

## **APPENDIX F – STOCKPILE TECHNICAL NOTE**

# Technical Note

|               |                                                                                          |               |         |
|---------------|------------------------------------------------------------------------------------------|---------------|---------|
| Project:      | Transpennine Route Upgrade                                                               |               |         |
| Subject:      | Hillhouse Construction Compound Stockpile Sampling                                       |               |         |
| Author:       | Lucy Norris                                                                              |               |         |
| Date:         | 07/06/2022                                                                               | Project No.:  | 5186546 |
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## Document history

| Revision | Purpose description      | Originated | Checked   | Reviewed  | Authorised | Date      |
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| 1.0      | Draft for Client Comment | A. Singh   | L. Norris | C. Hughes | C. Rose    | June 2022 |
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## Client signoff

|                         |                            |
|-------------------------|----------------------------|
| Client                  | Network Rail               |
| Project                 | Transpennine Route Upgrade |
| Project No.             | 5186546                    |
| Client signature / date |                            |



# 1. Introduction

## 1.1. Background Information

Network Rail is proposing to develop the former Hillhouse Engine Shed and sidings at land off Alder Street, Fartown into a strategic construction compound with railway sidings and temporary railway platform (“the Development”) to facilitate the construction works for the section of the Transpennine Route Upgrade (TRU) between Huddersfield and Westtown (Dewsbury) (“the Scheme”).

A Transport and Works Act Order (TWAO) for the Huddersfield and Westtown (Dewsbury) section of the TRU was submitted to the Secretary of State for Transport on 31 March 2021 (The Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order). Upgrading the railway between Huddersfield and Westtown (Dewsbury) is key to delivering passenger benefits along the Transpennine railway. Whilst the development of the former railway sidings into a construction compound is included within the Order application, Network Rail has submitted a standalone planning application under the Town and Country Planning Act 1990 to facilitate the use of the Hillhouse Construction Compound site (herein referred to as “the Site”) as advanced works to the Order.

Planning Permission for the advanced works, reference 2021/62/94337/W was granted in March 2022.

## 1.2. The Site

The Site is located at Hillhouse railway yard, Alder Street, Fartown, Huddersfield at approximate National Grid Reference (NGR) 414838, 418129.

The site encompasses an area of approximately five hectares (ha) and was recently occupied by a number of commercial and industrial units including a vehicle repair facility, fuel distributors, wood products suppliers, stone quarrying and preparation, garages and a concrete producer and supplier who operated under short-term leases. Gas tanks, oil tanks and other miscellaneous tanks were observed during the site walkover undertaken in 2019.

The site is bound by residential properties to the north-east, the operational railway to the south-east and Alder Street to the north-west. Listed coal drops and a motorcycle training centre are also located adjacent to the south-west of the site. The northern site boundary is located within 20m of residential properties on Abbey Place and Hammond Street. Residential properties and playing fields are also located beyond the railway line approximately 300m and 200m, respectively, to south-east of the site.

Three stockpiles of material are present on site; Stockpile 1 (150 m<sup>3</sup>) is located in the north of the site, Stockpile 2 (300 m<sup>3</sup>) is located in the centre of the site and Stockpile 3 (600 m<sup>3</sup>) is located in the south of the site. All three stockpiles are noted to support vegetation. Approximate stockpile volumes have been obtained from the Adler and Allan report 2014 [1].

Fly tipping has been observed at the site, in particular adjacent to the railway line in the east.

## 1.3. Objectives

The objectives of the GI and Technical Note are:

- To review previous phases of stockpile sampling undertaken at the site;
- To undertake intrusive site investigation within the three stockpiles, soil sampling and chemical analysis of soil samples to:
  - Undertake a generic quantitative risk assessment to assess the risks of potential soil contamination contained within the stockpiles;
  - To collect samples to inform material reuse suitability and waste characterisation.

## 1.4. Limitations

The report authors are responsible for selecting and summarising the data supplied by third parties but cannot be held responsible for any mistakes or inaccuracies or the completeness of third-party data on which it has relied. As with any point data, ground conditions can only be inferred between test locations and as such localised conditions on site may vary between point locations and groundwater/ground gas conditions may

differ from those encountered during the monitoring periods. Therefore, this report cannot guarantee against unexpected ground conditions occurring between the sampling points.

This report presents the preliminary findings of a geo-environmental ground investigation and risk assessment to inform the client about potential contamination hazards and constraints relating to the Development. Constraints relating to geotechnical hazards, ecology, heritage, flooding/drainage, utilities, air quality and noise are beyond the remit of this report.

This report does not advise on measures to deal with asbestos. Detailed advice should be sought from a specialist contractor.

## 2. Ground Investigation

### 2.1. Previous Stockpile Sampling

The three stockpiles present on site were previously sampled by Adler and Allan in 2014 [1] on behalf of Network Rail. Stockpile 1 (estimated volume 150 m<sup>3</sup>) is located in northern part of the site referred as “site 1”. Stockpile 2 (estimated volume 300 m<sup>3</sup>) is located in the centre of the site, aligned in a southwest-northeast direction referred as “site 2”. Stockpile 3 (estimated volume 600 m<sup>3</sup>) is located in the southern area referred as “site 3”. All three stockpiles were noted by Adler and Allan to have begun to support vegetation. Recent anecdotal information from BAM Ritchies [2] has indicated that Japanese knotweed is present on the stockpiles.

The following descriptions are summarised from the works undertaken at the site by Adler and Allan in 2014 on behalf of Network Rail:

- Stockpile 1: The western and near surface parts of the stockpile mainly comprised stones and rubble, indicated by Adler and Allan to have been associated with the stone merchants which operated in the north of the development site. The eastern and deeper parts of the stockpile contained black ash and coal. The presence of a former platform was also recorded.
- Stockpile 2: Material encountered within Stockpile 2 generally comprised a mixture of clayey sand and topsoil, stones and rubble. Plastic fragments were also recorded. It was concluded, by Adler and Allan, that this material was originated from the landscaping company that was located within the development boundary and the clearance of topsoil from the site itself.
- Stockpile 3: Stockpile 3 generally comprised stones, rubble, brick, concrete and fragments of plastic. It was noted by Adler and Allan that the northern half of the stockpile appeared to have been “screened” and contained larger blocks of concrete and stone.

Over and above the descriptions provided, no additional visual or olfactory evidence of contamination were recorded by Adler and Allan during the previous sampling of the stockpiles on site.

All samples collected were analysed for asbestos identification (ID). Ten samples collected during the stockpile sampling were submitted for waste acceptance criteria (WAC) analysis by Adler and Allan to Jones Environmental Laboratory. No further testing was undertaken on these samples.

Asbestos was identified within five samples collected from the three stockpiles located across the site. Details are summarised in Table 2-1.

**Table 2-1 - Summary of Asbestos Results (2014)**

| Exploratory Hole     | Depth (m)    | Asbestos ID                        | Asbestos identification |
|----------------------|--------------|------------------------------------|-------------------------|
| Sample 3 Stockpile 2 | 1.00 to 1.50 | Amosite & Chrysotile – free fibres | Quantifiable            |
| Sample 3 Stockpile 3 | 1.00 to 1.50 | Chrysotile – free fibres           | Quantifiable            |
| Sample 2 Stockpile 1 | 1.00 to 1.50 | Chrysotile – free fibres           | Trace                   |
| Sample 2 Stockpile 2 | 1.00 to 1.50 | Chrysotile – free fibres           | Trace                   |
| Sample 1 Stockpile 2 | 1.00 to 1.50 | Amosite & Chrysotile – free fibres | Quantifiable            |

Samples of stockpiled material were submitted for WAC testing. No further testing of the samples for hazardous properties assessments was included as part of the work by Adler and Allan and therefore waste classification cannot be undertaken. WAC testing provides an indication of landfill acceptability if off-site disposal is required, however, it should be noted that this is not sufficient for full classification and acceptance. A summary of the WAC results provided by Adler and Allan as follows:

- Stockpile 1: The WAC test results on the solid phase indicate that the samples fail the Inert WAC limits for PAH. Sample 3 taken from the black coaly material presents a high Total Organic Content (TOC) which also represents a failure for the Inert WAC. Asbestos fibres, in the form of amosite and chrysotile, were also recorded within Sample 2. For the purpose of waste disposal, the bulk of the material would therefore classify as stable non-reactive hazardous waste.
- Stockpile 2: The WAC test results indicate that material fails the Inert WAC limits for PAH and TOC. Chrysotile was identified within two samples.

- Stockpile 3: The WAC test results indicate that material fails the Inert WAC limits for mineral oil, PAH, sulphates and TOC. Asbestos was identified within samples 2 and 3 in the form of amosite and chrysotile.

## 2.2. Recent Stockpile Sampling

A ground investigation, comprising the excavation of 18 trial pits to 3.00 m below stockpile surface level, was undertaken by RSK Raw during 3<sup>rd</sup> to 5<sup>th</sup> April 2022. Soil samples were collected by an RSK Raw representative engineer working on behalf of Central Alliance and were submitted to i2 Analytical under chain of custody procedures. A total of 18 samples were subsequently scheduled for analysis by Atkins including nine soil samples for leachate analysis.

Testing comprised:

- Soil:
  - Metals/metalloids (antimony, arsenic, beryllium, boron, cadmium, chromium (hexavalent), chromium, copper, lead, mercury, nickel, selenium, vanadium and zinc);
  - Asbestos ID and subsequent quantification if required;
  - General inorganics including pH, total cyanide, total organic carbon, total phenols;
  - Speciated polycyclic aromatic hydrocarbons (PAHs);
  - Monoaromatics & oxygenates including benzene, toluene, ethylbenzene, p&m-xylene, o-xylene;
  - Total petroleum hydrocarbons criteria working group (TPH-CWG).; and
  - WAC analysis.
- Leachate:
  - Inorganics including pH, total cyanide, free cyanide, sulphate,
  - PAHs; and
  - Dissolved metals (antimony, arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc, magnesium).

Eighteen pre-determined trial pit positions were marked out on site by BAM Nuttall operatives prior to commencement of the works. The trial pits were excavated by BAM Nuttall operatives. Excavations were inadvertently repeated at the location of TP5205 and accordingly, the second trial pit was designated TP5205B.

Wherever possible and safe to do so, the excavations and arisings were logged by the RSK Raw representative engineer in accordance with BS5930-2015+A1-2020, and soil samples were collected in proprietary containers provided by the testing laboratory in accordance with the sampling schedule provided by Atkins in advance of the works. The assessment sheets are presented Appendix B.

## 2.3. Summary of Stockpile Material

### 2.3.1. Stockpile 1

Three trial pits were undertaken within Stockpile 1, TP5207 to TP5209 to depths of 1.75 m to 3.00 m below stockpile surface level.

Material encountered within Stockpile 1 was described as Made Ground consisting of sandy gravelly clays and clayey sands and gravels. Gravel was noted to include concrete, brick, tarmacadam, flagstone, sandstone and ceramic limestone tiles. Cobbles and boulders were also noted throughout the stockpile consisting of concrete, tarmacadam, brick, sandstone and limestone.

Frequent rootlets and anthropogenic waste, including plastic and glass, were also recorded.

### 2.3.2. Stockpile 2

Nine stockpiles were undertaken within Stockpile 2, TP5199 to TP5206, to a maximum depth of 3.00 m.

Material within Stockpile 2 was noted to entirely consist of Made Ground comprising sandy gravelly clay and clayey sandy gravel. Clayey gravelly sand was noted within TP5205.

Gravel was noted to comprise siltstone, brick, sandstone, mudstone, slate, concrete, tarmacadam, coal and ceramic tiles. Cobbles and boulders consisted of sandstone, brick, tarmacadam and concrete.

Anthropogenic waste including rubber, ceramic, polystyrene, glass and plastic waste was noted in TP5199, TP5200, TP5201, TP5202, TP5203, TP5204, TP5205 and TP5205B. Large chunks of wooden beams (railway sleepers) were noted at 2.00 m within TP5201.

### 2.3.3. Stockpile 3

Seven trial pits were undertaken within Stockpile 3, TP5192 to TP5198. Depths of trial pits ranged from 1.50 m to 3.00 m.

Material encountered within Stockpile 3 was all classified as Made Ground, consisting of sandy gravelly clays and clayey gravelly sands. Gravel was noted to consist of sandstone, siltstone, mudstone, quartzite, igneous lithologies, slate, brick, tarmacadam, ceramic tiles and concrete. Cobbles and boulders included sandstone, concrete and brick.

Anthropogenic glass, metal and plastic waste was also noted within TP5192, TP5193, TP5194, TP5196, TP5197 and TP5198. Metal rebar was noted within TP5193.

## 2.4. Visual and Olfactory evidence of contamination

Evidence of organic material was recorded in TP5208 at the depth of 0.80 m. No other visual or olfactory evidence of contamination was identified in the stockpiled materials.

## 3. Generic Quantitative Risk Assessment

### 3.1. Human Health Risk Assessment

#### 3.1.1. Introduction

A total of 18 soil samples; three from Stockpile 1, eight from Stockpile 2 and seven from Stockpile 3, were recovered from the exploratory holes during the recent investigation and submitted to a MCERTS / UKAS accredited laboratory for analysis. The results of laboratory testing are presented in Appendix A.

#### 3.1.2. Methodology

In order to identify potential contaminants of concern (CoCs), the soil analytical data has been screened against Atkins' soil screening values (SSVs) or Category 4 Screening Levels (C4SLs) derived to be protective of chronic risks to human health.

SSVs are based on minimal toxicological risk Invalid source specified. for a variety of standard land uses at 1% soil organic matter (SOM) (sand soil type) and 6% SOM (sandy loam soil type) using CLEA v1.071 in accordance with Environment Agency guidance (Environment Agency, 2009b).

Based on the ratio of genotoxic PAHs to benzo(a)pyrene, the surrogate marker approach for genotoxic PAHs as set out in the C4SL Project Methodology ((Contaminated Land: Applications in Real Environments, 2014)) has been adopted.

Samples were analysed for total organic carbon and have therefore been converted to Soil Organic Matter (SOM) ( $SOM = TOC \times 1.72$ ). The laboratory data of the soil collected from the site indicates a geometric mean SOM of 6.30.

No visual and/or olfactory evidence of hydrocarbon contamination was noted. The GAC for 6% SOM was selected for use within the GQRA.

For compounds arsenic, benzene, benzo(a)pyrene, cadmium and lead, the C4SL (based on a low level of toxicological concern) for the commercial land use at 6% SOM has been selected as the assessment criterion. C4SLs have also been published for vinyl chloride, trichloroethylene (TCE) and tetrachloroethylene (PCE).

Due to the nature of acute risk from cyanide, the SSV for cyanide has been based on the potential for an adult to ingest a bolus of soil contaminated with free cyanide.

Due to the nature of risk from asbestos an SSV cannot be derived using CLEA. Therefore, for generic quantitative risk assessment the limit of detection at the laboratory has been selected as the assessment criterion.

#### 3.1.3. Comparison of Soil Concentration Data with Generic Assessment Criteria

Assessment of the soil chemical data, which included a total of 18 soil sample being screened against the GAC for commercial end-use with 6% SOM, identified no exceedances of human health GAC. The assessment sheets are presented Appendix B.

#### 3.1.4. Asbestos in soils

A total of 18 samples collected during the recent investigation were submitted for asbestos analysis (presence and type). Asbestos was identified within three out of the 18 samples as described in table 3-1 below.

**Table 3-1 - Asbestos summary**

| Trial Pit | Depth (m) | Asbestos ID            | Asbestos Containing Material Types Detected (ACM) | Quantification (%) |
|-----------|-----------|------------------------|---------------------------------------------------|--------------------|
| TP5194    | 0.50      | Chrysotile and Amosite | Sheeting/board debris                             | 0.011              |
| TP5193    | 0.50      | Chrysotile             | Sheeting/board debris                             | <0.001             |
| TP5203    | 0.50      | Chrysotile             | Loose fibrous debris                              | <0.001             |

### 3.1.5. Human Health Risk Assessment Conclusions

No exceedances of human health GAC protective of a commercial end use were identified during the recent GI. Therefore, the risk to human health from potential sources of contamination is not considered to be unacceptable.

Asbestos was identified within three trial pit locations out of the 18 undertaken. Only one sample recorded a quantification above the detection limit of 0.001%. The risk from asbestos to construction workers should be managed through appropriate working procedures and mitigation measures.

## 3.2. Controlled Waters Risk Assessment

### 3.2.1. Introduction

The Water Environment GQRA has been undertaken to assess the potential risks posed to the identified water environment receptors from the migration of contaminants from identified on-site sources. To assess the potential risks to the identified receptors, a comparison of soil-leachate concentrations against pertinent water quality standards (WQS) has been undertaken.

### 3.2.2. Methodology

The preliminary ground investigation identified that the majority of the site is not underlain by superficial deposits, with Made Ground underlain directly by the Pennine Lower Coal Measures (Secondary A Aquifer). Cohesive clay was occasionally recorded within the north and south of the site. The site is not located within 250 m of a groundwater source protection zone (SPZ), however, a groundwater abstraction utilised for general use is located 130 m south-west of the site and preliminary data suggests groundwater flow might be towards the south-west. Blackhouse Dike is located approximately 30 m north of the site and the Huddersfield Canal 100 m south-east (both in relation to the north-east tip of the site). Due to the topography of the site and the surrounding area and initial data indicating groundwater flow direction may be towards the south-west, groundwater is not anticipated to flow towards Blackhouse Dike. Groundwater and any potential contamination is likely to flow to the south/south-west away from surface water receptors. Also, the Huddersfield Canal is likely to have been lined with impermeable material during its construction, minimising the ingress of groundwater.

The WQS for the controlled waters assessment are dependent on the nature of the receptors (as identified above). Due to the absence of viable pathways to surface water receptors and Made Ground being in direct contact with the underlying Secondary A Aquifer within the Pennine Lower Coal Measures, groundwater is considered to be the risk driver for this assessment. Therefore, soil leachate results will be screened against Drinking Water Standards (DWS), which is considered to be a relatively conservative approach given the site is not located within 250m of a potable water abstraction or SPZ.

Soil-derived leachate tests give an indication of the concentrations at which contaminants might leach from soil into soil pore-water and thereby migrate to groundwater.

### 3.2.3. Comparison of Soil-Leachate Data with DWS

Nine soil derived leachate samples were assessed against drinking water standards. Determinands exceeding the drinking water standards are summarised in Table 3-2 below. Determinands not listed in the tables below either did not exceed the DWS or do not have an DWS available. Bold locations indicate the location of the maximum concentration.

**Table 3-2 - Leachate Exceedances of Drinking Water Standards (DWS)**

| Constituent                 | Unit | GAC (mg/l) | No. of Samples | Min. Value | Max. Value | No. of Exceedances | Locations of Exceedances                                                            |
|-----------------------------|------|------------|----------------|------------|------------|--------------------|-------------------------------------------------------------------------------------|
| Sulphate as SO <sub>4</sub> | mg/l | 250        | 9              | 6.4        | 393        | 1                  | <b>TP5204 ES7, 2.5m</b>                                                             |
| Antimony                    | mg/l | 0.005      | 9              | <0.0017    | 0.012      | 4                  | TP5209 ES1, 0.25m;<br>TP5207 ES7, 2.5m;<br>TP5206 ES1, 0.5m;<br><b>TP5193, 0.5m</b> |



| Constituent | Unit | GAC (mg/l) | No. of Samples | Min. Value | Max. Value | No. of Exceedances | Locations of Exceedances                     |
|-------------|------|------------|----------------|------------|------------|--------------------|----------------------------------------------|
| Lead        | mg/l | 0.01       | 9              | 0.0019     | 0.015      | 2                  | <b>TP5201 ES7, 2.5m;</b><br>TP5199 ES4, 1.5m |
| Selenium    | mg/l | 0.01       | 9              | <0.004     | 0.014      | 1                  | <b>TP5204 ES7, 2.5m</b>                      |

### 3.2.4. Controlled Waters Risk Assessment Conclusions

Exceedances of sulphate, antimony, lead and selenium have been recorded above the DWS within soil leachate samples. All recorded exceedances are considered to be marginal, within the same or one order of magnitude of the DWS.

All measured PAHs concentrations from the leachable soils analysis were recorded below their respective LODs. Laboratory leachate testing typically overestimates the leachable component of organics due to the aggressive nature of the test. This indicates hydrocarbons are not present in a leachable form and as such are not considered to present an unacceptable risk to the controlled water.

Overall, the stockpiles are considered unlikely to pose an unacceptable risk to controlled waters.



## 4. Preliminary Waste Characterisation

### 4.1. CAT-Waste Assessment

A preliminary waste assessment has been undertaken using the Atkins/McArdle online waste characterisation tool CAT-Waste<sup>SOIL</sup> [3]. This provides an indication of whether waste might be Hazardous in accordance with the current guidance within the Environment Agency's Technical Guidance WM3: Waste Classification – Guidance on the Classification and Assessment of Waste( [4]) Analytical results from the forty on-site soil samples were uploaded into CAT-Waste<sup>SOIL</sup>.

### 4.2. Results of CAT-Waste Soil

The results of the CAT-WASTE Soil analysis indicated that six of the 18 soil samples were identified to contain hazardous properties.

The summary of CAT-Waste soil recorded in trial pit locations is presented in Table 4-1

**Table 4-1 - Summary of CAT-Waste result**

| Stockpile ID | Hole ID | Sample Depth<br>(m below<br>stockpile<br>surface level) | Contaminant                                     | Contaminant<br>Concentration<br>(%) |
|--------------|---------|---------------------------------------------------------|-------------------------------------------------|-------------------------------------|
| Stockpile 1  | TP5205  | 1.5                                                     | Unknown hydrocarbon/oil<br>with marker compound | 0.18100                             |
| Stockpile 3  | TP5192  | 1.4                                                     |                                                 | 0.10400                             |
| Stockpile 2  | TP5199  | 1.5                                                     |                                                 | 0.15100                             |
| Stockpile 3  | TP5198  | 2.5                                                     | Zinc                                            | 0.27160                             |
| Stockpile 3  | TP5195  | 1.5                                                     |                                                 | 0.32099                             |
| Stockpile 3  | TP5192  | 1.4                                                     |                                                 | 0.29630                             |
| Stockpile 2  | TP5200  | 0.5                                                     |                                                 | 0.46914                             |

It is the duty of the waste producer to ensure that waste materials have been appropriately tested and classified to allow disposal to suitably licensed waste management facilities.

### 4.3. Waste Acceptance Criteria

As part of the recent ground investigation, nine soil samples from TP5209, TP5208, TP5207, TP5206, TP5195, TP5197, TP5192, TP5203 and TP5200 were submitted for WAC analysis.

The results of laboratory testing are presented in Appendix D. The WAC test provides an indication of which type of landfill (inert, stable non-reactive hazardous and hazardous) might be able to accept the waste. A summary of the WAC results is provided in Table 8-2 below.

WAC testing shows that a majority of the stockpiled material should be suitable for disposal as stable non-reactive hazardous waste in a non-hazardous landfill or landfill cell.

It was noted that Japanese Knotweed was anecdotally recorded as present on one or more of the stockpiles. The presence of Japanese Knotweed was not taken into account for the waste classification assessment reported here. Any material potentially impacted by Japanese Knotweed should be managed by an invasive species specialist and will require disposal under an appropriate duty of care as a Controlled Waste.

For any material being considered for off-site disposal from site, liaison with landfill operators should be undertaken prior to disposal. Copies of the laboratory analysis undertaken on soil samples from site should be presented to the waste disposal / landfill operator(s) so that they can confirm their requirements. It is the Principal Contractor's responsibility to agree with the landfill operators the appropriate testing regime.

Material that needs to be discarded (e.g. because of contamination/engineering properties, or surplus to the development requirements), including water which should be collected and disposed of as part of wheel washing operations, is waste and should be disposed of in accordance with the current relevant regulations.

## 5. Conclusions and Recommendations

### 5.1. Contamination Assessment

#### 5.1.1. Human Health

Analytical results of 18 geo-environmental soil samples were assessed, and screened against commercial land-use GAC for 6% SOM. A summary of the human health risk assessment findings is presented below:

- No exceedances of human health GAC for commercial end use were identified.
- Asbestos in the form of chrysotile and amosite was identified within three samples.
- Anthropogenic waste material was encountered within all three stockpiles. No further visual or olfactory signs of contamination, including free product, were identified.

The risk from asbestos within the soils should be managed through risk assessment and appropriate mitigation measures, including being placed at depth under suitable cover material. It should be noted that during the 2014 investigation undertaken by Adler and Allan, asbestos was recorded in a higher number of samples across the stockpiles located on site.

Should any unexpected visual or olfactory evidence of potential contamination, including asbestos, be encountered during the removal works, that part of the works should be halted. A contaminated land / asbestos specialist should be consulted immediately so that additional assessment can be undertaken, and appropriate mitigation measures are put in place. Appropriate best practice environmental management should be adopted during the works to mitigate potential risks to environmental receptors (e.g., minimisation of dust generation and migration, and controlled surface water run-off).

#### 5.1.2. Controlled Water

Soil-derived leachate data has been screened against DWS due to the presence of a Secondary A aquifer underlying the site. A summary is provided below:

- Sulphate (as SO<sub>4</sub>) exceeded the DWS at TP5204 ES7 (2.5 m), antimony exceeded the DWS at TP5193 (0.5 m), lead exceeded the DWS at TP5201 ES7 (2.5 m) and selenium exceeded the DWS at TP5204 ES7 (2.5m). In addition to that the superficial deposits underlying the site comprise Glaciofluvial Deposits (Mid Pleistocene) sand and gravel which will not impede the migration of contaminants vertically to the Secondary A aquifer. However, the superficial deposits are absent in large part of the area. All the exceedances are marginally higher than the GAC with relative exceedances of one order of magnitude. The risk to groundwater is therefore assessed as low and are not considered to be unacceptable.

### 5.2. Material Reuse

The risk assessment undertaken indicated that material encountered within the stockpiles on site would be chemically suitable for reuse on site as it is unlikely to pose an unacceptable risk to human health and/or the environment. However, due to the large proportion of anthropogenic inclusions material may not be geotechnically suitable for reuse. It is anticipated that arisings could be reused across the site, subject to re-use complying with requirements of a materials management plan, exemption or environmental permit. Verification that re-use complied with the MMP/permit would be required, accordingly materials should be tested and compared to re-use criteria. It is essential this approach is agreed with the contaminated land officers at the Council and Environment Agency prior to submission of the MMP/permit.

### 5.3. Waste Classification for Off Site Disposal (if required)

A summary of the conclusions and recommendations relating to waste classification and disposal is provided below:

- The results of the CAT-WASTE Soil analysis indicated that six of the 18 soil samples were identified to contain hazardous properties for markers HP7, HP11 and HP14 relating to hydrocarbons/oil and zinc.

- WAC testing shows that a majority of the stockpiled material should be suitable for disposal as stable non-reactive hazardous waste in a non-hazardous landfill or landfill cell.
- It was noted that Japanese Knotweed was anecdotally recorded as present on one or more of the stockpiles. The presence of Japanese Knotweed was not taken into account for the waste classification assessment reported here. Any material potentially impacted by Japanese Knotweed should be managed by an invasive species specialist and will require disposal under an appropriate duty of care as a controlled waste.
- The Principal Contractor should contact the appropriate landfill operator to confirm additional testing requirements prior to the off-site disposal of any material at an appropriately licensed facility. It is the Principal Contractor's responsibility to agree with the non-hazardous landfill operators the appropriate testing regime.
- Should any material from site be considered for off-site disposal, liaison with non-hazardous landfill operators should be undertaken prior to disposal. Copies of the laboratory analysis undertaken on soil samples from site should be presented to the waste disposal / landfill operator(s) so that they can confirm their requirements.

## 6. References

- [1] AAdler and Allan, "Inspection and Site Report of Stockpile Material Land East of Alder Street Huddersfield," Network Rail, November 2014.
- [2] RSK Raw, " Hillhouse TRU Stockpiles – Logging and Sampling of Trial Pits – Final Logs, Photographs and Environmental Lab reports," 2022.
- [3] Atkins, "CatWastesoil," 2022. [Online]. Available: [www.catwastesoil.co.uk](http://www.catwastesoil.co.uk).
- [4] Environment Agency, "Guidance on the classification and assessment of waste (Technical Guidance WM3)," 2018.
- [5] The Scottish Government, Scotland River Basin District (Surface Water Typology, Environmental Standards, Condition Limits and Groundwater Threshold Values) Directions, 2014.
- [6] Scottish Government, "Scotland River Basin District (Standards) Amendment Directions," 2015.
- [7] Scottish Environment Protection Agency (SEPA), "WAT-PS-10-01, Assigning Groundwater Assessment Criteria for Pollutant Inputs v3.0," August 2014.
- [8] Scottish Environment Protection Agency (SEPA), WAT-SG-53, Environmental Standards for Discharges to Surface Waters v7.1, 2020.
- [9] S. E. P. Agency, "Waste (Scotland) Regulations," 2012 (as amended).
- [10] Atkins, "CatWastesoil," 2020. [Online]. Available: [www.catwastesoil.co.uk](http://www.catwastesoil.co.uk). [Accessed 2022].

# Appendices

# Appendix A. Figures





Legend

- Trial Pit
- Approximate location of Japanese Knotweed

Coordinate System: GCS TPEN11-TM

|     |            |    |      |      |
|-----|------------|----|------|------|
| P0  | 2021-05-28 | KB | CB   | CB   |
| Rev | Date       | By | Chkd | Appd |

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Client  
TRU - West Alliance

Project Title  
Transpennine Route Upgrade

Drawing Title  
TRIAL PIT LOCATION PLAN

Scale at A3  
NTS  
Role  
Suitability  
Preliminary  
Arup Job No  
254336-00  
Rev  
P0  
Figure  
FIGURE 1



## Appendix B. RSK Factual Report





Offices across the UK and Ireland

25<sup>th</sup> May 2022

Mr Ranjit Soomal  
Alliance Environment Manager  
Transpennine Route Upgrade

Our Ref. 2641987-220525  
Your Ref. Hillhouse TRU

RSK Raw Limited  
Raw House  
Portland Road, Malvern  
Worcestershire WR14 2TA

T: 0345 166 8491  
E: enquiries@raw-group.com  
W: www.rskraw.com

Dear Ranjit

**Re: Hillhouse TRU Stockpiles – Logging and Sampling of Trial Pits – Final Logs, Photographs and Environmental Laboratory Reports**

Following our attendance on the above site, we are pleased to present the collated trial pit logs, photographs and environmental laboratory reports.

RSK Raw representative engineer (Central Alliance) attended site on Tuesday 3<sup>rd</sup>, Wednesday 4<sup>th</sup> and Thursday 5<sup>th</sup> May 2022 for logging and sampling from trial pits excavated into three stockpiles on site.

Eighteen pre-determined trial pit positions were marked out on site by BAM Nuttall operatives prior to commencement of the works. The trial pits were excavated by BAM Nuttall operatives. Excavations were inadvertently repeated at the location of TP5205 and accordingly, the second trial pit was designated TP5205B. Wherever possible and safe to do so, the excavations and arisings were logged by our representative engineer in accordance with BS5930-2015+A1-2020, and soil samples were collected in proprietary containers provided by the testing laboratory in accordance with the sampling schedule provided by Atkins in advance of the works.

All soil samples were submitted to i2 Analytical under chain of custody procedures and subsequently scheduled for analysis by Atkins.

The following are appended:

- Appendix A - Final Trial Pit Logs and Photographs
- Appendix B - Final i2 Analytical Laboratory Reports

Yours sincerely  
**For RSK Raw**  
**Redacted**

Fiona Townley  
Principal Scientist

Please note that the standard RSK Raw limitations to the above works as reported herein apply.



Pollution response and remediation

RSK Raw is a trading name of RSK Raw Limited.  
Registered in England No. 12071477. Registered Office: Spring Lodge,  
172 Chester Road, Helsby, Cheshire, UK, WA6 0AR.  
RSK Raw Limited is a member of the RSK group.

## Appendix A





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Web: [www.central-alliance.co.uk](http://www.central-alliance.co.uk)

## Trial Pit

Sheet 1 of 1

# TP5192

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**Location: **Huddersfield**Client: **RSK**

### Location Details

Easting: N/A

Northing: **N/A**

Elevation: N/A

Final Depth: **1.50m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination:  $90^\circ$ 

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

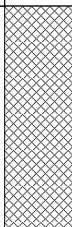
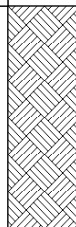
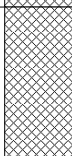
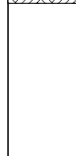
Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 05/05/2022

Finish Date: 05/05/2022

| Strata Description                                                                                                                                                                                                                                                                                 | Legend                                                                            | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD) | Water Level (m) | Installation / Backfill                                                             | Samples & Testing |      |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------|-------------------------|-----------------|-------------------------------------------------------------------------------------|-------------------|------|--------------|
|                                                                                                                                                                                                                                                                                                    |                                                                                   |                                  |                         |                 |                                                                                     | Depth (m)         | Ref  | Test Results |
| MADE GROUND: Soft friable brown slightly sandy slightly gravelly CLAY with low cobble content and frequent rootlets. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse sandstone, siltstone, brick and concrete. Cobbles are angular concrete and brick.                      |  | (0.90)                           |                         |                 |  | 0.00 - 1.00       | 3 B  |              |
|                                                                                                                                                                                                                                                                                                    |                                                                                   |                                  |                         |                 |                                                                                     | 0.00 - 1.50       | 7 ES |              |
| MADE GROUND: Soft brownish black slightly gravelly sandy CLAY with low cobble content, anthropogenic glass and plastic waste and frequent rootlets. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse sandstone, siltstone, brick and concrete. Cobbles are angular concrete. |  | 0.90<br>(0.60)                   |                         |                 |  | 0.50              | 1 ES |              |
|                                                                                                                                                                                                                                                                                                    |                                                                                   |                                  |                         |                 |                                                                                     | 0.60              | 2 D  |              |
| EOH at 1.50m - Scheduled Depth                                                                                                                                                                                                                                                                     |  | 1.50                             |                         |                 |  | 1.00 - 1.50       | 6 B  |              |
|                                                                                                                                                                                                                                                                                                    |                                                                                   |                                  |                         |                 |                                                                                     | 1.40              | 4 ES |              |
|                                                                                                                                                                                                                                                                                                    |                                                                                   |                                  |                         |                 |                                                                                     | 1.50              | 5 D  |              |
| Observations / Remarks                                                                                                                                                                                                                                                                             | Breaking Out / Hard Strata                                                        |                                  | Stability & Backfill    |                 | Pit Dimensions                                                                      |                   |      |              |
|                                                                                                                                                                                                                                                                                                    | From (m)                                                                          | Remarks                          | Shoring: None           |                 | <div><div></div><div>Orientation:<br/>°</div></div>                                 |                   |      |              |
|                                                                                                                                                                                                                                                                                                    |                                                                                   |                                  | Stability: Stable       |                 |                                                                                     |                   |      |              |
|                                                                                                                                                                                                                                                                                                    |                                                                                   |                                  | Backfill: Arisings      |                 |                                                                                     |                   |      |              |



PHOTOGRAPH 1 – TP5192 – G.L. to 1.50 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5192 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5192 – G.L. to 1.50 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5192 Photographs              |                                                                                                                     |





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## Trial Pit

Sheet 1 of 1

# TP5193

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: N/A

Final Depth: **3.00m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination:  $90^\circ$ 

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

Scale: 1:30

Checked By: JD

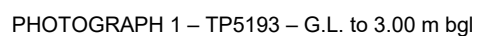
Approved By: PS

Start Date: 05/05/2022

Finish Date: 05/05/2022

[illegible]

| Observations / Remarks | Breaking Out / Hard Strata |         | Stability & Backfill                                             | Pit Dimensions                                                                                                                                                                                                                                                                                   |
|------------------------|----------------------------|---------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | From (m)                   | Remarks |                                                                  |                                                                                                                                                                                                                                                                                                  |
|                        |                            |         | Shoring: None<br><br>Stability: Stable<br><br>Backfill: Arisings | <div style="text-align: center;">             m<br/>  </div> Orientation:<br><div style="text-align: center;">  </div> |



|                |                                 |
|----------------|---------------------------------|
| <b>Client</b>  | TRUw Alliance                   |
| <b>Project</b> | Huddersfield Stockpile Analysis |
| <b>Title</b>   | TP5193 Photographs              |


**CENTRAL ALLIANCE**  
 GEO





PHOTOGRAPH 2 – TP5193 – G.L. to 3.00 m bgl

|         |                                 |
|---------|---------------------------------|
| Client  | TRUw Alliance                   |
| Project | Huddersfield Stockpile Analysis |
| Title   | TP5193 Photographs              |





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## Trial Pit

Sheet 1 of 1

TP5194

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: **N/A**

Final Depth: 3.00m

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 05/05/2022

Finish Date: 05/05/2022

| Strata Description                                                                                                                                                                                                                                                                                                                                                            | Legend | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD) | Water Level (m) | Installation / Backfill | Samples & Testing |       |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------|-------------------------|-----------------|-------------------------|-------------------|-------|--------------|
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         | Depth (m)         | Ref   | Test Results |
| <p>MADE GROUND: Soft friable dark greyish brown slightly sandy gravelly CLAY with low cobble content, anthropogenic glass and plastic waste and occasional rootlets. Sand is fine to coarse. Gravel is angular to rounded fine to coarse brick, concrete, siltstone, sandstone, quartzite and igneous lithologies. Cobbles are angular to subangular brick and sandstone.</p> |        | (1.80)                           |                         |                 |                         | 0.00 - 1.00       | 3 B   |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         | 0.00 - 3.00       | 10 ES |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         | 0.50              | 1 ES  |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         | 0.60              | 2 D   |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
| <p>MADE GROUND: Soft dark brownish grey slightly gravelly sandy CLAY with low cobble content and rare rootlets. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, concrete, siltstone, sandstone, quartzite and various igneous lithologies. Cobbles are angular to subangular brick.</p>                                                         |        | 1.80                             |                         |                 |                         | 1.00 - 2.00       | 6 B   |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         | 1.50              | 4 ES  |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         | 1.60              | 5 D   |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
| <p>EOH at 3.00m - Scheduled Depth</p>                                                                                                                                                                                                                                                                                                                                         |        | (1.20)                           |                         |                 |                         | 2.00 - 3.00       | 9 B   |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         | 2.50              | 7 ES  |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         | 2.60              | 8 D   |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
| <p>EOH at 3.00m - Scheduled Depth</p>                                                                                                                                                                                                                                                                                                                                         |        | 3.00                             |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                                               |        |                                  |                         |                 |                         |                   |       |              |

| Observations / Remarks | Breaking Out / Hard Strata |         | Stability & Backfill                                             | Pit Dimensions                                                                                                                                                                                                                                                                                 |
|------------------------|----------------------------|---------|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | From (m)                   | Remarks |                                                                  |                                                                                                                                                                                                                                                                                                |
|                        |                            |         | Shoring: None<br><br>Stability: Stable<br><br>Backfill: Arisings | <div style="text-align: center;">             m<br/> <br/>             m<br/><br/>             Orientation:<br/>  </div> |





PHOTOGRAPH 1 – TP5194 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5194 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5194 – G.L. to 3.00 m bgl

|         |                                 |                                                                                                              |
|---------|---------------------------------|--------------------------------------------------------------------------------------------------------------|
| Client  | TRUw Alliance                   |  CENTRAL ALLIANCE<br>GEO |
| Project | Huddersfield Stockpile Analysis |                                                                                                              |
| Title   | TP5194 Photographs              |                                                                                                              |





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## Trial Pit

Sheet 1 of 1

# TP5195

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: **N/A**

Final Depth: **3.00m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination:  $90^\circ$ 

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

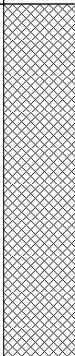
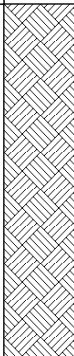
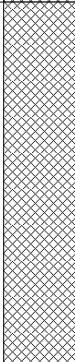
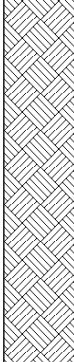
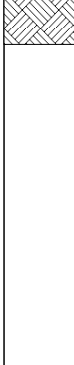
Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 05/05/2022

Finish Date: 05/05/2022

| Strata Description                                                                                                                                                                                                                                                                                                                                        | Legend                                                                              | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD)                                  | Water Level (m) | Installation / Backfill                                                               | Samples & Testing |       |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------|-------------------|-------|--------------|
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | Depth (m)         | Ref   | Test Results |
| MADE GROUND: Soft friable dark greyish brown slightly sandy gravelly CLAY with low cobble and boulder content and occasional rootlets. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, concrete, macadam, sandstone, siltstone and quartzite. Cobbles and boulders are angular to subangular concrete, sandstone and brick. |    | (1.40)                           |                                                          |                 |    | 0.00 - 1.00       | 3 B   |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 0.00 - 3.00       | 10 ES |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 0.50              | 1 ES  |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 0.60              | 2 D   |              |
| MADE GROUND: Brownish black clayey very gravelly fine to coarse SAND with low cobble and boulder content. Gravel is angular to subrounded fine to coarse brick, slate, concrete, mudstone, sandstone and siltstone. Cobbles are angular to subangular brick and sandstone.                                                                                |   | (1.60)                           |                                                          |                 |   | 1.00 - 2.00       | 6 B   |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 1.40              |       |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 1.50              | 4 ES  |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 1.60              | 5 D   |              |
| EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                                                                                                                            |  | (1.60)                           |                                                          |                 |  | 2.00 - 3.00       | 9 B   |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 2.50              | 7 ES  |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 2.60              | 8 D   |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                  |                                                          |                 |                                                                                       | 3.00              |       |              |
| Observations / Remarks                                                                                                                                                                                                                                                                                                                                    | Breaking Out / Hard Strata                                                          |                                  | Stability & Backfill                                     |                 | Pit Dimensions                                                                        |                   |       |              |
|                                                                                                                                                                                                                                                                                                                                                           | From (m)                                                                            | Remarks                          | Shoring: None<br>Stability: Stable<br>Backfill: Arisings |                 | <div><div></div><div>Orientation:</div></div>                                         |                   |       |              |





PHOTOGRAPH 1 – TP5195 – G.L. to 3.00 m bgl

|                |                                 |
|----------------|---------------------------------|
| <b>Client</b>  | TRUw Alliance                   |
| <b>Project</b> | Huddersfield Stockpile Analysis |
| <b>Title</b>   | TP5195 Photographs              |





PHOTOGRAPH 2 – TP5195 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5195 Photographs              |                                                                                                                     |



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## Trial Pit

Sheet 1 of 1

**TP5196**

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: **N/A**

Final Depth: **3.00m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

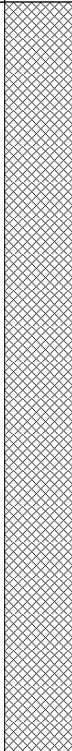
Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 05/05/2022

Finish Date: 05/05/2022

| Strata Description                                                                                                                                                                                                                                                                                                  | Legend                                                                             | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD)                                          | Water Level (m) | Installation / Backfill                                                              | Samples & Testing |       |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------|-------------------|-------|--------------|
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | Depth (m)         | Ref   | Test Results |
| MADE GROUND: Blackish brown slightly clayey very gravelly fine to coarse SAND with low cobble content and anthropogenic glass, metal and plastic waste. Gravel is angular to rounded fine to coarse siltstone, sandstone, brick and ceramic tiles. Cobbles are angular rick.<br><br>From 0.00-0.50m, Rare rootlets. |  | (3.00)                           |                                                                  |                 |  | 0.00 - 1.00       | 3 B   |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 0.00 - 3.00       | 10 ES |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 0.50              | 1 ES  |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 0.60              | 2 D   |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 1.00 - 2.00       | 6 B   |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 1.50              | 4 ES  |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 1.60              | 5 D   |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 2.00 - 3.00       | 9 B   |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 2.50              | 7 ES  |              |
|                                                                                                                                                                                                                                                                                                                     |                                                                                    |                                  |                                                                  |                 |                                                                                      | 2.60              | 8 D   |              |
| EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                                                                                      |                                                                                    | 3.00                             |                                                                  |                 |                                                                                      |                   |       |              |
| Observations / Remarks                                                                                                                                                                                                                                                                                              | Breaking Out / Hard Strata                                                         |                                  | Stability & Backfill                                             |                 | Pit Dimensions                                                                       |                   |       |              |
|                                                                                                                                                                                                                                                                                                                     | From (m)                                                                           | Remarks                          | Shoring: None<br><br>Stability: Stable<br><br>Backfill: Arisings |                 | m<br><div></div> m<br><br>Orientation:<br>°                                          |                   |       |              |





PHOTOGRAPH 1 – TP5196 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5196 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5196 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5196 Photographs              |                                                                                                                     |





PHOTOGRAPH 3 – TP5196 – G.L. to 3.00 m bgl

|         |                                 |                                                                                                                     |
|---------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Client  | TRUW Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| Project | Huddersfield Stockpile Analysis |                                                                                                                     |
| Title   | TP5196 Photographs              |                                                                                                                     |





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## Trial Pit

Sheet 1 of 1

TP5197

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**Location: **Huddersfield**Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: N/A

Final Depth: **1.50m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination:  $90^\circ$ 

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

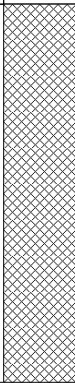
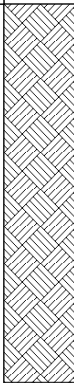
Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 05/05/2022

Finish Date: 05/05/2022

| Strata Description                                                                                                                                                                                                                                                                                                                                  | Legend                                                                            | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD)                                  | Water Level (m)      | Installation / Backfill                                                             | Samples & Testing |      |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|-------------------|------|--------------|
|                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                  |                                                          |                      |                                                                                     | Depth (m)         | Ref  | Test Results |
| MADE GROUND: Soft friable dark blackish brown slightly sandy gravelly CLAY with low cobble and boulder content, anthropogenic waste and frequent rootlets. Sand is fine to coarse. Gravel is angular to rounded fine to coarse sandstone, concrete, siltstone, brick, mudstone, sandstone and quartzite. Cobbles and boulders are angular concrete. |  | (1.50)                           |                                                          |                      |  | 0.00 - 1.00       | 3 B  |              |
|                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                  |                                                          |                      |                                                                                     | 0.00 - 1.50       | 7 ES |              |
|                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                  |                                                          |                      |                                                                                     | 0.40              | 4 ES |              |
|                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                  |                                                          |                      |                                                                                     | 0.50              | 1 ES |              |
|                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                  |                                                          |                      |                                                                                     | 0.60              | 2 D  |              |
|                                                                                                                                                                                                                                                                                                                                                     |                                                                                   |                                  |                                                          |                      |                                                                                     | 1.00 - 1.50       | 6 B  |              |
| EOH at 1.50m - Scheduled Depth                                                                                                                                                                                                                                                                                                                      |                                                                                   | 1.50                             |                                                          |                      |                                                                                     | 1.50              | 5 D  |              |
| Observations / Remarks                                                                                                                                                                                                                                                                                                                              |                                                                                   | Breaking Out / Hard Strata       |                                                          | Stability & Backfill |                                                                                     | Pit Dimensions    |      |              |
|                                                                                                                                                                                                                                                                                                                                                     | From (m)                                                                          | Remarks                          | Shoring: None<br>Stability: Stable<br>Backfill: Arisings |                      | <div><div></div><div>Orientation: °</div></div>                                     |                   |      |              |





PHOTOGRAPH 1 – TP5197 – G.L. to 1.50 m bgl

|         |                                 |
|---------|---------------------------------|
| Client  | TRUw Alliance                   |
| Project | Huddersfield Stockpile Analysis |
| Title   | TP5197 Photographs              |







PHOTOGRAPH 2 – TP5197 – G.L. to 1.50 m bgl

|         |                                 |                                                                                                              |
|---------|---------------------------------|--------------------------------------------------------------------------------------------------------------|
| Client  | TRUw Alliance                   |  CENTRAL ALLIANCE<br>GEO |
| Project | Huddersfield Stockpile Analysis |                                                                                                              |
| Title   | TP5197 Photographs              |                                                                                                              |





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## Trial Pit

Sheet 1 of 1

**TP5198**

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: RSK Raw

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: **N/A**

Final Depth: **3.00m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

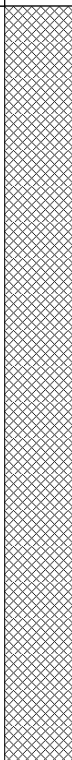
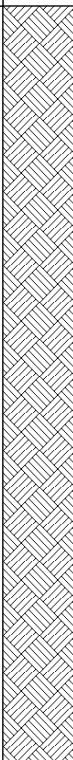
Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 05/05/2022

Finish Date: 05/05/2022

| Strata Description                                                                                                                                                                                                                                                                                                   | Legend                                                                             | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD)                                  | Water Level (m) | Installation / Backfill                                                              | Samples & Testing |       |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------|-------------------|-------|--------------|
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | Depth (m)         | Ref   | Test Results |
| MADE GROUND: Black slightly clayey very gravelly fine to coarse SAND with low cobble and boulder content and anthropogenic waste. Gravel is angular to rounded fine to coarse siltstone, sandstone, brick and concrete. Cobbles and boulders are angular concrete.<br><i>From 0.00m to 1.20m, Frequent rootlets.</i> |  | (3.00)                           |                                                          |                 |  | 0.00 - 1.00       | 3 B   |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 0.00 - 3.00       | 10 ES |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 0.50              | 1 ES  |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 0.60              | 2 D   |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 1.00 - 2.00       | 6 B   |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 1.50              | 4 ES  |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 1.60              | 5 D   |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 2.00 - 3.00       | 9 B   |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 2.50              | 7 ES  |              |
|                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                  |                                                          |                 |                                                                                      | 2.60              | 8 D   |              |
| EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                                                                                       |                                                                                    | 3.00                             |                                                          |                 |                                                                                      |                   |       |              |
| Observations / Remarks                                                                                                                                                                                                                                                                                               | Breaking Out / Hard Strata                                                         |                                  | Stability & Backfill                                     |                 | Pit Dimensions                                                                       |                   |       |              |
|                                                                                                                                                                                                                                                                                                                      | From (m)                                                                           | Remarks                          | Shoring: None<br>Stability: Stable<br>Backfill: Arisings |                 | <div><div></div><div>Orientation:<br/>°</div></div>                                  |                   |       |              |





PHOTOGRAPH 1 – TP5198 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5198 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5198 – G.L. to 3.00 m bgl

|                |                                 |
|----------------|---------------------------------|
| <b>Client</b>  | TRUw Alliance                   |
| <b>Project</b> | Huddersfield Stockpile Analysis |
| <b>Title</b>   | TP5198 Photographs              |





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## Trial Pit

Sheet 1 of 1

**TP5199**

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: **N/A**

Final Depth: **3.00m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 04/05/2022

Finish Date: 04/05/2022

| Strata Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Legend | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(MAOD) | Water Level (m) | Installation / Backfill | Samples & Testing |     |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                  |                         |                 |                         | Depth (m)         | Ref | Test Results |
| MADE GROUND: Soft friable dark greyish brown slightly sandy gravelly CLAY with medium cobble and boulder content, frequent rootlets and plastic waste. Sand is fine to coarse. Gravel is angular to rounded fine to coarse siltstone, brick, sandstone, mudstone, concrete and macadam. Cobbles and boulders are subrounded concrete.<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br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|        |                                  |                         |                 |                         |                   |     |              |





PHOTOGRAPH 1 – TP5199 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5199 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5199 – G.L. to 3.00 m bgl

|                |                                 |
|----------------|---------------------------------|
| <b>Client</b>  | TRUw Alliance                   |
| <b>Project</b> | Huddersfield Stockpile Analysis |
| <b>Title</b>   | TP5199 Photographs              |





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## Trial Pit

Sheet 1 of 1

# TP5200

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**Location: **Huddersfield**Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: N/A

Final Depth: 3.00m

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

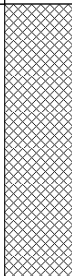
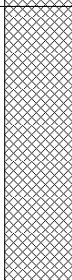
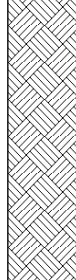
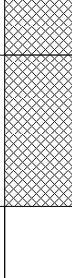
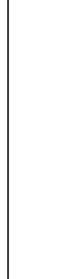
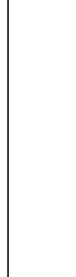
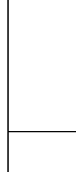
Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 04/05/2022

Finish Date: 04/05/2022

|   | Strata Description                                                                                                                                                                                                                                   | Legend                                                                              | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD) | Water Level (m) | Installation / Backfill                                                               | Samples & Testing |       |              |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------|-------------------------|-----------------|---------------------------------------------------------------------------------------|-------------------|-------|--------------|
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       | Depth (m)         | Ref   | Test Results |
| 1 | MADE GROUND: Soft friable greyish brown slightly sandy gravelly CLAY with frequent rootlets and anthropogenic rubber and plastic waste. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, concrete, slate and sandstone. |    | (1.10)                           |                         |                 |    | 0.00 - 1.00       | 3 B   |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       | 0.00 - 3.00       | 10 ES |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       |                   |       |              |
| 2 | MADE GROUND: Soft dark brown slightly sandy gravelly CLAY with occasional rootlets. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse mudstone, sandstone, slate and brick.                                                     |    | (1.30)                           |                         |                 |    | 0.50              | 1 ES  |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       | 0.60              | 2 D   |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       |                   |       |              |
| 3 | MADE GROUND: Orangish brown and dark brown slightly clayey sandy angular to subangular fine to coarse mudstone, slate, brick and concrete GRAVEL. Sand is fine to coarse.                                                                            |   | (0.60)                           |                         |                 |   | 1.00 - 2.00       | 6 B   |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       |                   |       |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       |                   |       |              |
| 4 | EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                       |  | 3.00                             |                         |                 |  | 1.50              | 4 ES  |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       | 1.60              | 5 D   |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       |                   |       |              |
| 5 |                                                                                                                                                                                                                                                      |  |                                  |                         |                 |  | 2.00 - 3.00       | 9 B   |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       |                   |       |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       |                   |       |              |
| 6 |                                                                                                                                                                                                                                                      |  |                                  |                         |                 |  | 2.50              | 7 ES  |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       | 2.60              | 8 D   |              |
|   |                                                                                                                                                                                                                                                      |                                                                                     |                                  |                         |                 |                                                                                       |                   |       |              |

| Observations / Remarks | Breaking Out / Hard Strata |         | Stability & Backfill                                             | Pit Dimensions                                                                                                                                                                                                                                                                                     |
|------------------------|----------------------------|---------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | From (m)                   | Remarks |                                                                  |                                                                                                                                                                                                                                                                                                    |
|                        |                            |         | Shoring: None<br><br>Stability: Stable<br><br>Backfill: Arisings | <div style="text-align: center;">             m<br/> <br/>             m<br/><br/>             Orientation:<br/>  </div> |





PHOTOGRAPH 1 – TP5200 – G.L. to 3.00 m bgl

|         |                                 |                                                                                                              |
|---------|---------------------------------|--------------------------------------------------------------------------------------------------------------|
| Client  | TRUw Alliance                   |  CENTRAL ALLIANCE<br>GEO |
| Project | Huddersfield Stockpile Analysis |                                                                                                              |
| Title   | TP5200 Photographs              |                                                                                                              |





PHOTOGRAPH 2 – TP5200 – G.L. to 3.00 m bgl

|                |                                 |
|----------------|---------------------------------|
| <b>Client</b>  | TRUW Alliance                   |
| <b>Project</b> | Huddersfield Stockpile Analysis |
| <b>Title</b>   | TP5200 Photographs              |







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## Trial Pit

Sheet 1 of 1

# TP5201

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: **N/A**

Final Depth: 3.00m

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

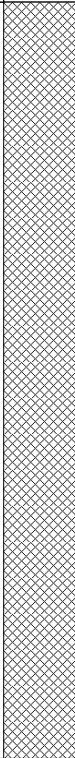
Scale: 1:30

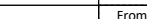
Checked By: JD

Approved By: PS

Start Date: 04/05/2022

Finish Date: 04/05/2022

|   | Strata Description                                                                                                                                                                                                                                                                                                                                                                              | Legend                                                                             | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD) | Water Level (m) | Installation / Backfill                                                              | Samples & Testing |       |              |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|-------------------------|-----------------|--------------------------------------------------------------------------------------|-------------------|-------|--------------|
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | Depth (m)         | Ref   | Test Results |
| 1 | MADE GROUND: Soft dark brown slightly sandy gravelly CLAY with high cobble and boulder content, frequent rootlets and anthropogenic plastic waste. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, concrete, mudstone, macadam and sandstone. Cobbles and boulders are angular to subangular macadam and concrete.<br><i>From 0.00m to 1.00m, Bark chippings.</i> |  | (3.00)                           |                         |                 |  | 0.00 - 1.00       | 3 B   |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 0.00 - 3.00       | 10 ES |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 0.50              | 1 ES  |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 0.60              | 2 D   |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 1.00 - 2.00       | 6 B   |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 1.50              | 4 ES  |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 1.60              | 5 D   |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 2.00 - 3.00       | 9 B   |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 2.50              | 7 ES  |              |
|   |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      | 2.60              | 8 D   |              |
| 2 | From 2.00m, Large chunks of wooden beams.                                                                                                                                                                                                                                                                                                                                                       |                                                                                    |                                  |                         |                 |                                                                                      | 2.00 - 3.00       | 9 B   | 2            |
| 3 | EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                                                                                                                                                                  |                                                                                    | 3.00                             |                         |                 |                                                                                      |                   |       | 3            |
| 4 |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      |                   |       | 4            |
| 5 |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      |                   |       | 5            |
| 6 |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                  |                         |                 |                                                                                      |                   |       | 6            |

| Observations / Remarks | Breaking Out / Hard Strata |         | Stability & Backfill                                             | Pit Dimensions                                                                                                                                  |
|------------------------|----------------------------|---------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | From (m)                   | Remarks |                                                                  |                                                                                                                                                 |
|                        |                            |         | Shoring: None<br><br>Stability: Stable<br><br>Backfill: Arisings | <div style="text-align: center;">             m<br/>  </div> |





PHOTOGRAPH 1 – TP5201 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5201 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5201 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5201 Photographs              |                                                                                                                     |





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## Trial Pit

Sheet 1 of 1

# TP5202

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: N/A

Final Depth: 3.00m

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination:  $90^\circ$ 

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 04/05/2022

Finish Date: 04/05/2022

[illegible]





PHOTOGRAPH 1 – TP5202 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5202 Photographs              |                                                                                                                     |



|                                                                                                                                                                                                                                                                     |             |                                                                                                                 |                                  |                                              |                 |                                                                                      |                   |                                                                                                                            |              |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------|-----------------|--------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|--------------|--|
| <div><div>CENTRAL ALLIANCE<br/>EXPLORE &gt; IDENTIFY &gt; DELIVER</div></div>                                                                                                        |             | Alliance House, South Park Way<br>Wakefield WF2 0XJ<br>Tel +44(0)1924 229889<br>Web: www.central-alliance.co.uk |                                  | Log Type<br><b>Trial Pit</b><br>Sheet 1 of 1 |                 | Exploratory Hole Number<br><b>TP5203</b><br>FINAL                                    |                   | <div><br/>CENTRAL ALLIANCE<br/>GEO</div> |              |  |
| Project No: <b>2371839</b>                                                                                                                                                                                                                                          |             | Location Details                                                                                                |                                  |                                              |                 | Methodology & Plant                                                                  |                   | Scale: 1:30                                                                                                                |              |  |
| Name: <b>RSK Raw</b>                                                                                                                                                                                                                                                |             | Easting: <b>N/A</b>                                                                                             |                                  | Northing: <b>N/A</b>                         |                 | Trial Pit                                                                            |                   | Checked By: JD                                                                                                             |              |  |
| Location: <b>Huddersfield</b>                                                                                                                                                                                                                                       |             | Elevation: <b>N/A</b>                                                                                           |                                  | Final Depth: <b>3.00m</b>                    |                 |                                                                                      |                   | Approved By: PS                                                                                                            |              |  |
| Client: <b>RSK</b>                                                                                                                                                                                                                                                  |             | Logger: <b>JD</b>                                                                                               |                                  | Grid System: <b>OSGB</b>                     |                 | Wheeled Backhoe Excavator                                                            |                   | Start Date: 04/05/2022                                                                                                     |              |  |
|                                                                                                                                                                                                                                                                     |             | Orientation: <b>N/A</b>                                                                                         |                                  | Inclination: <b>90°</b>                      |                 |                                                                                      |                   | Finish Date: 04/05/2022                                                                                                    |              |  |
| Strata Description                                                                                                                                                                                                                                                  |             | Legend                                                                                                          | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD)                      | Water Level (m) | Installation / Backfill                                                              | Samples & Testing |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     |             |                                                                                                                 |                                  |                                              |                 |                                                                                      | Depth (m)         | Ref                                                                                                                        | Test Results |  |
| MADE GROUND: Soft friable dark brown sandy gravelly CLAY with low cobble content, frequent rootlets and anthropogenic ceramic, rubber and plastic waste. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, concrete, mudstone and coal. |             |                               | (3.00)                           |                                              |                 |  | 0.00 - 1.00       | 3 B                                                                                                                        |              |  |
|                                                                                                                                                                                                                                                                     | 0.00 - 3.00 |                                                                                                                 |                                  |                                              |                 |                                                                                      | 10 ES             |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     | 0.50        |                                                                                                                 |                                  |                                              |                 |                                                                                      | 1 ES              |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     | 0.60        |                                                                                                                 |                                  |                                              |                 |                                                                                      | 2 D               |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     | 1.00 - 2.00 |                                                                                                                 |                                  |                                              |                 |                                                                                      | 6 B               |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     | 1.50        |                                                                                                                 |                                  |                                              |                 |                                                                                      | 4 ES              |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     | 1.60        |                                                                                                                 |                                  |                                              |                 |                                                                                      | 5 D               |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     | 2.00 - 3.00 |                                                                                                                 |                                  |                                              |                 |                                                                                      | 9 B               |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     | 2.50        |                                                                                                                 |                                  |                                              |                 |                                                                                      | 7 ES              |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     | 2.60        |                                                                                                                 |                                  |                                              |                 |                                                                                      | 8 D               |                                                                                                                            |              |  |
| EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                                      |             |                                                                                                                 | 3.00                             |                                              |                 |                                                                                      |                   |                                                                                                                            |              |  |
| Observations / Remarks                                                                                                                                                                                                                                              |             | Breaking Out / Hard Strata                                                                                      |                                  | Stability & Backfill                         |                 | Pit Dimensions                                                                       |                   |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     |             | From (m)                                                                                                        | Remarks                          | Shoring: None                                |                 | m                                                                                    |                   |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     |             |                                                                                                                 |                                  | Stability: Stable                            |                 | <div></div> m                                                                        |                   |                                                                                                                            |              |  |
|                                                                                                                                                                                                                                                                     |             |                                                                                                                 |                                  | Backfill: Arisings                           |                 | Orientation:<br>°                                                                    |                   |                                                                                                                            |              |  |





PHOTOGRAPH 1 – TP5203 – G.L. to 3.00 m bgl

|                |                                 |
|----------------|---------------------------------|
| <b>Client</b>  | TRUW Alliance                   |
| <b>Project</b> | Huddersfield Stockpile Analysis |
| <b>Title</b>   | TP5203 Photographs              |







PHOTOGRAPH 2 – TP5203 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5203 Photographs              |                                                                                                                     |



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## Trial Pit

Sheet 1 of 1

TP5204

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**Location: **Huddersfield**Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: N/A

Final Depth: **3.00m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 04/05/2022

Finish Date: 04/05/2022

[illegible]





PHOTOGRAPH 1 – TP5204 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5204 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5204 – G.L. to 3.00 m bgl

|                |                                 |
|----------------|---------------------------------|
| <b>Client</b>  | TRUw Alliance                   |
| <b>Project</b> | Huddersfield Stockpile Analysis |
| <b>Title</b>   | TP5204 Photographs              |





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Log Type

**Trial Pit**

Sheet 1 of 1

Exploratory Hole Number

**TP5205**

FINAL



Project No: 2371839

Name: **RSK Raw**Location: **Huddersfield**Client: **RSK**

### Location Details

Easting: **N/A**  
Elevation: **N/A**  
Logger: **JD**  
Orientation: **N/A**

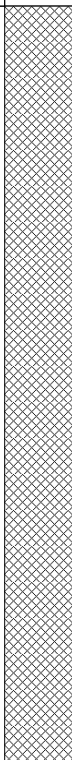
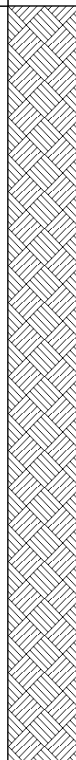
Northing: **N/A**  
 Final Depth: **3.00m**  
 Grid System: **OSGB**  
 Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

Scale: 1:30  
Checked By: JD  
Approved By: PS  
Start Date: 03/05/2022  
Finish Date: 03/05/2022

| Strata Description                                                                                                                                                                                                                                                                                            | Legend                                                                             | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD)                                          | Water Level (m) | Installation / Backfill                                                              | Samples & Testing |       |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------|-------------------|-------|--------------|
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | Depth (m)         | Ref   | Test Results |
| MADE GROUND: Dark brown clayey very gravelly fine to coarse SAND with medium cobble content, anthropogenic rubber, glass and plastic waste and frequent rootlets. Gravel is angular to subrounded fine to coarse brick, concrete, macadam, mudstone and ceramic tiles. Cobbles are angular macadam and brick. |  | (3.00)                           |                                                                  |                 |  | 0.00 - 1.00       | 3 B   |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 0.00 - 3.00       | 10 ES |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 0.50              | 1 ES  |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 0.60              | 2 D   |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 1.00 - 2.00       | 6 B   |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 1.50              | 4 ES  |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 1.60              | 5 D   |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 2.00 - 3.00       | 9 B   |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 2.50              | 7 ES  |              |
|                                                                                                                                                                                                                                                                                                               |                                                                                    |                                  |                                                                  |                 |                                                                                      | 2.60              | 8 D   |              |
| EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                                                                                |                                                                                    | 3.00                             |                                                                  |                 |                                                                                      |                   |       |              |
| Observations / Remarks                                                                                                                                                                                                                                                                                        | Breaking Out / Hard Strata                                                         |                                  | Stability & Backfill                                             |                 | Pit Dimensions                                                                       |                   |       |              |
|                                                                                                                                                                                                                                                                                                               | From (m)                                                                           | Remarks                          | Shoring: None<br><br>Stability: Stable<br><br>Backfill: Arisings |                 | <div><div></div><div>Orientation:<br/>°</div></div>                                  |                   |       |              |





PHOTOGRAPH 1 – TP5205 – G.L. to 3.00 m bgl

|         |                                 |
|---------|---------------------------------|
| Client  | TRUw Alliance                   |
| Project | Huddersfield Stockpile Analysis |
| Title   | TP5205 Photographs              |







PHOTOGRAPH 2 – TP5205 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5205 Photographs              |                                                                                                                     |





PHOTOGRAPH 3 – TP5205 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5205 Photographs              |                                                                                                                     |





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## Trial Pit

Sheet 1 of 1

# TP5205B

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**

Location: **Huddersfield**

Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: **N/A**

Final Depth: **3.00m**

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 04/05/2022

Finish Date: 04/05/2022

| Strata Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Legend | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD) | Water Level (m) | Installation / Backfill | Samples & Testing |     |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                  |                         |                 |                         | Depth (m)         | Ref | Test Results |
| MADE GROUND: Soft friable dark black slightly gravelly sandy CLAY with low cobble content, frequent rootlets and anthropogenic plastic waste. Sand is fine to coarse. Gravel is angular to subangular fine to coarse brick, sandstone, mudstone and concrete. Cobbles are subangular concrete.<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br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|        |                                  |                         |                 |                         |                   |     |              |





PHOTOGRAPH 1 – TP5205B – G.L. to 3.00 m bgl

|         |                                 |                                                                                                              |
|---------|---------------------------------|--------------------------------------------------------------------------------------------------------------|
| Client  | TRUw Alliance                   |  CENTRAL ALLIANCE<br>GEO |
| Project | Huddersfield Stockpile Analysis |                                                                                                              |
| Title   | TP5205B Photographs             |                                                                                                              |





PHOTOGRAPH 2 – TP5205B – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5205B Photographs             |                                                                                                                     |





Alliance House, South Park Way  
Wakefield 41 Business Park  
Wakefield WF2 0XJ  
Tel +44(0)1924 229889  
Web: [www.central-alliance.co.uk](http://www.central-alliance.co.uk)

## Trial Pit

Sheet 1 of 1

# TP5206

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**Location: **Huddersfield**Client: **RSK**

### Location Details

Easting: N/A

Northings: **N/A**

Elevation: N/A

Final Depth: 3.00m

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination: **90°**

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

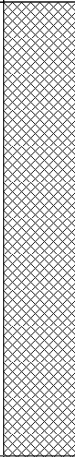
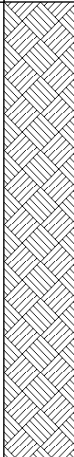
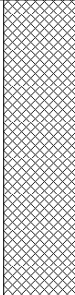
Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 03/05/2022

Finish Date: 03/05/2022

|   | Strata Description                                                                                                                                                                                                                                                                  | Legend                                                                             | Depth (m)<br>(Stratum<br>Thickness) | Reduced Level<br>(mAOD) | Water<br>Level (m) | Installation /<br>Backfill                                                           | Samples & Testing |       |              |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------|-------------------------|--------------------|--------------------------------------------------------------------------------------|-------------------|-------|--------------|
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      | Depth (m)         | Ref   | Test Results |
| 0 | MADE GROUND: Soft friable blackish brown and light brown sandy gravelly CLAY with low cobble content and occasional rootlets. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, concrete, macadam, mudstone and sandstone. Cobbles are angular macadam. |   | (1.80)                              |                         |                    |   | 0.00 - 1.00       | 3 B   |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      | 0.00 - 3.00       | 10 ES |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      | 0.50              | 1 ES  |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      | 0.60              | 2 D   |              |
| 1 |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
| 2 | MADE GROUND: Soft friable dark brown and reddish brown slightly sandy very gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, mudstone, concrete and macadam. Cobbles are angular macadam and brick.              |  | 1.80                                |                         |                    |  |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
| 3 | EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                                                      |                                                                                    | 3.00                                |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
| 4 |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
| 5 |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
| 6 |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |
|   |                                                                                                                                                                                                                                                                                     |                                                                                    |                                     |                         |                    |                                                                                      |                   |       |              |

| Observations / Remarks | Breaking Out / Hard Strata |         | Stability & Backfill                                             | Pit Dimensions                                                                                                                                                                                                                                                                                     |
|------------------------|----------------------------|---------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | From (m)                   | Remarks |                                                                  |                                                                                                                                                                                                                                                                                                    |
|                        |                            |         | Shoring: None<br><br>Stability: Stable<br><br>Backfill: Arisings | <div style="text-align: center;">             m<br/> <br/>             m<br/><br/>             Orientation:<br/>  </div> |





PHOTOGRAPH 1 – TP5206 – G.L. to 3.00 m bgl

|         |                                 |                                                                                                                     |
|---------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Client  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| Project | Huddersfield Stockpile Analysis |                                                                                                                     |
| Title   | TP5206 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5206 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5206 Photographs              |                                                                                                                     |





PHOTOGRAPH 3 – TP5206 – G.L. to 3.00 m bgl

|         |                                 |                                                                                                                     |
|---------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Client  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| Project | Huddersfield Stockpile Analysis |                                                                                                                     |
| Title   | TP5206 Photographs              |                                                                                                                     |



|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      |                   |                                                                                                                                  |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------|
| <div><div><div>CENTRAL ALLIANCE</div><div>EXPLORE &gt; IDENTIFY &gt; DELIVER</div></div></div>                                                                                                                                                               |  | Alliance House, South Park Way<br>Wakefield WF2 0XJ<br>Tel +44(0)1924 229889<br>Web: www.central-alliance.co.uk |                                  | Log Type<br><b>Trial Pit</b><br>Sheet 1 of 1             |                           | Exploratory Hole Number<br><b>TP5207</b><br>FINAL                                    |                   | <div><div>CENTRAL ALLIANCE<br/>GEO</div></div> |              |
| Project No: <b>2371839</b>                                                                                                                                                                                                                                                                                                                  |  | Location Details                                                                                                |                                  |                                                          | Methodology & Plant       |                                                                                      |                   | Scale: 1:30                                                                                                                      |              |
| Name: <b>RSK Raw</b>                                                                                                                                                                                                                                                                                                                        |  | Easting: <b>N/A</b> Northing: <b>N/A</b>                                                                        |                                  |                                                          | Trial Pit                 |                                                                                      |                   | Checked By: JD                                                                                                                   |              |
| Location: <b>Huddersfield</b>                                                                                                                                                                                                                                                                                                               |  | Elevation: <b>N/A</b> Final Depth: <b>3.00m</b>                                                                 |                                  |                                                          | Wheeled Backhoe Excavator |                                                                                      |                   | Approved By: PS                                                                                                                  |              |
| Client: <b>RSK</b>                                                                                                                                                                                                                                                                                                                          |  | Logger: <b>JD</b> Grid System: <b>OSGB</b>                                                                      |                                  |                                                          |                           |                                                                                      |                   | Start Date: 03/05/2022                                                                                                           |              |
|                                                                                                                                                                                                                                                                                                                                             |  | Orientation: <b>N/A</b> Inclination: <b>90°</b>                                                                 |                                  |                                                          |                           |                                                                                      |                   | Finish Date: 03/05/2022                                                                                                          |              |
| Strata Description                                                                                                                                                                                                                                                                                                                          |  | Legend                                                                                                          | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD)                                  | Water Level (m)           | Installation / Backfill                                                              | Samples & Testing |                                                                                                                                  |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | Depth (m)         | Ref                                                                                                                              | Test Results |
| MADE GROUND: Soft friable dark blackish brown slightly sandy gravelly CLAY with medium cobble content and frequent rootlets. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, concrete, macadam, limestone and sandstone. Cobbles are angular to subrounded brick, concrete, macadam, limestone and sandstone. |  |                               | (3.00)                           |                                                          |                           |  | 0.00 - 1.00       | 3 B                                                                                                                              |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 0.00 - 3.00       | 10 ES                                                                                                                            |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 0.50              | 1 ES                                                                                                                             |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 0.60              | 2 D                                                                                                                              |              |
| From 0.90m, Occasional rootlets.                                                                                                                                                                                                                                                                                                            |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 1.00 - 2.00       | 6 B                                                                                                                              |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 1.50              | 4 ES                                                                                                                             |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 1.60              | 5 D                                                                                                                              |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 2.00 - 3.00       | 9 B                                                                                                                              |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 2.50              | 7 ES                                                                                                                             |              |
|                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                 |                                  |                                                          |                           |                                                                                      | 2.60              | 8 D                                                                                                                              |              |
| EOH at 3.00m - Scheduled Depth                                                                                                                                                                                                                                                                                                              |  |                                                                                                                 | 3.00                             |                                                          |                           |                                                                                      |                   |                                                                                                                                  |              |
| Observations / Remarks                                                                                                                                                                                                                                                                                                                      |  | Breaking Out / Hard Strata                                                                                      |                                  | Stability & Backfill                                     |                           | Pit Dimensions                                                                       |                   |                                                                                                                                  |              |
|                                                                                                                                                                                                                                                                                                                                             |  | From (m)                                                                                                        | Remarks                          | Shoring: None<br>Stability: Stable<br>Backfill: Arisings |                           | m<br><div></div> m<br>Orientation: °                                                 |                   |                                                                                                                                  |              |





PHOTOGRAPH 1 – TP5207 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5207 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5207 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5207 Photographs              |                                                                                                                     |





PHOTOGRAPH 3 – TP5207 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5207 Photographs              |                                                                                                                     |





PHOTOGRAPH 4 – TP5207 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5207 Photographs              |                                                                                                                     |





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## Trial Pit

Sheet 1 of 1

# TP5208

# FINAL



CENTRAL ALLIANCE  
**GEO**

Project No: 2371839

Name: **RSK Raw**Location: **Huddersfield**Client: **RSK**

### Location Details

Easting: N/A

Northing: **N/A**

Elevation: N/A

Final Depth: 3.00m

Logger: JD

Grid System: **OSGB**

Orientation: **N/A**

Inclination:  $90^\circ$ 

## Methodology & Plant

### Trial Pit

### Wheeled Backhoe Excavator

Scale: 1:30

Checked By: JD

Approved By: PS

Start Date: 03/05/2022

Finish Date: 03/05/2022

| Strata Description                                                                                                                                                                                                                                                                                                                     | Legend                     | Depth (m)<br>(Stratum Thickness) | Reduced Level<br>(mAOD)                                          | Water Level (m)                | Installation / Backfill                                          | Samples & Testing          |                 |              |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------|------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------|----------------------------|-----------------|--------------|------|
|                                                                                                                                                                                                                                                                                                                                        |                            |                                  |                                                                  |                                |                                                                  | Depth (m)                  | Ref             | Test Results |      |
| MADE GROUND: Soft friable dark brown slightly sandy gravelly CLAY with high cobble content and frequent rootlets, anthropogenic plastic and glass waste. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse concrete, macadam, brick and sandstone. Cobbles are angular to subangular brick, concrete and macadam. |                            | (0.80)                           |                                                                  |                                |                                                                  | 0.00 - 0.80<br>0.00 - 3.00 | 3 B<br>6 ES     |              |      |
| MADE GROUND: Black slightly clayey very gravelly fine to coarse SAND with low cobble content and frequent rootlets and organic material. Gravel is angular to subrounded fine to coarse brick, concrete and macadam. Cobbles are angular to subangular brick, concrete and macadam.                                                    |                            | 0.80                             |                                                                  |                                |                                                                  | 0.50<br>0.60               | 1 ES<br>2 D     |              |      |
|                                                                                                                                                                                                                                                                                                                                        |                            | (2.20)                           |                                                                  |                                |                                                                  | 1.00 - 2.00<br><br>1.20    | 5 B<br><br>4 ES |              |      |
|                                                                                                                                                                                                                                                                                                                                        |                            |                                  | 3.00                                                             |                                |                                                                  |                            | 2.50            |              | 7 ES |
|                                                                                                                                                                                                                                                                                                                                        |                            |                                  |                                                                  | EOH at 3.00m - Scheduled Depth |                                                                  |                            |                 |              |      |
|                                                                                                                                                                                                                                                                                                                                        |                            |                                  |                                                                  |                                |                                                                  |                            |                 |              |      |
| Observations / Remarks                                                                                                                                                                                                                                                                                                                 | Breaking Out / Hard Strata |                                  | Stability & Backfill                                             |                                | Pit Dimensions                                                   |                            |                 |              |      |
|                                                                                                                                                                                                                                                                                                                                        | From (m)                   | Remarks                          | Shoring: None<br><br>Stability: Stable<br><br>Backfill: Arisings |                                | <div><div>m</div><div>m</div><div>Orientation:<br/>°</div></div> |                            |                 |              |      |





PHOTOGRAPH 1 – TP5208 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5208 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5208 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5208 Photographs              |                                                                                                                     |





PHOTOGRAPH 3 – TP5208 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5208 Photographs              |                                                                                                                     |





PHOTOGRAPH 4 – TP5208 – G.L. to 3.00 m bgl

|         |                                 |                                                                                                              |
|---------|---------------------------------|--------------------------------------------------------------------------------------------------------------|
| Client  | TRUw Alliance                   |  CENTRAL ALLIANCE<br>GEO |
| Project | Huddersfield Stockpile Analysis |                                                                                                              |
| Title   | TP5208 Photographs              |                                                                                                              |





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## Trial Pit

Sheet 1 of 1

**TP5209**

FINAL



CENTRAL ALLIANCE  
**GEO**

Client: RSK

### Location Details

Inclination: **90°**

Methodology &amp; Plant

### Trial Pit

### Wheeled Backhoe Excavator

Finish Date: 03/05/2022

[illegible]

|                        |
|------------------------|
| Observations / Remarks |
|------------------------|

## Breaking Out / Hard Strata

### Stability & Backfill

### Pit Dimensions

From (m)

Remarks

Shoring: None

Stability: Stable

Backfill: Arisings

m

m

Orientation:

•





PHOTOGRAPH 1 – TP5209 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5209 Photographs              |                                                                                                                     |





PHOTOGRAPH 2 – TP5209 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5209 Photographs              |                                                                                                                     |





PHOTOGRAPH 3 – TP5209 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5209 Photographs              |                                                                                                                     |





PHOTOGRAPH 4 – TP5209 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUW Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5209 Photographs              |                                                                                                                     |





PHOTOGRAPH 5 – TP5209 – G.L. to 3.00 m bgl

|                |                                 |                                                                                                                     |
|----------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Client</b>  | TRUw Alliance                   |  <b>CENTRAL ALLIANCE</b><br>GEO |
| <b>Project</b> | Huddersfield Stockpile Analysis |                                                                                                                     |
| <b>Title</b>   | TP5209 Photographs              |                                                                                                                     |



## Appendix B







**Fiona Townley**

RSK Raw  
RAW House  
Portland Road  
Malvern  
Worcestershire  
WR14 2TA

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

Redacted

e: Redacted

**Analytical Report Number : 22-56901**

|                             |                                     |                                                        |            |
|-----------------------------|-------------------------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Hillhouse TRU Huddersfield          | <b>Samples received on:</b>                            | 06/05/2022 |
| <b>Your job number:</b>     | 2641987                             | <b>Samples instructed on/<br/>Analysis started on:</b> | 06/05/2022 |
| <b>Your order number:</b>   | PAH24760                            | <b>Analysis completed by:</b>                          | 18/05/2022 |
| <b>Report Issue Number:</b> | 1                                   | <b>Report issued on:</b>                               | 18/05/2022 |
| <b>Samples Analysed:</b>    | 3 leachate samples - 7 soil samples |                                                        |            |

Redacted

**Signe**

Adam Fenwick  
Technical Reviewer  
**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 |

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

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



Analytical Report Number: 22-56901  
Project / Site name: Hillhouse TRU Huddersfield  
Your Order No: PAH24760

| Lab Sample Number                       |       |                    |                      | 2267793       | 2267794       | 2267795       | 2267796       | 2267797       |
|-----------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                      | TP5198        | TP5194        | TP5195        | TP5193        | TP5196        |
| Sample Number                           |       |                    |                      | ES7           | ES1           | ES4           | ES1           | ES4           |
| Depth (m)                               |       |                    |                      | 2.50          | 0.50          | 1.50          | 0.50          | 1.50          |
| Date Sampled                            |       |                    |                      | 05/05/2022    | 05/05/2022    | 05/05/2022    | 05/05/2022    | 05/05/2022    |
| Time Taken                              |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                 | < 0.1         | 27            | < 0.1         | 22            | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                 | 11            | 16            | 14            | 8.7           | 8.2           |
| Total mass of sample received           | kg    | 0.001              | NONE                 | 1.5           | 1.5           | 1.5           | 1.5           | 1.5           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | Chrysotile & Amosite | -            | Chrysotile | -            |
|-----------------------------------------------|------|-------|-----------|--------------|----------------------|--------------|------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Detected             | Not-detected | Detected   | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | 0.011                | -            | < 0.001    | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | 0.011                | -            | < 0.001    | -            |
| Asbestos Analyst ID                           | N/A  | N/A   | N/A       | SFS          | SFS                  | SFS          | SFS        | SFS          |

#### General Inorganics

|                                        |          |     |        |       |       |     |       |       |
|----------------------------------------|----------|-----|--------|-------|-------|-----|-------|-------|
| pH - Automated                         | pH Units | N/A | MCERTS | 6.5   | 7.2   | 7.2 | 7.3   | 8.6   |
| Total Cyanide                          | mg/kg    | 1   | MCERTS | < 1.0 | < 1.0 | 2.8 | < 1.0 | < 1.0 |
| Total Organic Carbon (TOC) - Automated | %        | 0.1 | MCERTS | 4.4   | 1.9   | 4.2 | 2.7   | 4.8   |

#### Total Phenols

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

#### Speciated PAHs

|                        |       |      |        |        |        |   |   |   |
|------------------------|-------|------|--------|--------|--------|---|---|---|
| Naphthalene            | mg/kg | 0.05 | MCERTS | 1.1    | < 0.05 | - | - | - |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | - | - |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | 0.35   | 0.23   | - | - | - |
| Fluorene               | mg/kg | 0.05 | MCERTS | 0.43   | 0.21   | - | - | - |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 3.2    | 1.8    | - | - | - |
| Anthracene             | mg/kg | 0.05 | MCERTS | 0.76   | 0.47   | - | - | - |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 6.2    | 4.1    | - | - | - |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 5.8    | 3.7    | - | - | - |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 4.3    | 2.8    | - | - | - |
| Chrysene               | mg/kg | 0.05 | MCERTS | 3      | 1.8    | - | - | - |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 5.3    | 3.3    | - | - | - |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 1.3    | 0.82   | - | - | - |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 4      | 2.7    | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 2.1    | 1.4    | - | - | - |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | 0.7    | 0.45   | - | - | - |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | 2.5    | 1.6    | - | - | - |

#### Total PAH

|                             |       |     |        |      |      |   |   |   |
|-----------------------------|-------|-----|--------|------|------|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 41.1 | 25.2 | - | - | - |
|-----------------------------|-------|-----|--------|------|------|---|---|---|



Analytical Report Number: 22-56901  
Project / Site name: Hillhouse TRU Huddersfield  
Your Order No: PAH24760

| Lab Sample Number                       | 2267793       | 2267794            | 2267795                 | 2267796       | 2267797       |
|-----------------------------------------|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        | TP5198        | TP5194             | TP5195                  | TP5193        | TP5196        |
| Sample Number                           | ES7           | ES1                | ES4                     | ES1           | ES4           |
| Depth (m)                               | 2.50          | 0.50               | 1.50                    | 0.50          | 1.50          |
| Date Sampled                            | 05/05/2022    | 05/05/2022         | 05/05/2022              | 05/05/2022    | 05/05/2022    |
| Time Taken                              | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### Heavy Metals / Metalloids

|                                    |       |      |           |       |       |       |       |       |
|------------------------------------|-------|------|-----------|-------|-------|-------|-------|-------|
| Antimony (aqua regia extractable)  | mg/kg | 1    | ISO 17025 | 14    | 5.9   | 17    | 10    | < 1.0 |
| Arsenic (aqua regia extractable)   | mg/kg | 1    | MCERTS    | 52    | 16    | 62    | 21    | 14    |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS    | 1.8   | 0.99  | 1.6   | 0.83  | 1     |
| Boron (water soluble)              | mg/kg | 0.2  | MCERTS    | 1     | 1.3   | 1.1   | 0.7   | 0.6   |
| Cadmium (aqua regia extractable)   | mg/kg | 0.2  | MCERTS    | 3.9   | < 0.2 | < 0.2 | < 0.2 | 0.7   |
| Chromium (hexavalent)              | mg/kg | 1.2  | NONE      | < 1.2 | < 1.2 | < 1.2 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | 54    | 24    | 82    | 39    | 66    |
| Copper (aqua regia extractable)    | mg/kg | 1    | MCERTS    | 270   | 40    | 270   | 71    | 54    |
| Lead (aqua regia extractable)      | mg/kg | 1    | MCERTS    | 210   | 91    | 140   | 89    | 68    |
| Mercury (aqua regia extractable)   | mg/kg | 0.3  | MCERTS    | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)    | mg/kg | 1    | MCERTS    | 62    | 24    | 68    | 25    | 22    |
| Selenium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | 56    | 29    | 69    | 38    | 44    |
| Zinc (aqua regia extractable)      | mg/kg | 1    | MCERTS    | 1100  | 140   | 1300  | 320   | 250   |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |   |   |   |
|------------------------------------|-------|---|--------|-------|-------|---|---|---|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - | - |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - | - |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - | - |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - | - |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - | - |

#### Petroleum Hydrocarbons

|                                                 |       |       |        |         |         |   |   |   |
|-------------------------------------------------|-------|-------|--------|---------|---------|---|---|---|
| TPH-CWG - Aliphatic >EC5 - EC6 HS 1D AL         | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | - | - |
| TPH-CWG - Aliphatic >EC6 - EC8 HS 1D AL         | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | - | - |
| TPH-CWG - Aliphatic >EC8 - EC10 HS 1D AL        | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | - | - |
| TPH-CWG - Aliphatic >EC10 - EC12 EH CU 1D AL    | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | - | - | - |
| TPH-CWG - Aliphatic >EC12 - EC16 EH CU 1D AL    | mg/kg | 2     | MCERTS | 12      | < 2.0   | - | - | - |
| TPH-CWG - Aliphatic >EC16 - EC21 EH CU 1D AL    | mg/kg | 8     | MCERTS | 27      | < 8.0   | - | - | - |
| TPH-CWG - Aliphatic >EC21 - EC35 EH CU 1D AL    | mg/kg | 8     | MCERTS | 140     | < 8.0   | - | - | - |
| TPH-CWG - Aliphatic > EC35 - EC44 EH CU 1D AL   | mg/kg | 8.4   | NONE   | 67      | < 8.4   | - | - | - |
| TPH-CWG - Aliphatic (EC5 - EC35) EH CU+HS 1D AL | mg/kg | 10    | MCERTS | 180     | < 10    | - | - | - |
| TPH-CWG - Aliphatic (EC5 - EC44) EH CU+HS 1D AL | mg/kg | 10    | NONE   | 250     | < 10    | - | - | - |

|                                                |       |       |        |         |         |   |   |   |
|------------------------------------------------|-------|-------|--------|---------|---------|---|---|---|
| TPH-CWG - Aromatic >EC5 - EC7 HS 1D AR         | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | - | - |
| TPH-CWG - Aromatic >EC7 - EC8 HS 1D AR         | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | - | - |
| TPH-CWG - Aromatic >EC8 - EC10 HS 1D AR        | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | - | - |
| TPH-CWG - Aromatic >EC10 - EC12 EH CU 1D AR    | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | - | - | - |
| TPH-CWG - Aromatic >EC12 - EC16 EH CU 1D AR    | mg/kg | 2     | MCERTS | 20      | < 2.0   | - | - | - |
| TPH-CWG - Aromatic >EC16 - EC21 EH CU 1D AR    | mg/kg | 10    | MCERTS | 53      | 19      | - | - | - |
| TPH-CWG - Aromatic >EC21 - EC35 EH CU 1D AR    | mg/kg | 10    | MCERTS | 200     | 50      | - | - | - |
| TPH-CWG - Aromatic > EC35 - EC44 EH CU 1D AR   | mg/kg | 8.4   | NONE   | 24      | < 8.4   | - | - | - |
| TPH-CWG - Aromatic (EC5 - EC35) EH CU+HS 1D AR | mg/kg | 10    | MCERTS | 270     | 69      | - | - | - |
| TPH-CWG - Aromatic (EC5 - EC44) EH CU+HS 1D AR | mg/kg | 10    | NONE   | 300     | 69      | - | - | - |

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 22-56901  
 Project / Site name: Hillhouse TRU Huddersfield  
 Your Order No: PAH24760

| Lab Sample Number                       |       |                    |                         | 2267798       | 2267799       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | TP5197        | TP5192        |
| Sample Number                           |       |                    |                         | ES1           | ES4           |
| Depth (m)                               |       |                    |                         | 0.50          | 1.40          |
| Date Sampled                            |       |                    |                         | 05/05/2022    | 05/05/2022    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 11            | 11            |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.5           | 1.5           |

|                                               |      |       |           |              |              |
|-----------------------------------------------|------|-------|-----------|--------------|--------------|
| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | -            |
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | -            |
| Asbestos Analyst ID                           | N/A  | N/A   | N/A       | DSA          | DSA          |

#### General Inorganics

|                                        |          |     |        |       |     |
|----------------------------------------|----------|-----|--------|-------|-----|
| pH - Automated                         | pH Units | N/A | MCERTS | 7.6   | 7.6 |
| Total Cyanide                          | mg/kg    | 1   | MCERTS | < 1.0 | 1.2 |
| Total Organic Carbon (TOC) - Automated | %        | 0.1 | MCERTS | 3.9   | 7.5 |

#### Total Phenols

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

#### Speciated PAHs

|                        |       |      |        |   |        |
|------------------------|-------|------|--------|---|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | - | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | - | 0.64   |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | - | 1.5    |
| Fluorene               | mg/kg | 0.05 | MCERTS | - | 1.5    |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | - | 13     |
| Anthracene             | mg/kg | 0.05 | MCERTS | - | 4.5    |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | - | 20     |
| Pyrene                 | mg/kg | 0.05 | MCERTS | - | 18     |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | - | 13     |
| Chrysene               | mg/kg | 0.05 | MCERTS | - | 8.4    |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | - | 8.8    |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | - | 5.4    |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | - | 7.8    |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | 5.7    |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | - | 1.1    |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | - | 6.4    |

#### Total PAH

|                             |       |     |        |   |     |
|-----------------------------|-------|-----|--------|---|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | - | 116 |
|-----------------------------|-------|-----|--------|---|-----|



Analytical Report Number: 22-56901  
Project / Site name: Hillhouse TRU Huddersfield  
Your Order No: PAH24760

| Lab Sample Number                       |       |                    |                         | 2267798       | 2267799       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | TP5197        | TP5192        |
| Sample Number                           |       |                    |                         | ES1           | ES4           |
| Depth (m)                               |       |                    |                         | 0.50          | 1.40          |
| Date Sampled                            |       |                    |                         | 05/05/2022    | 05/05/2022    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |
| <b>Heavy Metals / Metalloids</b>        |       |                    |                         |               |               |
| Antimony (aqua regia extractable)       | mg/kg | 1                  | ISO 17025               | 6.3           | 15            |
| Arsenic (aqua regia extractable)        | mg/kg | 1                  | MCERTS                  | 20            | 43            |
| Beryllium (aqua regia extractable)      | mg/kg | 0.06               | MCERTS                  | 0.86          | 1.2           |
| Boron (water soluble)                   | mg/kg | 0.2                | MCERTS                  | 1             | 1.1           |
| Cadmium (aqua regia extractable)        | mg/kg | 0.2                | MCERTS                  | < 0.2         | 2.4           |
| Chromium (hexavalent)                   | mg/kg | 1.2                | NONE                    | < 1.2         | < 1.2         |
| Chromium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | 34            | 72            |
| Copper (aqua regia extractable)         | mg/kg | 1                  | MCERTS                  | 53            | 200           |
| Lead (aqua regia extractable)           | mg/kg | 1                  | MCERTS                  | 60            | 160           |
| Mercury (aqua regia extractable)        | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         |
| Nickel (aqua regia extractable)         | mg/kg | 1                  | MCERTS                  | 24            | 53            |
| Selenium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         |
| Vanadium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | 33            | 54            |
| Zinc (aqua regia extractable)           | mg/kg | 1                  | MCERTS                  | 210           | 1200          |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |   |       |
|------------------------------------|-------|---|--------|---|-------|
| Benzene                            | µg/kg | 1 | MCERTS | - | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | - | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | - | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | - | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | < 1.0 |

#### Petroleum Hydrocarbons

|                                                 |       |       |        |   |         |
|-------------------------------------------------|-------|-------|--------|---|---------|
| TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL         | mg/kg | 0.001 | MCERTS | - | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL         | mg/kg | 0.001 | MCERTS | - | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL        | mg/kg | 0.001 | MCERTS | - | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL    | mg/kg | 1     | MCERTS | - | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL    | mg/kg | 2     | MCERTS | - | 13      |
| TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL    | mg/kg | 8     | MCERTS | - | 43      |
| TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL    | mg/kg | 8     | MCERTS | - | 240     |
| TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_1D_AL   | mg/kg | 8.4   | NONE   | - | 190     |
| TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL | mg/kg | 10    | MCERTS | - | 300     |
| TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_1D_AL | mg/kg | 10    | NONE   | - | 490     |

|                                                |       |       |        |   |         |
|------------------------------------------------|-------|-------|--------|---|---------|
| TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR         | mg/kg | 0.001 | MCERTS | - | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR         | mg/kg | 0.001 | MCERTS | - | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR        | mg/kg | 0.001 | MCERTS | - | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR    | mg/kg | 1     | MCERTS | - | < 1.0   |
| TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR    | mg/kg | 2     | MCERTS | - | 17      |
| TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR    | mg/kg | 10    | MCERTS | - | 74      |
| TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR    | mg/kg | 10    | MCERTS | - | 360     |
| TPH-CWG - Aromatic > EC35 - EC44 EH_CU_1D_AR   | mg/kg | 8.4   | NONE   | - | 99      |
| TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR | mg/kg | 10    | MCERTS | - | 450     |
| TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_1D_AR | mg/kg | 10    | NONE   | - | 550     |

U/S = Unsuitable Sample I/S = Insufficient Sample





**Analytical Report Number:** 22-56901  
**Project / Site name:** Hillhouse TRU Huddersfield  
**Your Order No:**

## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results          | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|---------------|-----------|------------------|-------------------|---------------------------------------------------|----------------------|---------------------------------------|----------------------------|
| 2267794       | TP5194    | 0.50             | 129               | Sheeting/Board Debris                             | Chrysotile & Amosite | 0.011                                 | 0.011                      |
| 2267796       | TP5193    | 0.50             | 137               | Sheeting/Board Debris                             | Chrysotile           | < 0.001                               | < 0.001                    |

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.





Analytical Report Number: 22-56901

Project / Site name: Hillhouse TRU Huddersfield

Your Order No: PAH24760

|                                             |               |                    |                         |
|---------------------------------------------|---------------|--------------------|-------------------------|
| Lab Sample Number                           | 2267815       | 2267816            | 2267817                 |
| Sample Reference                            | TP5198        | TP5193             | TP5196                  |
| Sample Number                               | ES7           | ES1                | ES4                     |
| Depth (m)                                   | 2.50          | 0.50               | 1.50                    |
| Date Sampled                                | 05/05/2022    | 05/05/2022         | 05/05/2022              |
| Time Taken                                  | None Supplied | None Supplied      | None Supplied           |
| Analytical Parameter<br>(Leachate Analysis) | Units         | Limit of detection | Accreditation<br>Status |

#### General Inorganics

|                                  |          |     |           |     |       |     |
|----------------------------------|----------|-----|-----------|-----|-------|-----|
| pH (automated)                   | pH Units | N/A | ISO 17025 | 7.3 | 8.0   | 8.1 |
| Total Cyanide (Low Level 1 µg/l) | µg/l     | 1   | ISO 17025 | 7.1 | < 1.0 | 1.8 |
| Free Cyanide (Low Level 1 µg/l)  | µg/l     | 1   | ISO 17025 | < 1 | < 1   | < 1 |
| Sulphate as SO <sub>4</sub>      | mg/l     | 0.1 | ISO 17025 | 162 | 6.4   | 8.8 |

#### Speciated PAHs

|                        |      |      |           |        |        |        |
|------------------------|------|------|-----------|--------|--------|--------|
| Naphthalene            | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Fluorene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Anthracene             | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene  | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene     | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |

#### Total PAH

|                   |      |     |      |       |       |       |
|-------------------|------|-----|------|-------|-------|-------|
| Total EPA-16 PAHs | µg/l | 0.2 | NONE | < 0.2 | < 0.2 | < 0.2 |
|-------------------|------|-----|------|-------|-------|-------|

#### Heavy Metals / Metalloids

|                      |      |       |           |        |        |        |
|----------------------|------|-------|-----------|--------|--------|--------|
| Antimony (dissolved) | µg/l | 1.7   | ISO 17025 | < 1.7  | 12     | < 1.7  |
| Arsenic (dissolved)  | µg/l | 1     | ISO 17025 | 3.7    | < 1.0  | 1.8    |
| Boron (dissolved)    | µg/l | 10    | ISO 17025 | 62     | 29     | 36     |
| Cadmium (dissolved)  | µg/l | 0.08  | ISO 17025 | < 0.08 | < 0.08 | < 0.08 |
| Chromium (dissolved) | µg/l | 0.4   | ISO 17025 | 1.1    | 1.1    | 4.3    |
| Copper (dissolved)   | µg/l | 0.7   | ISO 17025 | 11     | 3.4    | 9.1    |
| Lead (dissolved)     | µg/l | 1     | ISO 17025 | 4.1    | 3.6    | 8      |
| Mercury - CV-AFS     | µg/l | 0.007 | ISO 17025 | 0.0114 | 0.0233 | 0.0113 |
| Nickel (dissolved)   | µg/l | 0.3   | ISO 17025 | 4.5    | 3.2    | 4.6    |
| Selenium (dissolved) | µg/l | 4     | ISO 17025 | 8      | 6.3    | < 4.0  |
| Vanadium (dissolved) | µg/l | 1.7   | ISO 17025 | 3.3    | 5.4    | 6.4    |
| Zinc (dissolved)     | µg/l | 0.4   | ISO 17025 | 42     | 4.5    | 17     |

|                       |      |       |           |     |     |     |
|-----------------------|------|-------|-----------|-----|-----|-----|
| Magnesium (dissolved) | mg/l | 0.005 | ISO 17025 | 5.8 | 1.9 | 1.9 |
|-----------------------|------|-------|-----------|-----|-----|-----|

U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number : 22-56901**

**Project / Site name: Hillhouse TRU Huddersfield**

\* 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 *                             |
|-------------------|------------------|---------------|-----------|--------------------------------------------------|
| 2267793           | TP5198           | ES7           | 2.5       | Brown loam and clay with gravel and brick.       |
| 2267794           | TP5194           | ES1           | 0.5       | Brown loam and clay with vegetation and stones.  |
| 2267795           | TP5195           | ES4           | 1.5       | Brown loam and gravel with rubble and brick.     |
| 2267796           | TP5193           | ES1           | 0.5       | Brown loam and sand with gravel and stones.      |
| 2267797           | TP5196           | ES4           | 1.5       | Brown loam and sand with gravel and vegetation.  |
| 2267798           | TP5197           | ES1           | 0.5       | Brown loam and gravel with brick and vegetation. |
| 2267799           | TP5192           | ES4           | 1.4       | Brown loam and sand with gravel and vegetation.  |



Analytical Report Number : 22-56901

Project / Site name: Hillhouse TRU Huddersfield

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

| Analytical Test Name                     | Analytical Method Description                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| 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.                            | L038-PL       | D                  | MCERTS               |
| BS EN 12457-1 (2:1) Leachate Prep        | 2:1 (as received, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.                               | In-house method based on BSEN12457-1.                                                                           | L043-PL       | W                  | NONE                 |
| Asbestos identification in soil          | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Metals by ICP-OES in leachate            | Determination of metals in leachate by acidification followed by ICP-OES.                                                                              | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Boron in leachate                        | Determination of boron in leachate. Sample acidified and followed by ICP-OES.                                                                          | In-house method based on MEWAM                                                                                  | L039-PL       | W                  | ISO 17025            |
| 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                                                       | L038-PL       | D                  | MCERTS               |
| Moisture Content                         | Moisture content, determined gravimetrically. (30 oC)                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| 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 (skalar) | L080-PL       | W                  | MCERTS               |
| Speciated EPA-16 PAHs in leachate        | Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.        | In-house method based on USEPA 8270                                                                             | L102B-PL      | W                  | ISO 17025            |
| Speciated EPA-16 PAHs in soil            | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | 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               |
| pH at 20oC in leachate (automated)       | Determination of pH in leachate by electrometric measurement.                                                                                          | In house method.                                                                                                | L099B         | W                  | ISO 17025            |
| 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.                                      | L019-UK/PL    | D                  | NONE                 |
| 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 (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)    | Determination of BTEX in soil by headspace GC-MS.                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |
| TPHCWG (Soil)                            | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                              | In-house method with silica gel split/clean up.                                                                 | L088/76-PL    | W                  | MCERTS               |



**Analytical Report Number : 22-56901**

**Project / Site name: Hillhouse TRU Huddersfield**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                         | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| TPH in (Soil)                                    | Determination of TPH bands by HS-GC-MS/GC-FID                                                                                                         | In-house method, TPH with carbon banding and silica gel split/cleanup.                                          | L076-PL       | D                  | NONE                 |
| Free cyanide in leachate                         | Determination of free cyanide by distillation followed by colorimetry.                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Total cyanide in leachate - 1µg/l                | 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                  | ISO 17025            |
| Asbestos Quantification - Gravimetric            | Asbestos quantification by gravimetric method - in house method based on references.                                                                  | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).                                               | A006-PL       | D                  | ISO 17025            |
| Sulphate in leachates                            | Determination of sulphate in leachate by acidification followed by ICP-OES.                                                                           | In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil <sup>TM</sup>               | L039-PL       | W                  | ISO 17025            |
| Hexavalent chromium in soil (Lower Level)        | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method                                                                                                 | L080-PL       | W                  | NONE                 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                               | In house asbestos methods A001 & A006.                                                                          | A006-PL       | D                  | NONE                 |
| Mercury Low Level in leachate                    | Mercury in leachate by CV-AFS,                                                                                                                        | In-house method based on USEPA method 1631                                                                      | L085-PL       | W                  | ISO 17025            |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' 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 300C.**

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

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

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





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**Analytical Report Number : 22-56790**

**Project / Site name:** Hillhouse TRU, Huddersfield

**Samples received on:** 04/05/2022

**Your job number:** 2641987

**Samples instructed on/  
Analysis started on:** 06/05/2022

**Your order number:** PAH24761

**Analysis completed by:** 19/05/2022

**Report Issue Number:** 1

**Report issued on:** 19/05/2022

**Samples Analysed:** 3 leachate samples - 5 soil samples

Redacted

**Signed**

Anna Goc  
Junior Reporting Specialist  
**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

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

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



Analytical Report Number: 22-56790  
Project / Site name: Hillhouse TRU, Huddersfield  
Your Order No: PAH24761

| Lab Sample Number                       |       |                    |                      | 2267192       | 2267193       | 2267194       | 2267195       | 2267196       |
|-----------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                      | TP5209 ES1    | TP5208 ES4    | TP5207 ES7    | TP5206 ES1    | TP5205 ES4    |
| Sample Number                           |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                      | 0.25          | 1.20          | 2.50          | 0.50          | 1.50          |
| Date Sampled                            |       |                    |                      | 03/05/2022    | 03/05/2022    | 03/05/2022    | 03/05/2022    | 03/05/2022    |
| Time Taken                              |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                 | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                 | 7.2           | 12            | 12            | 10            | 8.8           |
| Total mass of sample received           | kg    | 0.001              | NONE                 | 1.5           | 1.4           | 1.5           | 1.5           | 1.4           |

|                     |      |     |           |              |              |              |              |              |
|---------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|
| Asbestos in Soil    | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Analyst ID | N/A  | N/A | N/A       | DSA          | DSA          | DSA          | DSA          | DSA          |

#### General Inorganics

|                                        |          |     |        |       |       |       |       |       |
|----------------------------------------|----------|-----|--------|-------|-------|-------|-------|-------|
| pH - Automated                         | pH Units | N/A | MCERTS | 8.2   | 7.8   | 7.9   | 8.1   | 8.3   |
| Total Cyanide                          | mg/kg    | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Organic Carbon (TOC) - Automated | %        | 0.1 | MCERTS | 2.8   | 5.4   | 4.3   | 2.5   | 4.8   |

#### Total Phenols

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

#### Speciated PAHs

|                        |       |      |        |   |        |   |   |     |
|------------------------|-------|------|--------|---|--------|---|---|-----|
| Naphthalene            | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 9.4 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | - | 0.44   | - | - | 2.5 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | - | 3.2    | - | - | 10  |
| Fluorene               | mg/kg | 0.05 | MCERTS | - | 2.6    | - | - | 11  |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | - | 22     | - | - | 52  |
| Anthracene             | mg/kg | 0.05 | MCERTS | - | 6.6    | - | - | 17  |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | - | 28     | - | - | 42  |
| Pyrene                 | mg/kg | 0.05 | MCERTS | - | 26     | - | - | 41  |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | - | 17     | - | - | 30  |
| Chrysene               | mg/kg | 0.05 | MCERTS | - | 11     | - | - | 21  |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | - | 10     | - | - | 18  |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | - | 7.4    | - | - | 11  |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | - | 10     | - | - | 17  |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | 6.4    | - | - | 10  |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | - | 1.2    | - | - | 2.5 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | - | 6.4    | - | - | 11  |

#### Total PAH

|                             |       |     |        |   |     |   |   |     |
|-----------------------------|-------|-----|--------|---|-----|---|---|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | - | 158 | - | - | 305 |
|-----------------------------|-------|-----|--------|---|-----|---|---|-----|

#### Heavy Metals / Metalloids

|                                    |       |      |           |       |       |       |       |       |
|------------------------------------|-------|------|-----------|-------|-------|-------|-------|-------|
| Antimony (aqua regia extractable)  | mg/kg | 1    | ISO 17025 | 6.1   | 14    | 10    | 6.3   | 11    |
| Arsenic (aqua regia extractable)   | mg/kg | 1    | MCERTS    | 17    | 38    | 35    | 12    | 32    |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS    | 0.83  | 1.3   | 1.5   | 0.9   | 1.4   |
| Boron (water soluble)              | mg/kg | 0.2  | MCERTS    | 0.7   | 0.7   | 1.2   | 1.6   | 1.4   |
| Cadmium (aqua regia extractable)   | mg/kg | 0.2  | MCERTS    | < 0.2 | < 0.2 | < 0.2 | 0.8   | < 0.2 |
| Chromium (hexavalent)              | mg/kg | 1.2  | NONE      | < 1.2 | < 1.2 | < 1.2 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | 33    | 73    | 94    | 48    | 62    |
| Copper (aqua regia extractable)    | mg/kg | 1    | MCERTS    | 64    | 150   | 120   | 49    | 120   |
| Lead (aqua regia extractable)      | mg/kg | 1    | MCERTS    | 87    | 240   | 180   | 220   | 150   |
| Mercury (aqua regia extractable)   | mg/kg | 0.3  | MCERTS    | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)    | mg/kg | 1    | MCERTS    | 19    | 42    | 40    | 31    | 32    |
| Selenium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | 27    | 51    | 56    | 29    | 50    |
| Zinc (aqua regia extractable)      | mg/kg | 1    | MCERTS    | 110   | 220   | 190   | 180   | 160   |



Analytical Report Number: 22-56790  
Project / Site name: Hillhouse TRU, Huddersfield  
Your Order No: PAH24761

|                                         |               |                    |                      |               |               |
|-----------------------------------------|---------------|--------------------|----------------------|---------------|---------------|
| Lab Sample Number                       | 2267192       | 2267193            | 2267194              | 2267195       | 2267196       |
| Sample Reference                        | TP5209 ES1    | TP5208 ES4         | TP5207 ES7           | TP5206 ES1    | TP5205 ES4    |
| Sample Number                           | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Depth (m)                               | 0.25          | 1.20               | 2.50                 | 0.50          | 1.50          |
| Date Sampled                            | 03/05/2022    | 03/05/2022         | 03/05/2022           | 03/05/2022    | 03/05/2022    |
| Time Taken                              | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units         | Limit of detection | Accreditation Status |               |               |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |   |       |   |   |       |
|------------------------------------|-------|---|--------|---|-------|---|---|-------|
| Benzene                            | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |

#### Petroleum Hydrocarbons

|                                                 |       |       |        |   |         |   |   |         |
|-------------------------------------------------|-------|-------|--------|---|---------|---|---|---------|
| TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL         | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL         | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL        | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL    | mg/kg | 1     | MCERTS | - | < 1.0   | - | - | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL    | mg/kg | 2     | MCERTS | - | 7.1     | - | - | 8.8     |
| TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL    | mg/kg | 8     | MCERTS | - | 16      | - | - | 30      |
| TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL    | mg/kg | 8     | MCERTS | - | 100     | - | - | 410     |
| TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_1D_AL   | mg/kg | 8.4   | NONE   | - | 61      | - | - | 160     |
| TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL | mg/kg | 10    | MCERTS | - | 130     | - | - | 450     |
| TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_1D_AL | mg/kg | 10    | NONE   | - | 190     | - | - | 610     |

|                                                |       |       |        |   |         |   |   |         |
|------------------------------------------------|-------|-------|--------|---|---------|---|---|---------|
| TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR         | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR         | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR        | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR    | mg/kg | 1     | MCERTS | - | < 1.0   | - | - | < 1.0   |
| TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR    | mg/kg | 2     | MCERTS | - | 13      | - | - | 49      |
| TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR    | mg/kg | 10    | MCERTS | - | 70      | - | - | 220     |
| TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR    | mg/kg | 10    | MCERTS | - | 260     | - | - | 620     |
| TPH-CWG - Aromatic > EC35 - EC44 EH_CU_1D_AR   | mg/kg | 8.4   | NONE   | - | 130     | - | - | 290     |
| TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR | mg/kg | 10    | MCERTS | - | 350     | - | - | 900     |
| TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_1D_AR | mg/kg | 10    | NONE   | - | 480     | - | - | 1200    |

U/S = Unsuitable Sample I/S = Insufficient Sample





Analytical Report Number: 22-56790

Project / Site name: Hillhouse TRU, Huddersfield

Your Order No: PAH24761

|                                             |  |  |  |               |                    |                      |
|---------------------------------------------|--|--|--|---------------|--------------------|----------------------|
| Lab Sample Number                           |  |  |  | 2267197       | 2267198            | 2267199              |
| Sample Reference                            |  |  |  | TP5209 ES1    | TP5207 ES7         | TP5206 ES1           |
| Sample Number                               |  |  |  | None Supplied | None Supplied      | None Supplied        |
| Depth (m)                                   |  |  |  | 0.25          | 2.50               | 0.50                 |
| Date Sampled                                |  |  |  | 03/05/2022    | 03/05/2022         | 03/05/2022           |
| Time Taken                                  |  |  |  | None Supplied | None Supplied      | None Supplied        |
| Analytical Parameter<br>(Leachate Analysis) |  |  |  | Units         | Limit of detection | Accreditation Status |

#### General Inorganics

|                                  |          |     |           |       |       |     |
|----------------------------------|----------|-----|-----------|-------|-------|-----|
| pH (automated)                   | pH Units | N/A | ISO 17025 | 8.1   | 8     | 8.1 |
| Total Cyanide (Low Level 1 µg/l) | µg/l     | 1   | ISO 17025 | < 1.0 | < 1.0 | 1.5 |
| Free Cyanide (Low Level 1 µg/l)  | µg/l     | 1   | ISO 17025 | < 1   | < 1   | < 1 |
| Sulphate as SO <sub>4</sub>      | mg/l     | 0.1 | ISO 17025 | 47    | 11.8  | 8.5 |

#### Speciated PAHs

|                        |      |      |           |        |        |        |
|------------------------|------|------|-----------|--------|--------|--------|
| Naphthalene            | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Fluorene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Anthracene             | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene  | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene     | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |

#### Total PAH

|                   |      |     |      |       |       |       |
|-------------------|------|-----|------|-------|-------|-------|
| Total EPA-16 PAHs | µg/l | 0.2 | NONE | < 0.2 | < 0.2 | < 0.2 |
|-------------------|------|-----|------|-------|-------|-------|

#### Heavy Metals / Metalloids

|                      |      |       |           |        |        |        |
|----------------------|------|-------|-----------|--------|--------|--------|
| Antimony (dissolved) | µg/l | 1.7   | ISO 17025 | 6.1    | 8.5    | 7.6    |
| Arsenic (dissolved)  | µg/l | 1     | ISO 17025 | 6.6    | 1.2    | < 1.0  |
| Boron (dissolved)    | µg/l | 10    | ISO 17025 | 36     | 47     | 50     |
| Cadmium (dissolved)  | µg/l | 0.08  | ISO 17025 | < 0.08 | < 0.08 | < 0.08 |
| Chromium (dissolved) | µg/l | 0.4   | ISO 17025 | 1      | 1.4    | 1.1    |
| Copper (dissolved)   | µg/l | 0.7   | ISO 17025 | 2.9    | 2.6    | 5.4    |
| Lead (dissolved)     | µg/l | 1     | ISO 17025 | 5.9    | 2.5    | 1.9    |
| Mercury - CV-AFS     | µg/l | 0.007 | ISO 17025 | 0.0227 | 0.0444 | 0.0336 |
| Nickel (dissolved)   | µg/l | 0.3   | ISO 17025 | 3.1    | 4      | 4.1    |
| Selenium (dissolved) | µg/l | 4     | ISO 17025 | 6.2    | 8.6    | < 4.0  |
| Vanadium (dissolved) | µg/l | 1.7   | ISO 17025 | 6.1    | 2.4    | 6.5    |
| Zinc (dissolved)     | µg/l | 0.4   | ISO 17025 | 5.2    | 5.4    | 4.2    |

|                       |      |       |           |     |     |     |
|-----------------------|------|-------|-----------|-----|-----|-----|
| Magnesium (dissolved) | mg/l | 0.005 | ISO 17025 | 3.2 | 3.5 | 1.9 |
|-----------------------|------|-------|-----------|-----|-----|-----|

U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number : 22-56790**

**Project / Site name: Hillhouse TRU, Huddersfield**

\* 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 *                            |
|-------------------|------------------|---------------|-----------|-------------------------------------------------|
| 2267192           | TP5209 ES1       | None Supplied | 0.25      | Brown loam with gravel and vegetation.          |
| 2267193           | TP5208 ES4       | None Supplied | 1.2       | Brown loam and clay with gravel and vegetation. |
| 2267194           | TP5207 ES7       | None Supplied | 2.5       | Brown loam and clay with gravel and vegetation. |
| 2267195           | TP5206 ES1       | None Supplied | 0.5       | Brown sand with gravel.                         |
| 2267196           | TP5205 ES4       | None Supplied | 1.5       | Brown sandy loam with gravel and vegetation.    |



Analytical Report Number : 22-56790

Project / Site name: Hillhouse TRU, Huddersfield

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

| Analytical Test Name                     | Analytical Method Description                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| 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.                            | L038-PL       | D                  | MCERTS               |
| BS EN 12457-1 (2:1) Leachate Prep        | 2:1 (as received, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.                               | In-house method based on BSEN12457-1.                                                                           | L043-PL       | W                  | NONE                 |
| Asbestos identification in soil          | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Metals by ICP-OES in leachate            | Determination of metals in leachate by acidification followed by ICP-OES.                                                                              | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Boron in leachate                        | Determination of boron in leachate. Sample acidified and followed by ICP-OES.                                                                          | In-house method based on MEWAM                                                                                  | L039-PL       | W                  | ISO 17025            |
| 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                                                       | L038-PL       | D                  | MCERTS               |
| Moisture Content                         | Moisture content, determined gravimetrically. (30 oC)                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| 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 (skalar) | L080-PL       | W                  | MCERTS               |
| Speciated EPA-16 PAHs in leachate        | Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.        | In-house method based on USEPA 8270                                                                             | L102B-PL      | W                  | ISO 17025            |
| Speciated EPA-16 PAHs in soil            | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | 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               |
| pH at 20oC in leachate (automated)       | Determination of pH in leachate by electrometric measurement.                                                                                          | In house method.                                                                                                | L099B         | W                  | ISO 17025            |
| 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.                                      | L019-UK/PL    | D                  | NONE                 |
| 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 (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)    | Determination of BTEX in soil by headspace GC-MS.                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |
| TPHCWG (Soil)                            | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                              | In-house method with silica gel split/clean up.                                                                 | L088/76-PL    | W                  | MCERTS               |



**Analytical Report Number : 22-56790**  
**Project / Site name: Hillhouse TRU, Huddersfield**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                         | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| TPH in (Soil)                                    | Determination of TPH bands by HS-GC-MS/GC-FID                                                                                                         | In-house method, TPH with carbon banding and silica gel split/cleanup.                                          | L076-PL       | D                  | NONE                 |
| Free cyanide in leachate                         | Determination of free cyanide by distillation followed by colorimetry.                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Total cyanide in leachate - 1µg/l                | 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                  | ISO 17025            |
| Sulphate in leachates                            | Determination of sulphate in leachate by acidification followed by ICP-OES.                                                                           | In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil <sup>TM</sup>               | L039-PL       | W                  | ISO 17025            |
| Hexavalent chromium in soil (Lower Level)        | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method                                                                                                 | L080-PL       | W                  | NONE                 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                               | In house asbestos methods A001 & A006.                                                                          | A006-PL       | D                  | NONE                 |
| Mercury Low Level in leachate                    | Mercury in leachate by CV-AFS,                                                                                                                        | In-house method based on USEPA method 1631                                                                      | L085-PL       | W                  | ISO 17025            |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

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

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

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

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

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





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e:Redacted

**Analytical Report Number : 22-56922**

|                             |                                     |                                                        |            |
|-----------------------------|-------------------------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Hillhouse TRU, Huddersfield         | <b>Samples received on:</b>                            | 06/05/2022 |
| <b>Your job number:</b>     | 2641987                             | <b>Samples instructed on/<br/>Analysis started on:</b> | 06/05/2022 |
| <b>Your order number:</b>   | PAH24762                            | <b>Analysis completed by:</b>                          | 18/05/2022 |
| <b>Report Issue Number:</b> | 1                                   | <b>Report issued on:</b>                               | 18/05/2022 |
| <b>Samples Analysed:</b>    | 3 leachate samples - 6 soil samples |                                                        |            |

Redacted

**Signed:**

Joanna Wawrzeczko  
Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

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

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

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

|           |                           |
|-----------|---------------------------|
| soils     | - 4 weeks from reporting  |
| leachates | - 2 weeks from reporting  |
| waters    | - 2 weeks from reporting  |
| asbestos  | - 6 months from reporting |

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



Analytical Report Number: 22-56922  
Project / Site name: Hillhouse TRU, Huddersfield  
Your Order No: PAH24762

| Lab Sample Number                       |       |                    |                      | 2267902       | 2267903       | 2267904       | 2267905       | 2267906       |
|-----------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                      | TP5204 ES7    | TP5203 ES1    | TP5201 ES7    | TP5199 ES4    | TP5202 ES1    |
| Sample Number                           |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                      | 2.50          | 0.50          | 2.50          | 1.50          | 0.50          |
| Date Sampled                            |       |                    |                      | 04/05/2022    | 04/05/2022    | 04/05/2022    | 04/05/2022    | 04/05/2022    |
| Time Taken                              |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                 | < 0.1         | 29            | 31            | < 0.1         | 40            |
| Moisture Content                        | %     | 0.01               | NONE                 | 13            | 11            | 12            | 8.3           | 11            |
| Total mass of sample received           | kg    | 0.001              | NONE                 | 1.5           | 1.5           | 1.5           | 1.5           | 1.5           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | Chrysotile | -            | -            | -            |
|-----------------------------------------------|------|-------|-----------|--------------|------------|--------------|--------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Detected   | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | < 0.001    | -            | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | < 0.001    | -            | -            | -            |
| Asbestos Analyst ID                           | N/A  | N/A   | N/A       | MWI          | MWI        | MWI          | MWI          | MWI          |

#### General Inorganics

|                                        |          |     |        |       |     |       |       |       |
|----------------------------------------|----------|-----|--------|-------|-----|-------|-------|-------|
| pH - Automated                         | pH Units | N/A | MCERTS | 7.1   | 8   | 8.6   | 8.4   | 8     |
| Total Cyanide                          | mg/kg    | 1   | MCERTS | < 1.0 | 1.7 | < 1.0 | < 1.0 | < 1.0 |
| Total Organic Carbon (TOC) - Automated | %        | 0.1 | MCERTS | 2.1   | 5.3 | 3.2   | 3.9   | 2.2   |

#### Total Phenols

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

#### Speciated PAHs

|                        |       |      |        |   |   |   |        |        |
|------------------------|-------|------|--------|---|---|---|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | - | - | - | 0.54   | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | - | - | - | 1.2    | 0.32   |
| Fluorene               | mg/kg | 0.05 | MCERTS | - | - | - | 0.97   | 0.34   |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | - | - | - | 8.4    | 2.4    |
| Anthracene             | mg/kg | 0.05 | MCERTS | - | - | - | 2.9    | 0.77   |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | - | - | - | 17     | 4.5    |
| Pyrene                 | mg/kg | 0.05 | MCERTS | - | - | - | 16     | 4.4    |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | - | - | - | 8.7    | 2.7    |
| Chrysene               | mg/kg | 0.05 | MCERTS | - | - | - | 7      | 1.8    |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | - | - | - | 6.9    | 1.5    |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | - | - | - | 3.8    | 1.5    |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | - | - | - | 6.5    | 1.6    |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | 4.5    | 0.99   |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | - | - | - | 0.74   | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | - | - | - | 5      | 1.1    |

#### Total PAH

|                             |       |     |        |   |   |   |      |      |
|-----------------------------|-------|-----|--------|---|---|---|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | - | - | - | 89.8 | 23.9 |
|-----------------------------|-------|-----|--------|---|---|---|------|------|



Analytical Report Number: 22-56922  
Project / Site name: Hillhouse TRU, Huddersfield  
Your Order No: PAH24762

| Lab Sample Number                       | 2267902       | 2267903            | 2267904                 | 2267905       | 2267906       |
|-----------------------------------------|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        | TP5204 ES7    | TP5203 ES1         | TP5201 ES7              | TP5199 ES4    | TP5202 ES1    |
| Sample Number                           | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Depth (m)                               | 2.50          | 0.50               | 2.50                    | 1.50          | 0.50          |
| Date Sampled                            | 04/05/2022    | 04/05/2022         | 04/05/2022              | 04/05/2022    | 04/05/2022    |
| Time Taken                              | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### Heavy Metals / Metalloids

|                                    |       |      |           |       |       |       |       |       |
|------------------------------------|-------|------|-----------|-------|-------|-------|-------|-------|
| Antimony (aqua regia extractable)  | mg/kg | 1    | ISO 17025 | 7.6   | 18    | 6.1   | 11    | 5.4   |
| Arsenic (aqua regia extractable)   | mg/kg | 1    | MCERTS    | 24    | 60    | 19    | 24    | 25    |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS    | 1.7   | 1     | 1.8   | 0.98  | 0.87  |
| Boron (water soluble)              | mg/kg | 0.2  | MCERTS    | 0.7   | 1.2   | 2.4   | 1.5   | < 0.2 |
| Cadmium (aqua regia extractable)   | mg/kg | 0.2  | MCERTS    | < 0.2 | < 0.2 | < 0.2 | 1.3   | < 0.2 |
| Chromium (hexavalent)              | mg/kg | 1.2  | NONE      | < 1.2 | < 1.2 | < 1.2 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | 39    | 71    | 37    | 81    | 19    |
| Copper (aqua regia extractable)    | mg/kg | 1    | MCERTS    | 99    | 130   | 57    | 100   | 100   |
| Lead (aqua regia extractable)      | mg/kg | 1    | MCERTS    | 91    | 200   | 85    | 190   | 92    |
| Mercury (aqua regia extractable)   | mg/kg | 0.3  | MCERTS    | < 0.3 | < 0.3 | < 0.3 | 0.5   | < 0.3 |
| Nickel (aqua regia extractable)    | mg/kg | 1    | MCERTS    | 55    | 55    | 27    | 39    | 22    |
| Selenium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable)  | mg/kg | 1    | MCERTS    | 42    | 54    | 36    | 47    | 27    |
| Zinc (aqua regia extractable)      | mg/kg | 1    | MCERTS    | 420   | 500   | 130   | 820   | 180   |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |   |   |   |       |       |
|------------------------------------|-------|---|--------|---|---|---|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | - | - | - | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | - | - | - | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | - | - | - | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | - | - | - | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | - | - | - | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                                 |       |       |        |   |   |   |         |         |
|-------------------------------------------------|-------|-------|--------|---|---|---|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6 HS 1D AL         | mg/kg | 0.001 | MCERTS | - | - | - | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8 HS 1D AL         | mg/kg | 0.001 | MCERTS | - | - | - | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 HS 1D AL        | mg/kg | 0.001 | MCERTS | - | - | - | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 EH CU 1D AL    | mg/kg | 1     | MCERTS | - | - | - | < 1.0   | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 EH CU 1D AL    | mg/kg | 2     | MCERTS | - | - | - | 13      | 9.7     |
| TPH-CWG - Aliphatic >EC16 - EC21 EH CU 1D AL    | mg/kg | 8     | MCERTS | - | - | - | 34      | 20      |
| TPH-CWG - Aliphatic >EC21 - EC35 EH CU 1D AL    | mg/kg | 8     | MCERTS | - | - | - | 260     | 120     |
| TPH-CWG - Aliphatic > EC35 - EC44 EH CU 1D AL   | mg/kg | 8.4   | NONE   | - | - | - | 210     | 110     |
| TPH-CWG - Aliphatic (EC5 - EC35) EH CU+HS 1D AL | mg/kg | 10    | MCERTS | - | - | - | 310     | 150     |
| TPH-CWG - Aliphatic (EC5 - EC44) EH CU+HS 1D AL | mg/kg | 10    | NONE   | - | - | - | 510     | 260     |

|                                                |       |       |        |   |   |   |         |         |
|------------------------------------------------|-------|-------|--------|---|---|---|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7 HS 1D AR         | mg/kg | 0.001 | MCERTS | - | - | - | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8 HS 1D AR         | mg/kg | 0.001 | MCERTS | - | - | - | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10 HS 1D AR        | mg/kg | 0.001 | MCERTS | - | - | - | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 EH CU 1D AR    | mg/kg | 1     | MCERTS | - | - | - | < 1.0   | < 1.0   |
| TPH-CWG - Aromatic >EC12 - EC16 EH CU 1D AR    | mg/kg | 2     | MCERTS | - | - | - | 24      | 12      |
| TPH-CWG - Aromatic >EC16 - EC21 EH CU 1D AR    | mg/kg | 10    | MCERTS | - | - | - | 120     | 40      |
| TPH-CWG - Aromatic >EC21 - EC35 EH CU 1D AR    | mg/kg | 10    | MCERTS | - | - | - | 640     | 190     |
| TPH-CWG - Aromatic > EC35 - EC44 EH CU 1D AR   | mg/kg | 8.4   | NONE   | - | - | - | 230     | 98      |
| TPH-CWG - Aromatic (EC5 - EC35) EH CU+HS 1D AR | mg/kg | 10    | MCERTS | - | - | - | 790     | 250     |
| TPH-CWG - Aromatic (EC5 - EC44) EH CU+HS 1D AR | mg/kg | 10    | NONE   | - | - | - | 1000    | 340     |

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 22-56922  
 Project / Site name: Hillhouse TRU, Huddersfield  
 Your Order No: PAH24762

| Lab Sample Number                       |       |                    |                         | 2267907       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|
| Sample Reference                        |       |                    |                         | TP5200 ES1    |
| Sample Number                           |       |                    |                         | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          |
| Date Sampled                            |       |                    |                         | 04/05/2022    |
| Time Taken                              |       |                    |                         | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |
| Stone Content                           | %     | 0.1                | NONE                    | 23            |
| Moisture Content                        | %     | 0.01               | NONE                    | 11            |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.5           |

|                                               |      |       |           |              |
|-----------------------------------------------|------|-------|-----------|--------------|
| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            |
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            |
| Asbestos Analyst ID                           | N/A  | N/A   | N/A       | MWI          |

#### General Inorganics

|                                        |          |     |        |       |
|----------------------------------------|----------|-----|--------|-------|
| pH - Automated                         | pH Units | N/A | MCERTS | 7.6   |
| Total Cyanide                          | mg/kg    | 1   | MCERTS | < 1.0 |
| Total Organic Carbon (TOC) - Automated | %        | 0.1 | MCERTS | 4.5   |

#### Total Phenols

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

#### Speciated PAHs

|                        |       |      |        |   |
|------------------------|-------|------|--------|---|
| Naphthalene            | mg/kg | 0.05 | MCERTS | - |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | - |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | - |
| Fluorene               | mg/kg | 0.05 | MCERTS | - |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | - |
| Anthracene             | mg/kg | 0.05 | MCERTS | - |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | - |
| Pyrene                 | mg/kg | 0.05 | MCERTS | - |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | - |
| Chrysene               | mg/kg | 0.05 | MCERTS | - |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | - |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | - |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | - |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | - |

#### Total PAH

|                             |       |     |        |   |
|-----------------------------|-------|-----|--------|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | - |
|-----------------------------|-------|-----|--------|---|



Analytical Report Number: 22-56922  
Project / Site name: Hillhouse TRU, Huddersfield  
Your Order No: PAH24762

| Lab Sample Number                       |       | 2267907            |                         |       |
|-----------------------------------------|-------|--------------------|-------------------------|-------|
| Sample Reference                        |       | TP5200 ES1         |                         |       |
| Sample Number                           |       | None Supplied      |                         |       |
| Depth (m)                               |       | 0.50               |                         |       |
| Date Sampled                            |       | 04/05/2022         |                         |       |
| Time Taken                              |       | None Supplied      |                         |       |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |       |
| <b>Heavy Metals / Metalloids</b>        |       |                    |                         |       |
| Antimony (aqua regia extractable)       | mg/kg | 1                  | ISO 17025               | 13    |
| Arsenic (aqua regia extractable)        | mg/kg | 1                  | MCERTS                  | 40    |
| Beryllium (aqua regia extractable)      | mg/kg | 0.06               | MCERTS                  | 1.2   |
| Boron (water soluble)                   | mg/kg | 0.2                | MCERTS                  | 1.1   |
| Cadmium (aqua regia extractable)        | mg/kg | 0.2                | MCERTS                  | 3.2   |
| Chromium (hexavalent)                   | mg/kg | 1.2                | NONE                    | < 1.2 |
| Chromium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | 57    |
| Copper (aqua regia extractable)         | mg/kg | 1                  | MCERTS                  | 170   |
| Lead (aqua regia extractable)           | mg/kg | 1                  | MCERTS                  | 210   |
| Mercury (aqua regia extractable)        | mg/kg | 0.3                | MCERTS                  | < 0.3 |
| Nickel (aqua regia extractable)         | mg/kg | 1                  | MCERTS                  | 48    |
| Selenium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | < 1.0 |
| Vanadium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | 49    |
| Zinc (aqua regia extractable)           | mg/kg | 1                  | MCERTS                  | 1900  |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |   |
|------------------------------------|-------|---|--------|---|
| Benzene                            | µg/kg | 1 | MCERTS | - |
| Toluene                            | µg/kg | 1 | MCERTS | - |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | - |
| p & m-xylene                       | µg/kg | 1 | MCERTS | - |
| o-xylene                           | µg/kg | 1 | MCERTS | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - |

#### Petroleum Hydrocarbons

|                                                 |       |       |        |   |
|-------------------------------------------------|-------|-------|--------|---|
| TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL         | mg/kg | 0.001 | MCERTS | - |
| TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL         | mg/kg | 0.001 | MCERTS | - |
| TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL        | mg/kg | 0.001 | MCERTS | - |
| TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL    | mg/kg | 1     | MCERTS | - |
| TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL    | mg/kg | 2     | MCERTS | - |
| TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL    | mg/kg | 8     | MCERTS | - |
| TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL    | mg/kg | 8     | MCERTS | - |
| TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_1D_AL   | mg/kg | 8.4   | NONE   | - |
| TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL | mg/kg | 10    | MCERTS | - |
| TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_1D_AL | mg/kg | 10    | NONE   | - |

|                                                |       |       |        |   |
|------------------------------------------------|-------|-------|--------|---|
| TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR         | mg/kg | 0.001 | MCERTS | - |
| TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR         | mg/kg | 0.001 | MCERTS | - |
| TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR        | mg/kg | 0.001 | MCERTS | - |
| TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR    | mg/kg | 1     | MCERTS | - |
| TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR    | mg/kg | 2     | MCERTS | - |
| TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR    | mg/kg | 10    | MCERTS | - |
| TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR    | mg/kg | 10    | MCERTS | - |
| TPH-CWG - Aromatic > EC35 - EC44 EH_CU_1D_AR   | mg/kg | 8.4   | NONE   | - |
| TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR | mg/kg | 10    | MCERTS | - |
| TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_1D_AR | mg/kg | 10    | NONE   | - |

U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number:** 22-56922

**Project / Site name:** Hillhouse TRU, Huddersfield

**Your Order No:**

## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number | Sample ID  | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|---------------|------------|------------------|-------------------|---------------------------------------------------|-------------|---------------------------------------|----------------------------|
| 2267903       | TP5203 ES1 | 0.50             | 154               | Loose Fibrous Debris                              | Chrysotile  | < 0.001                               | < 0.001                    |

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.





Analytical Report Number: 22-56922  
Project / Site name: Hillhouse TRU, Huddersfield

Your Order No: PAH24762

|                                             |  |  |  |               |                    |                      |
|---------------------------------------------|--|--|--|---------------|--------------------|----------------------|
| Lab Sample Number                           |  |  |  | 2267908       | 2267909            | 2267910              |
| Sample Reference                            |  |  |  | TP5204 ES7    | TP5201 ES7         | TP5199 ES4           |
| Sample Number                               |  |  |  | None Supplied | None Supplied      | None Supplied        |
| Depth (m)                                   |  |  |  | 2.50          | 2.50               | 1.50                 |
| Date Sampled                                |  |  |  | 04/05/2022    | 04/05/2022         | 04/05/2022           |
| Time Taken                                  |  |  |  | None Supplied | None Supplied      | None Supplied        |
| Analytical Parameter<br>(Leachate Analysis) |  |  |  | Units         | Limit of detection | Accreditation Status |

#### General Inorganics

|                                  |          |     |           |     |      |       |
|----------------------------------|----------|-----|-----------|-----|------|-------|
| pH (automated)                   | pH Units | N/A | ISO 17025 | 7.5 | 7.6  | 7.6   |
| Total Cyanide (Low Level 1 µg/l) | µg/l     | 1   | ISO 17025 | 1.7 | 1.5  | < 1.0 |
| Free Cyanide (Low Level 1 µg/l)  | µg/l     | 1   | ISO 17025 | < 1 | < 1  | < 1   |
| Sulphate as SO <sub>4</sub>      | mg/l     | 0.1 | ISO 17025 | 393 | 12.2 | 27.2  |

#### Speciated PAHs

|                        |      |      |           |        |        |        |
|------------------------|------|------|-----------|--------|--------|--------|
| Naphthalene            | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Fluorene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Anthracene             | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene  | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene     | µg/l | 0.01 | NONE      | < 0.01 | < 0.01 | < 0.01 |

#### Total PAH

|                   |      |     |      |       |       |       |
|-------------------|------|-----|------|-------|-------|-------|
| Total EPA-16 PAHs | µg/l | 0.2 | NONE | < 0.2 | < 0.2 | < 0.2 |
|-------------------|------|-----|------|-------|-------|-------|

#### Heavy Metals / Metalloids

|                      |      |       |           |          |        |        |
|----------------------|------|-------|-----------|----------|--------|--------|
| Antimony (dissolved) | µg/l | 1.7   | ISO 17025 | < 1.7    | < 1.7  | < 1.7  |
| Arsenic (dissolved)  | µg/l | 1     | ISO 17025 | < 1.0    | 2.9    | 1.8    |
| Boron (dissolved)    | µg/l | 10    | ISO 17025 | 64       | 42     | 130    |
| Cadmium (dissolved)  | µg/l | 0.08  | ISO 17025 | 0.13     | 0.12   | < 0.08 |
| Chromium (dissolved) | µg/l | 0.4   | ISO 17025 | 0.8      | 5.9    | 4.2    |
| Copper (dissolved)   | µg/l | 0.7   | ISO 17025 | 3.7      | 14     | 14     |
| Lead (dissolved)     | µg/l | 1     | ISO 17025 | 5.5      | 15     | 14     |
| Mercury - CV-AFS     | µg/l | 0.007 | ISO 17025 | < 0.0070 | 0.0411 | 0.0187 |
| Nickel (dissolved)   | µg/l | 0.3   | ISO 17025 | 8.8      | 6.8    | 5.7    |
| Selenium (dissolved) | µg/l | 4     | ISO 17025 | 14       | < 4.0  | < 4.0  |
| Vanadium (dissolved) | µg/l | 1.7   | ISO 17025 | 2.1      | 7.3    | 11     |
| Zinc (dissolved)     | µg/l | 0.4   | ISO 17025 | 15       | 12     | 42     |

|                       |      |       |           |    |     |     |
|-----------------------|------|-------|-----------|----|-----|-----|
| Magnesium (dissolved) | mg/l | 0.005 | ISO 17025 | 23 | 2.5 | 2.4 |
|-----------------------|------|-------|-----------|----|-----|-----|

U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number : 22-56922**

**Project / Site name: Hillhouse TRU, Huddersfield**

\* 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 *                            |
|-------------------|------------------|---------------|-----------|-------------------------------------------------|
| 2267902           | TP5204 ES7       | None Supplied | 2.5       | Brown clay and sand with gravel and vegetation. |
| 2267903           | TP5203 ES1       | None Supplied | 0.5       | Brown loam and sand with stones and vegetation. |
| 2267904           | TP5201 ES7       | None Supplied | 2.5       | Brown loam and sand with stones and vegetation. |
| 2267905           | TP5199 ES4       | None Supplied | 1.5       | Brown loam and sand with gravel and vegetation. |
| 2267906           | TP5202 ES1       | None Supplied | 0.5       | Brown loam and clay with gravel and stones.     |
| 2267907           | TP5200 ES1       | None Supplied | 0.5       | Brown loam and sand with gravel and stones.     |



**Analytical Report Number : 22-56922**

**Project / Site name: Hillhouse TRU, Huddersfield**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                     | Analytical Method Description                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| 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.                            | L038-PL       | D                  | MCERTS               |
| BS EN 12457-1 (2:1) Leachate Prep        | 2:1 (as received, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.                               | In-house method based on BSEN12457-1.                                                                           | L043-PL       | W                  | NONE                 |
| Asbestos identification in soil          | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Metals by ICP-OES in leachate            | Determination of metals in leachate by acidification followed by ICP-OES.                                                                              | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Boron in leachate                        | Determination of boron in leachate. Sample acidified and followed by ICP-OES.                                                                          | In-house method based on MEWAM                                                                                  | L039-PL       | W                  | ISO 17025            |
| 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                                                       | L038-PL       | D                  | MCERTS               |
| Moisture Content                         | Moisture content, determined gravimetrically. (30 oC)                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| 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 (skalar) | L080-PL       | W                  | MCERTS               |
| Speciated EPA-16 PAHs in leachate        | Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.        | In-house method based on USEPA 8270                                                                             | L102B-PL      | W                  | ISO 17025            |
| Speciated EPA-16 PAHs in soil            | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | 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               |
| pH at 20oC in leachate (automated)       | Determination of pH in leachate by electrometric measurement.                                                                                          | In house method.                                                                                                | L099B         | W                  | ISO 17025            |
| 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.                                      | L019-UK/PL    | D                  | NONE                 |
| 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 (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)    | Determination of BTEX in soil by headspace GC-MS.                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |
| TPHCWG (Soil)                            | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                              | In-house method with silica gel split/clean up.                                                                 | L088/76-PL    | W                  | MCERTS               |

Analytical Report Number : 22-56922

Project / Site name: Hillhouse TRU, Huddersfield

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

| Analytical Test Name                             | Analytical Method Description                                                                                                                         | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| TPH in (Soil)                                    | Determination of TPH bands by HS-GC-MS/GC-FID                                                                                                         | In-house method, TPH with carbon banding and silica gel split/cleanup.                                          | L076-PL       | D                  | NONE                 |
| Free cyanide in leachate                         | Determination of free cyanide by distillation followed by colorimetry.                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Total cyanide in leachate - 1µg/l                | 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                  | ISO 17025            |
| Asbestos Quantification - Gravimetric            | Asbestos quantification by gravimetric method - in house method based on references.                                                                  | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).                                               | A006-PL       | D                  | ISO 17025            |
| Sulphate in leachates                            | Determination of sulphate in leachate by acidification followed by ICP-OES.                                                                           | In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil <sup>TM</sup>               | L039-PL       | W                  | ISO 17025            |
| Hexavalent chromium in soil (Lower Level)        | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method                                                                                                 | L080-PL       | W                  | NONE                 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                               | In house asbestos methods A001 & A006.                                                                          | A006-PL       | D                  | NONE                 |
| Mercury Low Level in leachate                    | Mercury in leachate by CV-AFS,                                                                                                                        | In-house method based on USEPA method 1631                                                                      | L085-PL       | W                  | ISO 17025            |

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

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

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

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

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

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



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WD18 8YS

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## **Analytical Report Number : 22-56795**

|                             |                             |                                                        |            |
|-----------------------------|-----------------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Hillhouse TRU, Huddersfield | <b>Samples received on:</b>                            | 04/05/2022 |
| <b>Your job number:</b>     | 2641987                     | <b>Samples instructed on/<br/>Analysis started on:</b> | 06/05/2022 |
| <b>Your order number:</b>   | PAH24758                    | <b>Analysis completed by:</b>                          | 16/05/2022 |
| <b>Report Issue Number:</b> | 1                           | <b>Report issued on:</b>                               | 16/05/2022 |
| <b>Samples Analysed:</b>    | 4 wac multi samples         |                                                        |            |

Redacted

**Signed:**

Martyna Langer  
Junior Reporting Specialist  
**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

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

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.

## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

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| Waste Acceptance Criteria Analytical Results                                                                         |                             |          |  |                 |                                                   |                                                               |                          |  |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|--|-----------------|---------------------------------------------------|---------------------------------------------------------------|--------------------------|--|
| Report No:                                                                                                           | 22-56795                    |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 | Client: RSKRAW                                    |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
| Location                                                                                                             | Hillhouse TRU, Huddersfield |          |  |                 |                                                   |                                                               |                          |  |
| Lab Reference (Sample Number)                                                                                        | 2267226                     |          |  |                 | Landfill Waste Acceptance Criteria                |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 | Limits                                            |                                                               |                          |  |
| Sampling Date                                                                                                        | 03/05/2022                  |          |  |                 | Inert Waste Landfill                              | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |  |
| Sample ID                                                                                                            | TP5209 WAC4                 |          |  |                 |                                                   |                                                               |                          |  |
| Depth (m)                                                                                                            | 0.40-1.50                   |          |  |                 |                                                   |                                                               |                          |  |
| Solid Waste Analysis                                                                                                 |                             |          |  |                 |                                                   |                                                               |                          |  |
| TOC (%)**                                                                                                            | 2.2                         |          |  |                 | 3%                                                | 5%                                                            | 6%                       |  |
| Loss on Ignition (%) **                                                                                              | 5.1                         |          |  |                 | --                                                | --                                                            | 10%                      |  |
| BTEX (µg/kg) **                                                                                                      | < 10                        |          |  |                 | 6000                                              | --                                                            | --                       |  |
| Sum of PCBs (mg/kg) **                                                                                               | < 0.30                      |          |  |                 | 1                                                 | --                                                            | --                       |  |
| Mineral Oil (mg/kg) <sup>EH_ID_CU_AL_#</sup>                                                                         | 250                         |          |  |                 | 500                                               | --                                                            | --                       |  |
| Total PAH (WAC-17) (mg/kg)                                                                                           | 1040                        |          |  |                 | 100                                               | --                                                            | --                       |  |
| pH (units)**                                                                                                         | 8.2                         |          |  |                 | --                                                | >6                                                            | --                       |  |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | 30                          |          |  |                 | --                                                | To be evaluated                                               | To be evaluated          |  |
| Eluate Analysis                                                                                                      | 2:1                         | 8:1      |  | Cumulative 10:1 | Limit values for compliance leaching test         |                                                               |                          |  |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              |                             |          |  |                 | using BS EN 12457-3 at L/S 10 l/kg (mg/kg)        |                                                               |                          |  |
|                                                                                                                      | mg/l                        | mg/l     |  | mg/kg           |                                                   |                                                               |                          |  |
| Arsenic *                                                                                                            | 0.015                       | 0.012    |  | 0.13            | 0.5                                               | 2                                                             | 25                       |  |
| Barium *                                                                                                             | 0.033                       | 0.020    |  | 0.22            | 20                                                | 100                                                           | 300                      |  |
| Cadmium *                                                                                                            | < 0.0005                    | < 0.0005 |  | < 0.0020        | 0.04                                              | 1                                                             | 5                        |  |
| Chromium *                                                                                                           | 0.0026                      | 0.0011   |  | 0.013           | 0.5                                               | 10                                                            | 70                       |  |
| Copper *                                                                                                             | 0.021                       | 0.011    |  | 0.12            | 2                                                 | 50                                                            | 100                      |  |
| Mercury *                                                                                                            | < 0.0015                    | < 0.0015 |  | < 0.010         | 0.01                                              | 0.2                                                           | 2                        |  |
| Molybdenum *                                                                                                         | 0.0047                      | < 0.0030 |  | 0.021           | 0.5                                               | 10                                                            | 30                       |  |
| Nickel *                                                                                                             | 0.0032                      | 0.0052   |  | 0.049           | 0.4                                               | 10                                                            | 40                       |  |
| Lead *                                                                                                               | 0.0068                      | 0.0055   |  | 0.057           | 0.5                                               | 10                                                            | 50                       |  |
| Antimony *                                                                                                           | < 0.0050                    | < 0.0050 |  | < 0.020         | 0.06                                              | 0.7                                                           | 5                        |  |
| Selenium *                                                                                                           | < 0.010                     | < 0.010  |  | < 0.040         | 0.1                                               | 0.5                                                           | 7                        |  |
| Zinc *                                                                                                               | 0.0069                      | 0.0063   |  | 0.064           | 4                                                 | 50                                                            | 200                      |  |
| Chloride *                                                                                                           | < 4.0                       | < 4.0    |  | < 15            | 800                                               | 15000                                                         | 25000                    |  |
| Fluoride                                                                                                             | 0.41                        | 0.30     |  | 3.1             | 10                                                | 150                                                           | 500                      |  |
| Sulphate *                                                                                                           | 7.3                         | 3.4      |  | 39              | 1000                                              | 20000                                                         | 50000                    |  |
| TDS*                                                                                                                 | 99                          | 64       |  | 690             | 4000                                              | 60000                                                         | 100000                   |  |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.13                      | < 0.13   |  | < 0.50          | 1                                                 | -                                                             | -                        |  |
| DOC                                                                                                                  | 12                          | 12       |  | 120             | 500                                               | 800                                                           | 1000                     |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
| Leach Test Information                                                                                               |                             |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
| Stone Content (%)                                                                                                    | 50                          |          |  |                 |                                                   |                                                               |                          |  |
| Sample Mass (kg)                                                                                                     | 1.0                         |          |  |                 |                                                   |                                                               |                          |  |
| Dry Matter (%)                                                                                                       | 93                          |          |  |                 |                                                   |                                                               |                          |  |
| Moisture (%)                                                                                                         | 7.0                         |          |  |                 |                                                   |                                                               |                          |  |
| Stage 1                                                                                                              |                             |          |  |                 |                                                   |                                                               |                          |  |
| Volume Eluate L2 (litres)                                                                                            | 0.33                        |          |  |                 |                                                   |                                                               |                          |  |
| Filtered Eluate VE1 (litres)                                                                                         | 0.24                        |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |                             |          |  |                 | * = UKAS accredited (liquid eluate analysis only) |                                                               |                          |  |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |                             |          |  |                 | ** = MCERTS accredited                            |                                                               |                          |  |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

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| Waste Acceptance Criteria Analytical Results                                                                         |                             |          |  |                 |                                                   |                                                               |                          |  |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|--|-----------------|---------------------------------------------------|---------------------------------------------------------------|--------------------------|--|
| Report No:                                                                                                           | 22-56795                    |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 | Client: RSKRAW                                    |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
| Location                                                                                                             | Hillhouse TRU, Huddersfield |          |  |                 |                                                   |                                                               |                          |  |
| Lab Reference (Sample Number)                                                                                        | 2267227                     |          |  |                 | Landfill Waste Acceptance Criteria                |                                                               |                          |  |
| Sampling Date                                                                                                        | 03/05/2022                  |          |  |                 | Inert Waste Landfill                              | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |  |
| Sample ID                                                                                                            | TP5208 WAC6                 |          |  |                 |                                                   |                                                               |                          |  |
| Depth (m)                                                                                                            | 0.00-3.00                   |          |  |                 |                                                   |                                                               |                          |  |
| Solid Waste Analysis                                                                                                 |                             |          |  |                 |                                                   |                                                               |                          |  |
| TOC (%)**                                                                                                            | 4.4                         |          |  |                 | 3%                                                | 5%                                                            | 6%                       |  |
| Loss on Ignition (%) **                                                                                              | 21                          |          |  |                 | --                                                | --                                                            | 10%                      |  |
| BTEX (µg/kg) **                                                                                                      | < 10                        |          |  |                 | 6000                                              | --                                                            | --                       |  |
| Sum of PCBs (mg/kg) **                                                                                               | < 0.30                      |          |  |                 | 1                                                 | --                                                            | --                       |  |
| Mineral Oil (mg/kg) EH ID CU AL #                                                                                    | 250                         |          |  |                 | 500                                               | --                                                            | --                       |  |
| Total PAH (WAC-17) (mg/kg)                                                                                           | 90.8                        |          |  |                 | 100                                               | --                                                            | --                       |  |
| pH (units)**                                                                                                         | 7.6                         |          |  |                 | --                                                | >6                                                            | --                       |  |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | 3.1                         |          |  |                 | --                                                | To be evaluated                                               | To be evaluated          |  |
| Eluate Analysis                                                                                                      | 2:1                         | 8:1      |  | Cumulative 10:1 | Limit values for compliance leaching test         |                                                               |                          |  |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              | mg/l                        | mg/l     |  | mg/kg           | using BS EN 12457-3 at L/S 10 l/kg (mg/kg)        |                                                               |                          |  |
| Arsenic *                                                                                                            | < 0.010                     | < 0.010  |  | < 0.050         | 0.5                                               | 2                                                             | 25                       |  |
| Barium *                                                                                                             | 0.047                       | 0.058    |  | 0.56            | 20                                                | 100                                                           | 300                      |  |
| Cadmium *                                                                                                            | < 0.0005                    | < 0.0005 |  | < 0.0020        | 0.04                                              | 1                                                             | 5                        |  |
| Chromium *                                                                                                           | < 0.0010                    | 0.0020   |  | 0.019           | 0.5                                               | 10                                                            | 70                       |  |
| Copper *                                                                                                             | 0.024                       | 0.012    |  | 0.14            | 2                                                 | 50                                                            | 100                      |  |
| Mercury *                                                                                                            | < 0.0015                    | < 0.0015 |  | < 0.010         | 0.01                                              | 0.2                                                           | 2                        |  |
| Molybdenum *                                                                                                         | 0.0061                      | 0.0056   |  | 0.057           | 0.5                                               | 10                                                            | 30                       |  |
| Nickel *                                                                                                             | 0.0061                      | 0.0050   |  | 0.052           | 0.4                                               | 10                                                            | 40                       |  |
| Lead *                                                                                                               | 0.0062                      | 0.0067   |  | 0.066           | 0.5                                               | 10                                                            | 50                       |  |
| Antimony *                                                                                                           | < 0.0050                    | < 0.0050 |  | < 0.020         | 0.06                                              | 0.7                                                           | 5                        |  |
| Selenium *                                                                                                           | < 0.010                     | < 0.010  |  | < 0.040         | 0.1                                               | 0.5                                                           | 7                        |  |
| Zinc *                                                                                                               | 0.017                       | 0.0107   |  | 0.12            | 4                                                 | 50                                                            | 200                      |  |
| Chloride *                                                                                                           | < 4.0                       | < 4.0    |  | < 15            | 800                                               | 15000                                                         | 25000                    |  |
| Fluoride                                                                                                             | 0.52                        | 0.53     |  | 5.3             | 10                                                | 150                                                           | 500                      |  |
| Sulphate *                                                                                                           | 36                          | 11       |  | 150             | 1000                                              | 20000                                                         | 50000                    |  |
| TDS*                                                                                                                 | 140                         | 74       |  | 830             | 4000                                              | 60000                                                         | 100000                   |  |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.13                      | < 0.13   |  | < 0.50          | 1                                                 | -                                                             | -                        |  |
| DOC                                                                                                                  | 14                          | 7.6      |  | 86              | 500                                               | 800                                                           | 1000                     |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
| Leach Test Information                                                                                               |                             |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
| Stone Content (%)                                                                                                    | < 0.1                       |          |  |                 |                                                   |                                                               |                          |  |
| Sample Mass (kg)                                                                                                     | 1.0                         |          |  |                 |                                                   |                                                               |                          |  |
| Dry Matter (%)                                                                                                       | 88                          |          |  |                 |                                                   |                                                               |                          |  |
| Moisture (%)                                                                                                         | 12                          |          |  |                 |                                                   |                                                               |                          |  |
| Stage 1                                                                                                              |                             |          |  |                 |                                                   |                                                               |                          |  |
| Volume Eluate L2 (litres)                                                                                            | 0.32                        |          |  |                 |                                                   |                                                               |                          |  |
| Filtered Eluate VE1 (litres)                                                                                         | 0.25                        |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |  |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |                             |          |  |                 | * = UKAS accredited (liquid eluate analysis only) |                                                               |                          |  |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |                             |          |  |                 | ** = MCFRTS accredited                            |                                                               |                          |  |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

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| Waste Acceptance Criteria Analytical Results                                                                         |                             |          |  |                 |                                                   |                                                               |                          |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|--|-----------------|---------------------------------------------------|---------------------------------------------------------------|--------------------------|
| Report No:                                                                                                           | 22-56795                    |          |  |                 |                                                   |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |
|                                                                                                                      |                             |          |  |                 | Client: RSKRAW                                    |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |
| Location                                                                                                             | Hillhouse TRU, Huddersfield |          |  |                 |                                                   |                                                               |                          |
| Lab Reference (Sample Number)                                                                                        | 2267228                     |          |  |                 | Landfill Waste Acceptance Criteria                |                                                               |                          |
|                                                                                                                      |                             |          |  |                 | Limits                                            |                                                               |                          |
| Sampling Date                                                                                                        | 03/05/2022                  |          |  |                 | Inert Waste Landfill                              | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |
| Sample ID                                                                                                            | TP5207 WAC10                |          |  |                 |                                                   |                                                               |                          |
| Depth (m)                                                                                                            | 0.00-3.00                   |          |  |                 |                                                   |                                                               |                          |
| Solid Waste Analysis                                                                                                 |                             |          |  |                 |                                                   |                                                               |                          |
| TOC (%)**                                                                                                            | 3.6                         |          |  |                 | 3%                                                | 5%                                                            | 6%                       |
| Loss on Ignition (%) **                                                                                              | 13                          |          |  |                 | --                                                | --                                                            | 10%                      |
| BTEX (µg/kg) **                                                                                                      | < 10                        |          |  |                 | 6000                                              | --                                                            | --                       |
| Sum of PCBs (mg/kg) **                                                                                               | < 0.30                      |          |  |                 | 1                                                 | --                                                            | --                       |
| Mineral Oil (mg/kg) <sup>EH ID CU AL #</sup>                                                                         | 180                         |          |  |                 | 500                                               | --                                                            | --                       |
| Total PAH (WAC-17) (mg/kg)                                                                                           | 141                         |          |  |                 | 100                                               | --                                                            | --                       |
| pH (units)**                                                                                                         | 7.9                         |          |  |                 | --                                                | >6                                                            | --                       |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | 7.4                         |          |  |                 | --                                                | To be evaluated                                               | To be evaluated          |
| Eluate Analysis                                                                                                      | 2:1                         | 8:1      |  | Cumulative 10:1 | Limit values for compliance leaching test         |                                                               |                          |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              | mg/l                        | mg/l     |  | mg/kg           | using BS EN 12457-3 at L/S 10 l/kg (mg/kg)        |                                                               |                          |
| Arsenic *                                                                                                            | < 0.010                     | < 0.010  |  | < 0.050         | 0.5                                               | 2                                                             | 25                       |
| Barium *                                                                                                             | 0.031                       | 0.042    |  | 0.40            | 20                                                | 100                                                           | 300                      |
| Cadmium *                                                                                                            | < 0.0005                    | < 0.0005 |  | < 0.0020        | 0.04                                              | 1                                                             | 5                        |
| Chromium *                                                                                                           | 0.0026                      | 0.0054   |  | 0.050           | 0.5                                               | 10                                                            | 70                       |
| Copper *                                                                                                             | 0.021                       | 0.031    |  | 0.30            | 2                                                 | 50                                                            | 100                      |
| Mercury *                                                                                                            | < 0.0015                    | < 0.0015 |  | < 0.010         | 0.01                                              | 0.2                                                           | 2                        |
| Molybdenum *                                                                                                         | 0.018                       | 0.0094   |  | 0.10            | 0.5                                               | 10                                                            | 30                       |
| Nickel *                                                                                                             | 0.0055                      | 0.0071   |  | 0.069           | 0.4                                               | 10                                                            | 40                       |
| Lead *                                                                                                               | 0.0073                      | 0.025    |  | 0.22            | 0.5                                               | 10                                                            | 50                       |
| Antimony *                                                                                                           | < 0.0050                    | < 0.0050 |  | < 0.020         | 0.06                                              | 0.7                                                           | 5                        |
| Selenium *                                                                                                           | < 0.010                     | < 0.010  |  | < 0.040         | 0.1                                               | 0.5                                                           | 7                        |
| Zinc *                                                                                                               | 0.011                       | 0.0300   |  | 0.27            | 4                                                 | 50                                                            | 200                      |
| Chloride *                                                                                                           | < 4.0                       | < 4.0    |  | 19              | 800                                               | 15000                                                         | 25000                    |
| Fluoride                                                                                                             | 1.5                         | 1.1      |  | 11              | 10                                                | 150                                                           | 500                      |
| Sulphate *                                                                                                           | 20                          | 6.5      |  | 83              | 1000                                              | 20000                                                         | 50000                    |
| TDS*                                                                                                                 | 130                         | 81       |  | 870             | 4000                                              | 60000                                                         | 100000                   |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.13                      | < 0.13   |  | < 0.50          | 1                                                 | -                                                             | -                        |
| DOC                                                                                                                  | 13                          | 12       |  | 120             | 500                                               | 800                                                           | 1000                     |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |
| Leach Test Information                                                                                               |                             |          |  |                 |                                                   |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |
| Stone Content (%)                                                                                                    | < 0.1                       |          |  |                 |                                                   |                                                               |                          |
| Sample Mass (kg)                                                                                                     | 1.0                         |          |  |                 |                                                   |                                                               |                          |
| Dry Matter (%)                                                                                                       | 89                          |          |  |                 |                                                   |                                                               |                          |
| Moisture (%)                                                                                                         | 11                          |          |  |                 |                                                   |                                                               |                          |
| Stage 1                                                                                                              |                             |          |  |                 |                                                   |                                                               |                          |
| Volume Eluate L2 (litres)                                                                                            | 0.32                        |          |  |                 |                                                   |                                                               |                          |
| Filtered Eluate VE1 (litres)                                                                                         | 0.23                        |          |  |                 |                                                   |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                                   |                                                               |                          |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |                             |          |  |                 | * = UKAS accredited (liquid eluate analysis only) |                                                               |                          |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |                             |          |  |                 | ** = MCERTS accredited                            |                                                               |                          |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

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| Waste Acceptance Criteria Analytical Results                                                                         |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|--|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--|
| Report No:                                                                                                           | 22-56795                    |          |  |                 |                                                                                                                                              |                 |                 |  |
|                                                                                                                      |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
|                                                                                                                      |                             |          |  |                 | Client: RSKRAW                                                                                                                               |                 |                 |  |
| Location                                                                                                             | Hillhouse TRU, Huddersfield |          |  |                 | <div>Inert Waste Landfill</div> <div>Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill</div> <div>Hazardous Waste Landfill</div> |                 |                 |  |
| Lab Reference (Sample Number)                                                                                        | 2267229                     |          |  |                 |                                                                                                                                              |                 |                 |  |
| Sampling Date                                                                                                        | 03/05/2022                  |          |  |                 |                                                                                                                                              |                 |                 |  |
| Sample ID                                                                                                            | TP5206 WAC10                |          |  |                 |                                                                                                                                              |                 |                 |  |
| Depth (m)                                                                                                            | 0.00-3.00                   |          |  |                 |                                                                                                                                              |                 |                 |  |
| Solid Waste Analysis                                                                                                 |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
| TOC (%)**                                                                                                            | 3.1                         |          |  |                 | 3%                                                                                                                                           | 5%              | 6%              |  |
| Loss on Ignition (%) **                                                                                              | 12                          |          |  |                 | --                                                                                                                                           | --              | 10%             |  |
| BTEX (µg/kg) **                                                                                                      | < 10                        |          |  |                 | 6000                                                                                                                                         | --              | --              |  |
| Sum of PCBs (mg/kg) **                                                                                               | < 0.30                      |          |  |                 | 1                                                                                                                                            | --              | --              |  |
| Mineral Oil (mg/kg) <small>EH_ID_CU_AL_#</small>                                                                     | 270                         |          |  |                 | 500                                                                                                                                          | --              | --              |  |
| Total PAH (WAC-17) (mg/kg)                                                                                           | 106                         |          |  |                 | 100                                                                                                                                          | --              | --              |  |
| pH (units)**                                                                                                         | 7.5                         |          |  |                 | --                                                                                                                                           | >6              | --              |  |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | 3.2                         |          |  |                 | --                                                                                                                                           | To be evaluated | To be evaluated |  |
| Eluate Analysis                                                                                                      | 2:1                         | 8:1      |  | Cumulative 10:1 | Limit values for compliance leaching test                                                                                                    |                 |                 |  |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              |                             |          |  |                 | using BS EN 12457-3 at L/S 10 l/kg (mg/kg)                                                                                                   |                 |                 |  |
|                                                                                                                      | mg/l                        | mg/l     |  | mg/kg           |                                                                                                                                              |                 |                 |  |
| Arsenic *                                                                                                            | < 0.010                     | < 0.010  |  | < 0.050         | 0.5                                                                                                                                          | 2               | 25              |  |
| Barium *                                                                                                             | 0.050                       | 0.055    |  | 0.55            | 20                                                                                                                                           | 100             | 300             |  |
| Cadmium *                                                                                                            | < 0.0005                    | < 0.0005 |  | < 0.0020        | 0.04                                                                                                                                         | 1               | 5               |  |
| Chromium *                                                                                                           | 0.0022                      | 0.0033   |  | 0.032           | 0.5                                                                                                                                          | 10              | 70              |  |
| Copper *                                                                                                             | 0.022                       | 0.014    |  | 0.15            | 2                                                                                                                                            | 50              | 100             |  |
| Mercury *                                                                                                            | < 0.0015                    | < 0.0015 |  | < 0.010         | 0.01                                                                                                                                         | 0.2             | 2               |  |
| Molybdenum *                                                                                                         | 0.0086                      | 0.0073   |  | 0.075           | 0.5                                                                                                                                          | 10              | 30              |  |
| Nickel *                                                                                                             | 0.0040                      | 0.0050   |  | 0.049           | 0.4                                                                                                                                          | 10              | 40              |  |
| Lead *                                                                                                               | < 0.0050                    | 0.015    |  | 0.13            | 0.5                                                                                                                                          | 10              | 50              |  |
| Antimony *                                                                                                           | < 0.0050                    | < 0.0050 |  | < 0.020         | 0.06                                                                                                                                         | 0.7             | 5               |  |
| Selenium *                                                                                                           | < 0.010                     | < 0.010  |  | < 0.040         | 0.1                                                                                                                                          | 0.5             | 7               |  |
| Zinc *                                                                                                               | 0.013                       | 0.0164   |  | 0.16            | 4                                                                                                                                            | 50              | 200             |  |
| Chloride *                                                                                                           | < 4.0                       | < 4.0    |  | < 15            | 800                                                                                                                                          | 15000           | 25000           |  |
| Fluoride                                                                                                             | 1.6                         | 1.3      |  | 14              | 10                                                                                                                                           | 150             | 500             |  |
| Sulphate *                                                                                                           | 98                          | 16       |  | 280             | 1000                                                                                                                                         | 20000           | 50000           |  |
| TDS*                                                                                                                 | 200                         | 77       |  | 940             | 4000                                                                                                                                         | 60000           | 100000          |  |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.13                      | < 0.13   |  | < 0.50          | 1                                                                                                                                            | -               | -               |  |
| DOC                                                                                                                  | 15                          | 8.9      |  | 97              | 500                                                                                                                                          | 800             | 1000            |  |
|                                                                                                                      |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
|                                                                                                                      |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
| Leach Test Information                                                                                               |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
|                                                                                                                      |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
| Stone Content (%)                                                                                                    | < 0.1                       |          |  |                 |                                                                                                                                              |                 |                 |  |
| Sample Mass (kg)                                                                                                     | 1.0                         |          |  |                 |                                                                                                                                              |                 |                 |  |
| Dry Matter (%)                                                                                                       | 92                          |          |  |                 |                                                                                                                                              |                 |                 |  |
| Moisture (%)                                                                                                         | 8.2                         |          |  |                 |                                                                                                                                              |                 |                 |  |
| Stage 1                                                                                                              |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
| Volume Eluate L2 (litres)                                                                                            | 0.32                        |          |  |                 |                                                                                                                                              |                 |                 |  |
| Filtered Eluate VE1 (litres)                                                                                         | 0.25                        |          |  |                 |                                                                                                                                              |                 |                 |  |
|                                                                                                                      |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
|                                                                                                                      |                             |          |  |                 |                                                                                                                                              |                 |                 |  |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |                             |          |  |                 | * = UKAS accredited (liquid eluate analysis only)                                                                                            |                 |                 |  |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |                             |          |  |                 | ** = MCERTS accredited                                                                                                                       |                 |                 |  |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

**Analytical Report Number : 22-56795**

**Project / Site name: Hillhouse TRU, Huddersfield**

\* 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 *             |
|-------------------|------------------|---------------|-----------|----------------------------------|
| 2267226           | TP5209 WAC4      | None Supplied | 0.40-1.50 | Brown clay and sand with stones. |
| 2267227           | TP5208 WAC6      | None Supplied | 0.00-3.00 | Brown sandy clay with gravel.    |
| 2267228           | TP5207 WAC10     | None Supplied | 0.00-3.00 | Brown clay and sand with gravel. |
| 2267229           | TP5206 WAC10     | None Supplied | 0.00-3.00 | Brown clay and sand with gravel. |



**Analytical Report Number : 22-56795**

**Project / Site name: Hillhouse TRU, Huddersfield**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                              | Analytical Method Description                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Moisture Content                                  | Moisture content, determined gravimetrically. (30 oC)                                                                                                  | In house method.                                                                                                | L019-UK/PL    | 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.                                      | L019-UK/PL    | D                  | NONE                 |
| Preparation WAC leachate                          |                                                                                                                                                        | In-house method                                                                                                 | L043-PL       | W                  | NONE                 |
| Speciated WAC-17 PAHs in soil                     | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270. MCERTS accredited except Coronene.                                         | L064-PL       | D                  | MCERTS               |
| Chloride in WAC leachate (BS EN 12457-3 Prep)     | Determination of Chloride colorimetrically by discrete analyser.                                                                                       | In house based on MEWAM Method ISBN 0117516260.                                                                 | L082-PL       | W                  | ISO 17025            |
| Fluoride in WAC leachate (BS EN 12457-3 Prep)     | Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.                                          | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L033-PL       | W                  | ISO 17025            |
| Phenol Index in WAC leachate (BS EN 12457-3 Prep) | Determination of monohydric phenols in leachate by continuous flow analyser.                                                                           | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL       | W                  | ISO 17025            |
| Sulphate in WAC leachate (BS EN 12457-3 Prep)     | Determination of sulphate in leachate by acidification followed by ICP-OES.                                                                            | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L039-PL       | W                  | ISO 17025            |
| TDS in WAC leachate (BS EN 12457-3 Prep)          | Determination of total dissolved solids in leachate by electrometric measurement.                                                                      | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L031-PL       | W                  | NONE                 |
| DOC in WAC leachate (BS EN 12457-3 Prep)          | Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.                                                                        | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L037-PL       | W                  | ISO 17025            |
| PCB's by GC-MS in soil                            | Determination of PCB by extraction with acetone and hexane followed by GC-MS.                                                                          | In-house method based on USEPA 8082                                                                             | L027-PL       | D                  | MCERTS               |
| BTEX (Sum of BTEX compounds) in soil              | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited                                                              | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |
| Acid neutralisation capacity of soil              | Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.                                              | In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance           | L046-PL       | W                  | NONE                 |
| Loss on ignition of soil @ 450oC                  | 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               |
| Mineral Oil in Soil C10 - C40                     | Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.                                                                     | In-house method based on USEPA 8270                                                                             | L076-PL       | D                  | NONE                 |
| pH in soil                                        | Determination of pH in soil by addition of water followed by electrometric measurement.                                                                | In house method.                                                                                                | L005-PL       | W                  | MCERTS               |
| Total organic carbon in soil                      | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                          | In house method.                                                                                                | L023-PL       | D                  | MCERTS               |

**Analytical Report Number : 22-56795**

**Project / Site name: Hillhouse TRU, Huddersfield**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                        | Analytical Method Description                                             | Analytical Method Reference                                                                      | Method number | Wet / Dry Analysis | Accreditation Status |
|---------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in WAC leachate (BS EN 12457-3 Prep) | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed. | L039-PL       | W                  | ISO 17025            |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' 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.**



## Sample Deviation Report



**Analytical Report Number : 22-56795**

**Project / Site name: Hillhouse TRU, Huddersfield**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

| Sample ID    | Other ID      | Sample Type | Lab Sample Number | Sample Deviation | Test Name                            | Test Ref | Test Deviation |
|--------------|---------------|-------------|-------------------|------------------|--------------------------------------|----------|----------------|
| TP5206 WAC10 | None Supplied | M           | 2267229           | b                | BTEX (Sum of BTEX compounds) in soil | L073B-PL | b              |
| TP5206 WAC10 | None Supplied | M           | 2267229           | b                | Mineral Oil in Soil C10 - C40        | L076-PL  | b              |
| TP5206 WAC10 | None Supplied | M           | 2267229           | b                | PCB's by GC-MS in soil               | L027-PL  | b              |
| TP5206 WAC10 | None Supplied | M           | 2267229           | b                | Speciated WAC-17 PAHs in soil        | L064-PL  | b              |
| TP5207 WAC10 | None Supplied | M           | 2267228           | b                | BTEX (Sum of BTEX compounds) in soil | L073B-PL | b              |
| TP5207 WAC10 | None Supplied | M           | 2267228           | b                | Mineral Oil in Soil C10 - C40        | L076-PL  | b              |
| TP5207 WAC10 | None Supplied | M           | 2267228           | b                | PCB's by GC-MS in soil               | L027-PL  | b              |
| TP5207 WAC10 | None Supplied | M           | 2267228           | b                | Speciated WAC-17 PAHs in soil        | L064-PL  | b              |
| TP5208 WAC6  | None Supplied | M           | 2267227           | b                | BTEX (Sum of BTEX compounds) in soil | L073B-PL | b              |
| TP5208 WAC6  | None Supplied | M           | 2267227           | b                | Mineral Oil in Soil C10 - C40        | L076-PL  | b              |
| TP5208 WAC6  | None Supplied | M           | 2267227           | b                | PCB's by GC-MS in soil               | L027-PL  | b              |
| TP5208 WAC6  | None Supplied | M           | 2267227           | b                | Speciated WAC-17 PAHs in soil        | L064-PL  | b              |
| TP5209 WAC4  | None Supplied | M           | 2267226           | b                | BTEX (Sum of BTEX compounds) in soil | L073B-PL | b              |
| TP5209 WAC4  | None Supplied | M           | 2267226           | b                | Mineral Oil in Soil C10 - C40        | L076-PL  | b              |
| TP5209 WAC4  | None Supplied | M           | 2267226           | b                | PCB's by GC-MS in soil               | L027-PL  | b              |
| TP5209 WAC4  | None Supplied | M           | 2267226           | b                | Speciated WAC-17 PAHs in soil        | L064-PL  | b              |

**Fiona Townley**

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i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

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## **Analytical Report Number : 22-56910**

|                             |                            |                                                        |            |
|-----------------------------|----------------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Hillhouse TRU Huddersfield | <b>Samples received on:</b>                            | 06/05/2022 |
| <b>Your job number:</b>     | 2641987                    | <b>Samples instructed on/<br/>Analysis started on:</b> | 06/05/2022 |
| <b>Your order number:</b>   | PAH24757                   | <b>Analysis completed by:</b>                          | 13/05/2022 |
| <b>Report Issue Number:</b> | 1                          | <b>Report issued on:</b>                               | 13/05/2022 |
| <b>Samples Analysed:</b>    | 3 wac multi samples        |                                                        |            |

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**Signed:**

Adam Fenwick  
Technical Reviewer  
**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 |

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

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.





## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

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| Waste Acceptance Criteria Analytical Results                                                                                                                                                                                                                                                                                                                                                                                                         |                            |          |  |                 |                                            |                                                               |                          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|--|-----------------|--------------------------------------------|---------------------------------------------------------------|--------------------------|--|
| Report No:                                                                                                                                                                                                                                                                                                                                                                                                                                           | 22-56910                   |          |  |                 |                                            |                                                               |                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                 |                                            |                                                               |                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                 | Client: RSKRAW                             |                                                               |                          |  |
| Location                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hillhouse TRU Huddersfield |          |  |                 |                                            |                                                               |                          |  |
| Lab Reference (Sample Number)                                                                                                                                                                                                                                                                                                                                                                                                                        | 2267841                    |          |  |                 | Landfill Waste Acceptance Criteria         |                                                               |                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                 | Limits                                     |                                                               |                          |  |
| Sampling Date                                                                                                                                                                                                                                                                                                                                                                                                                                        | 05/05/2022                 |          |  |                 | Inert Waste Landfill                       | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |  |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                            | TP5195 WAC10               |          |  |                 |                                            |                                                               |                          |  |
| Depth (m)                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00-3.00                  |          |  |                 |                                            |                                                               |                          |  |
| Solid Waste Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            |          |  |                 |                                            |                                                               |                          |  |
| TOC (%)**                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.6                        |          |  |                 | 3%                                         | 5%                                                            | 6%                       |  |
| Loss on Ignition (%) **                                                                                                                                                                                                                                                                                                                                                                                                                              | 5.2                        |          |  |                 | --                                         | --                                                            | 10%                      |  |
| BTEX (µg/kg) **                                                                                                                                                                                                                                                                                                                                                                                                                                      | < 10                       |          |  |                 | 6000                                       | --                                                            | --                       |  |
| Sum of PCBs (mg/kg) **                                                                                                                                                                                                                                                                                                                                                                                                                               | < 0.30                     |          |  |                 | 1                                          | --                                                            | --                       |  |
| Mineral Oil (mg/kg) <small>BH ID CU AL #</small>                                                                                                                                                                                                                                                                                                                                                                                                     | 110                        |          |  |                 | 500                                        | --                                                            | --                       |  |
| Total PAH (WAC-17) (mg/kg)                                                                                                                                                                                                                                                                                                                                                                                                                           | 17.0                       |          |  |                 | 100                                        | --                                                            | --                       |  |
| pH (units)**                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.7                        |          |  |                 | --                                         | >6                                                            | --                       |  |
| Acid Neutralisation Capacity (mmol / kg)                                                                                                                                                                                                                                                                                                                                                                                                             | 6.3                        |          |  |                 | --                                         | To be evaluated                                               | To be evaluated          |  |
| Eluate Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                 |                                            |                                                               |                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2:1                        | 8:1      |  | Cumulative 10:1 | Limit values for compliance leaching test  |                                                               |                          |  |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                                                                                                                                                                                                                                                                                                                                                              | mg/l                       | mg/l     |  | mg/kg           | using BS EN 12457-3 at L/S 10 l/kg (mg/kg) |                                                               |                          |  |
| Arsenic *                                                                                                                                                                                                                                                                                                                                                                                                                                            | < 0.010                    | < 0.010  |  | < 0.050         | 0.5                                        | 2                                                             | 25                       |  |
| Barium *                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.099                      | 0.032    |  | 0.41            | 20                                         | 100                                                           | 300                      |  |
| Cadmium *                                                                                                                                                                                                                                                                                                                                                                                                                                            | < 0.0005                   | < 0.0005 |  | < 0.0020        | 0.04                                       | 1                                                             | 5                        |  |
| Chromium *                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.0037                     | 0.0031   |  | 0.032           | 0.5                                        | 10                                                            | 70                       |  |
| Copper *                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.033                      | 0.011    |  | 0.14            | 2                                          | 50                                                            | 100                      |  |
| Mercury *                                                                                                                                                                                                                                                                                                                                                                                                                                            | < 0.0015                   | < 0.0015 |  | < 0.010         | 0.01                                       | 0.2                                                           | 2                        |  |
| Molybdenum *                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0069                     | 0.0039   |  | 0.043           | 0.5                                        | 10                                                            | 30                       |  |
| Nickel *                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0061                     | 0.0044   |  | 0.047           | 0.4                                        | 10                                                            | 40                       |  |
| Lead *                                                                                                                                                                                                                                                                                                                                                                                                                                               | < 0.0050                   | < 0.0050 |  | 0.032           | 0.5                                        | 10                                                            | 50                       |  |
| Antimony *                                                                                                                                                                                                                                                                                                                                                                                                                                           | < 0.0050                   | < 0.0050 |  | < 0.020         | 0.06                                       | 0.7                                                           | 5                        |  |
| Selenium *                                                                                                                                                                                                                                                                                                                                                                                                                                           | < 0.010                    | < 0.010  |  | < 0.040         | 0.1                                        | 0.5                                                           | 7                        |  |
| Zinc *                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.018                      | 0.0221   |  | 0.22            | 4                                          | 50                                                            | 200                      |  |
| Chloride *                                                                                                                                                                                                                                                                                                                                                                                                                                           | < 4.0                      | < 4.0    |  | 19              | 800                                        | 15000                                                         | 25000                    |  |
| Fluoride                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.56                       | 0.64     |  | 6.3             | 10                                         | 150                                                           | 500                      |  |
| Sulphate *                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1500                       | 190      |  | 3600            | 1000                                       | 20000                                                         | 50000                    |  |
| TDS*                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 770                        | 230      |  | 3000            | 4000                                       | 60000                                                         | 100000                   |  |
| Phenol Index (Monohydric Phenols) *                                                                                                                                                                                                                                                                                                                                                                                                                  | < 0.13                     | < 0.13   |  | < 0.50          | 1                                          | -                                                             | -                        |  |
| DOC                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 12                         | 7.1      |  | 78              | 500                                        | 800                                                           | 1000                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                 |                                            |                                                               |                          |  |
| Leach Test Information                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |          |  |                 |                                            |                                                               |                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                 |                                            |                                                               |                          |  |
| Stone Content (%)                                                                                                                                                                                                                                                                                                                                                                                                                                    | 48                         |          |  |                 |                                            |                                                               |                          |  |
| Sample Mass (kg)                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.2                        |          |  |                 |                                            |                                                               |                          |  |
| Dry Matter (%)                                                                                                                                                                                                                                                                                                                                                                                                                                       | 89                         |          |  |                 |                                            |                                                               |                          |  |
| Moisture (%)                                                                                                                                                                                                                                                                                                                                                                                                                                         | 11                         |          |  |                 |                                            |                                                               |                          |  |
| Stage 1                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            |          |  |                 |                                            |                                                               |                          |  |
| Volume Eluate L2 (litres)                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.31                       |          |  |                 |                                            |                                                               |                          |  |
| Filtered Eluate VE1 (litres)                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.24                       |          |  |                 |                                            |                                                               |                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                 |                                            |                                                               |                          |  |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable. * = UKAS accredited (liquid eluate analysis only)                                                                                                                                                                                                                                                                                               |                            |          |  |                 |                                            |                                                               |                          |  |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation ** = MCERTS accredited                                                                                                                                                                                                                                                                                                          |                            |          |  |                 |                                            |                                                               |                          |  |
| Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.<br>This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous. |                            |          |  |                 |                                            |                                                               |                          |  |

Iss No 22-56910-1 Hillhouse TRU Huddersfield 2641987

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The results included within the report are representative of the samples submitted for analysis.



## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

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| Waste Acceptance Criteria Analytical Results                                                                                                                                                                                                                                                                                                                                                                                                         |                            |          |  |                                    |                                                               |                          |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|--|------------------------------------|---------------------------------------------------------------|--------------------------|--------|
| Report No:                                                                                                                                                                                                                                                                                                                                                                                                                                           | 22-56910                   |          |  |                                    |                                                               |                          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                                    |                                                               |                          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  | Client: RSKRAW                     |                                                               |                          |        |
| Location                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hillhouse TRU Huddersfield |          |  |                                    |                                                               |                          |        |
| Lab Reference (Sample Number)                                                                                                                                                                                                                                                                                                                                                                                                                        | 2267842                    |          |  | Landfill Waste Acceptance Criteria |                                                               |                          |        |
| Sampling Date                                                                                                                                                                                                                                                                                                                                                                                                                                        | 05/05/2022                 |          |  | Limits                             |                                                               |                          |        |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                            | TP5197 WAC7                |          |  | Inert Waste Landfill               | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |        |
| Depth (m)                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00-1.50                  |          |  |                                    |                                                               |                          |        |
| Solid Waste Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            |          |  |                                    |                                                               |                          |        |
| TOC (%)**                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2.2                        |          |  | 3%                                 | 5%                                                            | 6%                       |        |
| Loss on Ignition (%) **                                                                                                                                                                                                                                                                                                                                                                                                                              | 5.9                        |          |  | --                                 | --                                                            | 10%                      |        |
| BTEX (µg/kg) **                                                                                                                                                                                                                                                                                                                                                                                                                                      | < 10                       |          |  | 6000                               | --                                                            | --                       |        |
| Sum of PCBs (mg/kg) **                                                                                                                                                                                                                                                                                                                                                                                                                               | < 0.30                     |          |  | 1                                  | --                                                            | --                       |        |
| Mineral Oil (mg/kg) <sup>BH, ID, CU, AL</sup> #                                                                                                                                                                                                                                                                                                                                                                                                      | 140                        |          |  | 500                                | --                                                            | --                       |        |
| Total PAH (WAC-17) (mg/kg)                                                                                                                                                                                                                                                                                                                                                                                                                           | 31.9                       |          |  | 100                                | --                                                            | --                       |        |
| pH (units)**                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7.8                        |          |  | --                                 | >6                                                            | --                       |        |
| Acid Neutralisation Capacity (mmol / kg)                                                                                                                                                                                                                                                                                                                                                                                                             | 14                         |          |  | --                                 | To be evaluated                                               | To be evaluated          |        |
| Eluate Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                                    |                                                               |                          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2:1                        | 8:1      |  | Cumulative 10:1                    | Limit values for compliance leaching test                     |                          |        |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                                                                                                                                                                                                                                                                                                                                                              | mg/l                       | mg/l     |  | mg/kg                              | using BS EN 12457-3 at L/S 10 l/kg (mg/kg)                    |                          |        |
| Arsenic *                                                                                                                                                                                                                                                                                                                                                                                                                                            | < 0.010                    | < 0.010  |  | 0.058                              | 0.5                                                           | 2                        | 25     |
| Barium *                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.058                      | 0.060    |  | 0.60                               | 20                                                            | 100                      | 300    |
| Cadmium *                                                                                                                                                                                                                                                                                                                                                                                                                                            | < 0.0005                   | < 0.0005 |  | < 0.0020                           | 0.04                                                          | 1                        | 5      |
| Chromium *                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.0019                     | 0.0035   |  | 0.033                              | 0.5                                                           | 10                       | 70     |
| Copper *                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.031                      | 0.026    |  | 0.27                               | 2                                                             | 50                       | 100    |
| Mercury *                                                                                                                                                                                                                                                                                                                                                                                                                                            | < 0.0015                   | < 0.0015 |  | < 0.010                            | 0.01                                                          | 0.2                      | 2      |
| Molybdenum *                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0091                     | 0.0049   |  | 0.055                              | 0.5                                                           | 10                       | 30     |
| Nickel *                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0066                     | 0.0069   |  | 0.069                              | 0.4                                                           | 10                       | 40     |
| Lead *                                                                                                                                                                                                                                                                                                                                                                                                                                               | < 0.0050                   | 0.013    |  | 0.12                               | 0.5                                                           | 10                       | 50     |
| Antimony *                                                                                                                                                                                                                                                                                                                                                                                                                                           | < 0.0050                   | < 0.0050 |  | < 0.020                            | 0.06                                                          | 0.7                      | 5      |
| Selenium *                                                                                                                                                                                                                                                                                                                                                                                                                                           | < 0.010                    | < 0.010  |  | < 0.040                            | 0.1                                                           | 0.5                      | 7      |
| Zinc *                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.015                      | 0.0224   |  | 0.21                               | 4                                                             | 50                       | 200    |
| Chloride *                                                                                                                                                                                                                                                                                                                                                                                                                                           | < 4.0                      | < 4.0    |  | < 15                               | 800                                                           | 15000                    | 25000  |
| Fluoride                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.64                       | 0.33     |  | 3.7                                | 10                                                            | 150                      | 500    |
| Sulphate *                                                                                                                                                                                                                                                                                                                                                                                                                                           | 31                         | 5.5      |  | 91                                 | 1000                                                          | 20000                    | 50000  |
| TDS*                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 150                        | 70       |  | 810                                | 4000                                                          | 60000                    | 100000 |
| Phenol Index (Monohydric Phenols) *                                                                                                                                                                                                                                                                                                                                                                                                                  | < 0.13                     | < 0.13   |  | < 0.50                             | 1                                                             | -                        | -      |
| DOC                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 21                         | 12       |  | 130                                | 500                                                           | 800                      | 1000   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                                    |                                                               |                          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                                    |                                                               |                          |        |
| Leach Test Information                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |          |  |                                    |                                                               |                          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                                    |                                                               |                          |        |
| Stone Content (%)                                                                                                                                                                                                                                                                                                                                                                                                                                    | 45                         |          |  |                                    |                                                               |                          |        |
| Sample Mass (kg)                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.2                        |          |  |                                    |                                                               |                          |        |
| Dry Matter (%)                                                                                                                                                                                                                                                                                                                                                                                                                                       | 91                         |          |  |                                    |                                                               |                          |        |
| Moisture (%)                                                                                                                                                                                                                                                                                                                                                                                                                                         | 9.1                        |          |  |                                    |                                                               |                          |        |
| Stage 1                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            |          |  |                                    |                                                               |                          |        |
| Volume Eluate L2 (litres)                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.32                       |          |  |                                    |                                                               |                          |        |
| Filtered Eluate VE1 (litres)                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.25                       |          |  |                                    |                                                               |                          |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |  |                                    |                                                               |                          |        |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                                                                                                                                                                                                                                                                                                                                                 |                            |          |  |                                    |                                                               |                          |        |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation                                                                                                                                                                                                                                                                                                                                 |                            |          |  |                                    |                                                               |                          |        |
| Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.<br>This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous. |                            |          |  |                                    |                                                               |                          |        |

Iss No 22-56910-1 Hillhouse TRU Huddersfield 2641987

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The results included within the report are representative of the samples submitted for analysis.





## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

Redacted

| Waste Acceptance Criteria Analytical Results                                                                                                                                                                               |                            |          |  |                                                   |                                                               |                          |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|--|---------------------------------------------------|---------------------------------------------------------------|--------------------------|--------|
| Report No:                                                                                                                                                                                                                 | 22-56910                   |          |  |                                                   |                                                               |                          |        |
|                                                                                                                                                                                                                            |                            |          |  |                                                   |                                                               |                          |        |
|                                                                                                                                                                                                                            |                            |          |  | Client: RSKRAW                                    |                                                               |                          |        |
| Location                                                                                                                                                                                                                   | Hillhouse TRU Huddersfield |          |  |                                                   |                                                               |                          |        |
| Lab Reference (Sample Number)                                                                                                                                                                                              | 2267843                    |          |  | Landfill Waste Acceptance Criteria                |                                                               |                          |        |
| Sampling Date                                                                                                                                                                                                              | 05/05/2022                 |          |  | Limits                                            |                                                               |                          |        |
| Sample ID                                                                                                                                                                                                                  | TP5192 WAC7                |          |  | Inert Waste Landfill                              | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |        |
| Depth (m)                                                                                                                                                                                                                  | 0.00-1.50                  |          |  |                                                   |                                                               |                          |        |
| Solid Waste Analysis                                                                                                                                                                                                       |                            |          |  |                                                   |                                                               |                          |        |
| TOC (%)**                                                                                                                                                                                                                  | 4.4                        |          |  | 3%                                                | 5%                                                            | 6%                       |        |
| Loss on Ignition (%) **                                                                                                                                                                                                    | 15                         |          |  | --                                                | --                                                            | 10%                      |        |
| BTEX (µg/kg) **                                                                                                                                                                                                            | < 10                       |          |  | 6000                                              | --                                                            | --                       |        |
| Sum of PCBs (mg/kg) **                                                                                                                                                                                                     | < 0.30                     |          |  | 1                                                 | --                                                            | --                       |        |
| Mineral Oil (mg/kg) <small>BH ID CU AL #</small>                                                                                                                                                                           | 360                        |          |  | 500                                               | --                                                            | --                       |        |
| Total PAH (WAC-17) (mg/kg)                                                                                                                                                                                                 | 98.2                       |          |  | 100                                               | --                                                            | --                       |        |
| pH (units)**                                                                                                                                                                                                               | 7.5                        |          |  | --                                                | >6                                                            | --                       |        |
| Acid Neutralisation Capacity (mmol / kg)                                                                                                                                                                                   | 9.1                        |          |  | --                                                | To be evaluated                                               | To be evaluated          |        |
| Eluate Analysis                                                                                                                                                                                                            |                            |          |  |                                                   |                                                               |                          |        |
|                                                                                                                                                                                                                            | 2:1                        | 8:1      |  | Cumulative 10:1                                   | Limit values for compliance leaching test                     |                          |        |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                                                                                                                                    | mg/l                       | mg/l     |  | mg/kg                                             | using BS EN 12457-3 at L/S 10 l/kg (mg/kg)                    |                          |        |
| Arsenic *                                                                                                                                                                                                                  | < 0.010                    | < 0.010  |  | < 0.050                                           | 0.5                                                           | 2                        | 25     |
| Barium *                                                                                                                                                                                                                   | 0.068                      | 0.054    |  | 0.56                                              | 20                                                            | 100                      | 300    |
| Cadmium *                                                                                                                                                                                                                  | < 0.0005                   | < 0.0005 |  | < 0.0020                                          | 0.04                                                          | 1                        | 5      |
| Chromium *                                                                                                                                                                                                                 | 0.0015                     | 0.0013   |  | 0.014                                             | 0.5                                                           | 10                       | 70     |
| Copper *                                                                                                                                                                                                                   | 0.038                      | 0.018    |  | 0.21                                              | 2                                                             | 50                       | 100    |
| Mercury *                                                                                                                                                                                                                  | < 0.0015                   | < 0.0015 |  | < 0.010                                           | 0.01                                                          | 0.2                      | 2      |
| Molybdenum *                                                                                                                                                                                                               | 0.0076                     | 0.0046   |  | 0.050                                             | 0.5                                                           | 10                       | 30     |
| Nickel *                                                                                                                                                                                                                   | 0.0060                     | 0.0054   |  | 0.055                                             | 0.4                                                           | 10                       | 40     |
| Lead *                                                                                                                                                                                                                     | < 0.0050                   | 0.0051   |  | 0.050                                             | 0.5                                                           | 10                       | 50     |
| Antimony *                                                                                                                                                                                                                 | < 0.0050                   | < 0.0050 |  | < 0.020                                           | 0.06                                                          | 0.7                      | 5      |
| Selenium *                                                                                                                                                                                                                 | < 0.010                    | < 0.010  |  | < 0.040                                           | 0.1                                                           | 0.5                      | 7      |
| Zinc *                                                                                                                                                                                                                     | 0.029                      | 0.0138   |  | 0.16                                              | 4                                                             | 50                       | 200    |
| Chloride *                                                                                                                                                                                                                 | 4.5                        | < 4.0    |  | 18                                                | 800                                                           | 15000                    | 25000  |
| Fluoride                                                                                                                                                                                                                   | 0.63                       | 0.50     |  | 5.1                                               | 10                                                            | 150                      | 500    |
| Sulphate *                                                                                                                                                                                                                 | 62                         | 11       |  | 180                                               | 1000                                                          | 20000                    | 50000  |
| TDS*                                                                                                                                                                                                                       | 190                        | 92       |  | 1100                                              | 4000                                                          | 60000                    | 100000 |
| Phenol Index (Monohydric Phenols) *                                                                                                                                                                                        | < 0.13                     | < 0.13   |  | < 0.50                                            | 1                                                             | -                        | -      |
| DOC                                                                                                                                                                                                                        | 35                         | 18       |  | 210                                               | 500                                                           | 800                      | 1000   |
|                                                                                                                                                                                                                            |                            |          |  |                                                   |                                                               |                          |        |
| Leach Test Information                                                                                                                                                                                                     |                            |          |  |                                                   |                                                               |                          |        |
|                                                                                                                                                                                                                            |                            |          |  |                                                   |                                                               |                          |        |
| Stone Content (%)                                                                                                                                                                                                          | 29                         |          |  |                                                   |                                                               |                          |        |
| Sample Mass (kg)                                                                                                                                                                                                           | 1.2                        |          |  |                                                   |                                                               |                          |        |
| Dry Matter (%)                                                                                                                                                                                                             | 91                         |          |  |                                                   |                                                               |                          |        |
| Moisture (%)                                                                                                                                                                                                               | 9.1                        |          |  |                                                   |                                                               |                          |        |
| Stage 1                                                                                                                                                                                                                    |                            |          |  |                                                   |                                                               |                          |        |
| Volume Eluate L2 (litres)                                                                                                                                                                                                  | 0.33                       |          |  |                                                   |                                                               |                          |        |
| Filtered Eluate VE1 (litres)                                                                                                                                                                                               | 0.24                       |          |  |                                                   |                                                               |                          |        |
|                                                                                                                                                                                                                            |                            |          |  |                                                   |                                                               |                          |        |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                                                                                                                       |                            |          |  |                                                   |                                                               |                          |        |
|                                                                                                                                                                                                                            |                            |          |  | * = UKAS accredited (liquid eluate analysis only) |                                                               |                          |        |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation                                                                                                       |                            |          |  | ** = MCERTS accredited                            |                                                               |                          |        |
| Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.     |                            |          |  |                                                   |                                                               |                          |        |
| This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous. |                            |          |  |                                                   |                                                               |                          |        |

**Analytical Report Number : 22-56910**

**Project / Site name: Hillhouse TRU Huddersfield**

\* 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 *                        |
|-------------------|------------------|---------------|-----------|---------------------------------------------|
| 2267841           | TP5195           | WAC10         | 0.00-3.00 | Brown loam and sand with gravel and stones. |
| 2267842           | TP5197           | WAC7          | 0.00-1.50 | Brown loam and sand with gravel and stones. |
| 2267843           | TP5192           | WAC7          | 0.00-1.50 | Brown loam and sand with gravel and stones. |



**Analytical Report Number : 22-56910**

**Project / Site name: Hillhouse TRU Huddersfield**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                              | Analytical Method Description                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Moisture Content                                  | Moisture content, determined gravimetrically. (30 oC)                                                                                                  | In house method.                                                                                                | L019-UK/PL    | 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.                                      | L019-UK/PL    | D                  | NONE                 |
| Preparation WAC leachate                          |                                                                                                                                                        | In-house method                                                                                                 | L043-PL       | W                  | NONE                 |
| Speciated WAC-17 PAHs in soil                     | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270. MCERTS accredited except Coronene.                                         | L064-PL       | D                  | MCERTS               |
| Chloride in WAC leachate (BS EN 12457-3 Prep)     | Determination of Chloride colorimetrically by discrete analyser.                                                                                       | In house based on MEWAM Method ISBN 0117516260.                                                                 | L082-PL       | W                  | ISO 17025            |
| Fluoride in WAC leachate (BS EN 12457-3 Prep)     | Determination of fluoride in leachate by 1:1 ratio with a buffer solution followed by Ion Selective Electrode.                                         | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L033-PL       | W                  | ISO 17025            |
| Phenol Index in WAC leachate (BS EN 12457-3 Prep) | Determination of monohydric phenols in leachate by continuous flow analyser.                                                                           | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL       | W                  | ISO 17025            |
| Sulphate in WAC leachate (BS EN 12457-3 Prep)     | Determination of sulphate in leachate by acidification followed by ICP-OES.                                                                            | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L039-PL       | W                  | ISO 17025            |
| TDS in WAC leachate (BS EN 12457-3 Prep)          | Determination of total dissolved solids in leachate by electrometric measurement.                                                                      | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L031-PL       | W                  | NONE                 |
| DOC in WAC leachate (BS EN 12457-3 Prep)          | Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.                                                                        | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L037-PL       | W                  | ISO 17025            |
| PCB's by GC-MS in soil                            | Determination of PCB by extraction with acetone and hexane followed by GC-MS.                                                                          | In-house method based on USEPA 8082                                                                             | L027-PL       | D                  | MCERTS               |
| BTEX (Sum of BTEX compounds) in soil              | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited                                                              | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |
| Acid neutralisation capacity of soil              | Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.                                              | In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance           | L046-PL       | W                  | NONE                 |
| Loss on ignition of soil @ 450oC                  | 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               |
| Mineral Oil in Soil C10 - C40                     | Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.                                                                     | In-house method based on USEPA 8270                                                                             | L076-PL       | D                  | NONE                 |
| pH in soil                                        | Determination of pH in soil by addition of water followed by electrometric measurement.                                                                | In house method.                                                                                                | L005-PL       | W                  | MCERTS               |
| Total organic carbon in soil                      | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                          | In house method.                                                                                                | L023-PL       | D                  | MCERTS               |

Analytical Report Number : 22-56910

Project / Site name: Hillhouse TRU Huddersfield

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

| Analytical Test Name                        | Analytical Method Description                                             | Analytical Method Reference                                                                      | Method number | Wet / Dry Analysis | Accreditation Status |
|---------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in WAC leachate (BS EN 12457-3 Prep) | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed. | L039-PL       | W                  | ISO 17025            |

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' 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.



## Sample Deviation Report



**Analytical Report Number : 22-56910**

**Project / Site name: Hillhouse TRU Huddersfield**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

| Sample ID | Other ID | Sample Type | Lab Sample Number | Sample Deviation | Test Name                            | Test Ref | Test Deviation |
|-----------|----------|-------------|-------------------|------------------|--------------------------------------|----------|----------------|
| TP5192    | WAC7     | M           | 2267843           | b                | BTEX (Sum of BTEX compounds) in soil | L073B-PL | b              |
| TP5195    | WAC10    | M           | 2267841           | b                | BTEX (Sum of BTEX compounds) in soil | L073B-PL | b              |
| TP5197    | WAC7     | M           | 2267842           | b                | BTEX (Sum of BTEX compounds) in soil | L073B-PL | b              |

**Fiona Townley**

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Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

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Redacted

## **Analytical Report Number : 22-56926**

|                             |                             |                                                        |            |
|-----------------------------|-----------------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Hillhouse TRU, Huddersfield | <b>Samples received on:</b>                            | 06/05/2022 |
| <b>Your job number:</b>     | 2641987                     | <b>Samples instructed on/<br/>Analysis started on:</b> | 06/05/2022 |
| <b>Your order number:</b>   | PAH24759                    | <b>Analysis completed by:</b>                          | 13/05/2022 |
| <b>Report Issue Number:</b> | 1                           | <b>Report issued on:</b>                               | 16/05/2022 |
| <b>Samples Analysed:</b>    | 2 wac multi samples         |                                                        |            |

Redacted

**Signed:** 

Martyna Langer  
Junior Reporting Specialist  
**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 |

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

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.



## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

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| Waste Acceptance Criteria Analytical Results                                                                         |                             |          |  |                 |                                            |                                                               |                          |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|--|-----------------|--------------------------------------------|---------------------------------------------------------------|--------------------------|
| Report No:                                                                                                           | 22-56926                    |          |  |                 |                                            |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                            |                                                               |                          |
|                                                                                                                      |                             |          |  |                 | Client: RSKRAW                             |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                            |                                                               |                          |
| Location                                                                                                             | Hillhouse TRU, Huddersfield |          |  |                 |                                            |                                                               |                          |
| Lab Reference (Sample Number)                                                                                        | 2267919                     |          |  |                 | Landfill Waste Acceptance Criteria         |                                                               |                          |
| Sampling Date                                                                                                        | 04/05/2022                  |          |  |                 | Limits                                     |                                                               |                          |
| Sample ID                                                                                                            | TP5203 WAC10                |          |  |                 | Inert Waste Landfill                       | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |
| Depth (m)                                                                                                            | 0.00-3.00                   |          |  |                 |                                            |                                                               |                          |
| Solid Waste Analysis                                                                                                 |                             |          |  |                 |                                            |                                                               |                          |
| TOC (%)**                                                                                                            | 2.5                         |          |  |                 | 3%                                         | 5%                                                            | 6%                       |
| Loss on Ignition (%) **                                                                                              | 7.7                         |          |  |                 | --                                         | --                                                            | 10%                      |
| BTEX (µg/kg) **                                                                                                      | < 10                        |          |  |                 | 6000                                       | --                                                            | --                       |
| Sum of PCBs (mg/kg) **                                                                                               | < 0.30                      |          |  |                 | 1                                          | --                                                            | --                       |
| Mineral Oil (mg/kg) EH_10_CU_AL #                                                                                    | 270                         |          |  |                 | 500                                        | --                                                            | --                       |
| Total PAH (WAC-17) (mg/kg)                                                                                           | 67.1                        |          |  |                 | 100                                        | --                                                            | --                       |
| pH (units)**                                                                                                         | 8.1                         |          |  |                 | --                                         | >6                                                            | --                       |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | 4.8                         |          |  |                 | --                                         | To be evaluated                                               | To be evaluated          |
| Eluate Analysis                                                                                                      |                             |          |  |                 |                                            |                                                               |                          |
|                                                                                                                      | 2:1                         | 8:1      |  | Cumulative 10:1 | Limit values for compliance leaching test  |                                                               |                          |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              | mg/l                        | mg/l     |  | mg/kg           | using BS EN 12457-3 at L/S 10 l/kg (mg/kg) |                                                               |                          |
| Arsenic *                                                                                                            | < 0.010                     | < 0.010  |  | < 0.050         | 0.5                                        | 2                                                             | 25                       |
| Barium *                                                                                                             | 0.023                       | 0.016    |  | 0.17            | 20                                         | 100                                                           | 300                      |
| Cadmium *                                                                                                            | < 0.0005                    | < 0.0005 |  | < 0.0020        | 0.04                                       | 1                                                             | 5                        |
| Chromium *                                                                                                           | 0.0021                      | 0.0017   |  | 0.018           | 0.5                                        | 10                                                            | 70                       |
| Copper *                                                                                                             | 0.021                       | 0.0083   |  | 0.099           | 2                                          | 50                                                            | 100                      |
| Mercury *                                                                                                            | < 0.0015                    | < 0.0015 |  | < 0.010         | 0.01                                       | 0.2                                                           | 2                        |
| Molybdenum *                                                                                                         | 0.019                       | 0.0079   |  | 0.094           | 0.5                                        | 10                                                            | 30                       |
| Nickel *                                                                                                             | 0.0049                      | 0.0042   |  | 0.043           | 0.4                                        | 10                                                            | 40                       |
| Lead *                                                                                                               | < 0.0050                    | < 0.0050 |  | 0.044           | 0.5                                        | 10                                                            | 50                       |
| Antimony *                                                                                                           | < 0.0050                    | < 0.0050 |  | < 0.020         | 0.06                                       | 0.7                                                           | 5                        |
| Selenium *                                                                                                           | < 0.010                     | < 0.010  |  | < 0.040         | 0.1                                        | 0.5                                                           | 7                        |
| Zinc *                                                                                                               | 0.0082                      | 0.0061   |  | 0.064           | 4                                          | 50                                                            | 200                      |
| Chloride *                                                                                                           | < 4.0                       | < 4.0    |  | < 15            | 800                                        | 15000                                                         | 25000                    |
| Fluoride                                                                                                             | 1.2                         | 0.83     |  | 8.8             | 10                                         | 150                                                           | 500                      |
| Sulphate *                                                                                                           | 14                          | 4.5      |  | 57              | 1000                                       | 20000                                                         | 50000                    |
| TDS*                                                                                                                 | 110                         | 61       |  | 670             | 4000                                       | 60000                                                         | 100000                   |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.13                      | < 0.13   |  | < 0.50          | 1                                          | -                                                             | -                        |
| DOC                                                                                                                  | 13                          | 12       |  | 120             | 500                                        | 800                                                           | 1000                     |
|                                                                                                                      |                             |          |  |                 |                                            |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                            |                                                               |                          |
| Leach Test Information                                                                                               |                             |          |  |                 |                                            |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                            |                                                               |                          |
| Stone Content (%)                                                                                                    | < 0.1                       |          |  |                 |                                            |                                                               |                          |
| Sample Mass (kg)                                                                                                     | 1.0                         |          |  |                 |                                            |                                                               |                          |
| Dry Matter (%)                                                                                                       | 90                          |          |  |                 |                                            |                                                               |                          |
| Moisture (%)                                                                                                         | 9.6                         |          |  |                 |                                            |                                                               |                          |
| Stage 1                                                                                                              |                             |          |  |                 |                                            |                                                               |                          |
| Volume Eluate L2 (litres)                                                                                            | 0.32                        |          |  |                 |                                            |                                                               |                          |
| Filtered Eluate VE1 (litres)                                                                                         | 0.22                        |          |  |                 |                                            |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                            |                                                               |                          |
|                                                                                                                      |                             |          |  |                 |                                            |                                                               |                          |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |                             |          |  |                 |                                            |                                                               |                          |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |                             |          |  |                 |                                            |                                                               |                          |
| ** = UKAS accredited (liquid eluate analysis only)                                                                   |                             |          |  |                 |                                            |                                                               |                          |
| ** = MCERTS accredited                                                                                               |                             |          |  |                 |                                            |                                                               |                          |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

## i2 Analytical

7 Woodshots Meadow  
Croxley Green Business Park  
Watford, WD18 8YS

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| Waste Acceptance Criteria Analytical Results                                                                         |                             |          |  |                                    |                                                               |                          |                 |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|--|------------------------------------|---------------------------------------------------------------|--------------------------|-----------------|
| Report No:                                                                                                           | 22-56926                    |          |  |                                    |                                                               |                          |                 |
|                                                                                                                      |                             |          |  |                                    |                                                               |                          |                 |
|                                                                                                                      |                             |          |  | Client: RSKRAW                     |                                                               |                          |                 |
|                                                                                                                      |                             |          |  |                                    |                                                               |                          |                 |
| Location                                                                                                             | Hillhouse TRU, Huddersfield |          |  |                                    |                                                               |                          |                 |
| Lab Reference (Sample Number)                                                                                        | 2267920                     |          |  | Landfill Waste Acceptance Criteria |                                                               |                          |                 |
| Sampling Date                                                                                                        | 04/05/2022                  |          |  | Limits                             |                                                               |                          |                 |
| Sample ID                                                                                                            | TP5200 WAC10                |          |  | Inert Waste Landfill               | Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill | Hazardous Waste Landfill |                 |
| Depth (m)                                                                                                            | 0.00-3.00                   |          |  |                                    |                                                               |                          |                 |
| Solid Waste Analysis                                                                                                 |                             |          |  |                                    |                                                               |                          |                 |
| TOC (%)**                                                                                                            | 2.5                         |          |  |                                    | 3%                                                            | 5%                       | 6%              |
| Loss on Ignition (%) **                                                                                              | 8.9                         |          |  |                                    | --                                                            | --                       | 10%             |
| BTEX (µg/kg) **                                                                                                      | < 10                        |          |  |                                    | 6000                                                          | --                       | --              |
| Sum of PCBs (mg/kg) **                                                                                               | < 0.30                      |          |  |                                    | 1                                                             | --                       | --              |
| Mineral Oil (mg/kg) EH_10_CU_AL #                                                                                    | 850                         |          |  |                                    | 500                                                           | --                       | --              |
| Total PAH (WAC-17) (mg/kg)                                                                                           | 14.6                        |          |  |                                    | 100                                                           | --                       | --              |
| pH (units)**                                                                                                         | 7.9                         |          |  |                                    | --                                                            | >6                       | --              |
| Acid Neutralisation Capacity (mmol / kg)                                                                             | 7.2                         |          |  |                                    | --                                                            | To be evaluated          | To be evaluated |
| Eluate Analysis                                                                                                      |                             |          |  |                                    |                                                               |                          |                 |
|                                                                                                                      | 2:1                         | 8:1      |  | Cumulative 10:1                    | Limit values for compliance leaching test                     |                          |                 |
| (BS EN 12457 - 3 preparation utilising end over end leaching procedure)                                              | mg/l                        | mg/l     |  | mg/kg                              | using BS EN 12457-3 at L/S 10 l/kg (mg/kg)                    |                          |                 |
| Arsenic *                                                                                                            | < 0.010                     | < 0.010  |  | < 0.050                            | 0.5                                                           | 2                        | 25              |
| Barium *                                                                                                             | 0.045                       | 0.054    |  | 0.53                               | 20                                                            | 100                      | 300             |
| Cadmium *                                                                                                            | < 0.0005                    | < 0.0005 |  | < 0.0020                           | 0.04                                                          | 1                        | 5               |
| Chromium *                                                                                                           | 0.0016                      | 0.0042   |  | 0.039                              | 0.5                                                           | 10                       | 70              |
| Copper *                                                                                                             | 0.022                       | 0.021    |  | 0.21                               | 2                                                             | 50                       | 100             |
| Mercury *                                                                                                            | < 0.0015                    | < 0.0015 |  | < 0.010                            | 0.01                                                          | 0.2                      | 2               |
| Molybdenum *                                                                                                         | 0.013                       | 0.0046   |  | 0.058                              | 0.5                                                           | 10                       | 30              |
| Nickel *                                                                                                             | 0.0050                      | 0.0067   |  | 0.064                              | 0.4                                                           | 10                       | 40              |
| Lead *                                                                                                               | < 0.0050                    | 0.0094   |  | 0.086                              | 0.5                                                           | 10                       | 50              |
| Antimony *                                                                                                           | < 0.0050                    | < 0.0050 |  | < 0.020                            | 0.06                                                          | 0.7                      | 5               |
| Selenium *                                                                                                           | < 0.010                     | < 0.010  |  | < 0.040                            | 0.1                                                           | 0.5                      | 7               |
| Zinc *                                                                                                               | 0.10                        | 0.0703   |  | 0.75                               | 4                                                             | 50                       | 200             |
| Chloride *                                                                                                           | < 4.0                       | < 4.0    |  | 15                                 | 800                                                           | 15000                    | 25000           |
| Fluoride                                                                                                             | 1.1                         | 0.75     |  | 8.0                                | 10                                                            | 150                      | 500             |
| Sulphate *                                                                                                           | 38                          | 7.8      |  | 120                                | 1000                                                          | 20000                    | 50000           |
| TDS*                                                                                                                 | 140                         | 63       |  | 740                                | 4000                                                          | 60000                    | 100000          |
| Phenol Index (Monohydric Phenols) *                                                                                  | < 0.13                      | < 0.13   |  | < 0.50                             | 1                                                             | -                        | -               |
| DOC                                                                                                                  | 18                          | 12       |  | 130                                | 500                                                           | 800                      | 1000            |
|                                                                                                                      |                             |          |  |                                    |                                                               |                          |                 |
|                                                                                                                      |                             |          |  |                                    |                                                               |                          |                 |
| Leach Test Information                                                                                               |                             |          |  |                                    |                                                               |                          |                 |
|                                                                                                                      |                             |          |  |                                    |                                                               |                          |                 |
| Stone Content (%)                                                                                                    | < 0.1                       |          |  |                                    |                                                               |                          |                 |
| Sample Mass (kg)                                                                                                     | 1.0                         |          |  |                                    |                                                               |                          |                 |
| Dry Matter (%)                                                                                                       | 86                          |          |  |                                    |                                                               |                          |                 |
| Moisture (%)                                                                                                         | 14                          |          |  |                                    |                                                               |                          |                 |
| Stage 1                                                                                                              |                             |          |  |                                    |                                                               |                          |                 |
| Volume Eluate L2 (litres)                                                                                            | 0.32                        |          |  |                                    |                                                               |                          |                 |
| Filtered Eluate VE1 (litres)                                                                                         | 0.25                        |          |  |                                    |                                                               |                          |                 |
|                                                                                                                      |                             |          |  |                                    |                                                               |                          |                 |
|                                                                                                                      |                             |          |  |                                    |                                                               |                          |                 |
| Results are expressed on a dry weight basis, after correction for moisture content where applicable.                 |                             |          |  |                                    |                                                               |                          |                 |
| Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation |                             |          |  |                                    |                                                               |                          |                 |
| ** = UKAS accredited (liquid eluate analysis only)<br>** = MCERTS accredited                                         |                             |          |  |                                    |                                                               |                          |                 |

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.  
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



**Analytical Report Number : 22-56926**

**Project / Site name: Hillhouse TRU, Huddersfield**

\* 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 *                            |
|-------------------|------------------|---------------|-----------|-------------------------------------------------|
| 2267919           | TP5203 WAC10     | None Supplied | 0.00-3.00 | Brown loam and sand with gravel and vegetation. |
| 2267920           | TP5200 WAC10     | None Supplied | 0.00-3.00 | Brown loam and clay with rubble.                |

**Analytical Report Number : 22-56926**  
**Project / Site name: Hillhouse TRU, Huddersfield**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                              | Analytical Method Description                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Moisture Content                                  | Moisture content, determined gravimetrically. (30 oC)                                                                                                  | In house method.                                                                                                | L019-UK/PL    | 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.                                      | L019-UK/PL    | D                  | NONE                 |
| Preparation WAC leachate                          |                                                                                                                                                        | In-house method                                                                                                 | L043-PL       | W                  | NONE                 |
| Speciated WAC-17 PAHs in soil                     | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270. MCERTS accredited except Coronene.                                         | L064-PL       | D                  | MCERTS               |
| Chloride in WAC leachate (BS EN 12457-3 Prep)     | Determination of Chloride colorimetrically by discrete analyser.                                                                                       | In house based on MEWAM Method ISBN 0117516260.                                                                 | L082-PL       | W                  | ISO 17025            |
| Fluoride in WAC leachate (BS EN 12457-3 Prep)     | Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.                                          | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L033-PL       | W                  | ISO 17025            |
| Phenol Index in WAC leachate (BS EN 12457-3 Prep) | Determination of monohydric phenols in leachate by continuous flow analyser.                                                                           | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL       | W                  | ISO 17025            |
| Sulphate in WAC leachate (BS EN 12457-3 Prep)     | Determination of sulphate in leachate by acidification followed by ICP-OES.                                                                            | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L039-PL       | W                  | ISO 17025            |
| TDS in WAC leachate (BS EN 12457-3 Prep)          | Determination of total dissolved solids in leachate by electrometric measurement.                                                                      | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L031-PL       | W                  | NONE                 |
| DOC in WAC leachate (BS EN 12457-3 Prep)          | Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.                                                                        | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.                | L037-PL       | W                  | ISO 17025            |
| PCB's by GC-MS in soil                            | Determination of PCB by extraction with acetone and hexane followed by GC-MS.                                                                          | In-house method based on USEPA 8082                                                                             | L027-PL       | D                  | MCERTS               |
| BTEX (Sum of BTEX compounds) in soil              | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited                                                              | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |
| Acid neutralisation capacity of soil              | Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.                                              | In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance           | L046-PL       | W                  | NONE                 |
| Loss on ignition of soil @ 450oC                  | 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               |
| Mineral Oil in Soil C10 - C40                     | Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.                                                                     | In-house method based on USEPA 8270                                                                             | L076-PL       | D                  | NONE                 |
| pH in soil                                        | Determination of pH in soil by addition of water followed by electrometric measurement.                                                                | In house method.                                                                                                | L005-PL       | W                  | MCERTS               |
| Total organic carbon in soil                      | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                          | In house method.                                                                                                | L023-PL       | D                  | MCERTS               |



**Analytical Report Number : 22-56926**  
**Project / Site name: Hillhouse TRU, Huddersfield**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name                        | Analytical Method Description                                             | Analytical Method Reference                                                                      | Method number | Wet / Dry Analysis | Accreditation Status |
|---------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in WAC leachate (BS EN 12457-3 Prep) | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed. | L039-PL       | W                  | ISO 17025            |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' 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.**

**Analytical Report Number : 22-56926**

**Project / Site name: Hillhouse TRU, Huddersfield**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

| Sample ID    | Other ID      | Sample Type | Lab Sample Number | Sample Deviation | Test Name                            | Test Ref | Test Deviation |
|--------------|---------------|-------------|-------------------|------------------|--------------------------------------|----------|----------------|
| TP5203 WAC10 | None Supplied | M           | 2267919           | b                | BTEX (Sum of BTEX compounds) in soil | L073B-PL | b              |
| TP5203 WAC10 | None Supplied | M           | 2267919           | b                | Mineral Oil in Soil C10 - C40        | L076-PL  | b              |
| TP5203 WAC10 | None Supplied | M           | 2267919           | b                | PCB's by GC-MS in soil               | L027-PL  | b              |
| TP5203 WAC10 | None Supplied | M           | 2267919           | b                | Speciated WAC-17 PAHs in soil        | L064-PL  | b              |



## Appendix C. Screening Sheets

| Assessment Criteria :                |          |                   | Commercial - 6% SOM Sandy Loam |                   |               |               |                       |                                                                            |           |             |            |            |            |            |            |                        |            |            |            |            |            |            |            |            |            |            |            |  |
|--------------------------------------|----------|-------------------|--------------------------------|-------------------|---------------|---------------|-----------------------|----------------------------------------------------------------------------|-----------|-------------|------------|------------|------------|------------|------------|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|
| Use MRL Values?                      |          |                   |                                |                   |               |               |                       |                                                                            |           |             |            |            |            |            |            |                        |            |            |            |            |            |            |            |            |            |            |            |  |
|                                      |          | Unit of Detection | Metric Assessment Criteria     | Number of Samples | Minimum Value | Maximum Value | Number of Exceedances |                                                                            | Location  | 2267192     | 2267193    | 2267194    | 2267195    | 2267196    | 2267793    | 2267794                | 2267795    | 2267796    | 2267797    | 2267798    | 2267799    | 2267902    | 2267903    | 2267904    | 2267905    | 2267906    | 2267907    |  |
|                                      |          |                   |                                |                   |               |               |                       |                                                                            | Sample ID | TP5209 ES1  | TP5208 ES4 | TP5207 ES7 | TP5206 ES1 | TP5205 ES4 | TP5198     | TP5194                 | TP5195     | TP5193     | TP5196     | TP5197     | TP5192     | TP5204 ES1 | TP5203 ES1 | TP5201 ES1 | TP5199 ES4 | TP5202 ES1 | TP5200 ES1 |  |
|                                      |          |                   |                                |                   |               |               |                       |                                                                            | Depth     | 0.25m       | 1.20m      | 2.50m      | 0.50m      | 1.50m      | 2.50m      | 0.50m                  | 1.50m      | 0.50m      | 1.50m      | 0.50m      | 1.40m      | 2.50m      | 0.50m      | 2.50m      | 1.50m      | 0.50m      | 0.50m      |  |
|                                      |          |                   |                                |                   |               |               |                       |                                                                            | Date      | 03/05/2022  | 03/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 05/05/2022 | 05/05/2022             | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 |            |  |
|                                      |          |                   |                                |                   |               |               |                       |                                                                            | Strata    | Made Ground |            |            |            |            |            |                        |            |            |            |            |            |            |            |            |            |            |            |  |
| Stone Content                        | %        | 0.1               | No SSV                         | 18                | <0.1          | 40            | 0                     |                                                                            |           | <0.1        | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       | 27                     | <0.1       | 22         | <0.1       | <0.1       | <0.1       | <0.1       | 29         | 31         | <0.1       | 40         | 23         |  |
| Moisture Content                     | %        | 0.01              | No SSV                         | 18                | 7.2           | 16            | 0                     |                                                                            |           | 7.2         | 12         | 12         | 10         | 8.8        | 11         | 16                     | 14         | 8.7        | 8.2        | 11         | 11         | 13         | 11         | 12         | 8.3        | 11         | 11         |  |
| Total mass of sample received        | kg       | 0.001             | No SSV                         | 18                | 1.4           | 1.5           | 0                     |                                                                            |           | 1.5         | 1.4        | 1.5        | 1.5        | 1.4        | 1.5        | 1.5                    | 1.5        | 1.5        | 1.5        | 1.5        | 1.5        | 1.5        | 1.5        | 1.5        | 1.5        | 1.5        | 1.5        |  |
| Asbestos in Soil                     | Type     | N/A               | No SSV                         | 3                 | -             | -             | 3                     | 2267794, TP5194, 0.50m; 2267796, TP5193, 0.50m; 2267903, TP5203 ES1, 0.50m |           |             |            |            |            |            |            | Detected               |            | Detected   |            |            |            |            | Detected   |            |            |            |            |  |
| Asbestos Analyst ID                  | N/A      | N/A               | No SSV                         | 18                | -             | -             | 3                     | 2267794, TP5194, 0.50m; 2267796, TP5193, 0.50m; 2267903, TP5203 ES1, 0.50m |           | N/A         | N/A        | N/A        | N/A        | N/A        | N/A        | Chrysotile and Amosite | N/A        | Chrysotile | N/A        | N/A        | N/A        | N/A        | Chrysotile | N/A        | N/A        | N/A        | N/A        |  |
| Asbestos Quantification (Stage 2)    | %        | 0.001             | No SSV                         | 3                 | <0.001        | 0.011         | 1                     | 2267794, TP5194, 0.50m                                                     |           |             |            |            |            |            |            | 0.011                  |            | <0.001     |            |            |            |            | <0.001     |            |            |            |            |  |
| Asbestos Quantification Total        | %        | 0.001             | No SSV                         | 3                 | <0.001        | 0.011         | 1                     | 2267794, TP5194, 0.50m                                                     |           |             |            |            |            |            |            | 0.011                  |            | <0.001     |            |            |            |            | <0.001     |            |            |            |            |  |
| General Inorganics                   |          |                   | No SSV                         | 0                 | -             | -             | 0                     |                                                                            |           |             |            |            |            |            |            |                        |            |            |            |            |            |            |            |            |            |            |            |  |
| pH                                   | pH Units | N/A               | No SSV                         | 18                | 6.5           | 8.6           | 0                     |                                                                            |           | 8.2         | 7.8        | 7.9        | 8.1        | 8.3        | 6.5        | 7.2                    | 7.2        | 7.3        | 8.6        | 7.6        | 7.6        | 7.1        | 8          | 8.6        | 8.4        | 8          | 7.6        |  |
| Total Cyanide                        | mg/kg    | 1                 | No SSV                         | 18                | <1            | 2.8           | 0                     |                                                                            |           | <1          | <1         | <1         | <1         | <1         | <1         | <1                     | 2.8        | <1         | <1         | <1         | 1.2        | <1         | 1.7        | <1         | <1         | <1         | <1         |  |
| Total Organic Carbon (TOC) Automated | %        | 0.1               | No SSV                         | 18                | 1.9           | 7.5           | 0                     |                                                                            |           | 2.8         | 5.4        | 4.3        | 2.5        | 4.8        | 4.4        | 1.9                    | 4.2        | 2.7        | 4.8        | 3.9        | 7.5        | 2.1        | 5.3        | 3.2        | 3.9        | 2.2        | 4.5        |  |
| Total Phenols                        |          |                   | 3170                           | 0                 | -             | -             | 0                     |                                                                            |           |             |            |            |            |            |            |                        |            |            |            |            |            |            |            |            |            |            |            |  |
| Total Phenols (monohydric)           | mg/kg    | 1                 | No SSV                         | 18                | <1            | <1            | 0                     |                                                                            |           | <1          | <1         | <1         | <1         | <1         | <1         | <1                     | <1         | <1         | <1         | <1         | <1         | <1         | <1         | <1         | <1         | <1         | <1         |  |
| Speciated PAHs                       |          |                   | No SSV                         | 0                 | -             | -             | 0                     |                                                                            |           |             |            |            |            |            |            |                        |            |            |            |            |            |            |            |            |            |            |            |  |
| Naphthalene                          | mg/kg    | 0.05              | 1050                           | 7                 | <0.05         | 9.4           | 0                     |                                                                            |           |             | <0.05      |            |            |            | 9.4        | 1.1                    | <0.05      |            |            |            | <0.05      |            |            |            | <0.05      | <0.05      |            |  |
| Acenaphthylene                       | mg/kg    | 0.05              | No SSV                         | 7                 | <0.05         | 2.5           | 0                     |                                                                            |           |             | 0.44       |            |            |            | 2.5        | <0.05                  | <0.05      |            |            |            |            |            |            |            | 0.54       | <0.05      |            |  |
| Acenaphthene                         | mg/kg    | 0.05              | 106000                         | 7                 | 0.23          | 10            | 0                     |                                                                            |           |             | 3.2        |            |            |            | 10         | 0.35                   | 0.23       |            |            |            |            |            |            |            | 1.2        | 0.32       |            |  |
| Fluorene                             | mg/kg    | 0.05              | 72000                          | 7                 | 0.21          | 11            | 0                     |                                                                            |           |             | 2.6        |            |            |            | 11         | 0.43                   | 0.21       |            |            |            |            |            |            |            | 0.97       | 0.34       |            |  |
| Phenanthrene                         | mg/kg    | 0.05              | No SSV                         | 7                 | 1.8           | 52            | 0                     |                                                                            |           |             | 22         |            |            |            | 52         | 3.2                    | 1.8        |            |            |            |            |            |            |            | 8.4        | 2.4        |            |  |
| Anthracene                           | mg/kg    | 0.05              | 544000                         | 7                 | 0.47          | 17            | 0                     |                                                                            |           |             | 6.6        |            |            |            | 17         | 0.76                   | 0.47       |            |            |            |            |            |            |            | 2.9        | 0.77       |            |  |
| Fluoranthene                         | mg/kg    | 0.05              | 72600                          | 7                 | 4.1           | 42            | 0                     |                                                                            |           |             | 28         |            |            |            | 42         | 6.2                    | 4.1        |            |            |            |            |            |            |            | 17         | 4.5        |            |  |
| Pyrene                               | mg/kg    | 0.05              | 54400                          | 7                 | 3.7           | 41            | 0                     |                                                                            |           |             | 26         |            |            |            | 41         | 5.8                    | 3.7        |            |            |            |            |            |            |            | 16         | 4.4        |            |  |
| Benzo(a)anthracene                   | mg/kg    | 0.05              | BaP Surrogate                  | 7                 | 2.7           | 30            | 0                     |                                                                            |           |             | 17         |            |            |            | 30         | 4.3                    | 2.8        |            |            |            |            |            |            |            | 8.7        | 2.7        |            |  |
| Chrysene                             | mg/kg    | 0.05              | BaP Surrogate                  | 7                 | 1.8           | 21            | 0                     |                                                                            |           |             | 11         |            |            |            | 21         | 3                      | 1.8        |            |            |            |            |            |            |            | 7          | 1.8        |            |  |
| Benzo(b)fluoranthene                 | mg/kg    | 0.05              | BaP Surrogate                  | 7                 | 1.5           | 18            | 0                     |                                                                            |           |             | 10         |            |            |            | 18         | 5.3                    | 3.3        |            |            |            |            |            |            |            | 6.9        | 1.5        |            |  |
| Benzo(k)fluoranthene                 | mg/kg    | 0.05              | BaP Surrogate                  | 7                 | 0.82          | 11            | 0                     |                                                                            |           |             | 7.4        |            |            |            | 11         | 1.3                    | 0.82       |            |            |            |            |            |            |            | 3.8        | 1.5        |            |  |
| Benzo(a)pyrene                       | mg/kg    | 0.05              | 76.3                           | 7                 | 1.6           | 17            | 0                     |                                                                            |           |             | 10         |            |            |            | 17         | 4                      | 2.7        |            |            |            |            |            |            |            | 6.5        | 1.6        |            |  |
| Indeno(1,2,3cd)pyrene                | mg/kg    | 0.05              | BaP Surrogate                  | 7                 | 0.99          | 10            | 0                     |                                                                            |           |             | 6.4        |            |            |            | 10         | 2.1                    | 1.4        |            |            |            |            |            |            |            | 4.5        | 0.99       |            |  |
| Dibenz(a,h)anthracene                | mg/kg    | 0.05              | BaP Surrogate                  | 7                 | <0.05         | 2.5           | 0                     |                                                                            |           |             | 1.2        |            |            |            | 2.5        | 0.7                    | 0.45       |            |            |            |            |            |            |            | 0.74       | <0.05      |            |  |
| Benzo(ghi)perylene                   | mg/kg    | 0.05              | BaP Surrogate                  | 7                 | 1.1           | 11            | 0                     |                                                                            |           |             | 6.4        |            |            |            | 11         | 2.5                    | 1.6        |            |            |            |            |            |            |            | 5          | 1.1        |            |  |
| Total PAH                            |          |                   | No SSV                         | 0                 | -             | -             | 0                     |                                                                            |           |             |            |            |            |            |            |                        |            |            |            |            |            |            |            |            |            |            |            |  |
| Speciated Total EPA16 PAHs           | mg/kg    | 0.8               | No SSV                         | 7                 | 23.9          | 305           | 0                     |                                                                            |           |             | 158        |            |            |            | 305        | 41.1                   | 25.2       |            |            |            |            |            |            |            | 89.8       | 23.9       |            |  |
| Heavy Metals / Metalloids            |          |                   | No SSV                         | 0                 | -             | -             | 0                     |                                                                            |           |             |            |            |            |            |            |                        |            |            |            |            |            |            |            |            |            |            |            |  |
| Antimony                             | mg/kg    | 1                 | 4650                           | 18                | <1            | 18            | 0                     |                                                                            |           | 6.1         | 14         | 10         | 6.3        | 11         | 14         | 5.9                    | 17         | 10         | <1         | 6.3        | 15         | 7.6        | 18         | 6.1        | 11         | 5.4        | 13         |  |
| Arsenic                              | mg/kg    | 1                 | 635                            | 18                | 12            | 62            | 0                     |                                                                            |           | 17          | 38         | 35         | 12         | 32         | 52         | 16                     | 62         | 21         | 14         | 20         | 43         | 24         | 60         | 19         | 24         | 25         | 40         |  |
| Beryllium                            | mg/kg    | 0.06              | 14                             | 18                | 0.83          | 1.8           | 0                     |                                                                            |           | 0.83        | 1.3        | 1.5        | 0.9        | 1.4        | 1.8        | 0.99                   | 1.6        | 0.83       | 1          | 0.86       | 1.2        | 1.7        | 1          | 1.8        | 0.98       | 0.87       | 1.2        |  |
| Boron                                | mg/kg    | 0.2               | No SSV                         | 18                | <0.2          | 2.4           | 0                     |                                                                            |           | 0.7         | 0.7        | 1.2        | 1.6        | 1.4        | 1          | 1.3                    | 1.1        | 0.7        | 0.6        | 1          | 1.1        | 0.7        | 1.2        | 2.4        | 1.5        | <0.2       | 1.1        |  |
| Cadmium                              | mg/kg    | 0.2               | 410                            | 18                | <0.2          | 3.9           | 0                     |                                                                            |           | <0.2        | <0.2       | <0.2       | 0.8        | <0.2       | 3.9        | <0.2                   | <0.2       | <0.2       | 0.7        | <0.2       | 2.4        | <0.2       | <0.2       | <0.2       | 1.3        | <0.2       | 3.2        |  |
| Chromium (hexavalent)                | mg/kg    | 1.2               | 49.1                           | 18                | <1.2          | <1.2          | 0                     |                                                                            |           | <1.2        | <1.2       | <1.2       | <1.2       | <1.2       | <1.2       | <1.2                   | <1.2       | <1.2       | <1.2       | <1.2       | <1.2       | <1.2       | <1.2       | <1.2       | <1.2       | <1.2       | <1.2       |  |
| Chromium                             | mg/kg    | 1                 | 208000                         | 18                | 19            | 94            | 0                     |                                                                            |           | 33          | 73         | 94         | 48         | 62         | 54         | 24                     | 82         | 39         | 66         | 34         | 72         | 39         | 71         | 37         | 81         | 19         | 57         |  |
| Copper                               | mg/kg    | 1                 | 106000                         | 18                | 40            | 270           | 0                     |                                                                            |           | 64          | 150        | 120        | 49         | 120        | 270        | 40                     | 270        | 71         | 54         | 53         | 200        | 99         |            |            |            |            |            |  |





| Assessment Criteria :  |          | Drinking Water Standard England and Wales/WHO |                             |                   |               |                 |                       |                                                                     |           |      |            |            |            |            |            |            |            |            |            |  |  |
|------------------------|----------|-----------------------------------------------|-----------------------------|-------------------|---------------|-----------------|-----------------------|---------------------------------------------------------------------|-----------|------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|
| CaCO (mg/l):           |          | 0.00                                          | pH                          |                   | 0.00          |                 |                       |                                                                     |           |      |            |            |            |            |            |            |            |            |            |  |  |
| Calcium (mg/l):        |          | 0.00                                          | DOC (mg/l)                  |                   | 0.00          | Catchment area: |                       | Anglesey                                                            |           |      |            |            |            |            |            |            |            |            |            |  |  |
| Constituents           | Unit     | Limit of Detection                            | Generic Assessment Criteria | Number of Samples | Minimum Value | Maximum Value   | Number of Exceedences | Locations of Exceedences                                            | Location  |      | 2267197    | 2267198    | 2267199    | 2267815    | 2267816    | 2267817    | 2267908    | 2267909    | 2267910    |  |  |
|                        |          |                                               |                             |                   |               |                 |                       |                                                                     | Sample ID |      | TP5209 ES1 | TP5207 ES7 | TP5206 ES1 | TP5198     | TP5193     | TP5196     | TP5204 ES7 | TP5201 ES7 | TP5199 ES4 |  |  |
|                        |          |                                               |                             |                   |               |                 |                       |                                                                     | Depth     |      | 0.25m      | 2.5m       | 0.5m       | 2.5m       | 0.5m       | 1.5m       | 2.5m       | 2.5m       | 1.5m       |  |  |
|                        |          |                                               |                             |                   |               |                 |                       |                                                                     | Date      |      | 03/05/2022 | 03/05/2022 | 03/05/2022 | 05/05/2022 | 05/05/2022 | 05/05/2022 | 04/05/2022 | 04/05/2022 | 04/05/2022 |  |  |
|                        |          |                                               |                             |                   |               |                 |                       |                                                                     | Strata    | Zone |            |            |            |            |            |            |            |            |            |  |  |
| pH                     | pH Units | N/A                                           | 6.5-9.5                     | 9                 | 7.3           | 8.1             | 0                     |                                                                     |           |      | 8.1        | 8          | 8.1        | 7.3        | 8          | 8.1        | 7.5        | 7.6        | 7.6        |  |  |
| Total Cyanide          | mg/l     | 0.001                                         | 0.05                        | 9                 | <0.001        | 0.0071          | 0                     |                                                                     |           |      | <0.001     | <0.001     | 0.0015     | 0.0071     | <0.001     | 0.0018     | 0.0017     | 0.0015     | <0.001     |  |  |
| Free Cyanide           | mg/l     | 0.001                                         | See Cyanide (total)         | 9                 | <0.001        | <0.001          | 0                     |                                                                     |           |      | <0.001     | <0.001     | <0.001     | <0.001     | <0.001     | <0.001     | <0.001     | <0.001     | <0.001     |  |  |
| Sulphate as SO4        | mg/l     | 0.1                                           | 250                         | 9                 | 6.4           | 393             | 1                     | TP5204 ES7, 2.5m                                                    |           |      | 47         | 11.8       | 8.5        | 162        | 6.4        | 8.8        | 393        | 12.2       | 27.2       |  |  |
| Naphthalene            | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Acenaphthylene         | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Acenaphthene           | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Fluorene               | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Phenanthrene           | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Anthracene             | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Fluoranthene           | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Pyrene                 | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Benzo(a)anthracene     | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Chrysene               | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Benzo(b)fluoranthene   | mg/l     | 0.00001                                       | See PAH Sum of 4            | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Benzo(k)fluoranthene   | mg/l     | 0.00001                                       | See PAH Sum of 4            | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Benzo(a)pyrene         | mg/l     | 0.00001                                       | 0.00001                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Indeno(1,2,3-cd)pyrene | mg/l     | 0.00001                                       | See PAH Sum of 4            | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Dibenz(a,h)anthracene  | mg/l     | 0.00001                                       | See BaP                     | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Benzo(ghi)perylene     | mg/l     | 0.00001                                       | See PAH Sum of 4            | 9                 | <0.00001      | <0.00001        | 0                     |                                                                     |           |      | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   | <0.00001   |  |  |
| Total EPA-16 PAHs      | mg/l     | 0.0002                                        | No WSV                      | 9                 | <0.0002       | <0.0002         | 0                     |                                                                     |           |      | <0.0002    | <0.0002    | <0.0002    | <0.0002    | <0.0002    | <0.0002    | <0.0002    | <0.0002    | <0.0002    |  |  |
| Antimony (dissolved)   | mg/l     | 0.0017                                        | 0.005                       | 9                 | <0.0017       | 0.012           | 4                     | TP5209 ES1, 0.25m; TP5207 ES7, 2.5m; TP5206 ES1, 0.5m; TP5193, 0.5m |           |      | 0.0061     | 0.0085     | 0.0076     | <0.0017    | 0.012      | <0.0017    | <0.0017    | <0.0017    | <0.0017    |  |  |
| Arsenic (dissolved)    | mg/l     | 0.001                                         | 0.01                        | 9                 | <0.001        | 0.0066          | 0                     |                                                                     |           |      | 0.0066     | 0.0012     | <0.001     | 0.0037     | <0.001     | 0.0018     | <0.001     | 0.0029     | 0.0018     |  |  |
| Boron (dissolved)      | mg/l     | 0.01                                          | 1                           | 9                 | 0.029         | 0.13            | 0                     |                                                                     |           |      | 0.036      | 0.047      | 0.05       | 0.062      | 0.029      | 0.036      | 0.064      | 0.042      | 0.13       |  |  |
| Cadmium (dissolved)    | mg/l     | 0.00008                                       | 0.005                       | 9                 | <0.00008      | 0.00013         | 0                     |                                                                     |           |      | <0.00008   | <0.00008   | <0.00008   | <0.00008   | <0.00008   | 0.00013    | 0.00012    | <0.00008   |            |  |  |
| Chromium (dissolved)   | mg/l     | 0.0004                                        | 0.05                        | 9                 | 0.0008        | 0.0059          | 0                     |                                                                     |           |      | 0.001      | 0.0014     | 0.0011     | 0.0011     | 0.0011     | 0.0043     | 0.0008     | 0.0059     | 0.0042     |  |  |
| Copper (dissolved)     | mg/l     | 0.0007                                        | 2                           | 9                 | 0.0026        | 0.014           | 0                     |                                                                     |           |      | 0.0029     | 0.0026     | 0.0054     | 0.011      | 0.0034     | 0.0091     | 0.0037     | 0.014      | 0.014      |  |  |
| Lead (dissolved)       | mg/l     | 0.001                                         | 0.01                        | 9                 | 0.0019        | 0.015           | 2                     | TP5201 ES7, 2.5m; TP5199 ES4, 1.5m                                  |           |      | 0.0059     | 0.0025     | 0.0019     | 0.0041     | 0.0036     | 0.008      | 0.0055     | 0.015      | 0.014      |  |  |
| Mercury                | mg/l     | 0.000007                                      | 0.001                       | 9                 | <0.000007     | 4.44E-05        | 0                     |                                                                     |           |      | 0.0000227  | 0.0000444  | 0.0000336  | 0.0000114  | 0.0000233  | 0.0000113  | <0.000007  | 0.0000411  | 0.0000187  |  |  |
| Nickel (dissolved)     | mg/l     | 0.0003                                        | 0.02                        | 9                 | 0.0031        | 0.0088          | 0                     |                                                                     |           |      | 0.0031     | 0.004      | 0.0041     | 0.0045     | 0.0032     | 0.0046     | 0.0088     | 0.0068     | 0.0057     |  |  |
| Selenium (dissolved)   | mg/l     | 0.004                                         | 0.01                        | 9                 | <0.004        | 0.014           | 1                     | TP5204 ES7, 2.5m                                                    |           |      | 0.0062     | 0.0086     | <0.004     | 0.008      | 0.0063     | <0.004     | 0.014      | <0.004     | <0.004     |  |  |
| Vanadium (dissolved)   | mg/l     | 0.0017                                        | N/A                         | 9                 | 0.0021        | 0.011           | 0                     |                                                                     |           |      | 0.0061     | 0.0024     | 0.0065     | 0.0033     | 0.0054     | 0.0064     | 0.0021     | 0.0073     | 0.011      |  |  |
| Zinc (dissolved)       | mg/l     | 0.0004                                        | 3                           | 9                 | 0.0042        | 0.042           | 0                     |                                                                     |           |      | 0.0052     | 0.0054     | 0.0042     | 0.042      | 0.0045     | 0.017      | 0.015      | 0.012      | 0.042      |  |  |
| Magnesium (dissolved)  | mg/l     | 0.005                                         | N/A                         | 9                 | 1.9           | 23              | 0                     |                                                                     |           |      | 3.2        | 3.5        | 1.9        | 5.8        | 1.9        | 1.9        | 23         | 2.5        | 2.4        |  |  |

## Appendix D. CAT-Waste results



|              |           |
|--------------|-----------|
| Site Name    | Hillhouse |
| Location     | Hillhouse |
| Site ID      | 5186546   |
| Job Number   | 5186546   |
| Date         | 5/26/2022 |
| User Name    | Redacted  |
| Company Name | Atkins    |

| Hole ID    | Sample Depth | Hazardous Waste Y/N | HP1 | HP2 | HP3 | HP4 | HP5 | HP6 | HP7 | HP8 | HP9 | HP10 | HP11 | HP12 | HP13 | HP14 | HP15 | HP16 |
|------------|--------------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|
| TP5209 ES1 | 0.25         | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5208 ES4 | 1.2          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5207 ES7 | 2.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5206 ES1 | 0.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5205 ES4 | 1.5          | Y                   | No  | No  | No  | No  | No  | No  | Yes | No  | No  | No   | Yes  | No   | No   | No   | No   | No   |
| TP5198     | 2.5          | Y                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | Yes  | No   | No   |
| TP5194     | 0.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5195     | 1.5          | Y                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | Yes  | No   | No   |
| TP5193     | 0.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5196     | 1.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5197     | 0.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5192     | 1.4          | Y                   | No  | No  | No  | No  | No  | No  | Yes | No  | No  | No   | Yes  | No   | No   | Yes  | No   | No   |
| TP5204 ES7 | 2.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5203 ES1 | 0.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5201 ES7 | 2.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5199 ES4 | 1.5          | Y                   | No  | No  | No  | No  | No  | No  | Yes | No  | No  | No   | Yes  | No   | No   | No   | No   | No   |
| TP5202 ES1 | 0.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5200 ES1 | 0.5          | Y                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | Yes  | No   | No   |
| TP5204 ES7 | 2.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5203 ES1 | 0.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5201 ES7 | 2.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5199 ES4 | 1.5          | Y                   | No  | No  | No  | No  | No  | No  | Yes | No  | No  | No   | Yes  | No   | No   | No   | No   | No   |
| TP5202 ES1 | 0.5          | N                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | No   | No   | No   |
| TP5200 ES1 | 0.5          | Y                   | No  | No  | No  | No  | No  | No  | No  | No  | No  | No   | No   | No   | No   | Yes  | No   | No   |