP10 8SF.

This imported topsoil and subsoil is accompanied by an Imported Materials Declaration Form and pre-importation certificate, copies are attached in Appendix B.

## ***Verification of Placed Capping Soils and Presence of Hi-Visibility Geotextile Membrane***

### **Plots 1A, 1B, 2A, 2B, 3A, 3B, 31 to 35 and a POS (Public Open Space) Area**

An engineer from Intégral Géotechnique attended the site on 29 October 2025 to undertake an inspection of a total of eleven (11) plot locations situated within the public and private garden areas containing placed imported soils, this has been broken down as detailed below.

The inspection was conducted to assess the condition and characteristics of the placed materials. Photographic records were taken throughout the visit to provide visual documentation and reference for subsequent analysis and reporting.

### **Plots 1A, 1B, 2A, 2B, 3A and 3B**

These plots are configured into two building units, comprising of two self-contained residential units, one at street level and one at first floor level. The further building unit consists of four self-contained units, consisting of two street-level apartments and two first-floor apartments.

The two residential units are not provided with private garden areas. In their place, each unit includes a small decorative planting area adjacent to the entrance doorways, serving an aesthetic function while also integrating rain garden systems designed to manage surface runoff and promote infiltration as part of the overall stormwater drainage strategy for the site.

No intrusive investigations were undertaken within the constructed rain garden areas, as these are outside the defined scope of this validation report. The recent design and construction specifications of these features are deemed to supersede the original remedial capping requirements previously outlined.

### **Plots 31 to 35 and POS Area**

The private gardens and POS area were found to be fully soiled up to finished levels. Instruction was given to hand excavate trial pits within the garden area of plot 33 and the POS area centred around the development. The trial pits were found to demonstrate the required total of a minimum 600mm of clean cover soil material placed in the private garden areas and also a minimum of 600mm in the POS area with the required geotextile membrane visible at the base of the capping soils.

The depths of the topsoil placed in the private garden area and POS area was noted to be between 160mm and 190mm respectively, the subsoil placed beneath this topsoil was noted to be between 450mm to 500mm to the placed hi-vis geotextile separation/alert membrane at the base of the placed soils. The plot location plan and photographic records taken are shown in Figures.

The representative soil samples obtained from a sampling location, (plot 33) were stored in sealed opaque amber glass jars to prevent loss of any volatile transit and placed in cool boxes for transportation to the UKAS accredited laboratories of i2 Analytical within 24 hours, all with chain of custody labelling.

All soil samples were analysed for the following suite of contaminants:

|                                  |                        |
|----------------------------------|------------------------|
| Beryllium                        | Cadmium                |
| Total Chromium                   | Hexavalent Chromium    |
| Copper                           | Lead                   |
| Mercury                          | Nickel                 |
| Vanadium                         | Zinc                   |
| Arsenic                          | Boron                  |
| Selenium                         | Elemental Sulphur      |
| Total Cyanide                    | Total Sulphate         |
| Sulphide                         | Water Soluble Sulphate |
| pH                               | Monohydric Phenol      |
| Polyaromatic Hydrocarbons (PAHs) | Petroleum Hydrocarbons |

All soil samples were screened for asbestos.

A copy of the certified laboratory in-situ chemical test results is presented in Appendix C.

The results of the soils sampled from within the areas presented above have been summarised and compared to the appropriate screening criteria for a residential end use. Therefore, the results will have been compared to appropriate Suitable 4 Use Levels (S4ULs) derived by LQM, in the first instance. In their absence, the results will have been compared to the Category 4 Screening Levels (C4SL) and the Soil Guideline Values (SGVs) and Soil Screening Values (SSVs) derived by Atkins ATRISKsoil for residential without consumption of home grown produce end use, to assess the potential risk to human health.

A summary of the in-situ results and comparison to the soil screening levels are presented in Appendix D.

The results indicate that none of the chemical elements or compounds analysed are present at concentrations that exceed the appropriate soil screening levels. Asbestos was not detected within any screened samples.

### ***Conclusion***

The foregoing remarks and recommendations are based upon the validation inspection site visits, demonstrated thickness of the proposed 600mm thick capping layer placed within private gardens and a POS area along with validation of the hi-vis geotextile separation/alert membrane layer at the base of the capping soils within the plot and POS area indicated above.

Results of the chemical testing of recovered samples recently placed within the soft landscaped areas of the site are considered to be suitable for use with regard to their chemical quality and is therefore considered that the placed soils are not considered a potential risk to future end users.

This report should be submitted to the Local Authority with the intention of discharging Condition 17 of Planning Reference 20/0140.

We trust the above and enclosed are to your satisfaction. However, if you have any queries, or require any further information, please do not hesitate to contact us.

Yours faithfully,



**Roger J Hawkins**  
**For**  
**Intégral Géotechnique (Wales) Limited**

- Appendix A** Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems prepared by Welsh Land Contamination Working Group
  - Appendix B** Imported Soil Material Certificate and and pre-importation certificate
  - Appendix C** Laboratory in-situ Chemical Test Results
  - Appendix D** Summary of the In-situ Results and Comparison to the Soil Screening Levels
- Figures**

## **APPENDIX A**

### **CHEMICAL TESTING OF IMPORTED MATERIALS FOR VARIOUS END USES DOCUMENT**



WLGA • CLILC

# **Requirements for the Chemical Testing of Imported Materials for Various End Uses and Validation of Cover Systems**



Prepared by  
**Welsh Land Contamination Working Group**

This guidance is primarily for property owners, developers, environmental consultants, architects and surveyors who require information to assist their submissions to the Local Planning Authority (LPA)/ Contaminated Land Officer (CLO)/ Environmental Health Officer (EHO) in support of planning conditions applicable to the importation of soils, stones or any other similar materials to a development, for the purposes of garden, landscape or engineering use.

It is strongly recommended that, before importing any material to site, the intended sampling regime for that material is discussed and agreed in advance with the Local Authority LPA/CLO/EHO

The process for ensuring all information is submitted in relation to the relevant planning condition is outlined in **TABLE 1** in a series of step by step actions. Adherence to these will greatly assist the LPA/ CLO/EHO to effectively make final recommendation for discharge and will also ensure that contaminative risks from imported materials are avoided.

#### **STEP 1.**

Please use **Table 2**, below as an initial screening tool to use when assessing what testing requirements will be required when considering importing material for use at a development site. The Colour Coding is explained as follows:

**Green** – Usually no testing required go to **Step 3** –*However this category does not include soils being imported from ‘greenfield sites’. Where such sources are identified the developer must initially consult with the CLO/EHO, and as a minimum provide Site Investigation data from the proposed site demonstrating chemical testing of the identified soils. Based on the data the CLO/EHO will agree the requirements for further testing (if deemed necessary) in line with Step 2.*

**Yellow** - Chemical Testing Required. **Go to Step 2** for specific requirements.

**Amber** - Where it is proposed to import waste/ processed waste materials chemical testing is required, **Go Step 2. However**, in addition to the chemical testing required, please provide exemption reference number/ Environmental Permit Number/ or waste protocol being used, **PRIOR TO THE COMMENCEMENT OF ANY IMPORTATION.**

**Red** – Importation of such materials prohibited.

#### **Step 2.**

**Please refer to Table 3.** This details the specific sampling frequencies and analytical requirements, which are dependent on the required quantities and the proposed end use of the development

#### **Step 3.**

**Please complete and sign the attached declaration form with all necessary information in support of the relevant planning condition number. Failure to complete all sections of this form will result in delays when discharging the relevant planning condition**

**Table 1 – Process for Submitting Relevant Information on Imported Materials**

| STEP | RESPONSIBILITY | TASK                                                                       | REQUIREMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------|----------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | APPLICANT      | Submit information relating to proposed materials for import               | Application needs to complete an Imported Materials Declaration Form, which can be found at the end of this document.                                                                                                                                                                                                                                                                                                                                                                                                         |
| 2    |                | Sampling of intended material(s) (topsoil, subsoil, stone, aggregates etc) | Either the supplier or importer must arrange for a suitably competent third party to undertake necessary sampling of intended materials prior to their importation to the development in line with the sampling frequency of <b>TABLE 3</b> . Imported Materials Declaration form to be completed and returned to CLO/EHO.                                                                                                                                                                                                    |
|      |                | Notify intentions to use "Other" Imported Materials (if applicable)        | Imported Materials Declaration completed to notify CLO/EHO of the type of materials such as by-products of any chemical manufacturing or processing e.g. furnace slag must be submitted. Such products must be subject to additional laboratory testing to those set out in <b>TABLE 3</b> to determine for example a product's chemical stability/leachability etc. Additional testing proposals must be submitted to and agreed with CLO/EHO prior to importation to ensure that potential contaminative risks are avoided. |
| 3    | LABORATORY     | Analysis of submitted samples                                              | Analysis of submitted samples for determinands relevant to the specific development as outlined in <b>TABLE 3</b> . All analysis (where applicable) must be subject to MCERTS accreditation(*) at a certified laboratory.                                                                                                                                                                                                                                                                                                     |
| 4    | APPLICANT      | Employ a suitably qualified consultant to review analysis                  | Submission of a report interpreting the laboratory results and a conclusion on the suitability for the sampled material(s) to be used for the intended purpose at the development site.                                                                                                                                                                                                                                                                                                                                       |
| 5    | CLO/EHO        | Review the consultant's comments and raw data                              | If satisfactory partial discharge to be recommended of relevant planning condition.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6    | APPLICANT      | Notify CLO/EHO following import completion                                 | Confirm the total volume and type(s) of material imported to site to CLO/EHO.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7    | CLO/EHO        | Check receipt of all required information                                  | Consideration to be given to discharge planning condition in full.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

<sup>(\*)</sup> Further information is available from Natural Resources Wales at [www.naturalresourceswales.gov.uk](http://www.naturalresourceswales.gov.uk)  
Telephone: 0300 065 3000.

**TABLE 2. Screening Tool to Assess if Chemical Testing is Required**

| Nature of Imported Materials                                                                                                                                         | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Chemical Testing required     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Bagged or bulk bag quantities of <b>soils / compost and sand.</b>                                                                                                    | <b>Applicable only to</b> materials available from retail outlets such as garden centres, DIY Superstores or builder's merchants. All other sources will require testing in accordance with TABLE 3 overleaf, unless otherwise agreed with a CLO/EHO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>TESTING NOT REQUIRED</b>   |
| Bagged / bulk quantities of <b>aggregate, gravel and stone.</b>                                                                                                      | <b>Applicable only to</b> material available from retail outlets such as garden centres, DIY Superstores or builder's merchants. All other sources will require testing in accordance with TABLE 2 overleaf, unless otherwise agreed with a CLO/EHO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |
| Naturally sourced materials.                                                                                                                                         | Includes quarry products and peat which have accompanying British Standard certification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |
| Recycled, sieved, blended or screened soils, stones or aggregates.                                                                                                   | Testing required regardless of whether these are from one source or several sources / suppliers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>TESTING REQUIRED</b>       |
| By products from industrial processes. Mechanically screened and sorted demolition wastes.                                                                           | Additional testing to that in <b>TABLE 3</b> will be required to determine the suitability of these materials for specific uses prior to CLO/EHO acceptance for import. This is likely to include leachability testing in line with WAC testing or Remedial Targets Methodology Appendix B Leachate testing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |
| <b>Any</b> Unprocessed / unsorted demolition wastes.<br><br><b>Any</b> materials originating from a site confirmed as being contaminated or potentially contaminated | Where potential waste materials or previously contaminated materials are to be imported and processed for reuse the Developer must ensure that such materials are suitable for use in accordance with the Definition of Waste: Development Industry Code of Practice V2. Prior to <b>any importation</b> the developer <b>MUST</b> provide details of an exemption reference number/ Environmental Permit Number/ or waste protocol being used. Under no circumstances should such materials be imported without the above documents being provided, and formal written agreement received from the relevant CLO/EHO and or Environment Agency officer.<br><br>Additional testing to that in <b>TABLE 3</b> will be required to determine the suitability of these materials for specific uses prior to CLO/EHO acceptance for import. This is likely to include leachability testing in line with WAC testing or Remedial Targets Methodology Appendix B Leachate testing. | <b>TESTING REQUIRED</b>       |
| <b>Materials containaing Japanese Knotweed</b> stems, leaves and rhizome infested soils                                                                              | It is an offence under the Wildlife and Countryside Act 1981 to spread this invasive weed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>IMPORTATION PROHIBITED</b> |

**TABLE 3 – Sampling Frequencies and Analytical Requirements for Imported Materials**

|                                                                   | DEVELOPMENT TYPE                                                                                                                                                                                                                           |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                   | Residential                                                                                                                                                                                                                                | Allotments                                                                            | Parks, Play Areas, & POSs                                                             | Commercial & Industrial                                                               |                                                                                       |
|                                                                   |                                                                                                                                                                                                                                            |                                                                                       |                                                                                       | With Landscaping                                                                      | Hardstand Only                                                                        |
| QUANTITY TO BE IMPORTED                                           | NUMBER OF SAMPLES REQUIRED                                                                                                                                                                                                                 |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| Less than 20m <sup>3</sup>                                        | Please contact CLO/EHO to agree sampling requirements                                                                                                                                                                                      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| Between 20m <sup>3</sup> - 250m <sup>3</sup>                      | 4                                                                                                                                                                                                                                          | 4                                                                                     | 3                                                                                     | 2                                                                                     | 2                                                                                     |
| More than 250m <sup>3</sup>                                       | 4 per 250m <sup>3</sup>                                                                                                                                                                                                                    | 4 per 250m <sup>3</sup>                                                               | 4 per 250m <sup>3</sup>                                                               | 4 per 250m <sup>3</sup>                                                               | 4 per 250m <sup>3</sup>                                                               |
| >1000m <sup>3</sup>                                               | Where significant volumes of subsoil/topsoil are required, it is appreciated that laboratory costs for suitable frequency of analysis could be cost prohibitive. As such an appropriate sampling scheme should be agreed with the CLO/EHO. |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| DETERMINAND                                                       | LABORATORY ANALYSIS                                                                                                                                                                                                                        |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| Arsenic / Cadmium/ Chromium (Total) / Lead / Mercury and Selenium |                                                                                                                                                         |  |  |   | Optional                                                                              |
| Boron / Copper / Nickel and Zinc                                  |                                                                                                                                                                                                                                            |                                                                                       |                                                                                       | Optional                                                                              | Optional                                                                              |
| Speciated PAHs                                                    |                                                                                                                                                                                                                                            |                                                                                       |                                                                                       |  | Optional                                                                              |
| TPH <sup>(1)</sup> Phenol & Asbestos                              |                                                                                                                                                                                                                                            |                                                                                       |                                                                                       |                                                                                       |  |

(1) Further testing will be required for BTEX compounds if significantly elevated concentrations are present in the sample(s) tested.

## IMPORTED MATERIALS DECLARATION FORM

|                                                                                                                                                                                              |                                                                  |                          |                                                                                                                                                              |                                                |                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------|
| <b>1.</b>                                                                                                                                                                                    | <b>Planning Permission Number</b>                                | <b>2.</b>                | <b>Development Address</b>                                                                                                                                   |                                                |                          |
|                                                                                                                                                                                              |                                                                  |                          |                                                                                                                                                              |                                                |                          |
| <b>3.</b>                                                                                                                                                                                    | <b>Proposed use(s) of ALL imported material(s)</b>               | <b>4.</b>                | <b>Description of material imported</b>                                                                                                                      | <b>British Standard Certification supplied</b> |                          |
|                                                                                                                                                                                              |                                                                  |                          |                                                                                                                                                              | <b>Yes</b>                                     | <b>No</b>                |
| <input type="checkbox"/>                                                                                                                                                                     | Engineering use/works (e.g. backfill, sub formation, foundation) | <input type="checkbox"/> | Topsoil                                                                                                                                                      | <input type="checkbox"/>                       | <input type="checkbox"/> |
| <input type="checkbox"/>                                                                                                                                                                     | Domestic Garden use (inc. crop growing)                          | <input type="checkbox"/> | Subsoil                                                                                                                                                      | <input type="checkbox"/>                       | <input type="checkbox"/> |
| <input type="checkbox"/>                                                                                                                                                                     | Landscaping (play areas, communal areas, roadside)               | <input type="checkbox"/> | Aggregate                                                                                                                                                    | <input type="checkbox"/>                       | <input type="checkbox"/> |
| <input type="checkbox"/>                                                                                                                                                                     | Other <i>Please specify</i>                                      | <input type="checkbox"/> | Quarry stone                                                                                                                                                 | <input type="checkbox"/>                       | <input type="checkbox"/> |
|                                                                                                                                                                                              |                                                                  |                          | Other ( <i>Please specify</i> ) _____                                                                                                                        | <input type="checkbox"/>                       | <input type="checkbox"/> |
| <b>5.</b>                                                                                                                                                                                    | <b>Origin of Imported Material(s)</b> <input type="checkbox"/>   |                          |                                                                                                                                                              |                                                |                          |
| <input type="checkbox"/>                                                                                                                                                                     | Greenfield Site ( <i>Please specify</i> ) _____                  |                          |                                                                                                                                                              |                                                |                          |
| <input type="checkbox"/>                                                                                                                                                                     | Brownfield Site ( <i>Please specify</i> ) _____                  |                          |                                                                                                                                                              |                                                |                          |
| <input type="checkbox"/>                                                                                                                                                                     | Recycling / Process supplier ( <i>Please specify</i> ) _____     |                          |                                                                                                                                                              |                                                |                          |
|                                                                                                                                                                                              | Other ( <i>Please specify</i> ) _____                            |                          |                                                                                                                                                              |                                                |                          |
| <b>6.</b>                                                                                                                                                                                    | <b>Volume(s) of Material to be Imported</b>                      | <b>7.</b>                | <b>No of samples taken (per source)</b>                                                                                                                      |                                                |                          |
| <input type="checkbox"/>                                                                                                                                                                     | Less than 20m <sup>3</sup>                                       | <input type="checkbox"/> | 2-3                                                                                                                                                          |                                                |                          |
| <input type="checkbox"/>                                                                                                                                                                     | Between 20m <sup>3</sup> - 100m <sup>3</sup>                     | <input type="checkbox"/> | 4-6                                                                                                                                                          |                                                |                          |
| <input type="checkbox"/>                                                                                                                                                                     | More than 100m <sup>3</sup>                                      | <input type="checkbox"/> | More than 6 ( <i>please specify</i> ) (NB: All analyses (where applicable) must be subject to MCERTS accreditation <sup>(c)</sup> at a certified laboratory) |                                                |                          |
| <b>8.</b>                                                                                                                                                                                    | <b>Suitability of Use</b>                                        |                          |                                                                                                                                                              |                                                |                          |
| Confirmation that soil imported does not contain any evidence of Japanese Knotweed stems, leaves and rhizomes. YES <input type="checkbox"/> NO <input type="checkbox"/>                      |                                                                  |                          |                                                                                                                                                              |                                                |                          |
| Confirmation the imported soil does not contain any unprocessed / unsorted demolition waste YES <input type="checkbox"/> NO <input type="checkbox"/>                                         |                                                                  |                          |                                                                                                                                                              |                                                |                          |
| Confirmation that the soil imported does not contain contaminated or potentially contaminated by chemical or radioactive substances YES <input type="checkbox"/> NO <input type="checkbox"/> |                                                                  |                          |                                                                                                                                                              |                                                |                          |
| Confirmation that the soils imported is suitable for use for the intended purpose on site YES <input type="checkbox"/> NO <input type="checkbox"/>                                           |                                                                  |                          |                                                                                                                                                              |                                                |                          |
| Signed:.....Date:.....                                                                                                                                                                       |                                                                  |                          |                                                                                                                                                              |                                                |                          |
| Name:.....Position:.....                                                                                                                                                                     |                                                                  |                          |                                                                                                                                                              |                                                |                          |
| Company Name and Address                                                                                                                                                                     |                                                                  |                          |                                                                                                                                                              |                                                |                          |

### **Validation of Capping Systems**

Capping Systems are an engineered remediation solution frequently used to address contamination issues on development sites. They offer a simplistic and effective method to ensure that the risks from any residual contamination to future site users are adequately managed ensuring minimal long term exposure.

In essence capping systems or clean cover systems, as they are also referred to, involve the placement of a predetermined thickness of certified clean subsoil and/ or topsoil over areas of insitu contamination. They are predominately used when concentrations of contaminants are marginally in excess of SGVs/GACs. Where significantly elevated concentrations are identified or when hydrocarbon and other organic contaminants are present the use of a cover system as a single remediation method is not normally viable, and additional remediation technique(s) are likely to be required. A detailed assessment of the nature and extent of contamination must be undertaken by a suitably qualified consultant or specialist to determine if a capping system in isolation is a sufficient remedial solution.

Whenever capping systems are used the quantity of material to be imported will be dependant on the size of the garden and depth of cover material required. Full design details of the cover system including the proposed depth cover and risk assessment supporting why it is sufficient, must be detailed in a Remediation Strategy for the site and agreed with the LPA/CLO/EHO prior to the commencement of the verification of imported materials. The required depth will be dependant upon the type and concentration of contaminant(s) that will remain in situ and the proposed end use of the site. Whether any additional design measures are required as part of the cover system, such as a warning geomembrane or capillary break layer should also be clearly considered and details provided.

If the purpose of importing materials is for any other reason then the depth of cover may not need to be approved by the LPA/CLO/EHO although you are advised to check.

CIRIA Special Publication 124 'Barriers liners and cover systems for containment and control of land contamination', 1996 and CIRIA Special Publication 106 'Remedial Treatment for contaminated land', 1996 both provide advice on the provision of imported material as a cover/barrier to contaminated ground. The BRE document 'Cover systems for land regeneration - thickness of cover systems for contaminated land', 2004 also provides advice on designing a cover system although this document is heavily caveated and was designed for use in limited scenarios as detailed in the document (which should be read fully).

### **Verification of Capping Thickness**

Capping systems need to be validated to demonstrate that the agreed thickness of clean cover has been achieved and this must be undertaken by a suitably experienced consultant or specialist. There are three main elements that must be verified to prove that the capping system is suitable:

- Details of the origin of the capping material (as detailed earlier in this document)
- Confirmation that the agreed capping thickness has been achieved
- Chemical analysis results which confirm that material used in the cover system are certified clean and free from contamination. (as detailed earlier in this document)

The most common and simplistic way of verifying capping thickness is by the excavation of trial holes (usually hand dug) within completed areas. A verification report should document all trial holes (including a plan showing their location) and the confirmation of thickness should be confirmed through a log which should describe the material encountered in accordance with BS5930. The log descriptions should be supported with photographs of the trial holes with a scale reference (tape measure/ staff) to fully demonstrate the capping thickness.

Alternatively, on some sites it may be convenient to use data from level surveys made before and after cover system placement from which the thickness of cover materials can be calculated.

For housing developments the frequency of thickness verification will be dependant on the number of plots and also whether the capping material came from a variety of sources/locations. Table 4 below provides a **suggested minimum frequency** based on plot numbers. However advice and approval should always be sought from the LPA/CLO/EHO before commencing work.

**Table 4. Verification of Capping Thickness**

| Development Size                                        | Frequency for Verification |
|---------------------------------------------------------|----------------------------|
| 1- 5 Plots                                              | 1 per plot                 |
| 5-20 Plots                                              | 1 in every 2 plots         |
| 20-30 Plots                                             | 1 in every 3 plots         |
| > 30 Plots                                              | 1 in every 4 plots         |
| Adapted from NHBC Technical Extra Note Issue 8 Nov 2012 |                            |

## **APPENDIX B**

### **Imported Soil Material Certificate and Pre-importation Certificate**

# IMPORTED MATERIALS DECLARATION FORM

|                                                                                                                                                                                                         |                                                                  |                                     |                                                                                                                                                     |                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 1.                                                                                                                                                                                                      | Planning Permission Number                                       | 2.                                  | Development Address                                                                                                                                 |                                                   |
| *                                                                                                                                                                                                       |                                                                  | *                                   | CONSTABLES CLOSE<br>PILL<br>NEWPORT.                                                                                                                |                                                   |
| 3.                                                                                                                                                                                                      | Proposed use(s) of ALL imported material(s)                      | 4.                                  | Description of material imported                                                                                                                    | British Standard Certification supplied           |
|                                                                                                                                                                                                         |                                                                  |                                     |                                                                                                                                                     | Yes No                                            |
| <input type="checkbox"/>                                                                                                                                                                                | Engineering use/works (e.g. backfill, sub formation, foundation) | <input type="checkbox"/>            | Topsoil                                                                                                                                             | <input type="checkbox"/> <input type="checkbox"/> |
| <input checked="" type="checkbox"/>                                                                                                                                                                     | Domestic Garden use (inc. crop growing)                          | <input checked="" type="checkbox"/> | Subsoil                                                                                                                                             | <input type="checkbox"/> <input type="checkbox"/> |
| <input checked="" type="checkbox"/>                                                                                                                                                                     | Landscaping (play areas, communal areas, roadside)               | <input type="checkbox"/>            | Aggregate                                                                                                                                           | <input type="checkbox"/> <input type="checkbox"/> |
| <input type="checkbox"/>                                                                                                                                                                                | Other Please specify                                             | <input type="checkbox"/>            | Quarry stone                                                                                                                                        | <input type="checkbox"/> <input type="checkbox"/> |
|                                                                                                                                                                                                         |                                                                  |                                     | Other (Please specify)                                                                                                                              | <input type="checkbox"/> <input type="checkbox"/> |
| 5.                                                                                                                                                                                                      | Origin of Imported Material(s) <input type="checkbox"/>          |                                     |                                                                                                                                                     |                                                   |
| <input type="checkbox"/>                                                                                                                                                                                | Greenfield Site (Please specify) ENZO HOMES, CWMBRAN.            |                                     |                                                                                                                                                     |                                                   |
| <input type="checkbox"/>                                                                                                                                                                                | Brownfield Site (Please specify)                                 |                                     |                                                                                                                                                     |                                                   |
| <input type="checkbox"/>                                                                                                                                                                                | Recycling / Process supplier (Please specify)                    |                                     |                                                                                                                                                     |                                                   |
|                                                                                                                                                                                                         | Other (Please specify)                                           |                                     |                                                                                                                                                     |                                                   |
| 6.                                                                                                                                                                                                      | Volume(s) of Material to be Imported                             | 7.                                  | No of samples taken (per source)                                                                                                                    |                                                   |
| <input type="checkbox"/>                                                                                                                                                                                | Less than 20m <sup>3</sup>                                       | <input type="checkbox"/>            | 2-3                                                                                                                                                 |                                                   |
| <input type="checkbox"/>                                                                                                                                                                                | Between 20m <sup>3</sup> - 100m <sup>3</sup>                     | <input type="checkbox"/>            | 4-6 6.                                                                                                                                              |                                                   |
| <input checked="" type="checkbox"/>                                                                                                                                                                     | More than 100m <sup>3</sup>                                      | <input type="checkbox"/>            | More than 6 (please specify) (NB: All analyses (where applicable) must be subject to MCERTS accreditation <sup>(1)</sup> at a certified laboratory) |                                                   |
| 8.                                                                                                                                                                                                      | Suitability of Use                                               |                                     |                                                                                                                                                     |                                                   |
| Confirmation that soil imported does not contain any evidence of Japanese Knotweed stems, leaves and rhizomes. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>                      |                                                                  |                                     |                                                                                                                                                     |                                                   |
| Confirmation the imported soil does not contain any unprocessed / unsorted demolition waste YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>                                         |                                                                  |                                     |                                                                                                                                                     |                                                   |
| Confirmation that the soil imported does not contain contaminated or potentially contaminated by chemical or radioactive substances YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |                                                                  |                                     |                                                                                                                                                     |                                                   |
| Confirmation that the soils imported is suitable for use for the intended purpose on site YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>                                           |                                                                  |                                     |                                                                                                                                                     |                                                   |
| Signed: <u>DAVID RICHARDSON</u> * Date: <u>15/5/24</u> *                                                                                                                                                |                                                                  |                                     |                                                                                                                                                     |                                                   |
| Name: <u>DAVID RICHARDSON</u> * Position: <u>DIRECTOR</u> *                                                                                                                                             |                                                                  |                                     |                                                                                                                                                     |                                                   |
| Company Name and Address *                                                                                                                                                                              |                                                                  |                                     |                                                                                                                                                     |                                                   |
| GROUNDRICH LTD                                                                                                                                                                                          |                                                                  |                                     |                                                                                                                                                     |                                                   |
| HOME FARM                                                                                                                                                                                               |                                                                  |                                     |                                                                                                                                                     |                                                   |
| ITTON                                                                                                                                                                                                   |                                                                  |                                     |                                                                                                                                                     |                                                   |
| CHERPSTAN NP16 6BP                                                                                                                                                                                      |                                                                  |                                     |                                                                                                                                                     |                                                   |

# IMPORTED MATERIALS DECLARATION FORM

|                                                                                                                                                                                                         |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| 1.                                                                                                                                                                                                      | Planning Permission Number                                                                              | 2.                                  | Development Address                                                                                                                                 |                                                              |
| *                                                                                                                                                                                                       |                                                                                                         | *                                   | CONSTABLES CLOSE<br>PILL<br>NEWPORT.                                                                                                                |                                                              |
| 3.                                                                                                                                                                                                      | Proposed use(s) of ALL imported material(s)                                                             | 4.                                  | Description of material imported                                                                                                                    | British Standard Certification supplied                      |
|                                                                                                                                                                                                         |                                                                                                         |                                     |                                                                                                                                                     | Yes No                                                       |
| <input type="checkbox"/>                                                                                                                                                                                | Engineering use/works (e.g. backfill, sub formation, foundation)                                        | <input checked="" type="checkbox"/> | Topsoil                                                                                                                                             | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/>                                                                                                                                                                     | Domestic Garden use (inc. crop growing)                                                                 | <input type="checkbox"/>            | Subsoil                                                                                                                                             | <input type="checkbox"/> <input type="checkbox"/>            |
| <input checked="" type="checkbox"/>                                                                                                                                                                     | Landscaping (play areas, communal areas, roadside)                                                      | <input type="checkbox"/>            | Aggregate                                                                                                                                           | <input type="checkbox"/> <input type="checkbox"/>            |
| <input type="checkbox"/>                                                                                                                                                                                | Other Please specify                                                                                    | <input type="checkbox"/>            | Quarry stone                                                                                                                                        | <input type="checkbox"/> <input type="checkbox"/>            |
|                                                                                                                                                                                                         |                                                                                                         |                                     | Other (Please specify)                                                                                                                              | <input type="checkbox"/> <input type="checkbox"/>            |
| 5.                                                                                                                                                                                                      | Origin of Imported Material(s)                                                                          |                                     |                                                                                                                                                     |                                                              |
| <input type="checkbox"/>                                                                                                                                                                                | Greenfield Site (Please specify) <del>EXISTING HOME, CUMBRIAN</del>                                     |                                     |                                                                                                                                                     |                                                              |
| <input type="checkbox"/>                                                                                                                                                                                | Brownfield Site (Please specify)                                                                        |                                     |                                                                                                                                                     |                                                              |
| <input type="checkbox"/>                                                                                                                                                                                | Recycling / Process supplier (Please specify) COUNTRYSIDE RECYCLING, TY MANOR FARM, ST BRIDES WENTLOOGE |                                     |                                                                                                                                                     |                                                              |
|                                                                                                                                                                                                         | Other (Please specify)                                                                                  |                                     |                                                                                                                                                     |                                                              |
| 6.                                                                                                                                                                                                      | Volume(s) of Material to be Imported                                                                    | 7.                                  | No of samples taken (per source)                                                                                                                    |                                                              |
| <input type="checkbox"/>                                                                                                                                                                                | Less than 20m <sup>3</sup>                                                                              | <input type="checkbox"/>            | 2-3                                                                                                                                                 |                                                              |
| <input type="checkbox"/>                                                                                                                                                                                | Between 20m <sup>3</sup> - 100m <sup>3</sup>                                                            | <input checked="" type="checkbox"/> | 4-6 6                                                                                                                                               |                                                              |
| <input checked="" type="checkbox"/>                                                                                                                                                                     | More than 100m <sup>3</sup>                                                                             | <input type="checkbox"/>            | More than 6 (please specify) (NB: All analyses (where applicable) must be subject to MCERTS accreditation <sup>(1)</sup> at a certified laboratory) |                                                              |
| 8.                                                                                                                                                                                                      | Suitability of Use                                                                                      |                                     |                                                                                                                                                     |                                                              |
| Confirmation that soil imported does not contain any evidence of Japanese Knotweed stems, leaves and rhizomes. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>                      |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| Confirmation the imported soil does not contain any unprocessed / unsorted demolition waste YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>                                         |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| Confirmation that the soil imported does not contain contaminated or potentially contaminated by chemical or radioactive substances YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| Confirmation that the soils imported is suitable for use for the intended purpose on site YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>                                           |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| Signed: <u>DR Richardson</u> * Date: <u>15/5/24</u> *                                                                                                                                                   |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| Name: <u>DAVID RICHARDSON</u> * Position: <u>DIRECTOR</u> *                                                                                                                                             |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| Company Name and Address *                                                                                                                                                                              |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| GROUNDRICH LTD                                                                                                                                                                                          |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| HOME FARM                                                                                                                                                                                               |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| ITTON                                                                                                                                                                                                   |                                                                                                         |                                     |                                                                                                                                                     |                                                              |
| CHERSTON NP16 6BP                                                                                                                                                                                       |                                                                                                         |                                     |                                                                                                                                                     |                                                              |



Unit 7-8 Hawarden Business Park  
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Deeside  
CH5 3US

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Website: www.alsenvironmental.co.uk

Apex Testing Solutions Limited  
Sturmi Way  
Village Farm Industrial Estate  
Pyle  
Bridgend  
CF33 6BZ

Attention: Laura Davies

## CERTIFICATE OF ANALYSIS

|                              |                                |
|------------------------------|--------------------------------|
| Date of report Generation:   | 28 May 2024                    |
| Customer:                    | Apex Testing Solutions Limited |
| Sample Delivery Group (SDG): | 240521-34                      |
| Your Reference:              | D24163                         |
| Location:                    | Countrywide                    |
| Report No:                   | 729353                         |
| Order Number:                | ATS 1939                       |

We received 1 sample on Tuesday May 21, 2024 and 1 of these samples were scheduled for analysis which was completed on Tuesday May 28, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

**Sonia McWhan**  
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 240521-34  
Client Ref.: 024163

Report Number: 729353  
Location: Countrywide

Superseded Report:

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m)   | Sampled Date |
|------------------|----------------------|----------|-------------|--------------|
| 29821561         | Sample 1             |          | 0.00 - 0.00 | 20/05/2024   |

Only received samples which have had analysis scheduled will be shown on the following pages.



# CERTIFICATE OF ANALYSIS

Validated

SDG: 240521-34  
Client Ref: D24153

Report Number: 729353  
Location: Countryside

Superseded Report:

| Results Legend                                                                                                                                                                                                                                                                                                                                                                                                    |     | Lab Sample No(s)          | 29821561                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------|-----------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Test                                                                                                                                                                                                                                                                                                                                                                          |     | Customer Sample Reference | Sample 1                                                                    |
| <input type="checkbox"/> No Determination Possible                                                                                                                                                                                                                                                                                                                                                                |     | AGS Reference             |                                                                             |
| Sample Types -<br>S - Soil Solid<br>UNS - Unspecified Solid<br>GW - Ground Water<br>SW - Surface Water<br>LE - Land Leachate<br>PL - Prepared Leachate<br>PR - Process Water<br>SA - Saline Water<br>TE - Trade Effluent<br>TS - Treated Sewage<br>US - Untreated Sewage<br>RE - Recreational Water<br>DW - Drinking Water<br>Non-regulatory<br>UNL - Unspecified Liquid<br>SL - Sludge<br>G - Gas<br>OTH - Other |     | Depth (m)                 | 0.00 - 0.00                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                   |     | Container                 | 60g VOC (ALE215)<br>250g Amber Jar (ALE210)<br>1kg TUB with Handle (ALE260) |
|                                                                                                                                                                                                                                                                                                                                                                                                                   |     | Sample Type               | S S S                                                                       |
| Asbestos ID in Solid Samples                                                                                                                                                                                                                                                                                                                                                                                      | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| Cyanide Comp/Free/Total/Thiocyanate                                                                                                                                                                                                                                                                                                                                                                               | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| EPH CWG GC (S)                                                                                                                                                                                                                                                                                                                                                                                                    | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| GRO by GC-FID (S)                                                                                                                                                                                                                                                                                                                                                                                                 | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| Hexavalent Chromium (s)                                                                                                                                                                                                                                                                                                                                                                                           | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| Metals in solid samples by GES                                                                                                                                                                                                                                                                                                                                                                                    | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| PAH by GCMS                                                                                                                                                                                                                                                                                                                                                                                                       | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| pH                                                                                                                                                                                                                                                                                                                                                                                                                | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| Phenols by HPLC (S)                                                                                                                                                                                                                                                                                                                                                                                               | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| Sample description                                                                                                                                                                                                                                                                                                                                                                                                | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| Total Sulphate                                                                                                                                                                                                                                                                                                                                                                                                    | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| TPH CWG GC (S)                                                                                                                                                                                                                                                                                                                                                                                                    | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |
| VOC MS (S)                                                                                                                                                                                                                                                                                                                                                                                                        | All | NDPs: 0<br>Tests: 1       | <input checked="" type="checkbox"/>                                         |



# CERTIFICATE OF ANALYSIS

Validated

SDG: 240521-34  
Client Ref: D24163

Report Number: 729358  
Location: Countrywide

Superseded Report:

## Sample Descriptions

### Grain Sizes

|                  |          |             |                 |               |             |               |            |                    |       |
|------------------|----------|-------------|-----------------|---------------|-------------|---------------|------------|--------------------|-------|
| <b>very fine</b> | <0.063mm | <b>fine</b> | 0.063mm - 0.1mm | <b>medium</b> | 0.1mm - 2mm | <b>coarse</b> | 2mm - 10mm | <b>very coarse</b> | >10mm |
|------------------|----------|-------------|-----------------|---------------|-------------|---------------|------------|--------------------|-------|

| Lab Sample No(s) | Customer Sample Ref. | Depth (m)   | Colour     | Description     | Inclusions | Inclusions 2 |
|------------------|----------------------|-------------|------------|-----------------|------------|--------------|
| 29821561         | Sample 1             | 0.00 - 0.00 | Dark Brown | Sandy Clay Loam | Stones     | None         |

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



SDG: 240521-34  
Client Ref.: D24153

Report Number: 729353  
Location: Countrywide

Superseded Report:

PAH by GCMS

| Results Legend                |             | Customer Sample Ref. | Sample ID       |  |  |  |  |
|-------------------------------|-------------|----------------------|-----------------|--|--|--|--|
| M                             | Method used | Depth (m)            | 0.00 - 0.00     |  |  |  |  |
| M                             | Method used | Sample Type          | Solid/Solid (S) |  |  |  |  |
| M                             | Method used | Date Sampled         | 20/05/2024      |  |  |  |  |
| M                             | Method used | Sample Time          | -               |  |  |  |  |
| M                             | Method used | Date Received        | 21/05/2024      |  |  |  |  |
| M                             | Method used | SDG Ref              | 240521-34       |  |  |  |  |
| M                             | Method used | Lab Sample No. (s)   | 29821561        |  |  |  |  |
| M                             | Method used | AQS Reference        |                 |  |  |  |  |
| Component                     | LOD/Units   | Method               |                 |  |  |  |  |
| Naphthalene-d8 % recovery**   | %           | TM213                | 86.9            |  |  |  |  |
| Acenaphthene-d10 % recovery** | %           | TM213                | 88              |  |  |  |  |
| Phenanthrene-d12 % recovery** | %           | TM213                | 89.6            |  |  |  |  |
| Chrysene-d12 % recovery**     | %           | TM213                | 86.2            |  |  |  |  |
| Perylene-d12 % recovery**     | %           | TM213                | 86.3            |  |  |  |  |
| Naphthalene                   | <9 µg/kg    | TM213                | 37.7            |  |  |  |  |
| Acenaphthylene                | <12 µg/kg   | TM213                | 17.1            |  |  |  |  |
| Acenaphthene                  | <8 µg/kg    | TM213                | 19.9            |  |  |  |  |
| Fluorene                      | <10 µg/kg   | TM213                | 35.7            |  |  |  |  |
| Phenanthrene                  | <13 µg/kg   | TM213                | 264             |  |  |  |  |
| Anthracene                    | <16 µg/kg   | TM213                | 55              |  |  |  |  |
| Fluoranthene                  | <17 µg/kg   | TM213                | 361             |  |  |  |  |
| Pyrene                        | <15 µg/kg   | TM213                | 265             |  |  |  |  |
| Benz[a]anthracene             | <14 µg/kg   | TM213                | 143             |  |  |  |  |
| Chrysene                      | <10 µg/kg   | TM213                | 169             |  |  |  |  |
| Benz[b]fluoranthene           | <15 µg/kg   | TM213                | 200             |  |  |  |  |
| Benz[k]fluoranthene           | <14 µg/kg   | TM213                | 68.5            |  |  |  |  |
| Benz[ghi]perylene             | <15 µg/kg   | TM213                | 135             |  |  |  |  |
| Indeno[1,2,3-cd]pyrene        | <18 µg/kg   | TM213                | 90.9            |  |  |  |  |
| Dibenzo[a,h]anthracene        | <23 µg/kg   | TM213                | <23             |  |  |  |  |
| Benzo[g,h,i]perylene          | <24 µg/kg   | TM213                | 84.4            |  |  |  |  |
| PAH Total Detected USEPA 16   | <113 µg/kg  | TM213                | 1940            |  |  |  |  |







## CERTIFICATE OF ANALYSIS

Validated

SDG: 240521-34  
Client Ref: D24153Report Number: 729353  
Location: Countrywide

Superseded Report:

## Asbestos Identification - Solid Samples

## Results Legend

- # ISO17025 accredited.  
M mCERTS accredited.  
\* Subcontracted test.  
(F) Trigger breach confirmed.  
I-34 Sample deviation (see appendix)

|                   |                     | Date of Analysis | Analysed By             | Comments | Amosite<br>(Brown)<br>Asbestos | Asbestos<br>Actinolite | Asbestos<br>Anthophyllite | Asbestos<br>Tremolite | Chrysotile<br>(White)<br>Asbestos | Crocidolite<br>(Blue) Asbestos | Non-Asbestos<br>Fibre |
|-------------------|---------------------|------------------|-------------------------|----------|--------------------------------|------------------------|---------------------------|-----------------------|-----------------------------------|--------------------------------|-----------------------|
| Cust. Sample Ref. | Sample 1            | 23/05/2024       | Agnieszka<br>Chelmonska | -        | Not Detected<br>(#)            | Not Detected<br>(#)    | Not Detected<br>(#)       | Not Detected<br>(#)   | Not Detected<br>(#)               | Not Detected<br>(#)            | Not Detected          |
| Depth (m)         | 0.00 - 0.00         |                  |                         |          |                                |                        |                           |                       |                                   |                                |                       |
| Sample Type       | SOLID               |                  |                         |          |                                |                        |                           |                       |                                   |                                |                       |
| Date Sampled      | 20/05/2024 00:00:00 |                  |                         |          |                                |                        |                           |                       |                                   |                                |                       |
| Date Received     | 21/05/2024 09:00:00 |                  |                         |          |                                |                        |                           |                       |                                   |                                |                       |
| SDG               | 240521-34           |                  |                         |          |                                |                        |                           |                       |                                   |                                |                       |
| Original Sample   | 29821561            |                  |                         |          |                                |                        |                           |                       |                                   |                                |                       |
| Method Number     | TM048               |                  |                         |          |                                |                        |                           |                       |                                   |                                |                       |



## CERTIFICATE OF ANALYSIS

Validated

SDG: 240521-34  
Client Ref: D24153Report Number: 729853  
Location: Countrywide

Superseded Report:

## Table of Results - Appendix

| Method No | Description                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| PM024     | Soil preparation including homogenisation, moisture, screens of soils for Asbestos Containing Material                                  |
| TM048     | Identification of Asbestos in Bulk Material                                                                                             |
| TM062 (S) | Determination of Phenols in Soils by HPLC                                                                                               |
| TM089     | Determination of Gasoline Range Hydrocarbons (GRH) by Headspace GC-FID (C4-C12)                                                         |
| TM116     | Determination of Volatile Organic Compounds by Headspace GC-MS                                                                          |
| TM133     | Determination of pH in Soil and Water using the GLP pH Meter                                                                            |
| TM151     | Determination of Hexavalent Chromium using Kone analyser                                                                                |
| TM153     | Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser |
| TM181     | Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES                                                                        |
| TM218     | The determination of PAH in soil samples by GC-MS                                                                                       |
| TM221     | Determination of Acid Extractable Sulphate in Soils by ICP OES                                                                          |
| TM414     | Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID                                                     |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



# CERTIFICATE OF ANALYSIS

Validated

SDG: 240521-34  
Client Ref: D24153

Report Number: 729853  
Location: Countrywide

Superseded Report:

## Test Completion Dates

Lab Sample No(s) 29821561  
Customer Sample Ref. Sample 1

AGS Ref.  
Depth 0.00 - 0.00  
Type Soil/Solid (S)

|                                     |             |
|-------------------------------------|-------------|
| Asbestos ID in Solid Samples        | 23-May-2024 |
| Cyanide Comp/Free/Total/Thiocyanate | 23-May-2024 |
| EPH CWG GC (S)                      | 24-May-2024 |
| GRO by GC-FID (S)                   | 24-May-2024 |
| Hexavalent Chromium (s)             | 23-May-2024 |
| Metals in solid samples by DES      | 28-May-2024 |
| PAH by GC/MS                        | 24-May-2024 |
| pH                                  | 28-May-2024 |
| Phenols by HPLC (S)                 | 24-May-2024 |
| Sample description                  | 22-May-2024 |
| Total Sulphate                      | 24-May-2024 |
| TPH CWG GC (S)                      | 24-May-2024 |
| VOC MS (S)                          | 28-May-2024 |



# CERTIFICATE OF ANALYSIS

SDG: 240521-34  
Client Ref: D24163

Report Number: 729353  
Location: Countrywide

Superseded Report:

## Appendix

## General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NPA and GEN Leach tests, flash point LDI, pH, ammonium as NH<sub>4</sub> by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 3 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. Surrogate recoveries - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported; results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-100%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass. It is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g. volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BS EN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GC/FID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GC/FID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C6-C12 range, the total area of the chromatogram is integrated and expressed as µg/kg or µg/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GC/MS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. Data retention: All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. Tentatively Identified Compounds (TICs) are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as 'mixed hydrocarbons'. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

### 19. Sample Deviations

If a sample is flagged as deviating then the associated results may be compromised.

|    |                                                                             |
|----|-----------------------------------------------------------------------------|
| 1  | Container with Headspace provided for volatiles analysis                    |
| 2  | Incorrect container received                                                |
| 3  | Deviation from method                                                       |
| 4  | Matrix interference                                                         |
| ♦  | Sample holding time exceeded in laboratory                                  |
| @  | Sample holding time exceeded due to late arrival of instructions or samples |
| \$ | Sampled on date not provided                                                |

### 20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM043 based on HSG 248 (2021), which is accredited to ISO 17025. If a specific asbestos fibre type is not found this will be reported as 'Not detected'. If no asbestos fibre types are found all will be reported as 'Not detected' and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

#### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

| Asbestos Type      | Common Name    |
|--------------------|----------------|
| Chrysotile         | White Asbestos |
| Amosite            | Brown Asbestos |
| Crocidolite        | Blue Asbestos  |
| Totipot Actinolite |                |
| Anthropogenic      |                |
| Vermiculite        |                |

#### Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

#### Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

## **APPENDIX C**

### **LABORATORY IN-SITU CHEMICAL TEST RESULTS**



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## **Analytical Report Number : 25-059116**

|                             |                  |                                                        |            |
|-----------------------------|------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Constables Close | <b>Samples received on:</b>                            | 31/10/2025 |
| <b>Your job number:</b>     | 12517 RJH        | <b>Samples instructed on/<br/>Analysis started on:</b> | 31/10/2025 |
| <b>Your order number:</b>   |                  | <b>Analysis completed by:</b>                          | 07/11/2025 |
| <b>Report Issue Number:</b> | 1                | <b>Report issued on:</b>                               | 07/11/2025 |
| <b>Samples Analysed:</b>    | 2 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       |
| air       | - once the analysis is complete |

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

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

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

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|                                         |       |                            |                              |               |               |
|-----------------------------------------|-------|----------------------------|------------------------------|---------------|---------------|
| Lab Sample Number                       |       |                            |                              | 735925        | 735926        |
| Sample Reference                        |       |                            |                              | Plot 33 T/S   | Plot 33 S/S   |
| Sample Number                           |       |                            |                              | None Supplied | None Supplied |
| Water Matrix                            |       |                            |                              | N/A           | N/A           |
| Depth (m)                               |       |                            |                              | 0.10          | 0.40          |
| Date Sampled                            |       |                            |                              | 29/10/2025    | 29/10/2025    |
| Time Taken                              |       |                            |                              | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Test Limit of<br>detection | Test Accreditation<br>Status |               |               |
|                                         |       |                            |                              |               |               |

|                               |    |      |      |      |      |
|-------------------------------|----|------|------|------|------|
| Stone Content                 | %  | 0.1  | NONE | 13.8 | 23.9 |
| Moisture Content              | %  | 0.01 | NONE | 12   | 11   |
| Total mass of sample received | kg | 0.1  | NONE | 0.2  | 0.2  |

#### Asbestos

|                                        |      |     |           |              |              |
|----------------------------------------|------|-----|-----------|--------------|--------------|
| Asbestos in Soil Detected/Not Detected | Type | N/A | ISO 17025 | Not-detected | Not-detected |
| Asbestos Analyst ID                    | N/A  | N/A | N/A       | WIK          | WIK          |
| Analysis completed                     | N/A  | N/A | N/A       | 05/11/2025   | 05/11/2025   |

#### General Inorganics

|                                                                         |          |         |        |       |       |
|-------------------------------------------------------------------------|----------|---------|--------|-------|-------|
| pH (L099)                                                               | pH Units | N/A     | MCERTS | 9.6   | 9.6   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS | < 1.0 | < 1.0 |
| Total Sulphate as SO <sub>4</sub>                                       | mg/kg    | 50      | MCERTS | 1700  | 2000  |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS | 700   | 610   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS | 0.351 | 0.306 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS | 351   | 306   |
| Sulphide                                                                | mg/kg    | 1       | MCERTS | 25    | 54    |
| Total Sulphur                                                           | mg/kg    | 50      | MCERTS | 900   | 950   |
| Total Organic Carbon (TOC) - Automated                                  | %        | 0.1     | MCERTS | 0.6   | 0.9   |
| Loss on Ignition @ 450°C                                                | %        | 0.2     | MCERTS | 2.6   | 3     |

#### Total Phenols

|                            |       |   |        |       |       |
|----------------------------|-------|---|--------|-------|-------|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
|----------------------------|-------|---|--------|-------|-------|

#### Speciated PAHs

|                        |       |      |           |      |        |
|------------------------|-------|------|-----------|------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS    | 0.11 | 0.08   |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS    | 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS    | 0.08 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS    | 0.17 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS    | 1.3  | 0.26   |
| Anthracene             | mg/kg | 0.05 | MCERTS    | 0.29 | 0.08   |
| Fluoranthene           | mg/kg | 0.05 | MCERTS    | 1.6  | 0.52   |
| Pyrene                 | mg/kg | 0.05 | MCERTS    | 1.2  | 0.47   |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS    | 0.78 | 0.35   |
| Chrysene               | mg/kg | 0.05 | MCERTS    | 0.78 | 0.4    |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | ISO 17025 | 1    | 0.57   |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | ISO 17025 | 0.39 | 0.19   |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS    | 0.7  | 0.35   |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS    | 0.39 | 0.21   |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS    | 0.11 | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS    | 0.4  | 0.24   |

#### Total PAH

|                             |       |     |           |      |      |
|-----------------------------|-------|-----|-----------|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 9.38 | 3.72 |
|-----------------------------|-------|-----|-----------|------|------|

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|                                         |       |                            |                              |               |               |
|-----------------------------------------|-------|----------------------------|------------------------------|---------------|---------------|
| Lab Sample Number                       |       |                            |                              | 735925        | 735926        |
| Sample Reference                        |       |                            |                              | Plot 33 T/S   | Plot 33 S/S   |
| Sample Number                           |       |                            |                              | None Supplied | None Supplied |
| Water Matrix                            |       |                            |                              | N/A           | N/A           |
| Depth (m)                               |       |                            |                              | 0.10          | 0.40          |
| Date Sampled                            |       |                            |                              | 29/10/2025    | 29/10/2025    |
| Time Taken                              |       |                            |                              | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Test Limit of<br>detection | Test Accreditation<br>Status |               |               |
|                                         |       |                            |                              |               |               |
|                                         |       |                            |                              |               |               |
|                                         |       |                            |                              |               |               |
|                                         |       |                            |                              |               |               |

#### Heavy Metals / Metalloids

|                                    |       |      |        |       |       |
|------------------------------------|-------|------|--------|-------|-------|
| Arsenic (aqua regia extractable)   | mg/kg | 1    | MCERTS | 9     | 8.9   |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.92  | 1.1   |
| Boron (water soluble)              | mg/kg | 0.2  | MCERTS | 1.4   | 2.4   |
| Cadmium (aqua regia extractable)   | mg/kg | 0.2  | MCERTS | 1.4   | 0.8   |
| Chromium (hexavalent)              | mg/kg | 1.8  | MCERTS | < 1.8 | < 1.8 |
| Chromium (aqua regia extractable)  | mg/kg | 1    | MCERTS | 38    | 38    |
| Copper (aqua regia extractable)    | mg/kg | 1    | MCERTS | 37    | 35    |
| Lead (aqua regia extractable)      | mg/kg | 1    | MCERTS | 47    | 39    |
| Mercury (aqua regia extractable)   | mg/kg | 0.3  | MCERTS | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)    | mg/kg | 1    | MCERTS | 24    | 23    |
| Selenium (aqua regia extractable)  | mg/kg | 1    | MCERTS | < 1.0 | 1.7   |
| Vanadium (aqua regia extractable)  | mg/kg | 1    | MCERTS | 35    | 31    |
| Zinc (aqua regia extractable)      | mg/kg | 1    | MCERTS | 200   | 160   |

#### Petroleum Hydrocarbons

|                                                          |       |      |        |         |         |
|----------------------------------------------------------|-------|------|--------|---------|---------|
| TPHCWG - Aliphatic >EC5 - EC6 <sub>HS_1D_AL</sub>        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC6 - EC8 <sub>HS_1D_AL</sub>        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC8 - EC10 <sub>HS_1D_AL</sub>       | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC10 - EC12 <sub>EH_CU_1D_AL</sub>   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   |
| TPHCWG - Aliphatic >EC12 - EC16 <sub>EH_CU_1D_AL</sub>   | mg/kg | 2    | MCERTS | < 2.0   | < 2.0   |
| TPHCWG - Aliphatic >EC16 - EC21 <sub>EH_CU_1D_AL</sub>   | mg/kg | 8    | MCERTS | < 8.0   | < 8.0   |
| TPHCWG - Aliphatic >EC16 - EC35 <sub>EH_CU_1D_AL</sub>   | mg/kg | 10   | MCERTS | < 10    | 16      |
| TPHCWG - Aliphatic >EC21 - EC35 <sub>EH_CU_1D_AL</sub>   | mg/kg | 8    | MCERTS | < 8.0   | 16      |
| TPHCWG - Aliphatic >EC35 - EC44 <sub>EH_CU_1D_AL</sub>   | mg/kg | 8.4  | NONE   | < 8.4   | 21      |
| TPHCWG - Aliphatic >EC5 - EC35 <sub>EH_CU+HS_1D_AL</sub> | mg/kg | 10   | NONE   | < 10    | 16      |
| TPHCWG - Aliphatic >EC5 - EC44 <sub>EH_CU+HS_1D_AL</sub> | mg/kg | 10   | NONE   | < 10    | 37      |

|                                                         |       |      |        |         |         |
|---------------------------------------------------------|-------|------|--------|---------|---------|
| TPHCWG - Aromatic >EC5 - EC7 <sub>HS_1D_AR</sub>        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC7 - EC8 <sub>HS_1D_AR</sub>        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC8 - EC10 <sub>HS_1D_AR</sub>       | mg/kg | 0.02 | MCERTS | < 0.020 | < 0.020 |
| TPHCWG - Aromatic >EC10 - EC12 <sub>EH_CU_1D_AR</sub>   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   |
| TPHCWG - Aromatic >EC12 - EC16 <sub>EH_CU_1D_AR</sub>   | mg/kg | 2    | MCERTS | < 2.0   | < 2.0   |
| TPHCWG - Aromatic >EC16 - EC21 <sub>EH_CU_1D_AR</sub>   | mg/kg | 10   | MCERTS | < 10    | < 10    |
| TPHCWG - Aromatic >EC21 - EC35 <sub>EH_CU_1D_AR</sub>   | mg/kg | 10   | MCERTS | < 10    | 24      |
| TPHCWG - Aromatic >EC35 - EC40 <sub>EH_CU_1D_AR</sub>   | mg/kg | 10   | NONE   | < 10    | 19      |
| TPHCWG - Aromatic >EC35 - EC44 <sub>EH_CU_1D_AR</sub>   | mg/kg | 8.4  | NONE   | < 8.4   | 35      |
| TPHCWG - Aromatic >EC5 - EC35 <sub>EH_CU+HS_1D_AR</sub> | mg/kg | 10   | NONE   | < 10    | 24      |
| TPHCWG - Aromatic >EC5 - EC44 <sub>EH_CU+HS_1D_AR</sub> | mg/kg | 10   | NONE   | < 10    | 60      |

|                                                    |       |    |      |      |    |
|----------------------------------------------------|-------|----|------|------|----|
| TPH Total >EC5 - EC44 <sub>EH_CU+HS_1D_TOTAL</sub> | mg/kg | 10 | NONE | < 10 | 97 |
|----------------------------------------------------|-------|----|------|------|----|

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

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

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

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description *                       |
|-------------------|------------------|---------------|-----------|--------------------------------------------|
| 735925            | Plot 33 T/S      | None Supplied | 0.1       | Brown clay and sand with gravel and stones |
| 735926            | Plot 33 S/S      | None Supplied | 0.4       | Brown clay and sand with gravel and stones |

**Analytical Report Number : 25-059116**

**Project / Site name: Constables Close**

**Water matrix abbreviations:**

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

**Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                                                                       | Analytical Method Description                                                                                                                                         | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Asbestos identification in Soil                                                            | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques                                                 | In-house method based on HSG 248, 2021                                                                 | A001B         | D                  | ISO 17025            |
| Total organic carbon (Automated) in soil                                                   | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)                   | In-house method                                                                                        | L009B         | D                  | MCERTS               |
| Sulphide in soil                                                                           | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode | In-house method                                                                                        | L010-PL       | D                  | MCERTS               |
| 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               |
| Boron, water soluble, in soil                                                              | Determination of water soluble boron in soil by hot water extract followed by ICP-OES                                                                                 | In-house method based on Second Site Properties version 3                                              | L038B         | D                  | MCERTS               |
| Total sulphate (as SO <sub>4</sub> in soil)                                                | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES                                                                                | In-house method                                                                                        | L038B         | D                  | MCERTS               |
| Sulphate, water soluble, in soil (16hr extraction)                                         | Sulphate, water soluble, in soil (16hr extraction)                                                                                                                    | In-house method                                                                                        | L038B         | D                  | MCERTS               |
| Total Sulphur in soil                                                                      | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES                                                   | In-house method                                                                                        | L038B         | D                  | MCERTS               |
| Loss on ignition of soil @ 450°C                                                           | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace                                                        | In-house method                                                                                        | L047-PL       | 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               |
| Total petroleum hydrocarbons with carbon banding by GC-FID in soil                         | Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic                                                            | In-house method                                                                                        | L076B         | D                  | MCERTS               |
| Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands) | Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).                                   | Calculation                                                                                            | L076B/L088-PL | D/W                | NONE                 |
| Hexavalent chromium in soil                                                                | Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry                                      | In-house method                                                                                        | L080-PL       | W                  | MCERTS               |
| Monohydric phenols in soil                                                                 | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL       | W                  | MCERTS               |

**Analytical Report Number : 25-059116**

**Project / Site name: Constables Close**

**Water matrix abbreviations:**

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

**Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                                                 | Analytical Method Description                                                                                | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Total 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               |
| Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil | Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic | In-house method                                                                                        | L088-PL       | W                  | MCERTS               |
| pH in soil (automated)                                               | Determination of pH in soil by addition of water followed by automated electrometric measurement             | In-house method                                                                                        | L099-PL       | D                  | MCERTS               |
| Soil Descriptions                                                    | Textural classification                                                                                      | In-house method                                                                                        | L019B         | W                  | NONE                 |

**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

## **APPENDIX C**

### **SUMMARY OF THE IN-SITU RESULTS AND COMPARISON TO THE SOIL SCREENING LEVELS**

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### METALS AND SEMI-METALS

Job No.: 12517  
 Site: Constables Close, Newport  
 Soil Type: Capping Soils  
 Soil Organic Matter: 1%

| No.                                | Location    | Depth (m) | Arsenic<br>(mg/kg) | Boron<br>(mg/kg) | Beryllium<br>(mg/kg) | Cadmium<br>(mg/kg) | Chromium<br>(mg/kg) | Chromium (VI)<br>(mg/kg) | Copper<br>(mg/kg) | Lead<br>(mg/kg) | Mercury<br>(Elemental)<br>(mg/kg) | Nickel<br>(mg/kg) | Selenium<br>(mg/kg) | Vanadium<br>(mg/kg) | Zinc<br>(mg/kg) |
|------------------------------------|-------------|-----------|--------------------|------------------|----------------------|--------------------|---------------------|--------------------------|-------------------|-----------------|-----------------------------------|-------------------|---------------------|---------------------|-----------------|
| 13                                 | Plot 33 T/S | N/A       | 9                  | 1.4              | 0.92                 | 1.4                | 38                  | < 1.8                    | 37                | 47              | < 0.3                             | 24                | < 1.0               | 35                  | 200             |
| 14                                 | Plot 33 S/S | N/A       | 8.9                | 2.4              | 1.1                  | 0.8                | 38                  | < 1.8                    | 35                | 39              | < 0.3                             | 23                | 1.7                 | 31                  | 160             |
| Screening Criteria Value           |             |           | 40.0               | 11000.0          | 1.7                  | 85.0               | -                   | 6.0                      | 7100.0            | 235.0           | 1.2                               | 180.0             | 430.0               | 1200.0              | 40000.0         |
| Source of Screening Criteria Value |             |           | S4UL               | S4UL             | S4UL                 | S4UL               | -                   | S4UL                     | S4UL              | GAC             | S4UL                              | S4UL              | S4UL                | S4UL                | S4UL            |

## SUMMARY OF LABORATORY SOIL TEST RESULTS

### INORGANIC CHEMICALS & OTHERS

Job No.: 12517  
 Site: Constables Close, Newport  
 Soil Type: Capping Soils  
 Soil Organic Matter: 1%

| No.                                | Location    | Depth (m) | Cyanide<br>(mg/kg) | Loss on ignition,<br>dried solids<br>(%) | Moisture content<br>at 30 C<br>(%) | Phenol<br>(mg/kg) | pH<br>(pH units) | Water Soluble<br>Sulphate<br>(g/l) | Sulphate Total<br>as SO4<br>(mg/kg) | Sulphide<br>(mg/kg) | Total Sulphur<br>(mg/kg) | TOC by Ignition<br>in O2<br>(%) | Equivalent SOM<br>(%) | Asbestos in<br>Soil |
|------------------------------------|-------------|-----------|--------------------|------------------------------------------|------------------------------------|-------------------|------------------|------------------------------------|-------------------------------------|---------------------|--------------------------|---------------------------------|-----------------------|---------------------|
| 13                                 | Plot 33 T/S | N/A       | < 1.0              | 2.60                                     | 12.00                              | < 1.0             | 9.60             | 351.000                            | 1700.00                             | 25.00               | 900.00                   | 0.60                            | 1.03                  | Not-detected        |
| 14                                 | Plot 33 S/S | N/A       | < 1.0              | 3.00                                     | 11.00                              | < 1.0             | 9.60             | 306.000                            | 2000.00                             | 54.00               | 950.00                   | 0.90                            | 1.55                  | Not-detected        |
| Screening Criteria Value           |             |           | 34.0               | -                                        | -                                  | 440.0             | -                | -                                  | -                                   | -                   | -                        | -                               | -                     | -                   |
| Source of Screening Criteria Value |             |           | ATRISK             | -                                        | -                                  | S4UL              | -                | -                                  | -                                   | -                   | -                        | -                               | -                     | -                   |

SUMMARY OF LABORATORY SOIL TEST RESULTS

POLYAROMATIC HYDROCARBONS (PAH)

Job No.: 12517  
Site: Constables Close, Newport  
Soil Type: Capping Soils  
Soil Organic Matter: 1%

| No.                                | Location    | Depth (m) | Acenaphthene<br>(mg/kg) | Acenaphthylene<br>(mg/kg) | Anthracene<br>(mg/kg) | Benzo(a)anthracene<br>(mg/kg) | Benzo(a)pyrene<br>(mg/kg) | Benzo(b)fluoranthene<br>(mg/kg) | Benzo(ghi)perylene<br>(mg/kg) | Benzo(k)fluoranthene<br>(mg/kg) | Chrysene<br>(mg/kg) | Dibenzo(ah)anthracene<br>(mg/kg) | Fluoranthene<br>(mg/kg) | Fluorene<br>(mg/kg) | Indeno(123cd)pyrene<br>(mg/kg) | Naphthalene<br>(mg/kg) | Phenanthrene<br>(mg/kg) | Pyrene<br>(mg/kg) |
|------------------------------------|-------------|-----------|-------------------------|---------------------------|-----------------------|-------------------------------|---------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------|----------------------------------|-------------------------|---------------------|--------------------------------|------------------------|-------------------------|-------------------|
| 13                                 | Plot 33 T/S | N/A       | 0.08                    | 0.05                      | 0.29                  | 0.78                          | 0.7                       | 1                               | 0.4                           | 0.39                            | 0.78                | 0.11                             | 1.6                     | 0.17                | 0.39                           | 0.11                   | 1.3                     | 1.2               |
| 14                                 | Plot 33 S/S | N/A       | < 0.05                  | < 0.05                    | 0.08                  | 0.35                          | 0.35                      | 0.57                            | 0.24                          | 0.19                            | 0.4                 | < 0.05                           | 0.52                    | < 0.05              | 0.21                           | 0.08                   | 0.26                    | 0.47              |
| Screening Criteria Value           |             |           | 3000.0                  | 2900.0                    | 31000.0               | 11.0                          | 3.2                       | 3.9                             | 360.0                         | 110.0                           | 30.0                | 0.31                             | 1500.0                  | 2800.0              | 45.0                           | 2.3                    | 1300.0                  | 3700.0            |
| Source of Screening Criteria Value |             |           | S4UL                    | S4UL                      | S4UL                  | S4UL                          | S4UL                      | S4UL                            | S4UL                          | S4UL                            | S4UL                | S4UL                             | S4UL                    | S4UL                | S4UL                           | S4UL                   | S4UL                    | S4UL              |



# SUMMARY OF LABORATORY SOIL TEST RESULTS

## PETROLEUM HYDROCARBONS

Job No.: 12517  
 Site: Constables Close, Newport  
 Soil Type: Capping Soils  
 Soil Organic Matter: 1%

| No.                                | Location    | Depth (m) | Aliphatic C5-C6<br>(mg/kg) | Aliphatic C6-C8<br>(mg/kg) | Aliphatic C8-C10<br>(mg/kg) | Aliphatic C10-<br>C12 EPH<br>(mg/kg) | Aliphatic C12-<br>C16 EPH<br>(mg/kg) | Aliphatic C16-C35<br>EPH<br>(mg/kg) | Aliphatic C35-<br>C44 EPH<br>(mg/kg) | Aromatic C5-C7<br>(mg/kg) | Aromatic C7-C8<br>(mg/kg) | Aromatic C8-C10<br>(mg/kg) | Aromatic C10-<br>C12 EPH<br>(mg/kg) | Aromatic C12-<br>C16 EPH<br>(mg/kg) | Aromatic C16-<br>C21 EPH<br>(mg/kg) | Aromatic C21-<br>C35 EPH<br>(mg/kg) | Aromatic C35-<br>C40 EPH<br>(mg/kg) |
|------------------------------------|-------------|-----------|----------------------------|----------------------------|-----------------------------|--------------------------------------|--------------------------------------|-------------------------------------|--------------------------------------|---------------------------|---------------------------|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 13                                 | Plot 33 T/S | N/A       | < 10                       | < 0.010                    | < 0.010                     | < 1.0                                | < 2.0                                | < 8.0                               | < 8.4                                | < 0.010                   | < 0.010                   | < 0.020                    | < 1.0                               | < 2.0                               | < 10                                | < 10                                | < 10                                |
| 14                                 | Plot 33 S/S | N/A       | 16                         | < 0.010                    | < 0.010                     | < 1.0                                | < 2.0                                | 16                                  | 21                                   | < 0.010                   | < 0.010                   | < 0.020                    | < 1.0                               | < 2.0                               | < 10                                | 24                                  | 19                                  |
| Screening Criteria Value           |             |           | 42.0                       | 100.0                      | 27.0                        | 130.0                                | 1100.0                               | 65000.0                             | 65000.0                              | 0.4                       | 880.0                     | 47.0                       | 250.0                               | 1800.0                              | 1900.0                              | 1900.0                              | 1900.0                              |
| Source of Screening Criteria Value |             |           | S4UL                       | S4UL                       | S4UL                        | S4UL                                 | S4UL                                 | S4UL                                | S4UL                                 | S4UL                      | S4UL                      | S4UL                       | S4UL                                | S4UL                                | S4UL                                | S4UL                                | S4UL                                |

## FIGURES

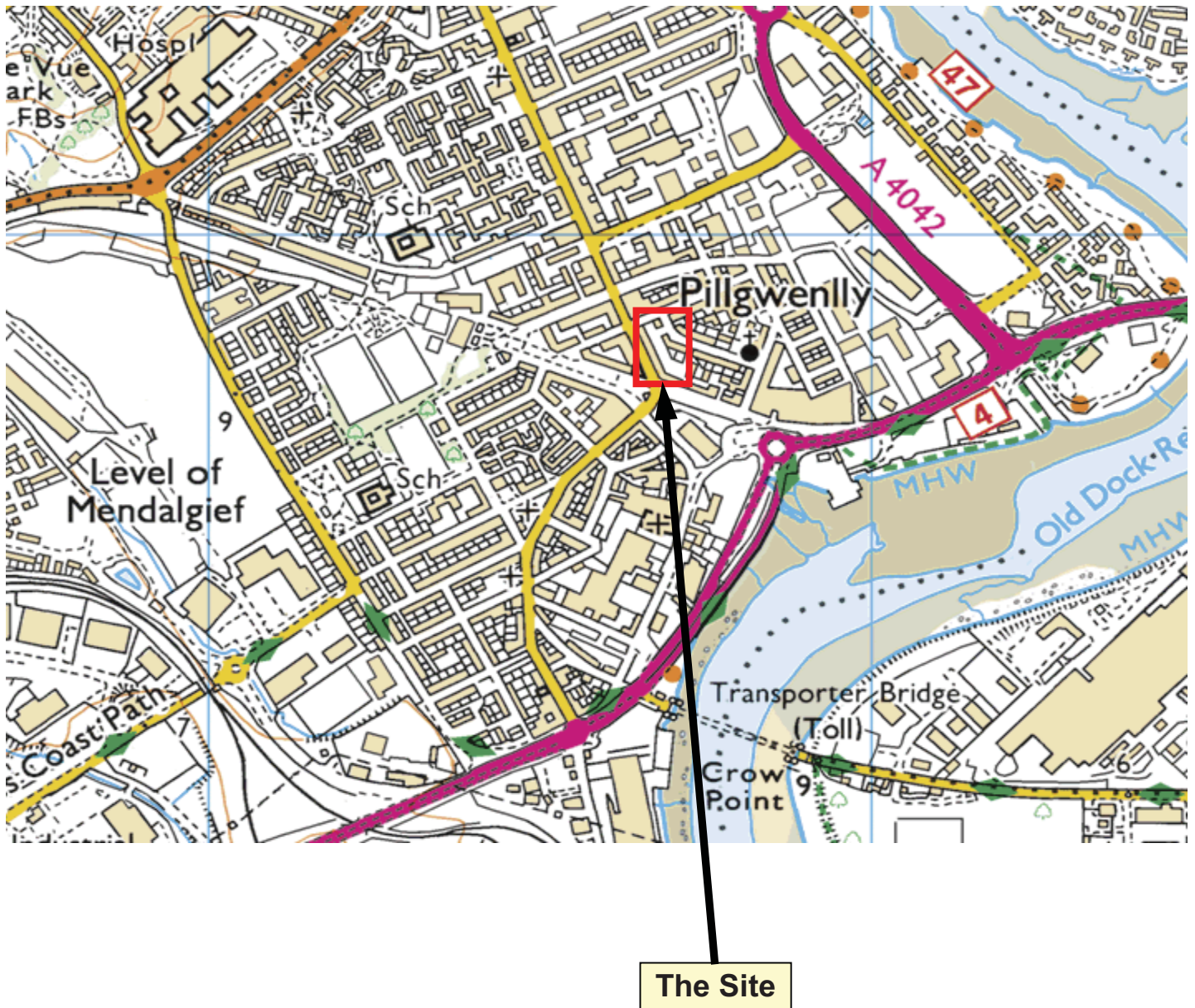
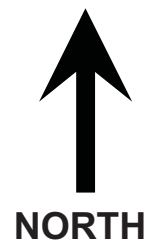
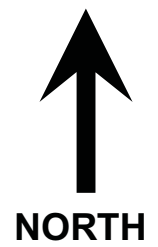


FIGURE 1 - Site Location Plan

Constables Close, Newport

**Intégral**  
Géotechnique

Intégral House  
7 Beddau Way  
Castlegate Business Park  
Caerphilly  
CF83 2AX  
Tel: 029 2080 7991  
Fax: 029 2086 2176



**FIGURE 2 - Site Layout Plan (Redeveloped)**

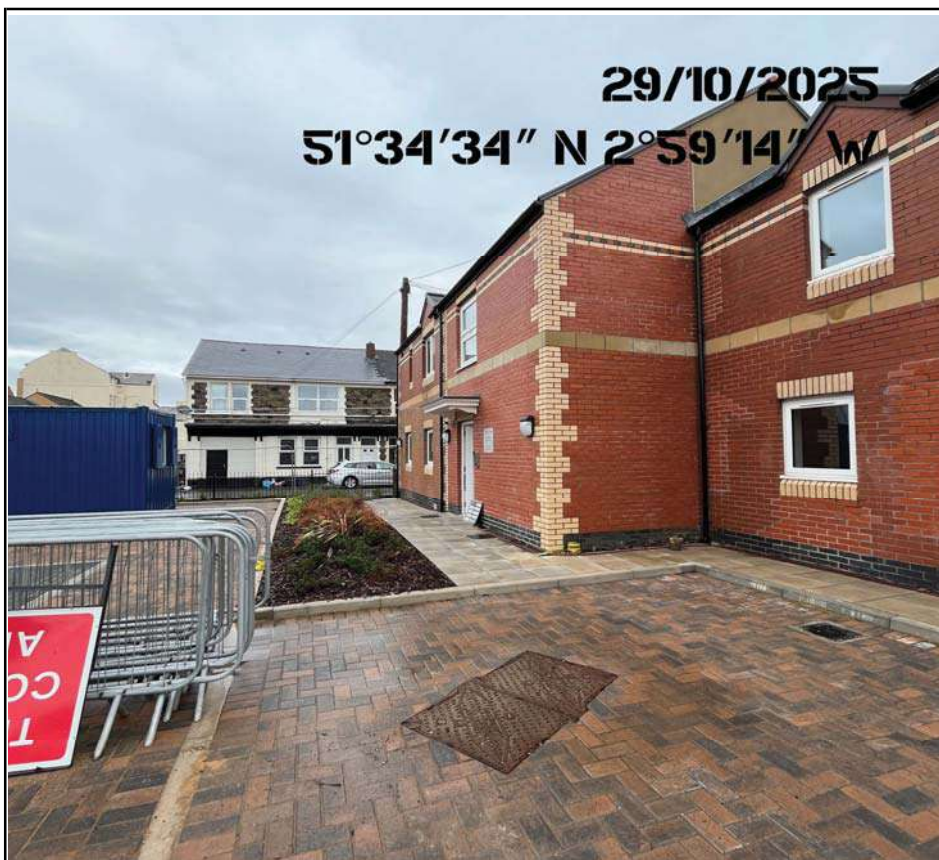
**Constables Close, Newport**

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Plots 1A,1B,2A and 2B Rain Garden Areas



Plot 1A, 1B, 2A and 2B Rain Garden Area

Constables Close, Newport

Ref:12517 Garden and Landscaping Photographs

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Plot 3A and 3B Rain Garden Area



Plot 33 Capping Depth Check Trial Pit

Constables Close, Newport

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## Constables Close, Newport

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POS Area Capping Depth Check



POS Area Placed Membrane at Base of Capping Soil

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