14. Water Resources

Appendix 14.1 Flood Risk Assessment

BURO HAPPOLD

Mayfield Phase 1b

Appendix 14.1 Flood Risk Assessment Addendum

0062001

18 December 2024

Revision P01

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Glossary

Term	Definition
FRA	Flood Risk Assessment
SRF	Strategic Regeneration Framework
EA	Environment Agency
LLFA	Lead Local Flood Authority
SFRA	Strategic Flood Risk Assessment
CC	Climate Change
PPG	Planning Practice Guidance
NPPF	National Planning Policy Framework

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1 Executive Summary

This Flood Risk Assessment (FRA) Addendum has been prepared by Buro Happold for the Mayfield Phase 1b proposed mixed use development. This Addendum is intended to be read in conjunction with the Site Wide and Phase 1 FRA dated September 2019.

The purpose of this Addendum is to provide additional detail to supplement the Site Wide FRA. This includes updates on relevant policies and guidance, planning context and changes to the wider Mayfield site, as well as a detailed appraisal of flood risk to the proposed development incorporating updated hydraulic modelling.

The key findings of this Addendum are summarised in the table below.

Subject		Findings
Site Description		The site comprises an area of ~17,000m^2 in the southeast of the Mayfield Strategic Regeneration Framework area. The site is bound by Hoyle Street to the east, the A635 to the south, and Mayfield Park to the north. The River Medlock passes through the centre of Mayfield Park, to the north of the site. At its closest, the river is just 5m from the site boundary. The site, and the adjacent plot to the west, are currently undeveloped brownfield sites.
Proposed Development		Mayfield Phase 1b forms the first residential phase of development as part of the wider regeneration priority area. The proposed development comprises two development plots providing accommodation in four buildings as well as ground floor frontage for commercial space, residential amenity areas, public realm and plant / back of house facilities. Regrading of the plot and landscaped public realm is also proposed.
Flood Risk	**Fluvial and Tidal**	The site is not at tidal flood risk. The Environment Agency fluvial flood mapping indicates that a small area of the site is within Flood Zones 2 and 3, corresponding to an annual exceedance probability of 0.1% – 1% and >1% respectively. The Mayfield As-Built Hydraulic model which represents the recent changes to the River Medlock following the completion of Mayfield Park is considered to be the most up-to-date hydraulic model, as confirmed with the EA. This version of the model has been used to define the baseline fluvial flood risk, which indicates that the majority of the site is at a low risk of flooding, and would now be classified as Flood Zone 1 (less than 0.1% annual probability, >1,000yr return period). Proposed finished floor levels have also been assessed against modelled flood levels. Overall, the site is assessed to be at low fluvial flood risk.
	Ground Water	As in the 2019 Site Wide FRA, the site is considered to be at low risk of groundwater flooding.
	Surface Water	The EA Surface Water Flood Risk Mapping indicates the risk of localised flooding (ponding) in and around the River Medlock. The mapping shows a small area at medium flood risk (greater than 1% AEP, 100yr return period) and the remainder of the site is at low or very low risk. The proposed surface water drainage strategy uses a range of blue-green infrastructure, including tree pits, rain gardens and larger attenuation basins to control surface water runoff and reduce it to greenfield rates. This exceeds the requirements of the LLFA. Foul water will be discharged to the existing combined sewer under Hoyle Street. The site is considered to be at a low risk of surface water flooding.
	Artificial Sources and Reservoirs	As in the 2019 Site Wide FRA, the site is considered to be at low risk of flooding from artificial sources, including reservoirs.
Residual Flood Risk		Assessment of the flood risk in the current condition, after the development of Mayfield Park and modifications to the River Medlock indicates that the site is at low risk of flooding, and therefore no flood risk mitigation measures are proposed as part of the Phase 1b development. Residual flood risk will be managed with the Flood Warning and Evacuation plan.

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Subject	Findings
Conclusion	Accounting for the recent development of Mayfield Park and naturalisation of the River Medlock, the risk of flooding is assessed to be low for all sources of flooding. The proposed development is assessed to have no adverse impacts to flood risk in the surrounding area.

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2 Introduction

2.1 Background

Mayfield Phase 1b is the first residential phase of development as part of the wider 'Mayfield Strategic Regeneration Framework' area (SRF). Following the endorsement of the SRF by Manchester City Council in 2018, planning applications were submitted in 2019 related to Phase 1a, Mayfield Park, the multi-storey car park and the Poulton. A site wide FRA covering the entire 2018 SRF site was submitted as part of this, and planning permission was granted in 2020.

This Flood Risk Assessment (FRA) Addendum relates specifically to the proposed Mayfield Phase 1b site development and forms part of the full planning application for the site. This FRA Addendum is to be read in conjunction with the Site Wide and Phase 1 FRA Rev. 00, dated September 2019, herein referred to as the '2019 Site Wide FRA'.

This FRA Addendum has been prepared to provide detail on proposed development at Phase 1b. This Addendum also provides updates on hydraulic modelling, planning conditions and changes to relevant policies and guidance which have occurred since the 2019 Site Wide FRA. This Addendum also provides an assessment of flood risk specific to the Phase 1b site and proposed development. Unless discussed in this Addendum, all information remains as in the original submission.

2.2 Site Wide Updates

Since the submission of the 2019 Site Wide FRA, there have been a range of changes to the wider site. Mayfield Park has been constructed, including the deculverting of the River Medlock to create a naturalised open channel. This channel, and the new bridges constructed over it, will form the centre of the new Mayfield neighbourhood. These works to the river have also had a significant positive impact on flood risk to the wider site, as described in the 2019 Site Wide FRA and confirmed by as-built hydraulic modelling. Planning applications were also submitted in 2019 and approved in 2020 relating to the Poulton, multi-storey car park and the Republic, but these sites are not yet under construction. These updates are further detailed in Sections 4.2 and 5.1.

2.3 Site Description

The Mayfield Phase 1b site comprises an area of ~17,000m^2 in the southeast of the Mayfield SRF area. The site is bound by Hoyle Street to the east, the A635 to the south, and Mayfield Park to the north. The River Medlock passes through the centre of the park, at its closest, 5m from the site boundary. The site, and the adjacent plot to the west, are currently undeveloped brownfield sites. This can be seen in Figure 2—1.

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Figure 2—1 Site location, including SRF boundary.

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3 Proposed Development

At the time that the 2019 Site Wide FRA was written, detail on the proposed developments at Phase 1b was not yet developed; therefore, was not included in the Site Wide application. The Phase 1b site was first identified as a location for residential development in the 2018 SRF, and this proposal has since been developed. The proposed buildings are situated on plots J and K, which occupy the area originally identified as plots J, K and L in the 2019 Site Wide FRA.

The proposed development consists of site remediation and reprofiling followed by the erection of two residential blocks (Use Class C3) comprising 879 no. residential units contained within 4 buildings ranging from 7 storeys to 24 storeys in height (Plot J) and 9 to 28 storeys in height (Plot K), including ground and first floor commercial spaces comprising restaurant and / or retail units (Use Class E(B) and / or E(a)), and / or indoor sports facilities (Use Class F2) together with highways works, access, servicing, rooftop plant, cycle parking and back of house, along with delivery of associated public realm and other associated works for each relevant phase. The two plots comprising four buildings can be seen in Figure 3—1. A copy of key general arrangement drawings can be found in Appendix B.

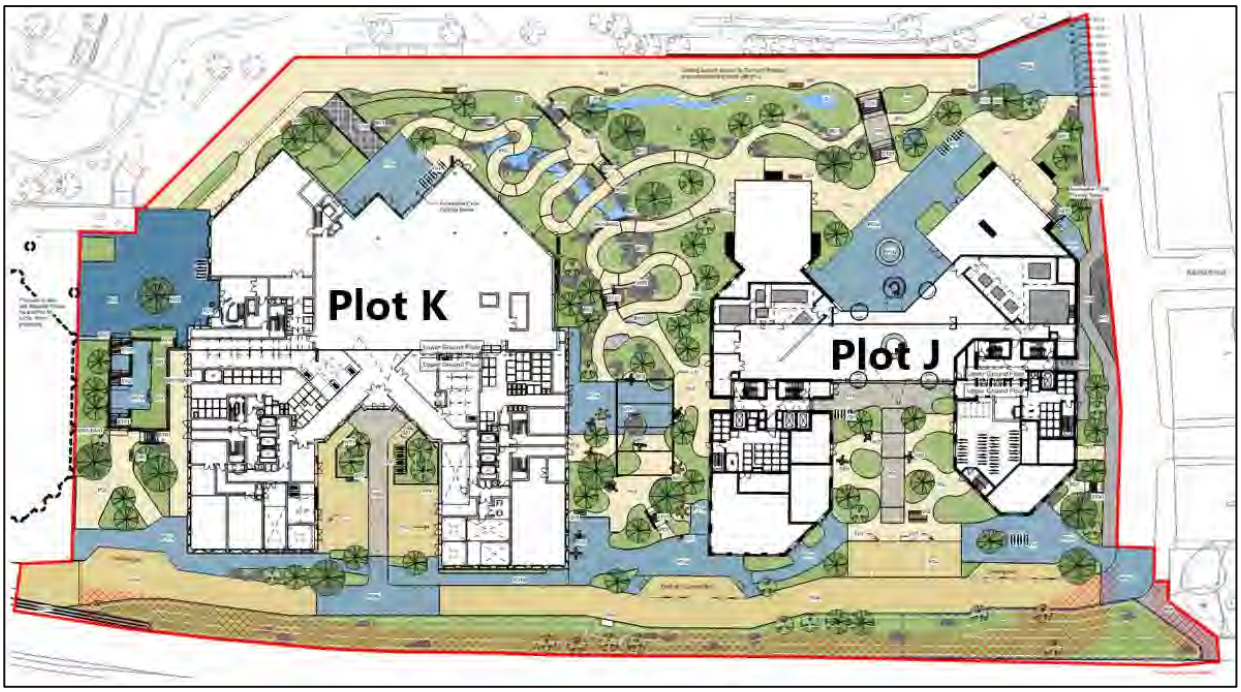


Figure 3—1 Landscaping General Arrangement. Drawing 0198_MAY-SEW-SW1-1000-DR-L-000001.

At the lower ground level, the buildings within Plot K are proposed to comprise a residents lobby, retail / restaurant / café and leisure facilities. The proposed finished floor level (FFL) is 36.17mAOD. Back of house facilities, including refuse areas, a substation, switch room and ancillary/plant rooms are also proposed, at a raised level of 40.5mAOD. The upper ground level is also proposed to contain mixed uses. Residential units are proposed to be provided from Floor 01 onwards, at a level of 46.34mAOD. The proposed general arrangement of the lower ground floor can be seen in Figure 3—2.

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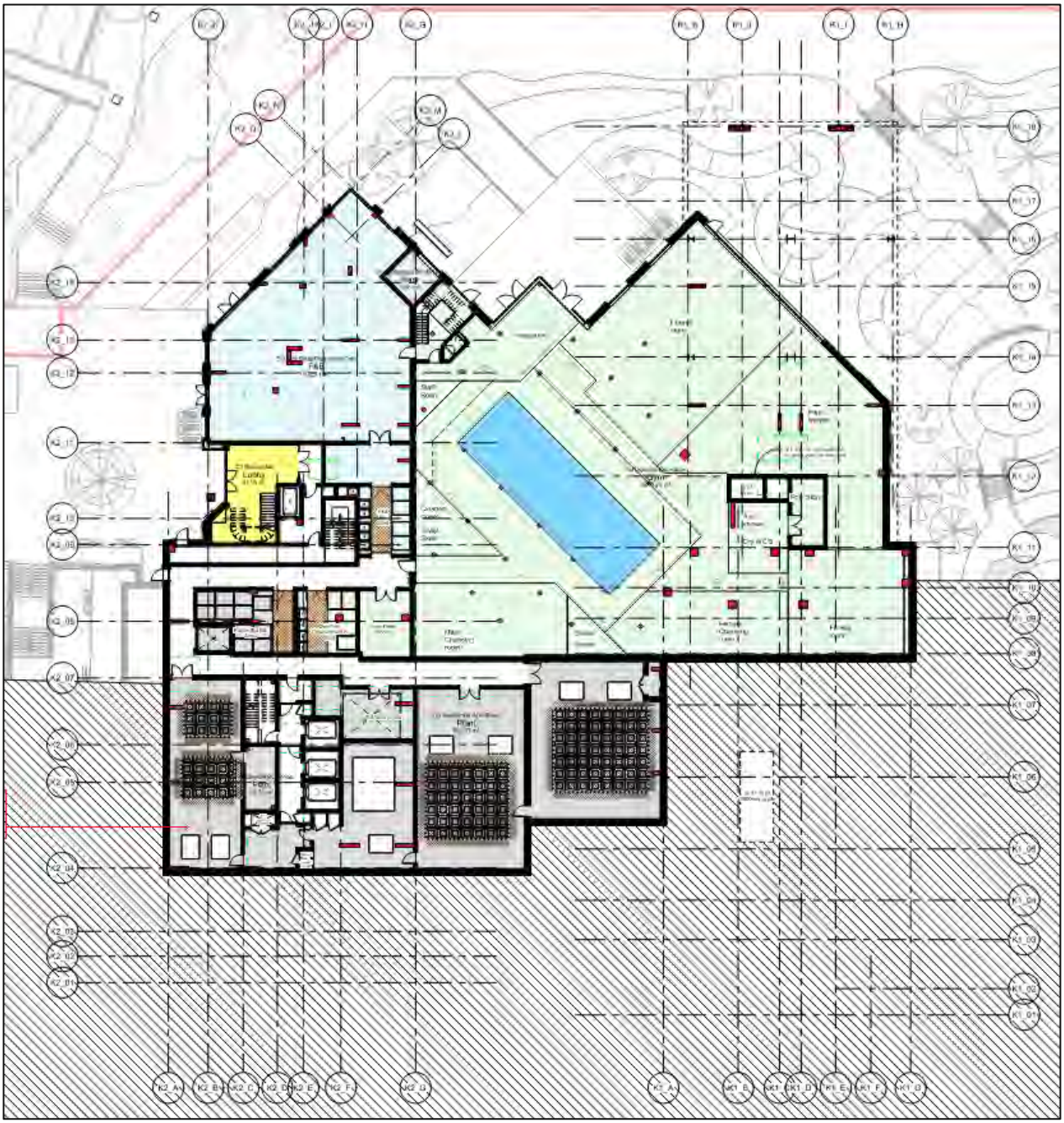


Figure 3—2 Plot K Lower Ground General Arrangement. Drawing 0199_MAY-SEW-K01-100L-DR-A-01099 P05

In Plot J, the lower ground floor is proposed to comprise a glasshouse garden, commercial space and a range of back of house facilities, including refuse areas, a substation, switch room and ancillary/plant rooms. The proposed finished floor level (FFL) is 38.0mAOD. The upper ground level is also proposed to contain mixed uses including commercial, back of house facilities and cycle storage. Residential units are proposed to be provided from Floor 01 onwards, at a level of 48.0mAOD. The proposed general arrangement of the lower ground floor can be seen in Figure 3—3.

A summary of the vulnerability classification and finished floor level of the proposed buildings is given in Table 3—1.

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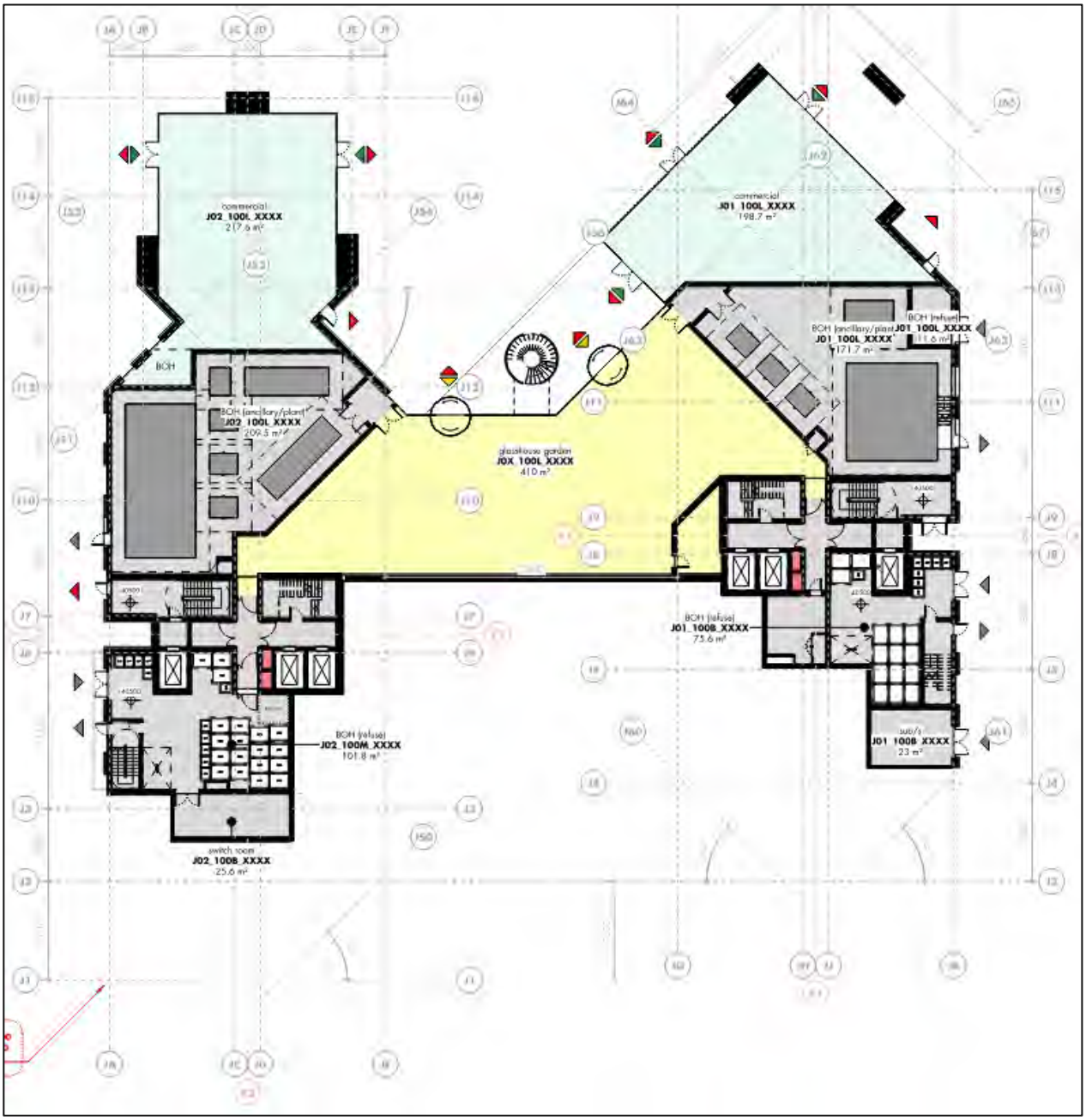


Figure 3—3 Plot J Lower Ground General Arrangement. Drawing 0200_MAY-SKM-J0X-100L-DR-A-039096_P01.5

In all proposed buildings, the lower and upper ground floors are designed to provide Low Vulnerability land uses, such as retail, restaurant, café, commercial or leisure space. Where More Vulnerable uses are proposed, such as residential dwellings and plant, these are positioned on higher floors or at higher elevations. This is discussed further in Section 5.1.2.

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Table 3—1 Summary of flood risk vulnerability classifications and finished floor levels of proposed development

Plot	Floor	Proposed Use	Vulnerability Classification	Finished Floor Level
J	Lower Ground	Glasshouse garden, commercial space, back of house facilities including refuse areas, a substation, switch room and ancillary/plant rooms.	Less Vulnerable	39.00 mAOD (Plant at 40.5 mAOD)
	Upper Ground	Foyer, commercial, retail / restaurant / café space, cycle storage, and back of house facilities including an office, refuse areas, substations, switch room and ancillary/plant rooms.	Less Vulnerable	From 43.00 mAOD
	1 - 24	Residential apartments, external and internal amenity space	More Vulnerable	48.3 mAOD
K	Lower Ground	Residents lobby, retail / restaurant / café and leisure facilities, plant rooms.	Less Vulnerable	36.17 mAOD
	Upper Ground	Residents lobby, commercial, retail, plant, cycle store, leisure and concierge offices.	Less Vulnerable	40.5 mAOD
	1 - 27	Residential.	More Vulnerable	46.34 mAOD

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4 Planning Context

4.1 Updates to Policies and Guidance

National Planning Policy Framework and Planning Practice Guidance

There have been no updates to the National Planning Policy Framework since the submission of the 2019 Site Wide FRA.

The Flood Risk and Coastal Change Planning Practice Guidance (PPG) was updated in August 2022. The main changes are summarised as follows:

- Guidance on the Sequential and Exception Tests have been updated;
- The definition of the design flood (for fluvial, tidal and surface water flooding), including the impact of climate change and the definition of development lifetime have been updated;
- Guidance on change of use, flood mitigation, off-site impacts and safe access and egress has been updated;
- The definition of a functional floodplain (Flood Zone 3b) and residual risks has been updated;
- Clearer requirements for Sustainable Drainage Systems (SuDS); and
- Increased promotion of Natural Flood Management (NFM) in new developments.

Climate Change

The EA's guidance on climate change was most recently updated in May 2022. Since the 2019 Site Wide FRA was written, there have been updates to both peak river flow allowances and peak rainfall allowances. These updates reflect the UKCP19 projections and define climate change allowances based on regional management catchments instead of a constant allowance applied at a national scale. The allowances adopted in this Addendum are indicated with bold text in Table 4—1 and
Table 4—2.

Table 4—1 Comparison of peak river flow allowance between 2019 Site Wide FRA and this 2024 Phase 1b FRA Addendum, for the 2080 epoch.

Document	Guidance Date, Site Region / Catchment	Central	Higher	Upper
2019 Site Wide FRA	2019 North West River Basin	30%	35%	70%
2024 Phase 1b FRA Addendum	2022 Irwell Management Catchment	**35%**	46%	75%

Table 4—2 Comparison of peak rainfall allowances for 2016 to 2125 for the 1% AEP event

Document	Guidance Date, Site Region / Catchment	Central	Upper
2019 Site Wide FRA	2019 National	20%	40%
2024 Phase 1b FRA Addendum	2022 Irwell Management Catchment	30%	**45%**

This updated guidance means that allowances for both peak rainfall and peak river flow have increased compared to the 2019 Site Wide FRA. The design flood event is therefore the 1 in 100 year event, with a 35% peak river flow

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allowance to account for the potential impact of climate change. The implications of this update are discussed in Section 5.

There have been no updates to any other guidance or policies referenced in the 2019 Site Wide FRA.

4.2 Planning Conditions

The planning permissions granted in 2020 were implemented through the discharge of pre-commencement conditions. A range of conditions related specifically to flood risk, and have been discharged prior to the commencement of Phase 1b.

124972/FO/2019 Condition 22

Since the submission of the 2019 Site Wide FRA, Buro Happold has carried out detailed hydraulic modelling of the development of Mayfield Park to support the discharge of Condition 22 of planning application in May 2021 (ref. 124972/FO/2019). Four iterations of hydraulic model have been developed, representing the various stages of development of Mayfield Park. These expand on the modelling completed for the 2019 Site Wide FRA by ultimately representing the as-built condition of Mayfield Park ('2022 Mayfield Park As-Built Model Update' Rev. 00 dated 06/05/2022). This model, and all other iterations, has been approved by the Environment Agency.

124972/FO/2019 Condition 10

In 2021, the phasing of the development of Mayfield Park was incorporated into the hydraulic model build for the site through the creation of multiple models representing enabling works, design and as-built phases. This phasing was submitted to the EA in 2021 (dated 20/04/2021), and supported the discharge of Condition 10 in May 2021.

124972/FO/2019 Condition 19

A Flood Warning and Evacuation Plan (FWEP) for Mayfield Park was developed In 2022 to support the discharge of Condition 19. The FWEP covers Mayfield Park only, as this is the only area of the SRF area within the 1 in 100 year +35% climate change event flood extent, based on the EA approved hydraulic modelling.

124972/FO/2019 Condition 66

Consultation with the EA in 2021 enabled the development of the detailed design for the restoration of the River Medlock. This allowed Condition 66 to be discharged in 2021.

4.3 Flood Risk Vulnerability

The proposed use of plots J and K is residential, with commercial and leisure units at the ground floor. The remaining area within Phase 1b will be reprofiled into amenity open space (soft and hardscaped). According to the NPPF, buildings used for shops, professional services, restaurants, cafes and leisure are classified as Less Vulnerable. Residential buildings are classified as More Vulnerable. Public realm is classified as Water Compatible. These classifications can be found in Appendix A.

4.4 Flood Zone Compatibility

For each Flood Zone and vulnerability classification, NPPF categorises where development is appropriate and whether the Exception Test is required. The categorisation guidance can be found in Appendix A.

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According to the EA Flood Map for Planning, the proposed development is located within Flood Zones 1, 2 and 3, as can be seen in Figure 4—1. However, 2023 hydraulic modelling of the as-built condition of Mayfield Park shows that the plot areas are no longer within the area at risk of flooding in a 1 in 100 year +35% event. This model has been approved by the EA and is therefore considered as the baseline for this assessment. It should be noted that the EA Flood Map for Planning has not yet been updated to reflect the recently completed Mayfield Park works. Refer to Section 5.1 for further details.

As part of the residential Plot K is indicated as located within Flood Zones 3 in the current Flood Map for Planning, the Exception Test is required. Therefore, whilst the site is no longer considered to be at high risk of flooding, the Sequential and Exception Test have been provided below for completeness.



Figure 4—1 Flood Map for Planning showing flood zones, with building plot locations indicated.

4.5 The Sequential Test

The Sequential Test is a tool used to direct new development to areas with the lowest risk of flooding. It ensures that sites at little or no risk of flooding are developed in preference to areas at higher risk. If there are no suitable sites at lower risk, the test requires that the development demonstrate that there are no reasonable alternative locations and that it can be made safe without increasing flood risk elsewhere. This approach aims to avoid inappropriate development in flood-prone areas and to manage residual risks.

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The proposed development forms a key part of the Strategic Regeneration Framework for Mayfield, endorsed by Manchester City Council. The SRF has specifically targeted this site as it is an area that is well connected to the city where the development of a new neighbourhood will provide significant socio-economic benefits. Phase 1b, which comprises one of the key residential aspects of the Mayfield development, has been positioned such that the building plots are far as possible from the river and Flood Zone 3. Therefore, it is not possible for the development to be located in a preferable alternative location and it is considered to pass the Sequential Test.

4.6 The Exception Test

The Exception Test is applied when a proposed development of specific flood risk vulnerability classifications must be located in areas of high flood risk. As aspects of the proposed development are classified as more vulnerable under the flood risk vulnerability classifications, and is located partially within Flood Zone 3, it is subject to the Exception Test. For the Exception Test to be passed, two conditions must be met:

1. The development must provide wider sustainability benefits that outweigh the flood risk; and,
2. The development must be safe for its lifetime without increasing flood risk elsewhere, and where possible, decrease overall flood risk.

This test ensures that even in higher flood risk areas, developments are justified and resilient.

The proposed development forms a key part of the Strategic Regeneration Framework planned for Mayfield, delivering 879 residential units as well as public amenity space and commercial units. Both the residential and commercial units are key to creating a new neighbourhood that provides the positive socio-economic impact that underpins of the vision of the 2018 SRF. The proposed development also provides new frontage to the recently developed Mayfield Park, further increasing the size of amenity open space, and providing further biodiversity benefits. For these reasons, condition 1 is considered to be met.

The proposed development provides water compatible public realm in the areas at the greatest risk of flooding. Finished floor levels and the positioning of buildings has been designed to minimise the risk of Low Vulnerability and More Vulnerable assets flooding. Hydraulic modelling of the updated Mayfield Park and River Medlock indicates that the building plots are at low risk of flooding. The proposed development is not occupying any area within the floodplain, and does not proposed to impede the natural flow of the River Medlock in any way. Therefore the risk of flooding to the surrounding area is not considered to be affected by the development. For further details, refer to Section 5.1.2. For these reasons, condition 2 is considered to be met.

4.7 Consultations

Prior to the submission of the 2019 Site Wide FRA, extensive consultations with the EA and LLFA took place. Refer to the 2019 Site Wide FRA for further detail. The EA have been consulted throughout the build of updated hydraulic models, providing approval to the as-built model in 2022, allowing planning Condition 22 to be discharged. The EA have accepted the '2023 Wildscape As-Built' model as the most representative of current site conditions, and, provided that the Mayfield site is not materially modified as a result of a third party, agree that it is the most appropriate for use in planning proposals.

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5 Appraisal of Flood Risk

5.1 Fluvial Flood Risk

5.1.1 Baseline Fluvial Flood Risk

The Phase 1b site is located, at its closest, just 5m from the banks of the River Medlock. The EA Flood Map for planning indicates that a small area of the site falls within Flood Zone 2 or 3. Flood Zone 3 corresponds to a greater that 1% Annual Exceedance Probability (1 in 100 year) while Flood Zone 2 corresponds to a 1% - 0.1% AEP (between 1 in 100 years and 1 in 1000 years). However, the Flood Map For Planning is based on a 2009 hydraulic model developed by the Environment Agency. This model is now considered to be superseded by more recent hydraulic modelling completed by Buro Happold and approved by the EA, reflecting the as-built condition of Mayfield Park.

The 2019 Site Wide FRA reported that the deculverting and naturalisation of the River Medlock was expected to have a positive impact in decreasing flood risk within the SRF site, and a negligible impact on flood risk to the surrounding area. Since 2019, extensive hydraulic modelling has been completed to represent the various stages of the development of Mayfield Park and the changes to the River Medlock. Hydraulic modelling of the various stages of design and construction has been carried out. Most recently, the 'Wildscape As-Built' Model developed in 2023 reflects as-built levels in Mayfield Park following the completion of the construction phase. The results from this model can be seen in Figure 5—1. This model is considered by the EA to be the most appropriate for informing future Mayfield planning proposals, including Phase 1b, provided that there are no further modifications to the River Medlock. As there have been no changes to the river, and this model is considered to be the most contemporary representation of flood risk to the site, it has therefore been used to assess fluvial flood risk to the development of Phase 1b. This model is considered to provide the best assessment of present-day baseline flood risk to the development.

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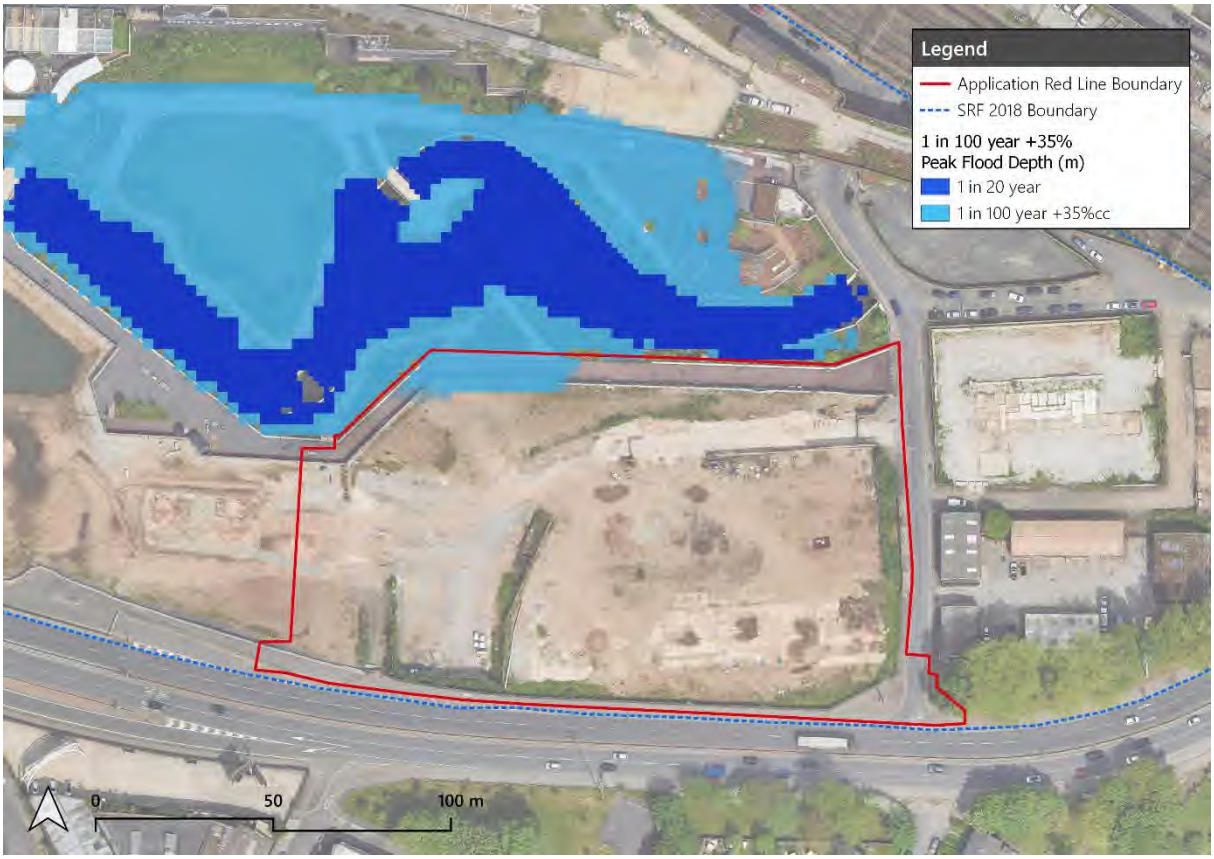


Figure 5—1 2023 'Wildscape As-Built' hydraulic model results, showing flood extents for the 1 in 20 year and 1 in 100 year +35% return period.

5.1.2 Proposed Flood Risk

As described in Section 3, the proposed development has been designed such that the land uses at the lower ground level, closest to the river, are of Low Vulnerability, including commercial space for retail, cafes or restaurants, as well as leisure space. Buro Happold hydraulic modelling indicates that these buildings are not at risk of flooding in the 1 in 100 year +35% climate change event, and that minimum 300mm freeboard is provided between water levels and proposed finished floor levels. Residential units are not proposed until a minimum level of 46.34mAOD.

The results of this model can be seen in Figure 5—2 and Figure 5—3, and maximum flood levels are compared to proposed FFLs in Table 5—1.

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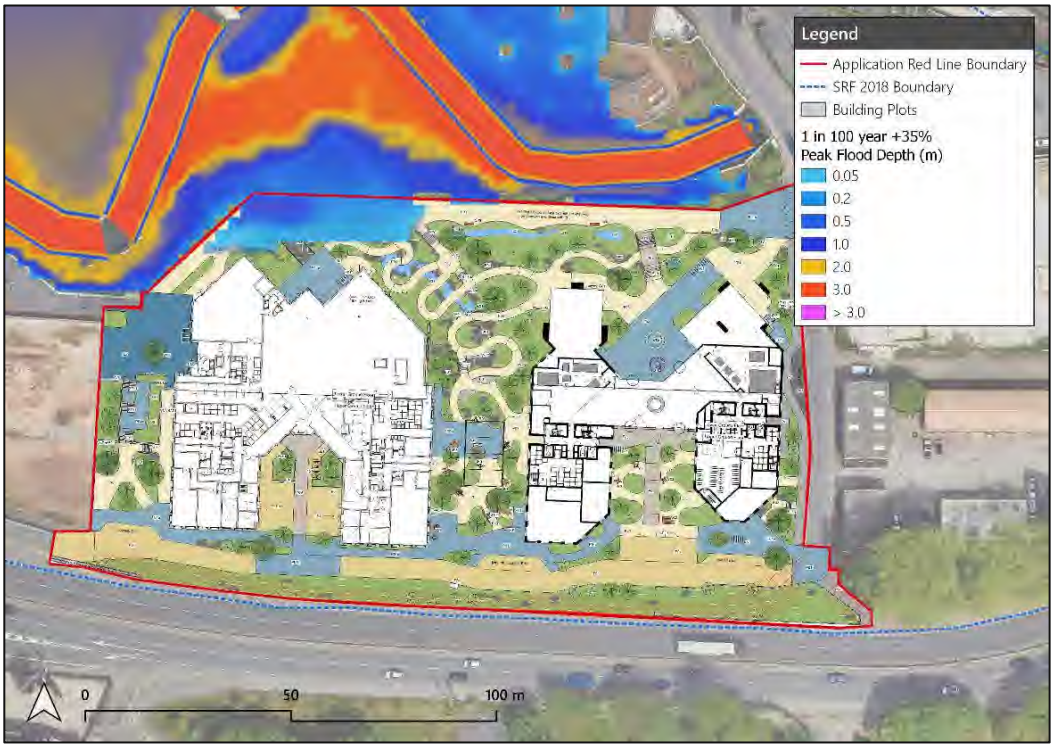


Figure 5—2 Modelled flood depths in 1 in 100 year +35%CC event, overlayed onto proposed general arrangement. Based on Buro Happold 2023 'Wildscape As-Built' hydraulic model and drawing 198_MAY-SEW-SW1-1000-DR-L-000001.

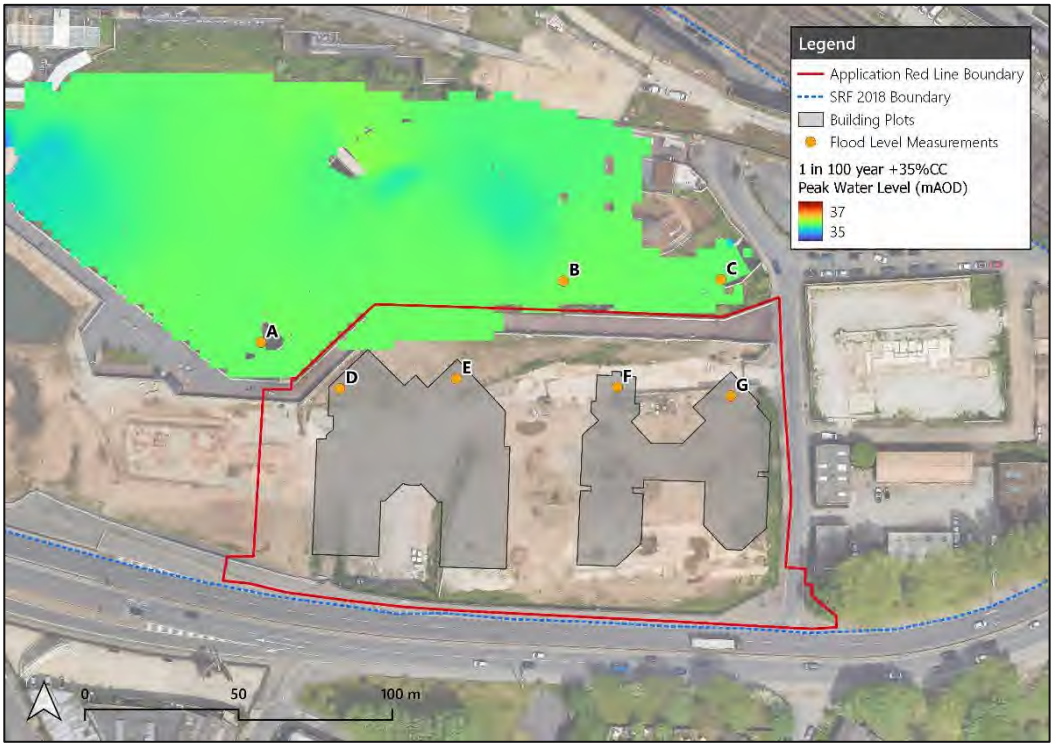


Figure 5—3 Modelled flood depths in 1 in 100 year +35%CC event. Based on Buro Happold 2023 'Wildscape As-Built' hydraulic model.

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Table 5—1 Comparison of modelled 1 in 100 year +35%CC peak water levels and proposed development levels.

Location	1 in 100 year +35% Flood Level (mAOD)	Proposed Lower Ground Floor FFL (mAOD)	Proposed Use / Vulnerability
A	35.85	-	-
B	35.85	-	-
C	35.85	-	-
D	-	36.17	Retail / Café / Restaurant Low Vulnerability
E	-	36.17	Leisure Low Vulnerability
F	-	39.00	Retail / Café / Restaurant Low Vulnerability
G	-	39.00	Retail / Café / Restaurant Low Vulnerability

Comparing these model results to the proposed development levels of the Lower Ground Floor, at least 300mm freeboard above the 1 in 100 year +35% climate change flood level is provided in all locations. The land use of the Lower Ground floor, on both plots, is for Low Vulnerability land uses, further reducing flood risk to the development. Therefore, flood risk to the buildings is considered to be low. The residual risk of flooding is to be managed through the Flood Warning and Evacuation Plan, discussed in Section 6.

As the proposed development is not located within the floodplain of the river, and no modifications which impact the existing flow of the River Medlock are proposed. Planning Condition 3 (ref. 124972/FO/2019), stipulates that, further to those carried out during the construction of Mayfield Park, no changes to site topography within the flood extents of the Medlock are permitted. The development is therefore considered to have a negligible impact on the flood risk to the surrounding area.

It should be noted that due to the close proximity to the River Medlock, further permits, including Flood Risk Activity Permits (FRAPs), may be required after the planning process is complete.

5.2 Surface Water Flood Risk

5.2.1 Baseline Surface Water Flood Risk

Based on EA mapping, most of the site is considered to be at very low risk of flooding (<0.1% AEP). A small area of the site, adjacent to the River Medlock, is considered to be at low or medium risk of surface water flooding (0.1 - 1% AEP and 1 - 3.3% AEP respectively). The areas at risk of surface water flooding follow the topography of the river, indicating that runoff from the site and the surrounding landscape drains to the River Medlock. This can be seen in Figure 5—4.

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Figure 5—4 Flood risk from surface water.

In the baseline condition, the brownfield runoff rate from the site is 263 l/s in the 1 in 100 year +45% climate change event.

5.2.2 Proposed Surface Water Flood Risk

To manage the surface water within the site, a drainage strategy is proposed which includes:

- Attenuation at source of runoff from plot roofs in green and blue-green roofs;
- Rain gardens, tree pits and permeable paving to store runoff in high frequency, low order storm events; and
- A large rain garden/attenuation basin at a downstream location to provide storage for low frequency, high order events.

Conveyance is proposed to be permeable paving, discharging to below ground pipe network. This can be seen in Figure 5—5 and is duplicated in Appendix C.

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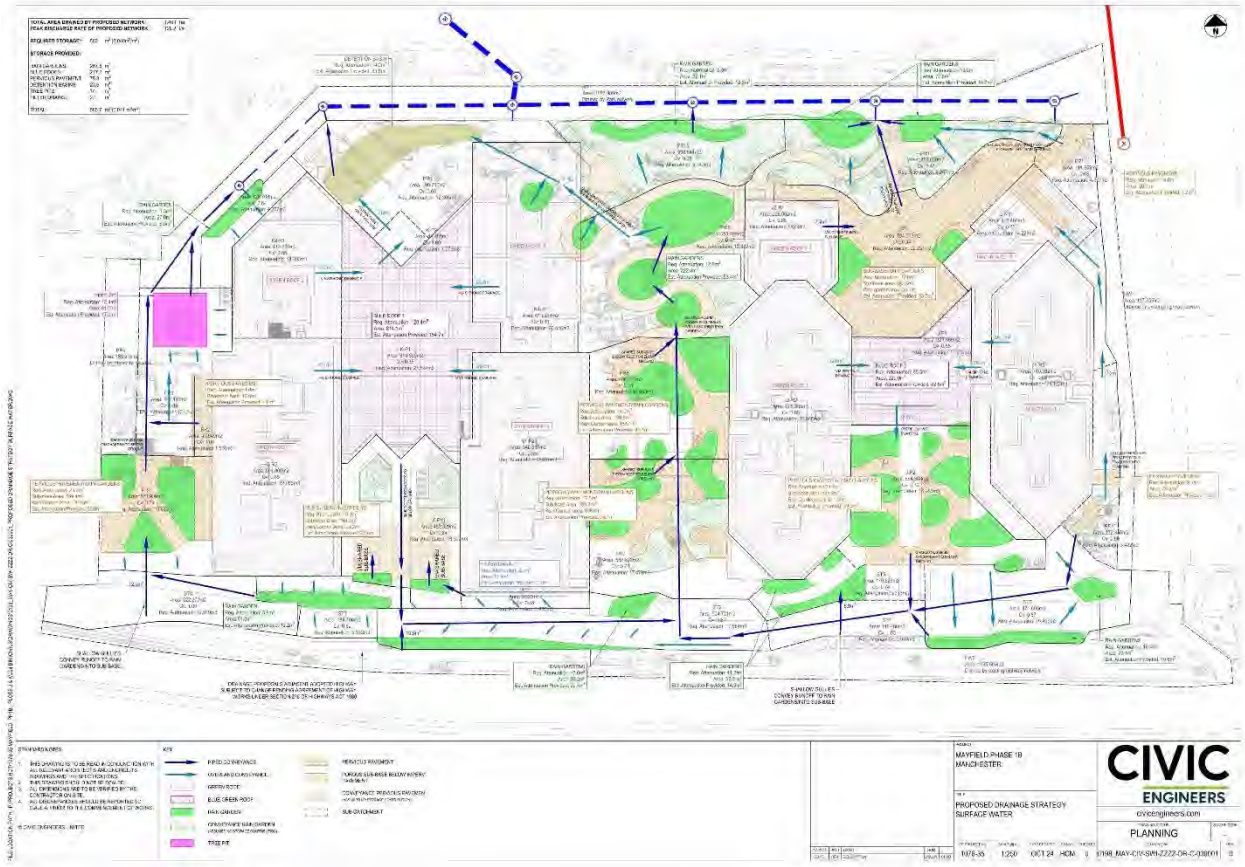


Figure 5—5 Sketch showing proposed drainage strategy.

Through implementation of this drainage strategy, runoff is anticipated to be reduced to 11.38 l/s in the 1 in 1 year and 27.21 l/s in the 1 in 100 year +45% climate change event. This far exceeds the requirement set by the LLFA to reduce runoff to 50% of brownfield rates, plus a reduction of 2l/s/ha, which would require a maximum peak runoff of 128.22l/s in the 1 in 100 year +45% event. With the proposed drainage strategy in place, the risk of flooding from surface water is considered to be low. For further details, refer to the Mayfield Phase 1b Drainage Strategy produced by Civic Engineers.

5.3 Failure of Drainage Infrastructure

5.3.1 Baseline

The site is served by a network of public combined sewers, situated beneath the surrounding roads (Hoyle Street, Mancunian Way) which convey foul and surface water. These sewers are owned and managed by United Utilities. The SFRA shows no recorded incidents of sewer flooding on the site, and the baseline risk of sewer flooding is therefore considered to be low.

5.3.2 Proposed

The proposed foul water drainage will discharge to the United Utilities public sewer network, via a connection to the existing combined sewer within Hoyle Street. The foul water system will be designed to minimise risk of blockage through the use of smooth transitions and frequent inspection chambers, rodding eyes and manholes.

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United Utilities have confirmed no objection to the proposed drainage strategy, in a response to a pre-development enquiry. With the proposed foul water drainage strategy in place, the risk of combined sewer flooding is therefore considered to be low as the Phase 1b development will not increase the risk of surcharging. For further details, refer to the Mayfield Phase 1b Drainage Strategy and drawing 0198_MAY-CIV-SWI-ZZZZ-SK-C-03002.

5.4 Groundwater Flood Risk

As reported in the 2019 Site Wide FRA, the Greater Manchester sub-regional SFRA reports no known instances of groundwater flooding in the Manchester City Council area. The proposed development does not include any below ground development. The risk of groundwater flooding to Mayfield Phase 1b is therefore considered to be low. For further details, refer to the 2019 Site Wide FRA.

5.5 Artificial Sources

The Ashton Canal is the closest artificial water body to the site, passing 500m north of the development. The SFRA identifies that this canal is at some risk of overtopping, however mapping of the overtopping and breach scenarios does not indicate any risk to the site. For further details, refer to the 2019 Site Wide FRA. Therefore, the Mayfield Phase 1b site is considered to be at very low risk of flooding due to artificial sources.

5.6 Reservoir Flooding

EA mapping indicating maximum reservoir flood extents in the event of failure shows a small area of the site at risk of reservoir flooding in the 'wet day' scenario. This can be seen in Figure 5—6. The risk of reservoir failure is considered extremely unlikely due to ongoing management, and the impact of such an event on the site is considered low. Therefore the risk of flooding from reservoirs is considered to be extremely low. For further details, refer to the 2019 Site Wide FRA.

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Figure 5—6 Flood risk from reservoir failure for wet day and dry day scenarios.

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6 Emergency Planning, Safe Access and Egress

The appraisal of flood risk to the proposed development in the current condition, after the development of Mayfield Park and modifications to the River Medlock indicates that the site is at low risk of flooding. Therefore no flood risk mitigation measures are proposed as part of the Phase 1b development. Residual flood risk to residents and users of the public realm and amenity spaces will be managed with the Flood Warning and Evacuation Plan.

A Flood Warning and Evacuation Plan (MAY101-WSB-EXT-BUR-DC-7000-0002, dated 04/03/2022) has been developed by Buro Happold for Mayfield Park. This plan was developed to provide guidance on the flood warning and safe access and egress arrangements in the event of an extreme flood event.

The proposed buildings are outside of the modelled flood extents in the 1 in 100 year +35% event, and users, staff and residents are therefore only considered to be at risk in the event of an exceedance event. To manage the residual risk of an exceedance event, it is recommended that a FWEP for the four proposed buildings is developed, and that the operators of the buildings are subscribed to the EA's flood warning direct alert system. The topography of the site, with levels rising towards the A635 at the south of the site, means that access and egress to all buildings will be possible in the case of an exceedance event. Across both plots, the minimum egress route at the southern side of the buildings is at 40.5mAOD, at least 4.33m above the northern access level, and 4.65m above the modelled 1 in 100 +35% water level. This means that access and egress to the south of the site in the event of an extreme flood event will always be possible. This can be seen in Figure 6—1.



Figure 6—1 Building exit levels and egress routes in the event of an exceedance event.

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7 Conclusions

This Flood Risk Assessment Addendum has been prepared by Buro Happold on behalf of Mayfield Medlock Limited to support the planning application for the proposed mixed-use development of Phase 1b of the Mayfield Strategic Regeneration Framework area. This assessment has provided site-specific detail on the risk of flooding from fluvial, surface water, groundwater, reservoirs and artificial sources. This Addendum is designed to supplement the 2019 Site Wide and Phase 1 FRA (related to planning application 124972/FO/2019), providing additional detail on the proposed development and an updated assessment on the risk of flooding accounting for the recently completed works to Mayfield Park.

A wide range of updates have occurred since the 2019 Site Wide FRA was submitted. These include:

- Updates to guidance and policies, including Planning Practice Guidance and Climate Change Allowances;
- The completion of the Mayfield Park scheme, including works to restore the River Medlock in the wider Mayfield site;
- Extensive hydraulic modelling of the as-built condition of Mayfield park, including updated site levels and river geometry; and
- The discharge of a range of planning conditions related to the Site Wide Planning Application (ref. 124972/FO/2019).

The baseline assessment of flood risk for the site considers these updates and developments.

The EA Flood Map for Planning indicates that the majority of the site falls within Flood Zone 1. A small area of the site falls within Flood Zone 2 and 3, meaning that the risk of fluvial flooding corresponds to 0.1-1%AEP, or >1%AEP, respectively. However, this classification is based on a 2009 EA hydraulic model which is now considered to be superseded by Buro Happold site specific modelling.

This model does not account for recent changes to the River Medlock and Mayfield Park, and therefore the '2023 Wildscapes As-Built' model has been used for this assessment. The changes to the River Medlock have reduced flood risk to the site. The modelled water levels in the 1 in 100 year +35% climate change scenario have been compared to proposed finished floor levels, and 300mm freeboard is provided in all locations. The proposed development has also been designed to provide Low Vulnerability land uses at the ground floor level, with dwellings provided from floor 1 to reduce the risk to residents. Overall, the recent changes to the River Medlock, and subsequent hydraulic modelling provide evidence that fluvial flood risk to the site is low, and therefore the proposed development is not considered to be at risk of flooding in the baseline or proposed scenarios.

The baseline risk of surface water flooding is considered to be very low, with a small area at medium risk adjacent to the River Medlock. It is proposed that surface water runoff is managed through a combination of blue-green infrastructure, including tree pits, rain gardens and larger attenuation basins. This drainage strategy aims to achieve greenfield runoff rates, exceeding the requirements set by the LLFA. Foul water will be discharged to the existing combined sewer under Hoyle Street.

The risk of flooding from groundwater, artificial sources and reservoirs is considered to be very low, as in the 2019 Site Wide FRA.

Overall, whilst the site is shown as being at some risk of flooding in the EA Flood Map for Planning, developments to the Mayfield site mean that in the baseline and proposed scenarios, flood risk from all sources is considered to be low.

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Residual risk is to be managed through a Flood Warning and Evacuation Plan. The proposed development has no material impact on the flow or floodplain of the River Medlock, and is therefore considered to have no impact on offsite fluvial flood risk, and a positive impact on offsite surface water flood risk.

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Appendix A NPPF Technical Guidance Tables 1 and 2

Table A—1 Flood Zone Compatibility

Zone 1 - low probability

Definition

This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).

Appropriate uses

All uses of land are appropriate in this zone.

Flood risk assessment requirements

For development proposals on sites comprising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in a flood risk assessment. This need only be brief unless the factors above or other local considerations require

particular attention.

Policy aims

In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development, and the appropriate application of sustainable drainage systems[2].

Zone 2 - medium probability

Definition

This zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year.

Appropriate uses

Essential infrastructure and the water-compatible, less vulnerable and more vulnerable uses, as set out in table 2, are appropriate in this zone. The highly vulnerable uses are only appropriate in this zone if the Exception Test is passed.

Flood risk assessment requirements

All development proposals in this zone should be accompanied by a flood risk assessment.

Policy aims

In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout and form of the development, and the appropriate application of sustainable drainage systems.

Zone 3a - high probability

Definition

This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

Appropriate uses

The water-compatible and less vulnerable uses of land (table 2) are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable uses and essential infrastructure should only be permitted in this zone if the Exception Test is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.

Flood risk assessment requirements

All development proposals in this zone should be accompanied by a flood risk assessment.

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Policy aims In this zone, developers and local authorities should seek opportunities to: • reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage systems; • relocate existing development to land in zones with a lower probability of flooding; and • create space for flooding to occur by restoring functional floodplain and flood slow pathways and by identifying, allocating and safeguarding open space for flood storage.
Zone 3b - the functional floodplain **Definition** This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. But land which would flood with an annual probability of 1 in 20 (5%) or greater in any year, or is designed to flood in an extreme (0.1%) flood, should provide a starting point for consideration and discussions to identify the functional floodplain. i **Appropriate uses** Only the water-compatible uses and the essential infrastructure listed in table 2 that has to be there should be permitted in this zone. It should be designed and constructed to: • remain operational and safe for users in times of flood; • result in no net loss of floodplain storage; • not impede water flows; and • not increase flood risk elsewhere. Essential infrastructure in this zone should pass the Exception Test. **Flood risk assessment requirements** All development proposals in this zone should be accompanied by a flood risk assessment. **Policy aims** In this zone, developers and local authorities should seek opportunities to: • reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage systems; • relocate existing development to land with a lower probability of flooding.

[2] Sustainable drainage systems cover the whole range of sustainable approaches to surface drainage management. They are designed to control surface water run off close to where it falls and mimic natural drainage as closely as possible.

Table A—2 Flood Risk Vulnerability Classifications

Essential infrastructure • Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. • Wind turbines.
Highly vulnerable • Police stations, ambulance stations and fire stations and command centres and telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use[3] • Installations requiring hazardous substances consent[4] (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon

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capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as "essential infrastructure")[5]
More vulnerable • Hospitals. • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non–residential uses for health services, nurseries and educational establishments. • Landfill and sites used for waste management facilities for hazardous waste6 . • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.[7]
Less vulnerable • Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for shops, financial, professional and other services, restaurants and cafes, hot food takeaways, offices, general industry, • storage and distribution, non–residential institutions not included in "more • vulnerable", and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational during times of flood. • Sewage treatment works (if adequate measures to control pollution and manage sewage during flooding events are in place).
Water-compatible development • Flood control infrastructure. • Water transmission infrastructure and pumping stations. • Sewage transmission infrastructure and pumping stations. • Sand and gravel working. • Docks, marinas and wharves. • Navigation facilities. • Ministry of Defence defence installations. • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation). • Lifeguard and coastguard stations. • Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. • Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

Notes to table 2:

a. This classification is based partly on Department for Environment, Food and Rural Affairs and Environment Agency research on Flood Risks to People (FD2321/TR2)[8] and also on the need of some uses to keep functioning during flooding.
b. Buildings that combine a mixture of uses should be placed into the higher of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity.
c. The impact of a flood on the particular uses identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore, the flood risk management infrastructure and other risk mitigation measures needed to ensure the development is safe may differ between uses within a particular vulnerability classification.

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[3] For any proposal involving a change of use of land to a caravan, camping or chalet site, or to a mobile home site or park home site, the Sequential and Exception Tests should be applied.

[4] See Circular 04/00: Planning controls for hazardous substances (paragraph 18) at: www.communities.gov.uk/publications/planningandbuilding/circularplanningcontrols

[5] In considering any development proposal for such an installation, local planning authorities should have regard to planning policy on pollution in the National Planning Policy Framework.

[6] For definition, see Planning for Sustainable Waste Management: Companion Guide to Planning Policy Statement 10 at www.communities.gov.uk/publications/planningandbuilding/planningsustainable

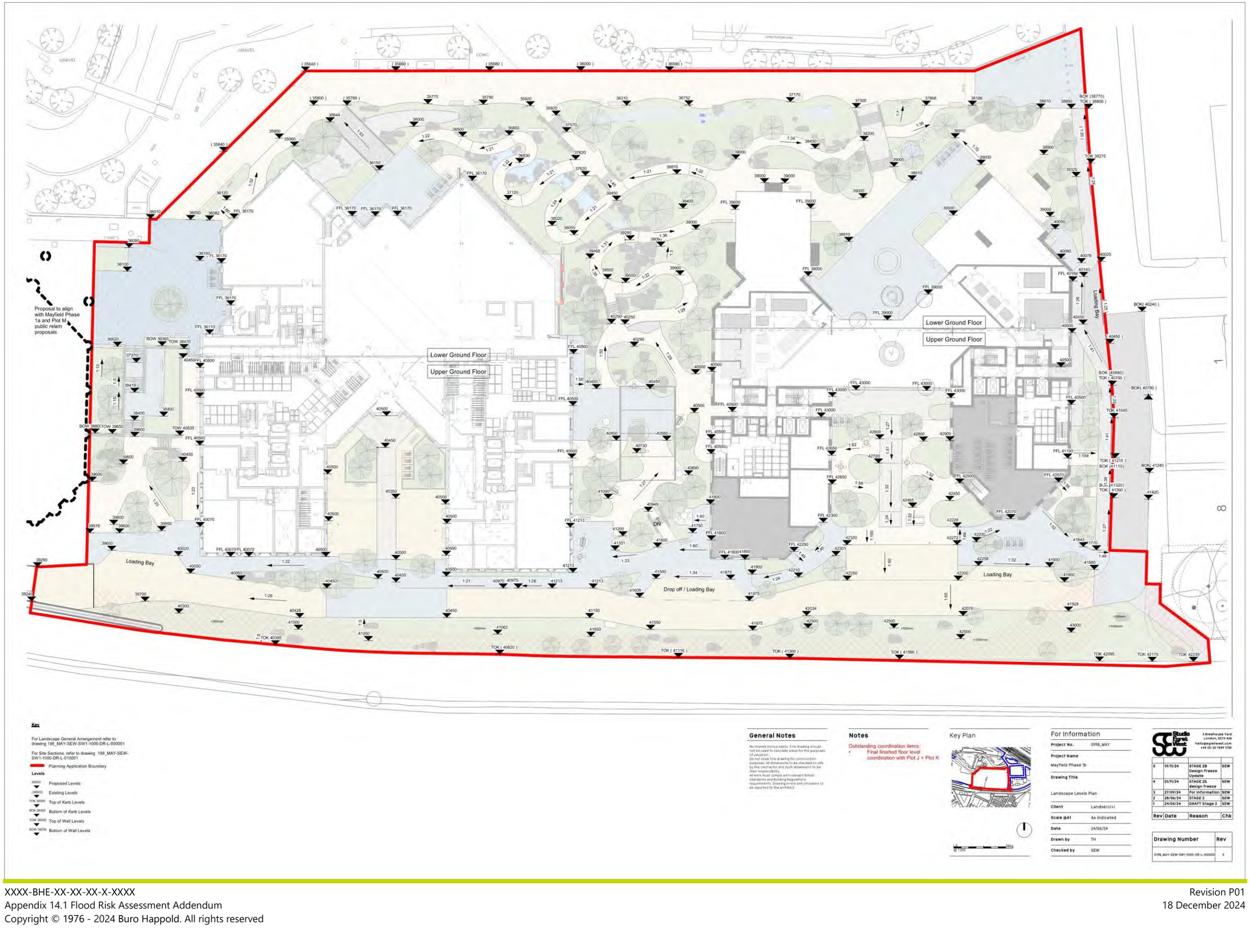
[7] See footnote 3.

[8] See website for further details. www.defra.gov.uk/science/Project_Data/DocumentLibrary/FD2320_3364_TRP.pdf

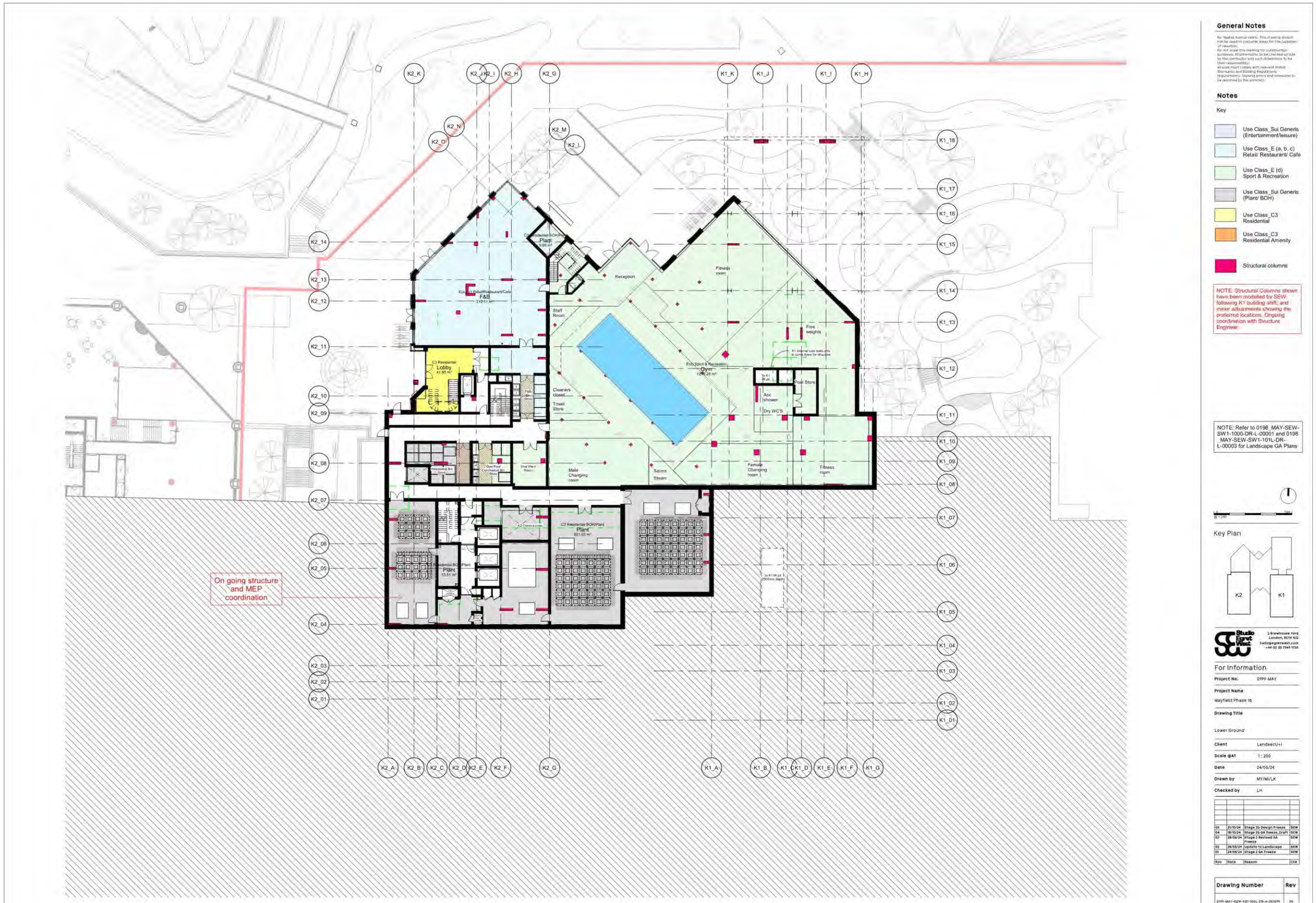
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Appendix B Key General Arrangement Drawings

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Notes

Key

- Use Class_Sui Generis (Entertainment/leisure)
- Use Class_E (a, b, c) Retail/ Restaurant/ Cafe
- Use Class_E (d) Sport & Recreation
- Use Class_Sui Generis (Plant/ BOH)
- Use Class_C3 Residential
- Use Class_C3 Residential Amenity
- Structural columns

NOTE: Structural Columns shown have been modelled by SEW following K1 building shift, and minor adjustments showing the preferred locations. Ongoing coordination with Structure Engineer

NOTE: Refer to 0198_MAY-SEW-SW1-1000-DR-L-00001 and 0198_MAY-SEW-SW1-101L-DR-L-00003 for Landscape GA Plans

@ 1:200

Key Plan

Studio Egret West
3 Brewhouse Yard
London, EC1V 4JQ
hello@egretwest.com
+44 (0) 20 7549 1730

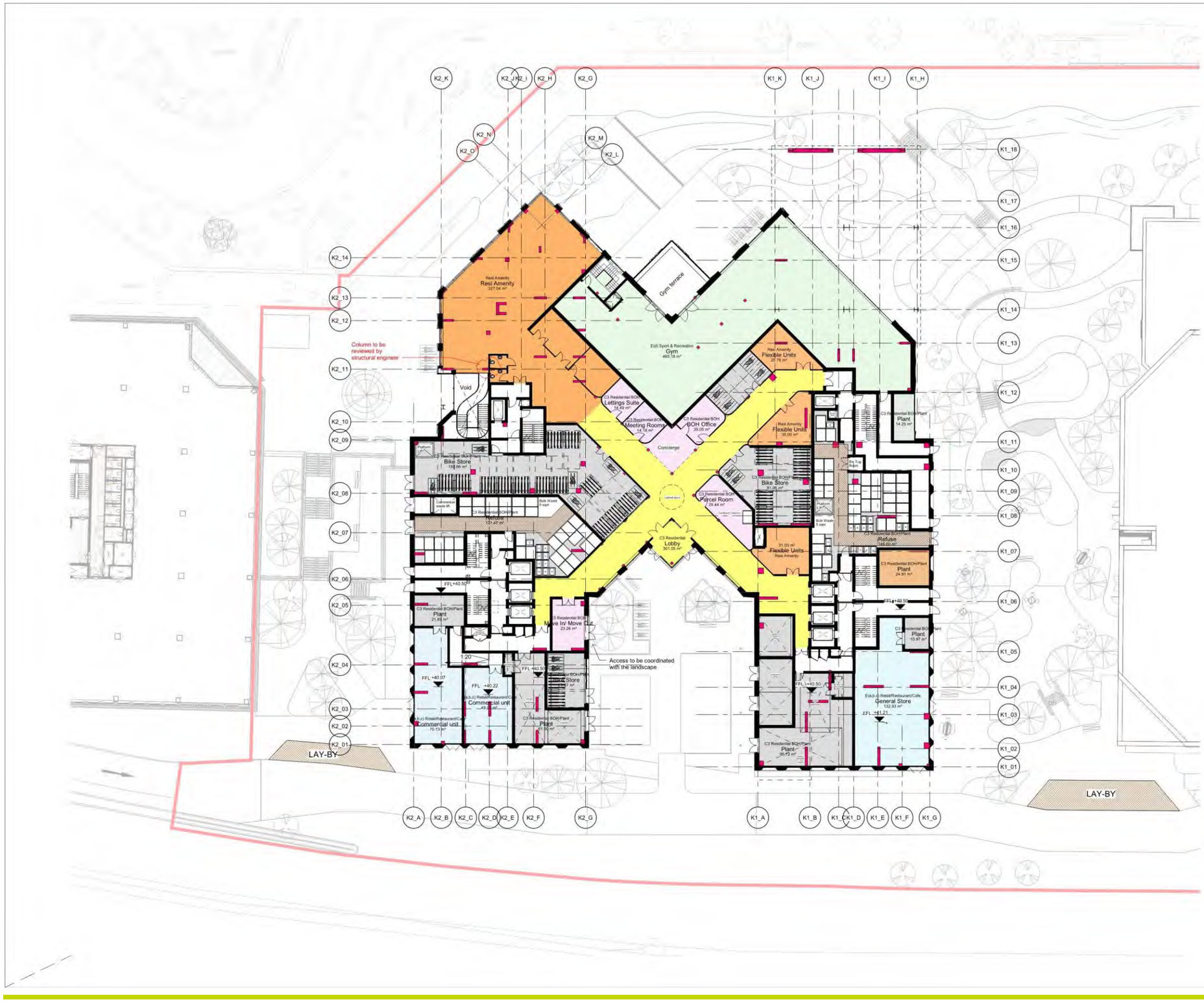
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Drawn by	MY/MI/LK
Checked by	LH

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04	18/10/24	Stage 2b GA freeze_Draft	SEW
03	28/06/24	Stage 2 Revised GA Freeze	SEW
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Drawing Number	Rev
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General Notes

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Notes

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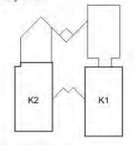
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- Use Class_C3 Residential
- Use Class_C3 Residential Amenity
- Structural columns

NOTE: Structural Columns shown have been modelled by SEW following K1 building shift, and minor adjustments showing the preferred locations. Ongoing coordination with Structure Engineer.

NOTE: Refer to 0198_MAY-SEW-SW1-1000-DR-L-00001 and 0198_MAY-SEW-SW1-1011-DR-L-00003 for Landscape GA Plans

@ 1:500

Key Plan



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3 Brewhouse Yard
London, EC1V 4JQ
hello@egretwest.com
+44 (0) 20 7549 1730

For Information

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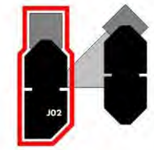
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Drawing Number	Rev
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01 - J02 section a 1 : 200
back reference 039007



notes
• sew work in progress landscape context shown for graphical use only

consultant references
for structure refer to civic engineers drawings + specification
for MEPH refer to arcadis drawings + specifications
for fire performance refer to jensen hughes strategy report
for acoustic refer to wsp drawings + specification
for landscape refer to studio egret west drawings + specification

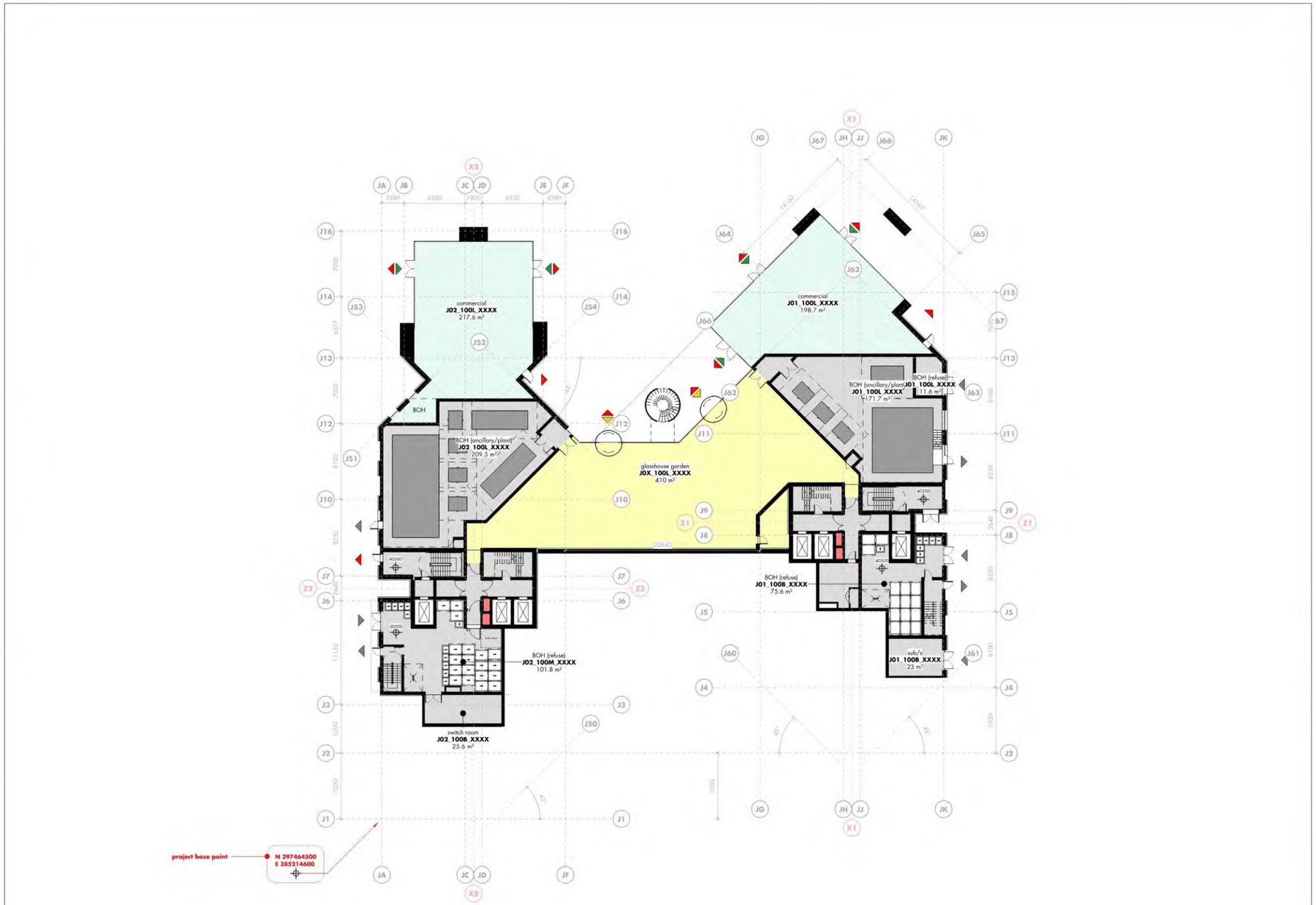
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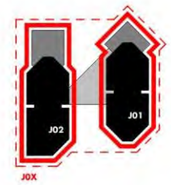
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notes
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consultant references
for structure refer to civic engineers drawings + specification
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P01.04	GA freeze - additional info	08.11.24	JB	HM
P01.03	GA freeze	31.10.24	JB	HM
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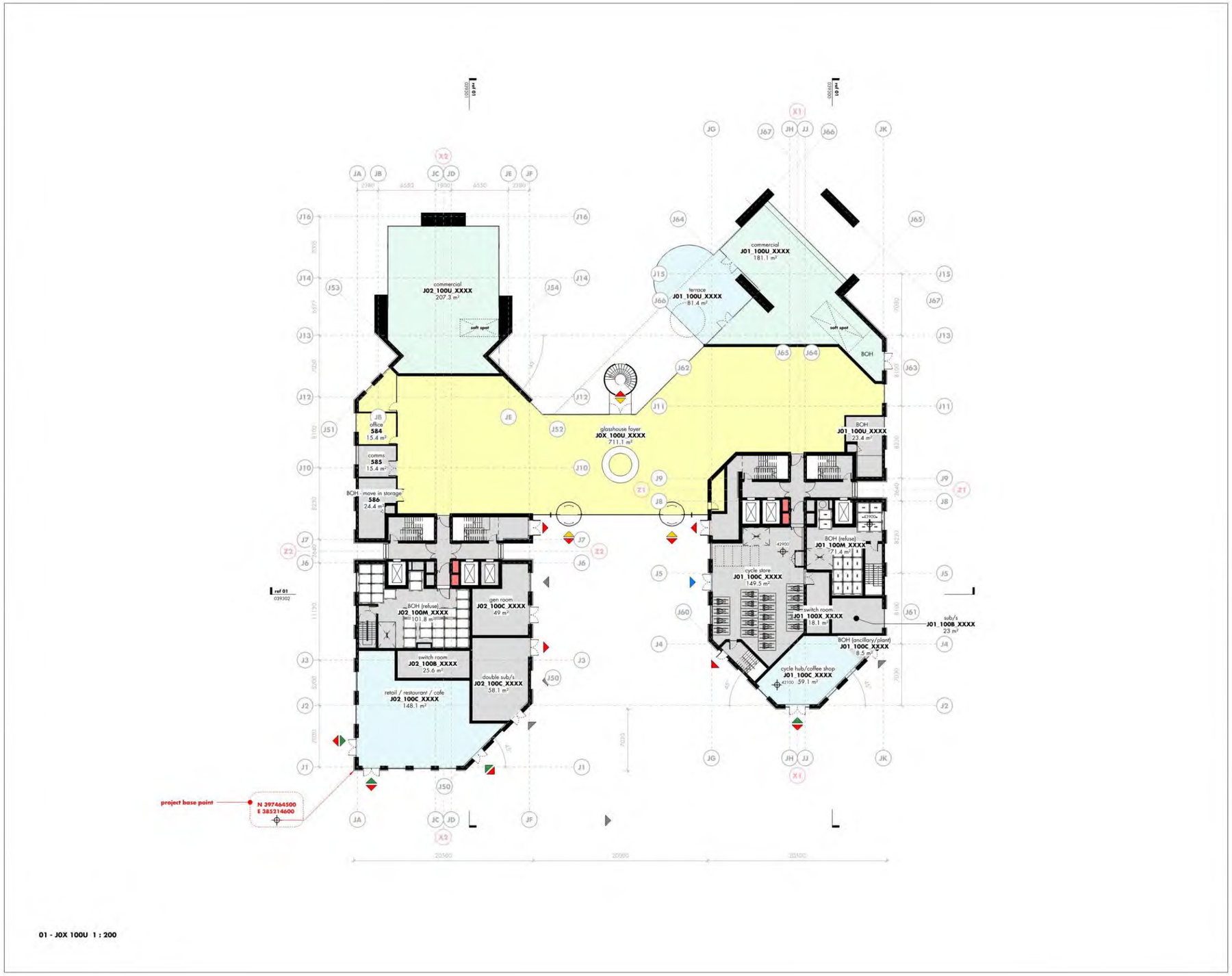
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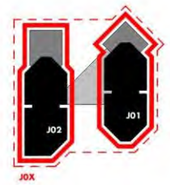
shedkm
+44 (0)151 709 8211
+44 (0)207 253 8881

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notes
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consultant references
for structure refer to civic engineers drawings + specification
for MEPH refer to arcadis drawings + specifications
for fire performance refer to jensen hughes strategy report
for acoustic refer to wsp drawings + specification
for landscape refer to studio egret west drawings + specification

drawing references
SKM GA's
- *plans* 039100s
- *elevations* 039200s
- *sections* 039300s

SKM enlarged GA's
- *plans* 201100s

rev • description	issued • drawn • checked
P01.05 EIA release	18.11.24 JB HM
P01.04 GA freeze - additional info	08.11.24 JB HM
P01.03 GA freeze	31.10.24 JB HM
P01.02 WIP landscape coordination	29.10.24 JB HM
P01.01 EIA early release	17.10.24 JB HM

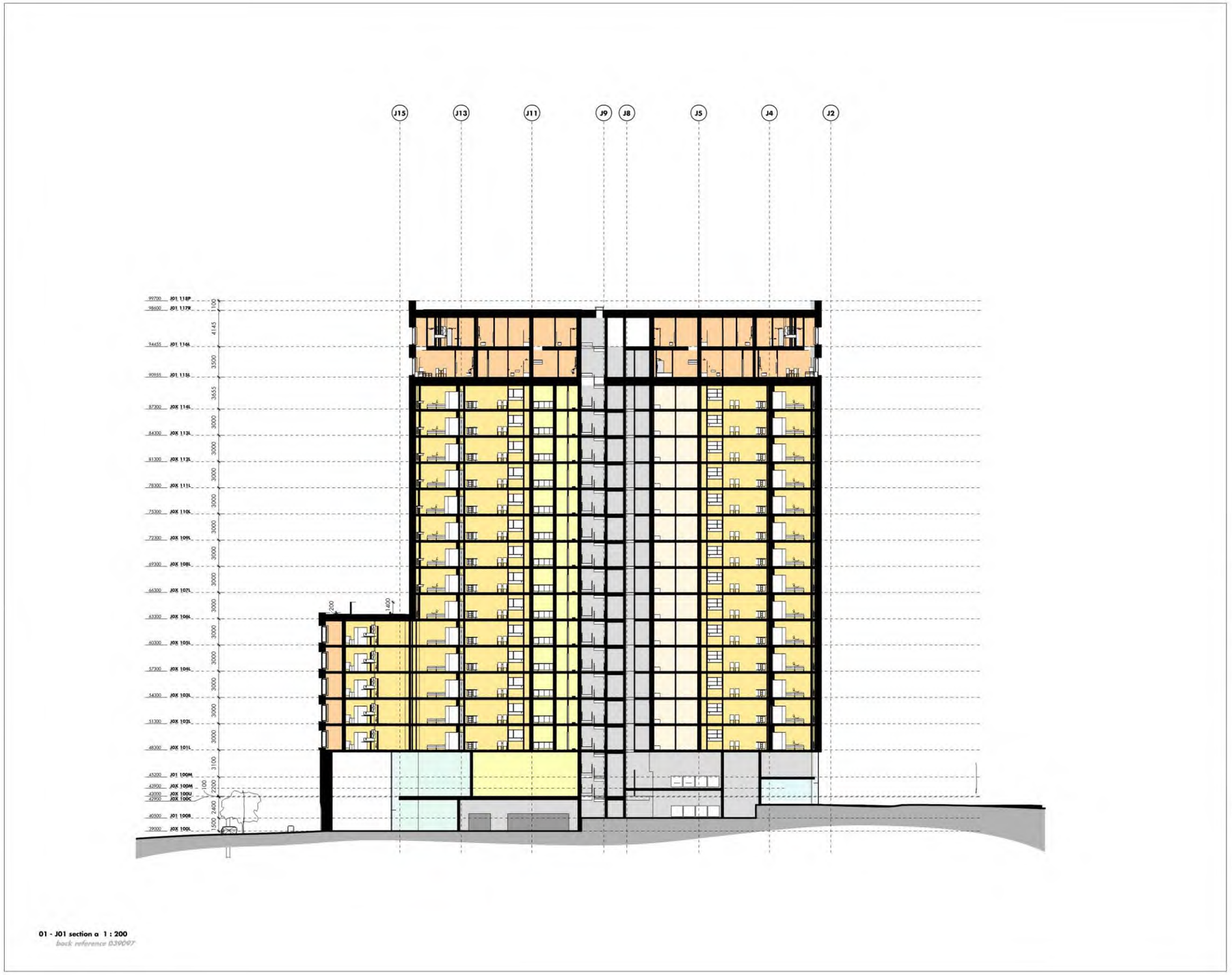
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shedkm +44 (0)151 709 8211 +44 (0)207 253 8881

project	Mayfield Park
shedkm project reference	2325
client	LandsecU+I
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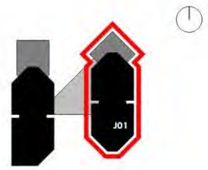
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01 - J01 section a 1 : 200

back reference 039007



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for MEPH refer to arcadis drawings + specifications
for fire performance refer to jensen hughes strategy report
for acoustic refer to wsp drawings + specification
for landscape refer to studio egret west drawings + specification

drawing references
SKM GA's
- *plans* 039100s
- *elevations* 039200s
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SKM enlarged GA's
- *plans* 201100s

rev • description	issued • drawn • checked
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P01.02 GA freeze - additional info	08.11.24 RG HM
P01.01 GA freeze	31.10.24 RG HM

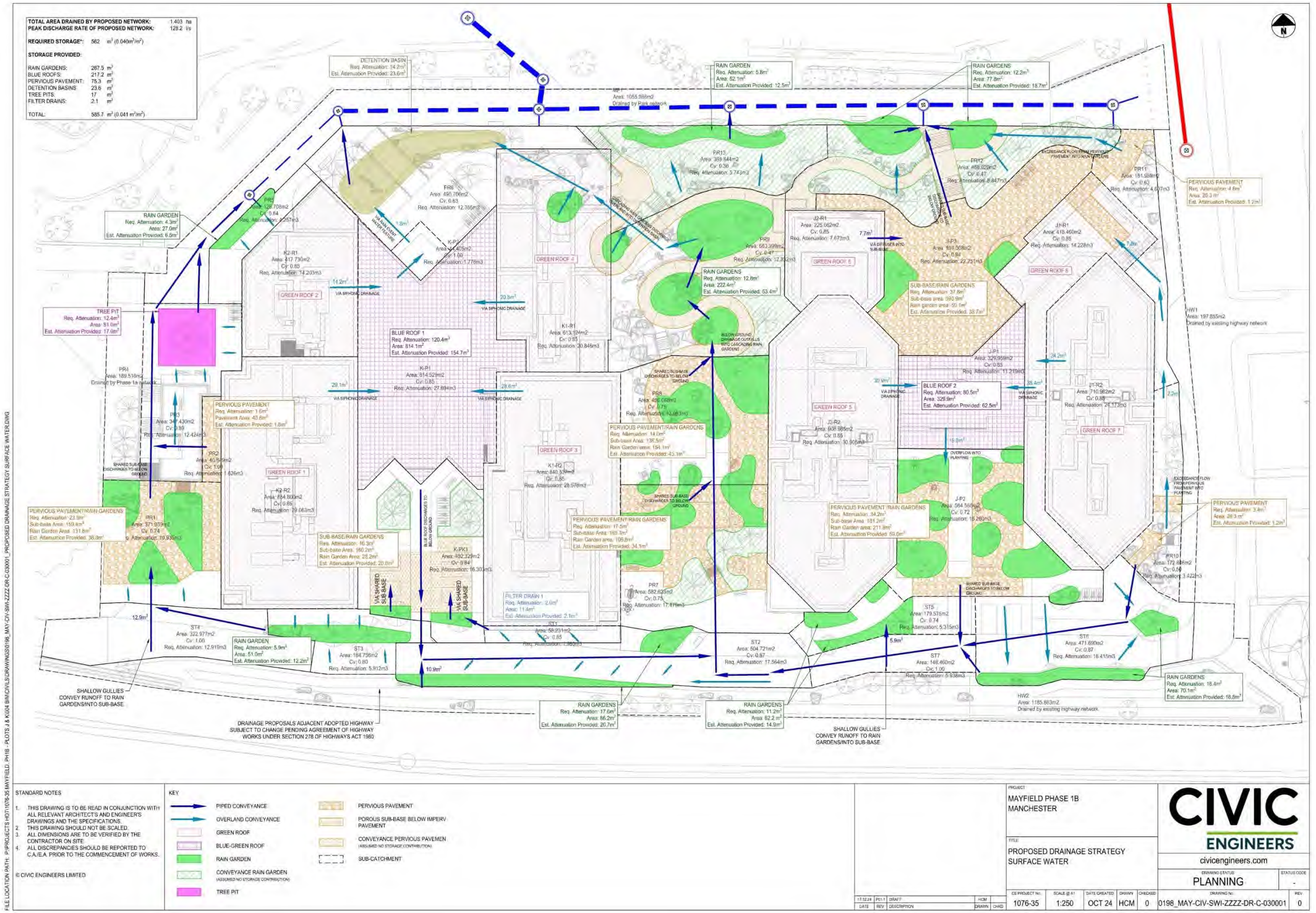
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shedkm project reference	2325
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dwg no.	0200_MAY-SKM-J01-ZZZZ-DR-A-039300_P01.03
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drawing title	J01 section a

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Appendix C Proposed Drainage Strategy

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Katie Lenton
Buro Happold Limited
Camden Mill
Lower Bristol Road
Bath
BA2 3DQ
UK

T: +44 (0)1225 320 600
F: +44 (0)870 787 4148
Email: katie.lenton@burohappold.com

Appendix 14.2 Drainage Strategy

Mayfield Phase 1b

Drainage Strategy

DECEMBER 2024

PREPARED FOR

Mayfield Medlock Limited

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APPENDICES

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Appendix B Supplementary Site Investigation Report
Appendix C Proposed Site Plan
Appendix D Proposed Drainage Drawings
Appendix E Greenfield Runoff Rate and Storage Requirement Calculations
Appendix F Correspondence

Drainage Strategy

Prepared By	Harry Morton / Natalia Lilliu
Reviewed By	Chris Kendrick
Report Reference	0198_MAY-CIV-SWI-XXXX-RP-C-030001
Issued	19/12/2024
Revised	-

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1. Introduction

This Drainage Strategy has been prepared on behalf of Mayfield Medlock Limited (the 'Applicant') to support a full planning application for Phase 1b of the proposed Mayfield Strategic Regeneration Framework (SRF) at land bounded by the Mancunian Way, Mayfield Park, Hoyle Street and Phase 1a of the SRF (the 'Site').

A description of the development is as follows:

> "Phased redevelopment of Mayfield Phase 1b comprising site remediation and reprofiling followed by the erection of two residential blocks (Use Class C3) comprising 879 no. residential units contained within four buildings ranging from 7 storeys to 23 storeys in height (Plot J) and 9 to 28 storeys in height (Plot K), including lower ground and upper ground floor commercial spaces comprising restaurant and / or retail units (Use Class E(b) and/or E(a)), and / or indoor sports facilities (Use Class F2) together with highways works, access, servicing, rooftop plant, cycle parking and back of house, along with delivery of associated public realm and other associated works for each relevant phase."

This report establishes the principles of how surface water runoff and foul water flows from the proposed development will be managed in accordance with current national and regional policy and guidance, for the expected lifetime of the development.

This document is prepared for the exclusive use of Civic Engineers, the Applicant, Lead Local Flood Authority and Local Planning Authority. This statement is based on currently available information held by Civic Engineers and all comments and conclusions contained within are based upon the assumption that the sourced data is reliable. Civic Engineers accepts no liability for any inaccurate conclusions or assumptions resulting from inaccurate information. Proposals contained or forming part of this statement represent the design intent and may be subject to alteration or adjustment in finalising the detailed design for this project.

2. Legislation, Policy and Guidance

2.1. Planning Context

The Phase 1b proposals form the first residential phase of development as part of a wider regeneration priority area. In 2018, Manchester's Executive Committee endorsed the 'Mayfield Strategic Regeneration Framework' ('SRF'), which sets out a clear ambition to guide the redevelopment, re-modelling and refurbishment of the Site within the SRF boundary.

Following the endorsement of the initial SRF by Manchester City Council in 2018, applications were submitted in 2019 and approved in 2020 relating to the Poulton, multi-storey car park, Republic (i.e., Phase 1a) and Mayfield Park. These planning permissions were implemented through the discharge of pre-commencement conditions and physical works being undertaken on site in 2021.

As part of planning application 132255/JO/2021, a Drainage Strategy (document ref. Stage 4 Drainage Strategy, revision P07, hereafter referred to as the 'Phase 1 Drainage Strategy') has been prepared by BuroHappold Engineering and outlines the principles of the proposed drainage network serving the entire Phase 1 development, which includes Mayfield Park, Phase 1a and Phase 1b. Section 3 of the Phase 1 Drainage Strategy lists the following design parameters agreed with Manchester City Council for the Phase 1 drainage network under Discharge of Conditions 10 of planning application 124972/FO/2019 (application for full planning permission for the Poulton, multi-storey car park and Mayfield Park), submitted as part of application CDN/20/0691:

> "
> - Proposed discharge rate is to be restricted to 50% of the existing brownfield runoff rate with 2l/s/ha to be subtracted from this peak 50% discharge rate.
> - Climate change allowance is to be 30%, however, attenuation volumes should also be checked against a 40% allowance.
> - No flooding of buildings occurs in the 1 in 100-year rainfall event plus climate change allowance. Plot designers will need to accommodate all the necessary surface water attenuation within the plot demise. The attenuation will need to be designed to accommodate the 1 in 100-year storm events plus climate change allowance based on a 50% brownfield rate with a further reduction of 2l/s/ha for long-term storage.
> - Surface flooding of open spaces is acceptable for short periods in events over 1 in 30-year return rainfall events.
> - Overland flow routes for extreme events are diverted away from buildings.
> - As the existing site is brownfield the 1 in 100-year, 6-hour rainfall runoff volume shall be constrained to a maximum of the existing brownfield runoff volume for the same event.
> - For surface car parks (>50 spaces) and areas of unusual pollution risk pollution control measures will be provided (likely to be a combination of petrol interceptors and SuDS features where applicable).
>
> "

The scope of this Phase 1b Drainage Strategy is limited to the Phase 1b drainage design and adopts the majority of the above design parameters (including locations of outfalls, indicative catchments and proposed discharge rates) as minimum design criteria. The minimum climate change allowance stated has been amended to align with latest allowances published by the Environment Agency, as discussed in Section 2.3. For further information on the wider development, including the derivation of agreed discharge rates/volumes, details of agreed outfalls and impacts of the development on flood risk; the Phase 1 Drainage Strategy should be consulted.

2.2. Relevant Legislation and Policy

For elements of the proposed drainage design where the parameters agreed as part of CDN/20/0691 do not apply or take precedence, proposals have been developed in accordance with the following legislation and policies:

- National Planning Policy Framework 2024, including the Non-statutory technical standards for sustainable drainage systems 2015 and Environment Agency Standing Advice 2024.
- Flood and Water Management Act 2010.
- Water Resources Act 1991.
- Water Industry Act 1991.
- Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA 2011.
- Manchester Core Strategy 2012, incorporating the Addendum to Manchester Core Strategy 2024.
- Places for Everyone Joint Development Plan for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 to 2039.

2.3. Environment Agency Climate Change Allowances

To account for changes to peak river flow, peak rainfall intensity, sea level rise, offshore wind speed and extreme wave height as a result of climate change, the Environment Agency publishes climate change allowances to enable future flood risk to sites to be assessed and to facilitate resilient design of developments. In May 2022, the Environment Agency significantly updated guidance on the application of peak rainfall allowances. For England, these are now provided for individual management catchments rather than at a national scale.

As a development incorporating residential uses, it is assumed that the development lifetime will be a minimum of 100 years. Latest guidance by the Environment Agency on the use of climate change allowances states:

> "
> Design your development so that for the upper end allowance in the 1% annual exceedance probability event:
> - there is no increase in flood risk elsewhere
> - your development will be safe from surface water flooding
>
> "

The following climate change allowance has been adopted in the design of the surface water drainage system for the proposed development:

> Peak rainfall allowance, 1% AEP event: 45%

3. Development Information

3.1. Existing Site

3.1.1. Location and Description

The Site is located between Mancunian Way (A635) to the south, Mayfield Park and the River Medlock to the north, Phase 1a of the SRF to the west and Hoyle Street to the east. A location plan is provided in Figure 1.



Figure 1. Site location within Manchester, with indicative red line boundary overlaid.

The nearest post code is M12 6HW with the approximate centre of the Site located at National Grid Reference SJ 85206 97495. The red line boundary of the development encompasses an area of approximately 1.664 ha.

Site clearance works were undertaken as part of the Mayfield Park development and the Site is now unoccupied. Prior to these, the Site was a residential development since at least 1851, with industrial units gradually introduced to the location from 1889 onwards. Since 1964, no residential units have existed on the Site, having been replaced by the Hoyle Street Industrial Estate.

3.1.2. Topography

A topographical survey of the Site was conducted by Malcolm Hughes in November 2023 and is provided in drawing 61000/1 in Appendix A.

The site ground levels drop by approximately 5.9m from southeast to northwest. A retaining wall with an approximate maximum height of 2.7m is present near the centre of the Site adjacent an existing electricity substation.

3.1.3. Geology

A desk study was previously carried out for the wider Mayfield Development by BuroHappold Engineering in 2017 (document ref. 035548, revision 0), which included the Site, and has been followed by a ground investigation carried out across the Mayfield Development by ROC Consulting in 2020 (document ref. 4153-ROC-XX-XX-RP-ES-P2SI1, revision R1) and a site-specific Phase 1 Desk Study and Data Review report produced by Civic Earth in November 2023 (document ref. 51001-CE-02-XX-R-G-1001, revision P02).

The information contained within the above investigations has been used as supporting documentation in the preparation of a 'Supplementary Site Investigation Report' produced by Civic Earth in March 2024 (document ref. 51001-CE-02-XX-R-G-1002, revision P01), which summarises the findings of site investigations to date and is provided in Appendix B.

Site investigations found the underlying geology is formed of 0.5 to 4.1m of Made Ground over 0.8 to 2.4m of Glacial Till (slightly sandy, slightly gravelly Clay), over 0.1 to 6.7m of Weathered Chester Sandstone Formation over Chester Sandstone Formation, around 20m below ground level. Illustrative ground profiles for sections taken through Plot J and Plot K are shown in Figure 2 and Figure 3, respectively.

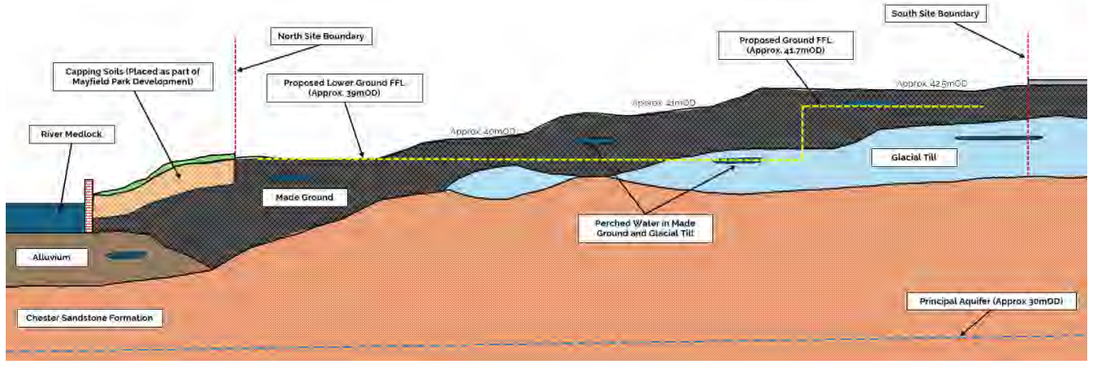


Figure 2. Illustrative ground model cross section for Plot J.

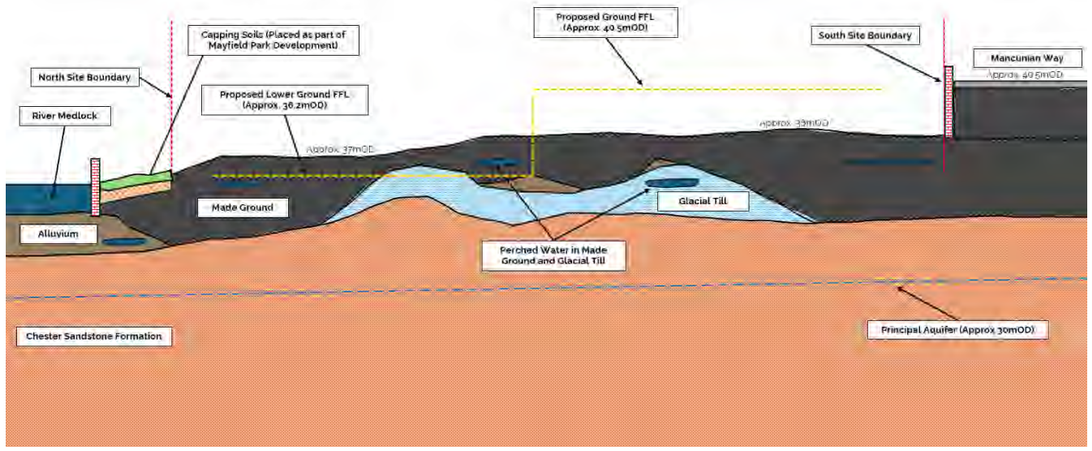


Figure 3. Illustrative ground model cross section for Plot K.

Contamination

Site investigations included the recovery of 40 soil samples (34 from the Made Ground and six from Glacial Till) and eight groundwater samples (three from the perched water table within the Made Ground and five from the principal aquifer) to test for contaminants.

Results from the soil samples showed localised elevated levels of contaminants, alongside a site-wide lower level of contamination within the Made Ground. Asbestos containing material (ACM) was detected in eight of the 34 Made Ground samples. Elevated levels of contaminants were identified in the perched water. No elevated levels of contaminants were identified in the principal aquifer.

A preliminary waste assessment identified three out of 40 samples as “hazardous” with the remaining identified as “non-hazardous". In addition, ACM was detected in eight samples. If disposed of offsite these are expected to go to a non-hazardous waste facility that accepts ACM.

Groundwater

The British Geological Survey /Environment Agency Aquifer Designation Dataset for England and Wales identifies the superficial deposits of Alluvium and Till as secondary undifferentiated aquifers, with the underlying Chester Sandstone Formation designated a principal aquifer. Environment Agency Groundwater Vulnerability maps locate the Site in an area of medium-low groundwater vulnerability.

The site is not located within a Groundwater Source Protection Zone (SPZ) according to the EA’s SPZ dataset.

The River Medlock to the north of the site flows from east to west with local groundwater flow direction anticipated to be northwest, towards the river.

On-site boreholes found groundwater within the sandstone stratum 15 to 20m below ground level corresponding with the principal aquifer. On-site trial pits found groundwater 2 to 3m below ground level within the Made Ground/ Glacial Till. This is likely to be perched water situated on top of the Till stratum.

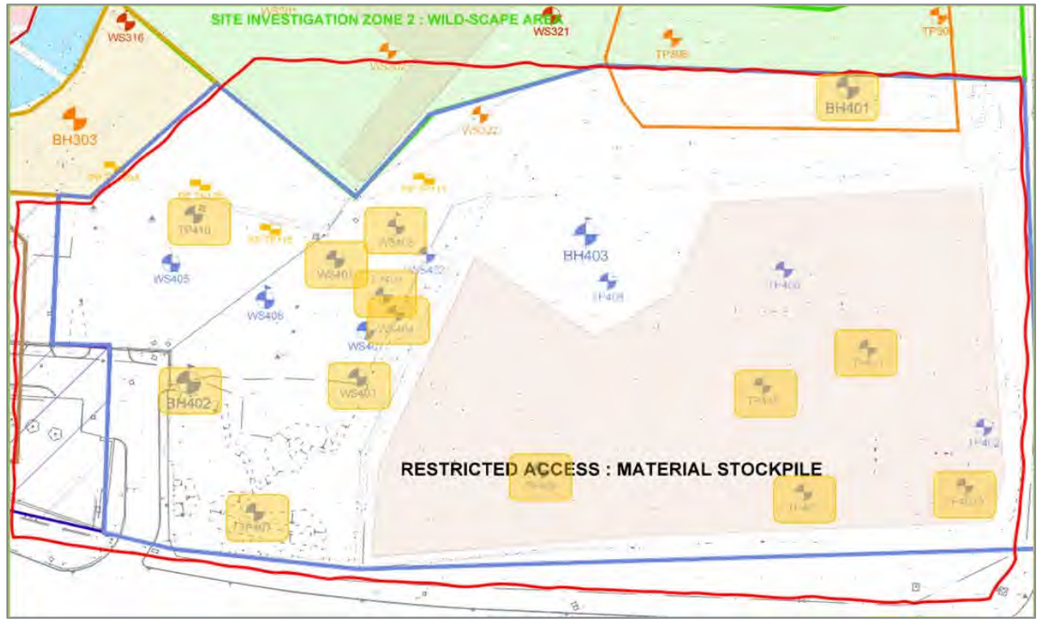


Figure 4. Summary of locations where soil contamination was identified by Civic Earth

3.1.4. Flood Risk

An addendum to the Flood Risk Assessment (FRA) submitted as part of planning application 124972/FO/2019 has been produced by BuroHappold Engineering for the current planning application and provides additional detail to supplement the previous FRA in the context of the latest development proposals. This document should be referred to in conjunction with the original FRA (document ref. Site Wide and Phase 1 Flood Risk Assessment, rev. 00) for information on the risk of flooding across the Site.

Whilst the current Flood Map for Planning shows a small portion of the Site lies within Flood Zones 2 and 3, a hydraulic model which represents the recent changes to the River Medlock as part of the Mayfield Park development indicates that that the entirety of the Site would now lie within Flood Zone 1. The FRA addendum identifies a low risk of flooding from all sources of flooding and anticipates that the proposed development will have no adverse impacts to flood risk in the surrounding area.

3.1.5. Utilities

A number of GPR surveys have been undertaken over the course of the development of the Mayfield SRF. Most recently, a ground penetrating radar (GPR) survey was carried out by Malcolm Hughes Land Surveyors in November 2023 on behalf of BuroHappold Engineering. This includes as-built utilities installed as part of the Mayfield Park works which completed in September 2022. The survey information is shown in drawing 61000-Area1B-UG1-CCTV1, provided in Appendix A.

Generally, the records indicate the majority of services are routed around the perimeter of the site. The existing electricity substation is served by a cluster of HV and LV cabling, which is due to be decommissioned as part of the Phase 1b proposals.

To the south of the site, a combined water sewer is shown on United Utilities’ records running underneath the Mancunian Way. Further surveys of this sewer have since revealed it has been abandoned and filled with concrete, with United Utilities not made aware of these works. It is presumed this was undertaken as an emergency repair after a sinkhole opened up within the Mancunian Way in August 2015. These works are not recorded on current statutory asset records. From information obtained to date, it is understood these works sit beyond the Phase 1b site boundary at a significant depth and are not expected to impact Phase 1b.

3.2. Proposed Development

The application for full planning permission for Phase 1b includes:

- Remediation and reprofiling works for the site to allow for the phased erection of two residential Plots (J and K) comprising Phase 1b.
- The development plots comprise two podium levels to address the site level changes and provide a generous amount of ground floor frontage, comprising commercial space, supporting residential amenity areas that are accessible to the public, and various back of house storage spaces, surrounded by new high quality public realm.
- Above the two storey podium levels, residential blocks will provide accommodation in four buildings providing a mix of 1-, 2- and 3-bedroom units in each. The total number of residential units is circa 879 at the time of writing.
- Plot J comprises two buildings on top of a two-storey podium level, with J1 being part 7 (from lower ground) and part 17 storeys (from upper ground) and J2 being part 10 (from lower ground) and part 23 storeys (from upper ground)
- Plot K comprises two buildings on top of a two-storey lower and upper ground floor, with K1 being part 9, part 28 storeys and K2 being part 11 and part 20 storeys.
- Creation of an at-grade multi-modal access route to the south of the residential blocks that will be traffic calmed to encourage pedestrian flows whilst allowing for a service road to be created, with a buffer zone between this route and the Mancunian Way.

A proposed site plan is provided in drawing 0198_MAY-SEW-SW1-1000-DR-L-000001 in Appendix C.

4. Proposed Surface Water Drainage

The proposed surface water drainage design is to utilise Sustainable Drainage Systems (SuDS) in accordance with the specifications outlined in CIRIA C753 ('The SuDS Manual') as well as best practices defined in other local and national guidance. SuDS incorporate nature-based solutions and aim to mimic natural drainage processes by restricting runoff volumes and rates from developments, encouraging discharge of runoff in line with the natural water cycle (i.e. into waterbodies and aquifers), protecting or enhancing water quality as well as providing increased biodiversity and creating better places to live, work and play, amongst other benefits.

SuDS design is guided by 'four pillars' encompassing these benefits: water quantity, water quality, amenity and biodiversity.

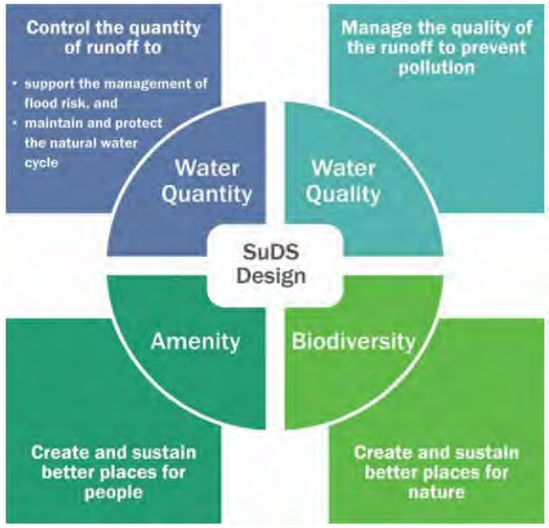


Figure 5. The four pillars of SuDS design (reproduced from Figure 2.1 of CIRIA C753 The SuDS Manual)

In this section, the proposed surface water drainage design is presented in relation to these four pillars.

4.1. Proposed Strategy Overview

The proposed surface water drainage strategy is provided in drawing 0198_MAY-CIV-SWI-ZZZZ-DR-C-030001 in Appendix D.

Runoff generated from plot roofs is to be attenuated at-source in green and green-blue roofs. Surface water flows from other hardstanding is to be conveyed to rain gardens, tree pits and permeable paving. It is intended that each component will restrict flow rates and provide sufficient storage for its incoming catchment for most storm events, with additional attenuation only provided in downstream components for extreme storm events (e.g., a larger rain garden/detention basin located in the north of the site) where the capacity of upstream components is exceeded.

The primary conveyance route from both plots is into nearby permeable sub-bases which discharge into below ground pipework located in the central 'spine' of the development. Rain gardens and permeable paving draining hardstanding also connect into this below ground pipework. Within the central spine, runoff is brought back to the surface, flowing through a series of cascading rain gardens to the site's low point, where it is retained in a small detention basin prior to discharge to the river.

Surface water drains running beneath the footpath abutting the northern edge of Phase 1b, which connect into an outfall into the River Medlock, were installed as part of works to Mayfield Park. The Phase 1b surface water drainage network is to connect into this system as outlined in the Phase 1 Drainage Strategy.

4.2. Water Quantity Design

Designing for water quantity involves controlling how fast surface water is discharged (the peak runoff rate) and how much surface water is discharged (the peak runoff volume) from a site, as well as where this runoff is discharged to. As a result of restricting runoff, it is necessary to provide attenuation within the surface water network so that runoff can be temporarily stored on site.

The minimum design criteria related to this SuDS pillar, based on the requirements outlined in Section 2.1, are presented in Table 1, with further information on the derivation of these values provided in this section.

Table 1. Design criteria based on existing planning permission requirements outlined in Section 2.1.

CRITERIA	VALUE
Rainfall Methodology	FEH22
Positively Drained Area (inc. Permeable Surfaces)	1.403 ha
Peak Runoff Rate	Min. 50% betterment on existing 1 in 1 year brownfield rate minus 2/l/s/ha (128.2 l/s)
Discharge Method	To River Medlock (or via infiltration where feasible)
Rainfall Climate Change Allowance	45%

4.2.1. Point of Discharge

In SuDS designs, runoff should be discharged in a manner that closely matches the natural water cycle, where feasible. This means aiming to discharge water into the ground via infiltration or to surface water bodies instead of direct to sewers. The NPPF 2024 specifies the following hierarchy of drainage options for the way rainfall leaves a development:

1. To the ground (infiltration).
2. To a surface waterbody.
3. To a surface water sewer, highway drain, or another drainage system.
4. To a combined sewer.

The Phase 1 Drainage Strategy outlines the proposed outfalls for the entire Phase 1 development in accordance with the NPPF discharge hierarchy and intends that Phase 1b discharges to the River Medlock via an existing outfall constructed as part of the Mayfield Park development. This connection is to be utilised within current proposals.

Civic Earth's Supplementary Site Investigation Report (see Appendix B) and investigations undertaken as part of Phase 1a indicate there may be a potential to utilise infiltration, particularly where runoff is discharged into the underlying bedrock of Chester Sandstone Formation. However, this will be subject to results of intrusive infiltration testing in proposed locations of infiltration, in addition to the production of a risk assessment to ascertain whether there is an unacceptable risk that existing contamination could be mobilised by runoff and enter sensitive receptors. The current surface water drainage network has been designed on the basis that infiltration will not be feasible until further design information is available.

4.2.2. Runoff Rates

The peak runoff rates permitted from the development have been previously agreed with the Lead Local Flood Authority (LLFA) as part of the Phase 1 Drainage Strategy, as discussed in Section 2.1. This stipulates that proposed discharge rates for plot attenuation shall be restricted to "50% of the existing peak brownfield runoff rate, with 2 l/s/ha subtracted from this 50% peak discharge rate (i.e., 1 in 100 year)". For Phase 1b, this has previously been determined as 138.68 l/s but due to changes in phase boundaries and design assumptions has required revalidation. Based on sketch 0198_MAY-CIV-SWI-ZZZZ-SK-C-030001, a revised rate of 128.22 l/s for the red line boundary was provided by BuroHappold Engineering on 3rd April 2024. This sketch and associated correspondence are provided in Appendix F.

For comparison, greenfield runoff rates have also been determined using the red line boundary with HR Wallingford's 'Greenfield runoff rate estimation for sites' tool, providing the following greenfield runoff rates:

Q_{BAR}: 14.23 l/s

1 in 1 year ($Q_{GF,1}$): 12.38 l/s

1 in 30 year ($Q_{GF,30}$): 24.2 l/s

1 in 100 year ($Q_{GF,100}$): 29.61 l/s

Calculations of these rates are provided in Appendix E.

The proposed surface water drainage network is designed such that the peak discharge rate of runoff into the River Medlock will not exceed 128.22 l/s up to the 1 in 100 year plus 45% climate change storm event.

4.2.3. Attenuation Requirements

Based on the determined runoff rates, the attenuation requirement for the site has been estimated in drainage design software Causeway Flow by modelling the drainage network as a simple tank and flow control arrangement. In this calculation, it is initially assumed that the entire area encompassed by the red line boundary, excluding existing areas of adopted highway and areas drained by the existing Mayfield Park drainage network, forms a contributing area to the drainage system and is fully impermeable, and 600m^3 of storage is deemed to be required. This contributing area is shown on drawing 0198_MAY-CIV-SWI-ZZZZ-DR-C-030003 in Appendix D. Simulation results of the preliminary drainage model are provided in Appendix E.

This value is a nominal figure used to determine an estimate of required attenuation proportional to the incoming catchment area, expressed in m^3/m^2. The m^3/m^2 value is determined by dividing the site-wide storage estimate (600m^3) by the site-wide contributing area (15,130m^2); 0.04 m^3/m^2 is shown to be required across the Site.

The site has then been split into sub-catchments representing different surface typologies, elevations and locations. To determine the storage requirement for each sub-catchment, the m^3/m^2 value is multiplied by the sub-catchment area, then reduced by a factor representing the average C_v (coefficient of runoff) across the sub-catchment to account for the permeability of the area. The C_v values applied for different surfaces are provided in Table 2.

Table 2. Values of coefficient of runoff utilised for various proposed surface typologies within the Site.

SURFACE TYPE	PROPOSED C_V
Hardstanding	1.00
Grass/vegetation	0.25
Green roofs	0.85

The required storage for each sub-catchment is detailed on drawing 0198_MAY-CIV-SWI-ZZZZ-DR-C-030001 (provided in Appendix D). The storage requirements determined at this stage are estimates only and will be refined at a later design stage through hydraulic modelling in drainage design software. SuDS have been sized to exceed the storage requirements of their incoming sub-catchments as far as possible. Where sufficient storage is not deemed to be feasible, runoff will be conveyed downstream via overflows to features with greater storage capacity – runoff volumes conveyed downstream are indicated on the drawing next to arrows indicating conveyance.

In the current strategy, storage is provided in green and green-blue roofs, bioretention systems, pervious pavements, porous sub-bases below impervious pavements, filter drains and SuDS-enabled tree pits. A summary of storage features and parameters used to estimate storage provided is presented in Table 3. Simple sketches of the proposed SuDS features visually demonstrating this information are shown on 0198_MAY-CIV-SWI-ZZZZ-SK-C-031001, provided in Appendix D.

Table 3. Summary of attenuation provision across the Site.

COMPONENT TYPE	INDICATIVE CONSTRUCTION (ELEMENTS CONTRIBUTING TO STORAGE CALCULATIONS HIGHLIGHTED IN BLUE)	APPROX. STORAGE PROVIDED PER UNIT AREA (m^3/m^2)	TOTAL STORAGE PROVIDED IN STRATEGY (m^3)
Green Roof	• Vegetation. • Min. 200mm growing medium. • 40mm drainage board.	Assumed saturated, therefore no storage contribution other than interception storage.	0
Green-Blue Roof	• Vegetation. • Min. 500mm growing medium. • 40mm drainage board. • 200mm attenuation cell.	0.19	217
Pervious Pavement	• Resin bound gravel/paving blocks. • 30mm bedding. • 150mm base. • 150mm sub-base.	0.045	61
Porous Sub-base Below Impervious Pavement	• Resin bound gravel/paving blocks. • 30mm bedding. • 150mm base. • 300mm sub-base.	0.09	14
Rain Garden	• 150mm depression. • 50mm mulch. • 300mm top-/subsoil. • 300mm sub-base.	0.24	268
Tree Pit	• 600mm top-/subsoil. • 200mm sub-base.	0.21	17
Filter Drain	• 150mm topsoil. • 600mm drain surround.	0.18	2
Detention Basin	• 0.2m deep basin formed with 1:4 side slopes.	N/A – bespoke design.	24
TOTAL			603 (0.043 m^3/m^2)

Whilst the peak discharge rate from the system in the 1 in 100 year plus 45% climate change event is designed to be 128.2 l/s, it is anticipated that this could be significantly reduced in the 1 in 1 year and 1 in 30 year events through efficient specification of flow controls throughout the system.

In the preliminary drainage model, an additional tank and flow control arrangement has been modelled to estimate storage requirements where the discharge rate of the network is reduced to Q_{BAR} (14.2 l/s). To achieve this discharge rate, 246m^3 and 544m^3 of attenuation are required in the 1 in 1 year and 1 in 30 year events, respectively, which are both lower than the 602.7m^3 provided across the development within the current drainage strategy. It may therefore be feasible for the proposed surface water drainage system to discharge at Q_{BAR} up to the 1 in 30 year event, subject to confirmation at sub-catchment level, with the discharge rate only increasing to the maximum of 128.2 l/s in more severe storm events.

4.3. Water Quality Design

Designing for water quality involves the specification of SuDS components which adequately cleanse and filter pollutants arising from runoff draining into the system. Runoff from developments is shown to potentially have high levels of suspended solids, copper, zinc, nickel and hydrocarbons which have toxic effects to aquatic life and the general environmental standard of waterbodies.

The approach to providing treatment is closely related to source control. SuDS networks should aim to use interception to prevent runoff from the SuDS system for the first 5mm of rainfall and should direct runoff through SuDS components providing major treatment/filtering up to the 1 in 1 year event.

The primary inlets of the drainage system, i.e. blue/green roofs, rain gardens, tree pits, pervious pavements, are all components that can provide interception storage, subject to confirmation at a later design stage in line with criteria outlined in CIRIA C753, Section 24.8.

A preliminary check of water quality performance has been undertaken at this design stage, based on the CIRIA Simple Index Approach detailed in Section 26.7.1 of CIRIA C753. The pollution hazard level of runoff from the site ranges from very low to low and possesses the hazard indices shown in Table 10. The proposed conveyance routes shown on drawing 0198_MAY-CIV-SWI-ZZZZ-DR-C-030001 show that all runoff is to be conveyed through SuDS components, which have the associated mitigation indices shown in Table 5. As all these components have mitigation indices equal to or exceeding the pollution hazard indices of incoming runoff, the necessary treatment is anticipated to be provided prior to its discharge into the River Medlock.

Table 4. Pollution hazard indices (from Table 26.2 of CIRIA C753)

Pollution Hazard Level	Associated Land Uses	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Very Low	Residential roofs	0.2	0.2	0.05
Low	Commercial roofs, low traffic roads and car parks with infrequent change (< 300 traffic movements per day).	0.3-0.5	0.2-0.4	0.05-0.4

Table 5. SuDS Mitigation indices for discharge to surface waters (from Table 26.3 of CIRIA C753)

SuDS Component	Mitigation Indices		
	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Rain gardens, Blue/Green roofs, Tree pits	0.8	0.8	0.8
Swale	0.5	0.6	0.6
Permeable Pavement	0.7	0.6	0.7
Detention Basin	0.5	0.5	0.6

4.3.1. Spillage Prevention & Management

Spills can contribute to a variety of pollutants to surface water runoff and are often preventable if appropriate practices for chemical and waste handling and spill response are implemented. A spill can be a one-off event, a continuous leak or frequent small spills.

Due to the proposed use of the Site, the risk of spillages is very low. The primary source of pollution is anticipated to be fuel-based spillages relating to vehicles. Whilst the proposed SuDS components are able to provide some mitigation against pollutants, as detailed in Table 5, leaks and spills should be contained promptly, and an appropriate clean-up regime implemented to prevent the conveyance of pollutants into the surface water drainage system and the associated risk of discharge of pollutants into the River Medlock.

4.3.2. Pollution Prevention during Construction

Sediment and hydrocarbons are the major sources of construction site pollution. Before mobilisation, the construction site layout should be planned so to fully consider the locations of stockpiles, fuel stores, storage areas, waste disposal, refuelling points and wash down areas. They should be located in areas least likely to affect waterbodies.

Detailed guidance on prevention of pollution during construction is provided in Masters-Williams et al (2001) and also in the pollution prevention guidelines produced by the EA et al (2012). A number of sources and measures to help prevent pollution are also detailed in CIRIA C753 Section 31.6.2, which have been reproduced in Table 6 and Table 7, overleaf.

The main requirements are to control pollution loads from surface water runoff and pumped water from construction sites to ensure that risks to the environment are minimised. The safe storage of materials and fuels is also important so that if spills occur, they are contained, do not mix with runoff and thus increase pollution risk. Safe storage of materials can be achieved through the use of berms, check ditches or other containment techniques.

Table 6. Sources of sediment pollution during construction and prevention measures, reproduced from CIRIA C753 Section 31.6.2.

SOURCE OF SEDIMENT POLLUTION	DESCRIPTION	PREVENTION MEASURES
Excavated ground and exposed ground	Relatively low velocity runoff can erode the surface when the ground had no vegetation or have been recently disturbed.	• Prevent pollution entering watercourse: Silt fences, hay bales or stilling ponds placed downstream. • Limit runoff reaching exposed ground: runoff diversion or interception devices places upstream.
Stockpiles	Erosion of stored materials depends on the material, find sand and topsoil will be eroded faster than heavy granular materials.	• Should be located away from watercourses or site drainage system. • Protective coverings will help prevent runoff stripping the stockpile.
Plant and wheel washing	Washing takes place in designated locations.	• That location area should be tanked and should not be allowed to discharge into a watercourse. • Some proprietary vehicle washing systems offer a recycling facility, which filters and settles solid. Solid waste materials should be treated as contaminated due to high hydrocarbon content.
Haul roads	Runoff from haul roads contains large amounts of suspended solids and hydrocarbons.	• Should be designed to keep length at a minimum while still serving its purpose and gradient should be shallow to prevent increased runoff velocity, bunds and/or discrete ditches should be constructed to intercept runoff if possible. • Should be sprayed regularly to keep down dust. Hard-surfaced section should be swept regularly to precent dust and mud accumulation.
De-watering operations	Groundwater discharge due to excavation activity is likely to be heavily polluted with suspended solids and should not be discharged directly into a watercourse.	To help reduce the amount of suspended solids within runoff: • Pass discharge over a grass area but velocity must be monitored and kept low to allow for settlement • Pass discharge water through temporary gravel strip. • Control use of skips/tanks to act as stilling basins • Controlled use of stilling ponds.

Table 7. Sources of hydrocarbon pollution during construction and prevention measures, reproduced from CIRIA C753 Section 31.6.2.

SOURCE OF HYDROCARBON POLLUTION	POTENTIAL PROBLEM INITIATORS	PREVENTION MEASURES
Storage tanks	• Leaking valves or pipework or bund • Corrosion • Frost damage • Vandalism	• Checking for signs or wear and tear on tanks • Appropriate maintenance of tanks and bunds • Drip trays • Correct storage facilities • Regular emptying of bunds • Tanks located in secure areas to prevent vandalism
General operation and maintenance	• Removal of waste • Refuelling • Leaking pumps, browsers, generators, plants or machinery • Disposal of waste oil	• Drip trays • Designated areas for refuelling • Care with specific procedures when refuelling • Appropriate maintenance of machinery and plant
Accidents/incidents	• Spillages (greatest risk at refuelling) • Overturning (drums & buckets) • Mechanical failure (e.g. rupture of pipes) • Inadequate bunded area • Vandalism	• Emergency spill kit located next to refuelling area • Appropriate maintenance of tanks, bunds and pipes • Design for adequate bunded area • Tanks located in secure areas to prevent vandalism

4.4. Amenity and Biodiversity Design

The landscaping strategy for the development has been coordinated with the proposed SuDS to provide amenity and biodiversity improvements across the site.

Further details of the amenity and biodiversity benefits provided by the proposed scheme may be found in the Design and Access Statement for the proposed development, however some common benefits provided by SuDS features forming the drainage strategy are provided in Table 8.

Table 8. Adaptation of Table 5.1 of CIRIA C753 ('The SuDS Manual'), detailing pertinent amenity and biodiversity benefits delivered by SuDS.

Category	Examples
Air quality improvements	SuDS using blue and green areas, including grass and trees, provide significant air quality improvements by, for example, trees "scrubbing" fine particulates from urban streets.
Air and building temperature regulation	Green and blue infrastructure buffers and moderates extreme temperatures, which will become increasingly important in future, as the climate changes and cities get hotter.
Biodiversity and ecology	Green and blue SuDS help to support flora and fauna for the benefit of communities, and it is here that SuDS amenity and biodiversity value come together.
Carbon emission reduction and sequestration	Plants and soils take in and store CO2 and other greenhouse gases, so where SuDS use plants this potential can be exploited. Suds tend to require less energy use in all stages of the supply chain and life cycle than conventional drainage and, by harvesting water at source, this also saves energy.
Community cohesion and crime reduction	SuDS can help bring communities together. By increasing opportunities for human interaction and creating more enjoyable environments, people are more likely to feel they belong to the community and take a greater pride in their neighbourhood. This is especially the case if the community has been involved in the SuDS design process and residents have ownership of the ongoing maintenance (even if only in part).
Economic growth and inward investment	Attractive places (particularly where water is a feature of the design) tend to encourage and support inward investment. Productivity tends to be enhanced in attractive environments, such as business parks with green spaces. Green and blue SuDS have been shown to add value to land and property nearby. The SuDS in themselves may provide interest for tourists especially where they are a novelty. SuDS also contribute to the creation of attractive places that appeal to tourists.
Education	By using green and blue spaces as part of the management of the water cycle this provides many opportunities to support education both formally in schools and in communities as a whole through environmental groups.
Health and well-being	Green and blue infrastructure can play an important role in maintaining mental and physical health by providing places for recreation and relaxation (see Recreation).
Noise reduction	SuDS and associated trees and grassed areas can provide noise-absorbent barriers and surfaces. Green roofs provide sound insulation for buildings.
Recreation	SuDS can deliver a wide range of green and blue spaces that can be used for walking, cycling, informal play, organised sports and games etc (see Health and well-being).

4.5. Management and Maintenance

The maintenance regime of the SuDS on site can be divided into three categories: regular maintenance, occasional tasks, and remedial works. The frequency of regular maintenance will usually be monthly, the occasional tasks and remedial works should be conducted as required. Specific maintenance needs of the SuDS should be monitored, and maintenance schedules adjusted to suit requirements. The appropriate types of regular, occasional and remedial maintenance for the proposed drainage features, based on the CIRIA C753 SuDS Manual, are shown in Table 9 below.

Table 9. Typical operation and maintenance activities of SuDS components (as based on Table 32.1 in CIRIA SuDS Manual 2015)

	GREEN-BLUEROOFS	RAIN GARDENS	PERVIOUS PAVEMENTS	TREE PITS	DETENTION BASINS	MODULAR STORAGE (E.G., TANKS)
REGULAR MAINTENANCE						
Inspection	√√	√√	√√	√√	√√	√√
Litter and debris removal		√√	√√	√√	√√	√
Grass cutting		√√		√√	√√	√
Weed and invasive plant control	√√		√		√	
Shrub management (Including pruning)		√	√	√	√	
Shoreline vegetation management					√	
Aquatic vegetation management					√	
OCCASIONAL TASKS						
Sediment management		√√	√√	√√	√√	√√
Vegetation replacement	√√	√		√	√	
Vacuum sweeping and brushing			√√			
REMEDIAL WORKS						
Structure rehabilitation/ repair	√	√	√	√	√	
Infiltration surface reconditioning		√	√	√	√	

Key:

√√ **- will be required** √ **- may be required**

The activities listed are generic to the relative SuDS types and represent the minimum maintenance and inspection requirements. The maintenance strategy for specific SuDS proposed at the detailed site will be dependent upon the products used within the installation of the systems and is therefore subject to manufacturer's guidance. Additional tasks or varied maintenance frequency may be instructed by those responsible for maintenance as required. It is currently understood that SuDS within the proposed surface water drainage strategy will not be adopted and an organisation responsible for the management and maintenance of the proposed SuDS will need to be appointed.

All those responsible for maintenance should follow the relevant Health and Safety legislation for all the activities listed including lone working, if relevant, and risk assessments should always be undertaken. Inspection checks shall be carried out by a qualified and competent person, at the minimum intervals listed within the schedules and the appropriate work carried out. Any parties involved with the disposal for any waste materials from the underground drainage system should hold appropriate management licenses to undertake any such activities. Disposal of any site materials is required to be made in accordance with current legislation and guidance.

5. Proposed Foul Water Drainage

The proposed foul water drainage network is to be a separate piped gravity network, designed in accordance with:

- BS EN 752:2008 (Drain and sewer systems outside buildings).
- Sewerage Sector Guidance
- Technical Guidance to the National Planning Policy Framework.
- BS EN 12056-2:2000 (Drainage systems inside buildings)
- Building Regulations Approved Document H, Drainage and waste disposal

The current proposed foul water drainage design is detailed in drawing 0198_MAY-CIV-SWI-ZZZZ-DR-C-030002, provided in Appendix D. At this stage, the design has been developed for the main external drainage runs only and coordination will be required with the above ground drainage designs for Plots J and K when these have been developed and finalised.

A connection to United Utilities' public sewer network is proposed within Hoyle Street. The receiving sewer is understood to be a 620 x 710mm combined brick sewer based on United Utilities asset records. A pre-development enquiry has been issued to United Utilities to obtain advice on the acceptability of this connection. A response was received on 8th May 2024, confirming that United Utilities have no objection in principle to this point of connection. This correspondence is provided in Appendix F. An agreement with United Utilities under Section 106 of the Water Industry Act 1991 will be required to facilitate the final connection of the proposed development.

All drainage runs will have a point of upstream rodding access either via access on internal downpipes within the building, inspection chambers, rodding eyes or manholes, in order to minimise risk of blockage within the system. Junctions without access and bends within the below slab drainage system will be designed out as far as reasonably practicable. Where necessary, junctions between foul drainage pipes will be formed using oblique angles to allow for smooth transitions between pipes.

It is expected that internal access chambers will be required to provide access at junctions between pipes where these are located below building foundations. Such chambers will be designed to coordinate with the internal layout and finishes and will have doubled-sealed access covers to prevent foul odours from entering the building.

6. Conclusion

This report has been produced to accompany a full planning application for the Mayfield Phase 1b development, which comprises site remediation and reprofiling followed by the erection of two residential blocks (Use Class C3) comprising 879 no. residential units contained within four buildings ranging from 7 storeys to 23 storeys in height (Plot J) and 9 to 28 storeys in height (Plot K), including lower ground and upper ground floor commercial spaces comprising restaurant and / or retail units (Use Class E(b) and/or E(a)), and / or indoor sports facilities (Use Class F2) together with highways works, access, servicing, rooftop plant, cycle parking and back of house, along with delivery of associated public realm and other associated works for each relevant phase.

The report provides information on how surface water and foul water flows will be managed from the proposed development in accordance with current national and regional policy and guidance, for its expected lifetime.

The Site has been subject to several planning permissions associated with the wider Mayfield Strategic Regeneration Framework (SRF) which have been implemented through the discharge of pre-commencement conditions and physical works being undertaken on site in 2021. A Drainage Strategy submitted as part of planning application 132255/JO/2021, (document ref. Stage 4 Drainage Strategy, revision P07 – the 'Phase 1 Drainage Strategy') outlines the principles of the proposed drainage network serving the entire Phase 1 development, which includes Mayfield Park, Phase 1a and Phase 1b. The design parameters proposed in the Phase 1 Strategy, which were agreed with Manchester City Council in 2021, have informed the design of proposed drainage systems presented in this Phase 1b Drainage Strategy.

An addendum to the Flood Risk Assessment (FRA) previously submitted as part of planning application 124972/FO/2019 has been produced by BuroHappold Engineering for the current planning application and provides additional detail to supplement the previous FRA in the context of the latest development proposals. The addendum identifies the Site as residing in Flood Zone 1 and having a low risk of flooding from all sources.

The proposed surface water drainage system is to utilise Sustainable Drainage Systems (SuDS) in the form of green and green-blue roofs, bioretention systems (rain gardens and SuDS-enabled tree pits), pervious pavements, porous sub-bases, filter drains and a detention basin. As infiltration is currently anticipated to be infeasible due to ground conditions and evidence of contamination, runoff is to be conveyed to the River Medlock, as proposed in the Phase 1 Drainage Strategy.

The surface water drainage system is proposed to discharge at a peak rate equivalent to 50% of the existing 1 in 1 year brownfield rate minus 2/l/s/ha which has been determined as 128.2 l/s. A total of 603m^3 of attenuation storage is provided across the development, equating to 0.043m^3 per m^2 drained area, which exceeds the required attenuation of 0.04m^3/m^2 that has been determined at this stage. It is anticipated that the system could be designed to discharge at a reduced rate of Q_{BAR} (14.2 l/s) in the 1 in 1 year and 1 in 30 year storm events, as the site-wide storage provided exceeds the estimated storage requirement for these storms, subject to confirmation at a sub-catchment level and specification of flow controls.

It is anticipated that the proposed SuDS components will provide sufficient mitigation against pollution within runoff. Via a preliminary assessment undertaken using the CIRIA Simple Index Approach detailed in Section 26.7.1 of CIRIA C753, it is shown that all sub-catchments drain to SuDS components which have mitigation indices equal to or exceeding the pollution hazard indices associated with runoff generated within these sub-catchments.

Foul water flows will be conveyed using a separate traditional piped gravity system with a connection to an existing United Utilities combined sewer located within Hoyle Street to the east of the Site. United Utilities have confirmed there is no objection in principle to this connection, however, this will be subject to agreement under Section 106 of the Water Industry Act 1991.

Based on the significant improvements to water quantity, water quality, amenity and biodiversity that are proposed to be provided as a result of the proposed surface water drainage system, in addition to the local sewerage company having no objections to the development with regard to effects of the proposed foul water system on the existing capacity of nearby public sewer networks, it is considered that there are no known grounds pertaining to the information contained in this Drainage Strategy on which the proposed development should be refused full planning permission.

Appendix A

Topographical and Utilities Survey

Grid: Local Plane Metric related to National Grid at survey control SC10
Levels: OS Datum from GNSS positioning converted using the National Geoid Model OSGM02

Notes
related to Project No.19479, originally surveyed September 2017

Topographical Survey Legend

BUILDINGS AND WALLS
FENCE STYLES AND DESCRIPTIONS
ROADS
STREET FURNITURE
INSPECTION CHAMBERS AND PIPES
GEOTECHNICAL INFORMATION
GENERAL INFORMATION
OVERHEAD FEATURES
WATER FEATURES
RELIEF AND VEGETATION
LEVEL AND HEIGHT INFORMATION
SURVEY INFORMATION SIGNS

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TH2
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5
1A
1B

Rev.	Date	Description

Accreditations

Aintree House, Trident Business Park, Daten Avenue
Warrington, WA3 6BX. Tel: 0161 905 1265
www.malcolmhughes.co.uk
survey@mhls.co.uk

Client
BURO HAPPOLD LTD
CAMDEN MILL, LOWER BRISTOL ROAD
BATH, BA2 3DQ

Project
MANCHESTER MAYFIELD STATION
FAIRFIELD STREET, MANCHESTER
M1 2QF

Drawing Title
TOPOGRAPHICAL SURVEY (3D)

Surveyed by	Drawn by	Survey Date
HA	IC 08/12/23	December 2023
Checked by	Approved by	Scale
ED 08/12/23		1 : 200

Drawing No
19479-Area1A-Topo1

Revision

Survey Notes

Grid: Local Plane Metric related to National Grid at survey control SC10

Levels: OS Datum from GNSS positioning converted using the National Geoid Model OSGM02.

Notes

related to Project No.19479, originally surveyed September 2017

Survey Legend

STREET FURNITURE

INSPECTION CHAMBERS

OVERHEAD FEATURES

LEVEL AND HEIGHT INFORMATION

UNDERGROUND SERVICES KEY

TV(B2)	Cable TV Cable
CCTV(B2)	CCTV Cable
COM(B2)	Communications Cable
DUB(B2)	Empty Ducting
EA(B2)	Earth Cable
HV(B2)	HV Electricity Cable
E(B2)	Electricity Cable
GU(B2)	Fuel Gauge Line
F(B2)	Fuel Line
V(B2)	Fuel Vent Line
G(B2)	Gas Pipe
H(B2)	Heating Pipe
R(B2)	GPR Detected Anomaly Point Directional
I(B2)	Sewer Rising Main
CWS(B2)	Sewer Combined
FWS(B2)	Sewer Foul
SWS(B2)	Sewer Surface Water
TEL(B2)	British Telecom
T(B2)	Traffic Light Cable Telecom Cable Unidentified GPR or electric location trace
U(B2)	Vapour Recovery Pipe
VR(B2)	Vehicle Detection Pad
W(B2)	Water pipe
	End of trace
	Services Survey Boundary
	Area of No Access
	GPR Detected Anomaly Area/Point
	GPR Detected Rebar
	GPR Detected Structural Feature
	GPR Detected Structure
	GPR Low Data
0.79d	GPR Detected Anomaly Point Directional
	GPR Transect

NOTES

Electromagnetic and Ground Penetrating Radar techniques have been used in the detection of underground services, features and anomalies shown on this survey plan. These are interpretive procedures and we recommend that trial excavations should be undertaken to confirm identification, location and depth of features where these are critical to design or site works.

Please note that not all buried pipes, cables and ducts can be detected and mapped in consideration of their depth, location, material type, geology and proximity to other utilities.

All reasonable effort and care has been made in searching available record drawings. The completeness of the underground service information supplied to and by us cannot be guaranteed.

Where services are non-metallic or not proven on site, positions are taken from records, trench scars and surface detail.

Pipe sizes which cannot be obtained by visual survey are taken from utilities record drawings or marker plates where available.

Services shown as Taken From Records (TFR) or PAS128 QL-D have not been proven on site.

The diagram below describes the depth information obtained in detail.

The CAD layering may contain further information.

Collected data from GPR has not been post processed unless specified elsewhere or denoted on the survey drawing.

All utilities inspected and measured at Inspection Covers or Manholes are considered to be a QL-A for a radius up to 5m from the chamber wall.

DRAWING INFORMATION

AR	Assumed Route
BA	Backdrop Arrow
BLA	Blocked
D	Depth
GPR	Ground Penetrating Radar
NVP	No Visible Pipes
SC	Survey Control
SL	Signal Lost
TFR	Taken From Records
U	Unknown
UTS	Unable To Survey
UR	Unable To Rod
UT	Unable To Trace
UV	Unable To Locate Valve Point

PIPE MATERIAL

AC	Asbestos Cement
BR	Brick
CI	Cast Iron
CO	Concrete
DI	Ductile Iron
MDPE	Medium Density Pipe
PVC	Polyvinyl Chloride
SI	Spun Iron
ST	Steel
VC	Vitrified Clay

TYPICAL FEATURE DEPTH ANNOTATION

ELECTRO-MAGNETIC DETECTION: APPROX. DEPTH TO CENTRE — CABLE/FIBRE OPTIC

GRAVITY DRAIN (VISUAL OBSERVATION): APPROX. DEPTH TO INVERT

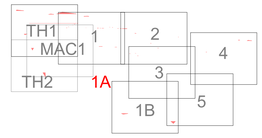
GROUND PENETRATING RADAR: APPROX. DEPTH TO EXTERNAL CROWN

BSI PAS128:2022 QUALITY LEVEL INFORMATION

SURVEY TYPE		QUALITY LEVEL	DESCRIPTION
B	Detection	QL-B4 TFR	Location not detected on site, taken from records.
		QL-B4 AR	A utility segment that has not been detected but is suspected to exist. Denotes assumed route only.
		QL-B3	Horizontal detection by one geophysical technique only. Denotes utility segments with weak signals / no depth information.
		QL-B2	Horizontal and vertical detection by one geophysical technique only (Electromagnetic Detector/Ground Penetrating Radar). Medium confidence level for position and depth.
		QL-B1	Horizontal and vertical detection by multiple geophysical techniques. (Electromagnetic Detector/Ground Penetrating Radar). High confidence level for position and depth.
A	Verification	QL-A	Horizontal and vertical location of the utility established by visual inspection at manholes and inspection covers or by use of targeted excavations (vacuum excavation and trial pits).
OTHER ANNOTATIONS		(P)	Denotes utility segments that have been detected through the use of GPR Post Processing.

Further information on PAS128 can be found on our resource website: www.pas128.co.uk

Sheet Index



Rev.	Date	Description

Accreditations

Pavilion 5, Marchburn Drive,
Glasgow Airport Business Park, PA3 2SJ

Tel: 0141 885 0800
www.metcalfehughes.co.uk
scotland@mmhs.co.uk

Client

Buro Happold Ltd.
Canal Suite, Churchgate House
56 Oxford Street, Manchester M1 6EU

Project

Mayfield, Manchester

Drawing Title

Utility Mapping Survey CCTV1 (2D)

Surveyed by: JB	Drawn by: IV 03/01/24	Survey Date: November 2023	
Checked by: DJ 04/01/24	Approved by:	Scale: A0@1:200	

Drawing No: 61000-Area1A-UG-CCTV1

Revision:

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Grid: Local Plane Metric related to National Grid at survey control SC2
Levels: Levels related to job 19479

Notes
related to Project No.19479, originally surveyed September 2017

Topographical Survey Legend

BUILDINGS AND WALLS

FENCE STYLES AND DESCRIPTIONS

ROADS

STREET FURNITURE

INSPECTION CHAMBERS AND PIPES

GEOTECHNICAL INFORMATION

GENERAL INFORMATION

OVERHEAD FEATURES

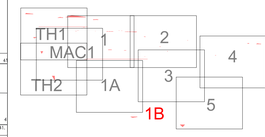
WATER FEATURES

RELIEF AND VEGETATION

LEVEL AND HEIGHT INFORMATION

SURVEY INFORMATION SIGNS

Sheet Index



Rev.	Date	Description

Accreditations

Aintree House, Trident Business Park, Daten Avenue
Warrington, WA3 6BX. Tel: 0161 905 1295
www.malcolmhughes.co.uk
survey@mhls.co.uk

Client
LANDSEC U & I GROUP LTD
100 VICTORIA STREET
LONDON, DW1E 5JL

Project
MAYFIELD PHASE 1b
MANCHESTER

Drawing Title
TOPOGRAPHICAL SURVEY (3D)

Surveyed by	Drawn by	Survey Date
PS	AS 16/11/23	November 2023
Checked by	Approved by	Scale
ED 16/11/23		1 : 200

Drawing No
61000-Area1B-Topo-1

Revision

Survey Notes

Grid: Local Plane Metric related to National Grid at survey control SC10

Levels: OS Datum from GNSS positioning converted using the National Geoid Model OSGM02.

Notes

related to Project No.19479, originally surveyed September 2017

Survey Legend

STREET FURNITURE

INSPECTION CHAMBERS

OVERHEAD FEATURES

LEVEL AND HEIGHT INFORMATION

UNDERGROUND SERVICES KEY

TV(B2)	Cable TV Cable
CCTV(B2)	CCTV Cable
COM(B2)	Communications Cable
DUB(B2)	Empty Ducting
EA(B2)	Earth Cable
HV(B2)	HV Electricity Cable
E(B2)	Electricity Cable
GU(B2)	Fuel Gauge Line
F(B2)	Fuel Line
V(B2)	Fuel Vent Line
G(B2)	Gas Pipe
H(B2)	Heating Pipe
R(B2)	GPR Detected Anomaly Area/Point
I (B2)	Sewer Rising Main
CWS(B2)	Sewer Combined
FW(B2)	Sewer Foul
SW(B2)	Sewer Surface Water
TEL(B2)	British Telecom
TL(B2)	Traffic Light Cable
U(B2)	Unidentified Cable
UB(B2)	Unidentified GPR or electric location trace
VR(B2)	Vapour Recovery Pipe
	Vehicle Detection Pad
W(B2)	Water pipe
	End of trace
	Services Survey Boundary
	Area of No Access
	GPR Detected Anomaly Area/Point
	GPR Detected Rebar
	GPR Detected Structural Feature
	GPR Detected Structure
	GPR Low Data
	GPR Detected Anomaly Point Directional
	GPR Transect

0.75d

NOTES

Electromagnetic and Ground Penetrating Radar techniques have been used in the detection of underground services, features and anomalies shown on this survey plan. These are interpretive procedures and we recommend that trial excavations should be undertaken to confirm identification, location and depth of features where these are critical to design or site works.

Please note that not all buried pipes, cables and ducts can be detected and mapped in consideration of their depth, location, material type, geology and proximity to other utilities.

All reasonable effort and care has been made in searching available record drawings. The completeness of the underground service information supplied to and by us cannot be guaranteed.

Where services are non-metallic or not proven on site, positions are taken from records, trench and surface detail.

Pipe sizes which cannot be obtained by visual survey are taken from utilities record drawings or marker plates where available.

Services shown as Taken From Records (TFR) or PAS128 QL-D have not been proven on site.

The diagram below describes the depth information obtained in detail.

The CAD layering may contain further information.

Collected data from GPR has not been post processed unless specified elsewhere or denoted on the survey drawing.

All utilities inspected and measured at Inspection Covers or Manholes are considered to be a QL-A for a radius up to 5m from the chamber wall.

DRAWING INFORMATION

AR	Assumed Route
BH	Borehole
BLK	Blockage
D	Depth
GPR	Ground Penetrating Radar
MAP	No Visible Paint
SL	Signal Lost
TFR	Taken From Records
U	Unknown
UTS	Unable To Survey
UR	Unable To Rod
UV	Unable To View
UC	Unable To Lift Cover / Point

PIPE MATERIAL

AC	Asbestos Cement
BR	Brick
CI	Cast Iron
CO	Concrete
DI	Ductile Iron
PE	Polyethylene Pipe
PVC	Polyvinyl Chloride
SI	Spun Iron
ST	Steel
VC	Vitrified Clay

TYPICAL FEATURE DEPTH ANNOTATION

ELECTRO-MAGNETIC DETECTION: APPROX. DEPTH TO CENTRE — CABLE/FIBRE OPTIC

GRAVITY DRAIN (VISUAL OBSERVATION): APPROX. DEPTH TO INVERT — Signal Lost

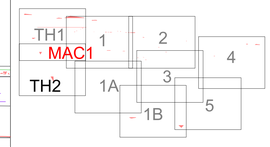
GROUND PENETRATING RADAR: APPROX. DEPTH TO EXTERNAL CROWN

BSI PAS128:2022 QUALITY LEVEL INFORMATION

SURVEY TYPE		QUALITY LEVEL	DESCRIPTION
B	Detection	QL-04 TFR	Location not detected on site, taken from records.
		QL-04 AR	A utility segment that has not been detected but is suspected to exist. Denotes assumed route only.
		QL-03	Horizontal detection by one geophysical technique only. Denotes utility segments with weak signals / no depth information.
		QL-02	Horizontal and vertical detection by one geophysical technique only (Electromagnetic Detection/Ground Penetrating Radar). Medium confidence level for position and depth.
		QL-01	Horizontal and vertical detection by multiple geophysical techniques. (Electromagnetic Detection/Ground Penetrating Radar). High confidence level for position and depth.
A	Verification	QL-A	Horizontal and vertical location of the utility established by visual inspection at manholes and inspection covers or by use of targeted excavations (vacuum excavation and trial pits).
OTHER ANNOTATIONS		(P)	Denotes utility segments that have been detected through the use of GPR Post Processing.

Further information on PAS128 can be found on our resource website: www.pas128.co.uk

Sheet Index



Rev.	Date	Description

Accreditations

Pavilion 5, Marchburn Drive,
Glasgow Airport Business Park, PA3 2SJ

Tel: 0141 885 0800
www.malcolmhughes.co.uk
scotland@mhls.co.uk

Client

Buro Happold Ltd.
Canal Suite, Churchgate House
56 Oxford Street, Manchester M1 6EU

Project

Mayfield, Manchester

Drawing Title

Utility Mapping Survey -CCTV1 (2D)

Surveyed by	JB	Drawn by	AS 13/12/23
Survey Date	November 2023		
Checked by	DJ 13/12/23	Approved by	
Scale	A0@1:200		

Drawing No: 61000-Area1B-UG1-CCTV1

Revision

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Appendix B

Supplementary Site Investigation Report

Job Title
Mayfield Phase 1B

Prepared for
LandsecU+I

Report Type
Supplementary Site Investigation Report

Date
21 March 2024



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Supplementary Site Investigation Report

Prepared by	**Kirsty Poore MSc MSci (Hons) CGeol FGS ARSM ROGEP**
Reviewed by	Hal Godwin MSc BSc (Hons) CGeol DIC FGS
Approved by	Dan Matthews BEng CSci CEnv MIEnvSc
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Executive Summary

Site Description	The site occupies a roughly rectangular, undeveloped plot of land within the wider Mayfield Development area. The site is bound to the east by Hoyle Street, to the north by Mayfield Park, to the south by Mancunian Way and to the west by the Phase 1A Mayfield development area. Current ground level ranges from approximately +37.5m above ordnance Datum (mOD) in the western third of the site to approximately +42mOD (approximate street level) in the east of the site, with a gentle slope down towards the northern site boundary from the access route off Hoyle Street. Two brick retaining walls extend into the west of the site and an electrical substation is located towards the centre of the site.
Proposed Development	Current proposals for the redevelopment of the site include the construction of two high-rise, predominantly residential plots (Plot J and K) with partial lower ground floor beneath each plot. Lower ground level is currently proposed at approximately +39mOD for Plot J and +36mOD for Plot K.
Historical Development	Earliest available historical mapping indicates that the northern and western areas of the site were predominantly occupied by industrial activities (*Reservoir, Ardwick Dye Works, Ardwick Tannery, Chapelfield Works (Indiarubber)* and *Britannia Brewery*) whilst the eastern and southern areas of the site were predominantly occupied by residential properties. By 1948, the majority of structures in the eastern area of the site were no longer indicated and two large industrial buildings were also indicated in the southwest and central areas of the site. A *Works* was subsequently constructed in the northeast of the site c.1964 and a *Rubber & Plastic Works* in the southeast of the site c.1968. By 1986, the structures in the west of the site were demolished and *Tanks* were recorded in the middle of the site and adjacent to the Works in the southeast of the site. The site remained predominantly unchanged in layout, with aerial photography indicating areas of the site as car parking, until c.2015 when the on-site structures were demolished. The site was used as a stockpiling and remediation storage area during the recent enabling works for the Mayfield Park and Phase 1A development areas.
Published Geology	Published BGS mapping indicates that the site is underlain by Alluvium across the northwest half of the site and Till (Diamicton) across the southeast half of the site. The superficial deposits are indicated to overly the Chester Formation (Sandstone). Deposits of artificial Made Ground are also indicated across the majority of the site.
Hydrology and Hydrogeological Setting	The superficial deposits of Alluvium and Till are designated as Secondary Undifferentiated aquifers. The underlying Chester Formation sandstone bedrock is designated as a Principal aquifer. The site is not located within a groundwater Source Protection Zone (SPZ) and an abstraction point is located in the far north of the site which was fitted with a manhole during the Mayfield Park and Phase 1A enabling works.
Previous ROC Site Investigation	Previous site investigation has been carried out by ROC (2020) within the site which included 3 cable percussion boreholes, 8 window sample boreholes and 11 trial pits. A large stockpile of material was present across approximately half of the site which limited the extent of the investigation. The ground conditions encountered comprised a variable thickness of Made Ground (between 0.70m and 4.80m) beneath thin layers of hardstanding and topsoil. Superficial deposits of Alluvium were recorded between 0.80mbgl and 3.50mbgl in four locations in the west of the site. Deposits of Glacial Till were recorded in three locations towards the middle of the site between 1.00mbgl and 1.80mbgl. The superficial deposits ranged between 0.80m and 2.10m in thickness. The weathered sandstone bedrock was recorded between 1.10mbgl and 5.00mbgl. Visual and olfactory signs of contamination were observed by ROC during the site investigation including a strong chemical odour in WS401, black water with hydrocarbon odour in WS404 and hydrocarbon odours in TP409 and TP410. Chemical assessment of soils (against a "Public Open Space" end use) indicated elevated concentrations of lead in the Made Ground at WS408. Elevated concentrations of TPH were also recorded (but at concentrations below the assessment criteria) in six locations; "Hydrocarbon Hotspot #2" was defined by ROC at WS401, WS404 and TP409. Asbestos was recorded at seven locations between <0.001% and 0.465%.
Supplementary Site Investigation	The current supplementary site investigation was undertaken in January 2024 and included 5 cable/rotary boreholes up to 25.0mbgl, 9 window sample boreholes up to 2.5mbgl, 12 trial pits up to 3.5mbgl and 4 foundation inspection trial pits up to a depth of 1.5mbgl. Three ground gas and groundwater monitoring rounds were subsequently carried out on 30 January, 12 February and 20 February 2024. The ground conditions were recorded to comprise a variable thickness of Made Ground (between 0.50m and 4.10m) overlying superficial deposits of Glacial Till. The deposits of Glacial Till were recorded in some locations between 0.50mbgl and 2.70mbgl and ranged between 0.80m and 2.40m in thickness. The bedrock of the Chester Sandstone Formation was encountered between 2.40mbgl and 4.70mbgl. Olfactory signs of potential hydrocarbon contamination were noted within TP1009 within the Made Ground at 1.90mbgl. Perched water was encountered in the Made Ground and Glacial Till which is variable in level and appears to be limited in nature, confined by surrounding cohesive deposits. The Principal aquifer was recorded in the Chester Sandstone Formation between approximately +30.65mOD and +29.70mOD.
Contamination Assessment	**Human Health:** A total of 40 soil samples were submitted for chemical analysis and the results compared against human health GAC for a "residential without home grown produce" end use. Assessment of the Made Ground indicated that contaminant concentrations are generally below their respective assessment thresholds with the exception of heavy metals and PAHs. In addition, asbestos was detected in 8 of the Made Ground soil samples. The results of the assessment of the natural soils indicate that the contaminant concentrations recorded are below their respective GAC. Assessment of contaminant concentrations from a total of 8 perched water and Principal aquifer groundwater samples indicates a low risk to human health via vapour intrusion.

	Ground Gases: Ground gas monitoring recorded methane and carbon dioxide concentrations below 1%v/v and 5%v/v respectively with negligible flow rate (<0.1l/h) recorded. The calculated GSVs correlate to CS1. **Controlled Waters**: A total of 5 Made Ground leachate samples, 3 perched water samples (plus 3 for total and free cyanide analysis only) and 5 Principal aquifer samples were analysed. The results of the Made Ground leachate assessment against freshwater EQS indicate that concentrations of heavy metals, total cyanide and pH have the potential to leachate at elevated concentrations. The results of the perched water analysis also reflect elevated concentrations of these contaminants, as well as elevated concentrations of total phenols, total TPH, PAHs and ammoniacal nitrogen in WS1007. The results of the Principal aquifer EQS assessment indicate that the contaminant concentrations are below their respective assessment thresholds. Elevated concentrations were recorded against the DWV assessment criteria in the perched water; however, the perched water is not considered to be a likely supply of drinking water. Elevated sulphate concentrations were recorded in the Principal Aquifer against the DWV; however, sulphate is considered unlikely to be a driver for remediation and concentrations are approximately three times lower in the Principal aquifer than the perched water. **Plants and Vegetation:** Localised elevated concentrations of zinc were recorded at WS1002 and WS1006 within the Made Ground which are considered to present a risk to proposed plant and vegetation growth. In addition, it is likely that the composition of the Made Ground is unlikely to be a suitable growth medium with high proportions of brick and concrete gravel and cobbles observed during the site investigation.
Preliminary Waste Characterisation	The preliminary waste assessment (carried out using the HazWaste Online Toolkit) indicates that the majority of the material tested would be characterised as non-hazardous material and therefore considered to be acceptable to a non-hazardous waste facility; some material may be acceptable at an inert waste facility (subject to WAC testing). However, 3 out of the 40 soil samples were characterised as hazardous material (BH1003 due to asbestos at >0.1% by weight, and BH1004 and TP1010 due to elevated TPH).
Revised Conceptual Site Model	There is considered to be a potential risk to future site users and construction workers from the Made Ground soils due to the elevated concentrations of heavy metals, PAHs and asbestos. Elevated concentrations of zinc within the Made Ground are considered to be a potential risk to plants and vegetation. The recorded ground gas concentrations and ground conditions encountered indicate a low risk from ground gases. The risks to controlled waters from the Made Ground and perched water are considered to be low to moderate and delineation and removal of gross contamination at WS1007, TP1010, BH1004 and "Hotspot #2" is recommended. The risks to controlled waters from foundation activities i.e. piling are considered to be low assuming appropriate piling techniques are adopted. Due to the recorded concentrations of contaminants at the site, it is anticipated that barrier pipes will be required for new buried water supply pipes. Buried concrete will need to be designed as appropriate for the ground conditions.
Geoenvironmental Recommendations	A remediation strategy and verification plan is to be produced by Civic Earth under a separate cover to outline the remediation requirements for the site in consideration of the recommendations outlined in this report. It is recommended that a watching brief is carried out by the Contractor during the enabling works, earthworks and construction works and the regulatory approved tannery watching brief, outlined in the ROC Remediation Strategy for Mayfield Park, is implemented during the construction phase. Existing monitoring wells should be decommissioned prior to commencement of significant earthworks and measures implemented to mitigate the potential impact to controlled waters during construction works. The Contractor should be responsible for the material management and waste classification at the site and the "waste hierarchy" should be used to rank waste management options. It is recommended that the gross TPH contamination identified at "Hydrocarbon Hotspot #2", BH1004 and TP1010, and hazardous concentrations of asbestos, are also removed and treated for re-use and/or removed from site. A clean capping layer will be required in areas of proposed soft landscaping to mitigate the risks to future site users and plants and vegetation. It is recommended that a Piling Works Risk Assessment is completed to demonstrate that the selected piling methodology will not lead to the creation of new pathways for contaminant migration. Due to the recorded concentrations of contaminants at the site, it is anticipated that barrier pipes will be required for new buried water supply pipes. Completion of a United Utilities Risk Assessment including sampling of soils at depth and location of proposed water supply pipes will be required.
Geotechnical Recommendations	Based on proposed finished floor levels, formation levels are likely to be within Made Ground, superficial deposits and/or sandstone bedrock. Given the variability of the shallow ground conditions, it is recommended that foundations are founded within the Chester Sandstone Formation. An allowable bearing capacity of 500kPa could be adopted for the sandstone bedrock (representative of a very dense sand). Pavements/roadways founded on the Made Ground or superficial deposits should be designed to a conservative CBR of 2.5%. Floor slab design will need to take account of the potential variability in ground conditions at the formation level, and suspended slabs will need to be utilised where there is insufficient bearing capacity or potential for an unacceptable level of differential settlement. Excavations during the development should not pose difficulties for conventional excavators or earth moving equipment for the identified strata including some excavation in the upper sandstone horizons. Localised groundwater control may be required to managed perched water ingress; however, excavations are not currently anticipated to extend below the Principal aquifer level. Buried concrete design classes for the Made Ground and natural Glacial Till and sandstone bedrock have been calculated as DS-2 (AC-2) and DS-1 (AC-1) respectively.

1. Introduction

Civic Earth Limited was appointed on 26 November 2023 by Civic Engineers on behalf of LandsecU+I (the Client) to undertake a supplementary site investigation for the proposed redevelopment of the Mayfield Phase 1B development area (herein referred to as "the site"). The Phase 1B development area forms part of the wider Mayfield Development.

A desk study was previously carried out for the wider Mayfield Development by BuroHappold Engineering (BuroHappold) in 2017[1], which included the site. A ground investigation was subsequently carried out across the wider Mayfield Development, including the site, by ROC Consulting (ROC) in 2020[2] and a site specific Phase 1 Desk Study and Data Review report was produced by Civic Earth in November 2023[3].

The above reports have been used as supporting documentation in the preparation of this site investigation report, and reference should be made to the reports for full details of the investigations and assessments completed for the site.

The aim of this report is to provide:

- A brief summary of the site history, anticipated geology and historical ground investigation data, hydrogeological setting and preliminary risk assessment and conceptual site model;
- A summary of the ground and groundwater conditions encountered during the supplementary Phase 2 site investigation, and analysis and interpretation of chemical and geotechnical laboratory testing carried out as part of the site investigation; and
- Recommendations with respect to the potential risks identified to receptors associated with potential contamination beneath the site, waste disposal and the geotechnical design of the project.

It is recommended that this report is submitted to the Local Authority to support the Planning Applications made in relation to the site.

[1] BuroHappold (2017) *Mayfield Regeneration. Geoenvironmental and Geotechnical Desk Study Report*. Reference 035548 Revision 0. 10 August 2017.
[2] ROC (2020) *Mayfield Park. Phase 2 Site Investigation.* Reference 4153-ROC-XX-XX-RP-ES-P2SI1 Revision R1. 22 December 2020.
[3] Civic Earth (2023) *Mayfield Phase 1B. Phase 1 Desk Study and Data Review.* Reference 51001-CE-02-XX-R-G-1001. Revision P02. 16 November 2023.

2. Site Context

2.1 Site Location

The site is located off Hoyle Street in Manchester. The approximate postcode for the site is M12 6HW. The National Grid coordinates for the approximate centre of the site are 385200E, 397499N and the site is approximately 1.43 ha in size. The site location is illustrated in Plate 1.

Plate 1: Approximate Site Location Plan (©OpenStreetMap Contributors)



2.2 Site Description

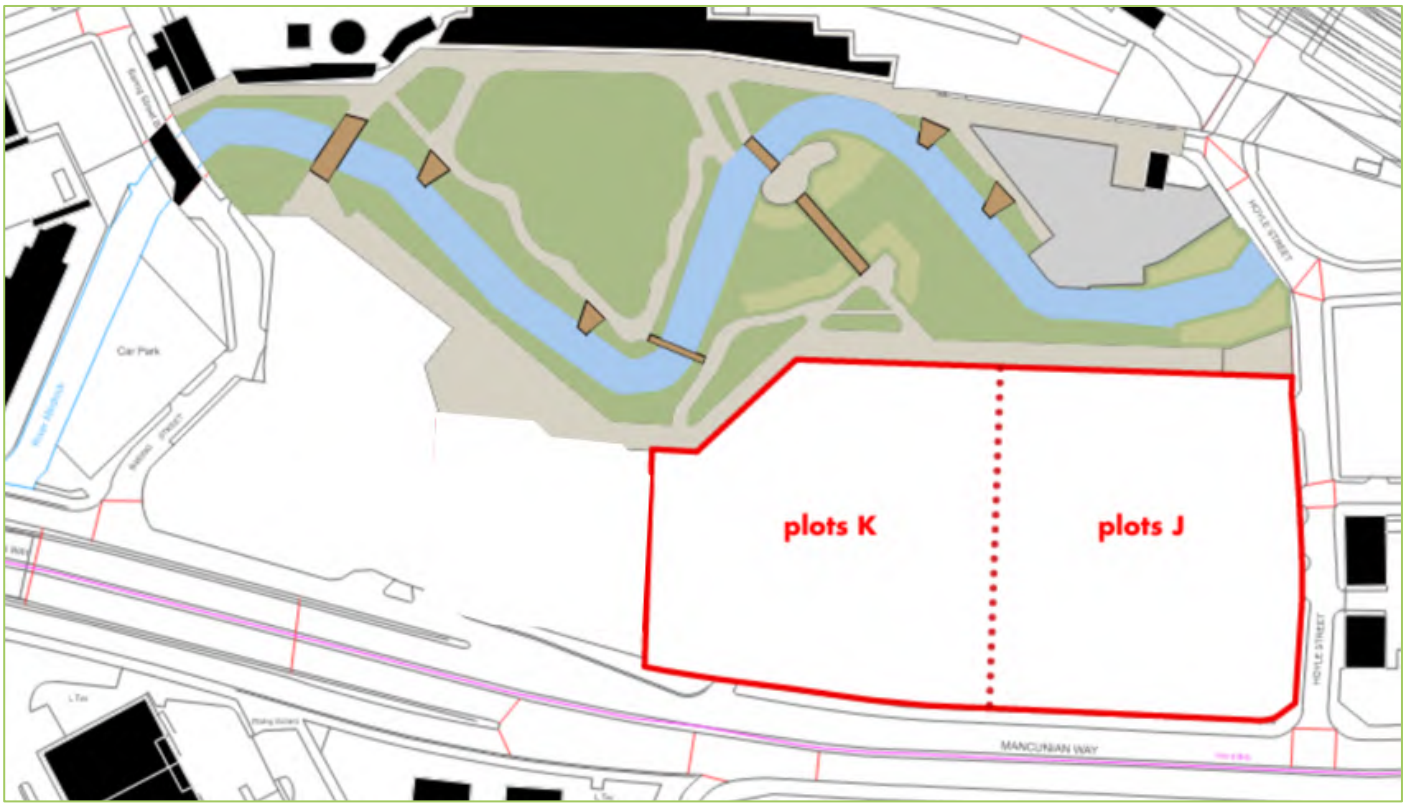
The site is roughly rectangular is shape and bounded to the north by Mayfield Park, to the east by Hoyle Street, to the south by Mancunian Way (A635) and to the west by the Phase 1A area of the Mayfield Development. The site is currently an unoccupied parcel of land following the recent completion of earthworks across the wider Mayfield Development. It is understood from Civic Engineers that the site was used as a stockpiling and soil remediation area during the works; earthworks were carried out across Mayfield Park to the north and the Phase 1A area to the west, however, it is understood that no earthworks were carried out within the site. Dense vegetation was previously located along the southern and eastern site boundaries which has been recently cleared during vegetation clearance works . Evidence of the previous site buildings' ground slabs and cobblestone roads were also observed.

Current ground level ranges from approximately +37.5m above ordnance Datum (mOD) in the western third of the site to approximately +42mOD (approximate street level) in the east of the site, with a gentle slope down towards the northern site boundary from the access route off Hoyle Street. A brick retaining wall, orientated north-south, separates the lower western area of the site and extends two thirds of the way into the site from the south boundary. A structural engineer from Civic Engineers Limited advised that the retaining wall is likely to have been a basement retaining wall given the presence of a cobbled access route to the east of the wall, and likely to be of brick and mortar construction. An electrical substation is located towards the northern end of the retaining wall. A second, smaller retaining wall was observed to the west of the main retaining wall, with a historical access route from Mancunian Way to the east of this second wall at a higher ground level.

2.3 Proposed Development

It is understood that the current proposals for the redevelopment of the site include the construction of two high-rise, predominantly residential plots (Plot J and K) with partial lower ground floor beneath each plot. The locations of the plots within the site are illustrated in Plate 2.

Plate 2: Conceptual Sketch for Proposed Redevelopment (Shedkm Architects Limited Stage 01 Report)



3. Summary of Desk Study and Data Review

3.1 Introduction

As outlined in Section 1, a desk study was previously carried out for the wider Mayfield Development by BuroHappold Engineering (BuroHappold) in 2017[1] which included the site (referred to by BuroHappold as "Zone 5". A site investigation was subsequently carried out across the wider Mayfield Development by ROC Consulting (ROC) in September 2020[2]. A site specific Phase 1 desk study report, which includes a review of the BuroHappold desk study and ROC site investigation data, was produced by Civic Earth in 2023[3].

The following sections provide a summary of the Civic Earth Phase 1 desk study and data review; for full details the original report should be referred to.

3.2 Site History

Earliest available historical mapping of the site indicates that the northern and western areas of the site were predominantly occupied by industrial activities (*Reservoir, Ardwick Dye Works, Ardwick Tannery, Chapelfield Works (Indiarubber)* and *Britannia Brewery*) whilst the eastern and southern areas of the site were predominantly occupied by residential properties. By 1948, the majority of structures in the eastern area of the site (residential properties and the brewery) were no longer indicated and it was considered possible that they may have been demolished due to bomb damage during the Second World War. Two large industrial buildings were also indicated in the southwest and central areas of the site during this time, and it was considered likely that the current brick retaining wall that extends into the site was constructed at this time.

A *Works* was subsequently constructed in the northeast of the site c.1964 and a *Rubber & Plastic Works* in the southeast of the site c.1968. By 1986, the structures in the west of the site were demolished and *Tanks* were recorded in the middle of the site and adjacent to the (Rubber & Plastic) *Works* in the southeast of the site. The site remained predominantly unchanged in layout, with aerial photography indicating areas of the site as car parking, until c.2015 when the on-site structures were demolished.

3.3 Published Geology

With reference to the British Geological Survey (BGS)[4] website, BGS Sheet 85[5] and the Groundsure Enviro + Geo Insight report obtained as part of the Civic Earth desk study[3], the site is anticipated to be underlain by Alluvium across the northwest half of the site and Till (Diamicton) across the southeast half of the site. The superficial deposits are indicated to overly the Chester Formation (Sandstone). Deposits of artificial Made Ground are also indicated across the majority of the site. Two northwest-southeast trending faults in the bedrock are located approximately 200m to 300m northeast and southwest of the site.

3.4 Hydrology and Hydrogeology

The Environment Agency (EA) has produced an aquifer designation system consistent with the requirements of the Water Framework Directive. The designations have been set for superficial and bedrock geologies and are based on the importance of aquifers for potable water supply and their role in supporting surface water bodies and wetland ecosystems.

The superficial deposits of Alluvium and Till are designated as Secondary Undifferentiated aquifers. The underlying Chester Formation sandstone bedrock is designated as a Principal aquifer.

The site is not located within a groundwater Source Protection Zone (SPZ). The Civic Earth desk study highlighted two records for a historical on-site groundwater abstraction point for Moseley Rubber Co. Limited for 'general cooling (low loss)' dated 1966. It is understood that the abstraction point is located in the far north of the site and was fitted with a manhole during the wider site enabling works[3].

A further five records for historical groundwater abstraction were identified approximately 760m west (two records

[4] British Geological Survey (BGS), www.bgs.ac.uk (06 November 2023)
[5] BGS (2011) *Manchester, Sheet 85. Solid and Drift.* 1:50,000.

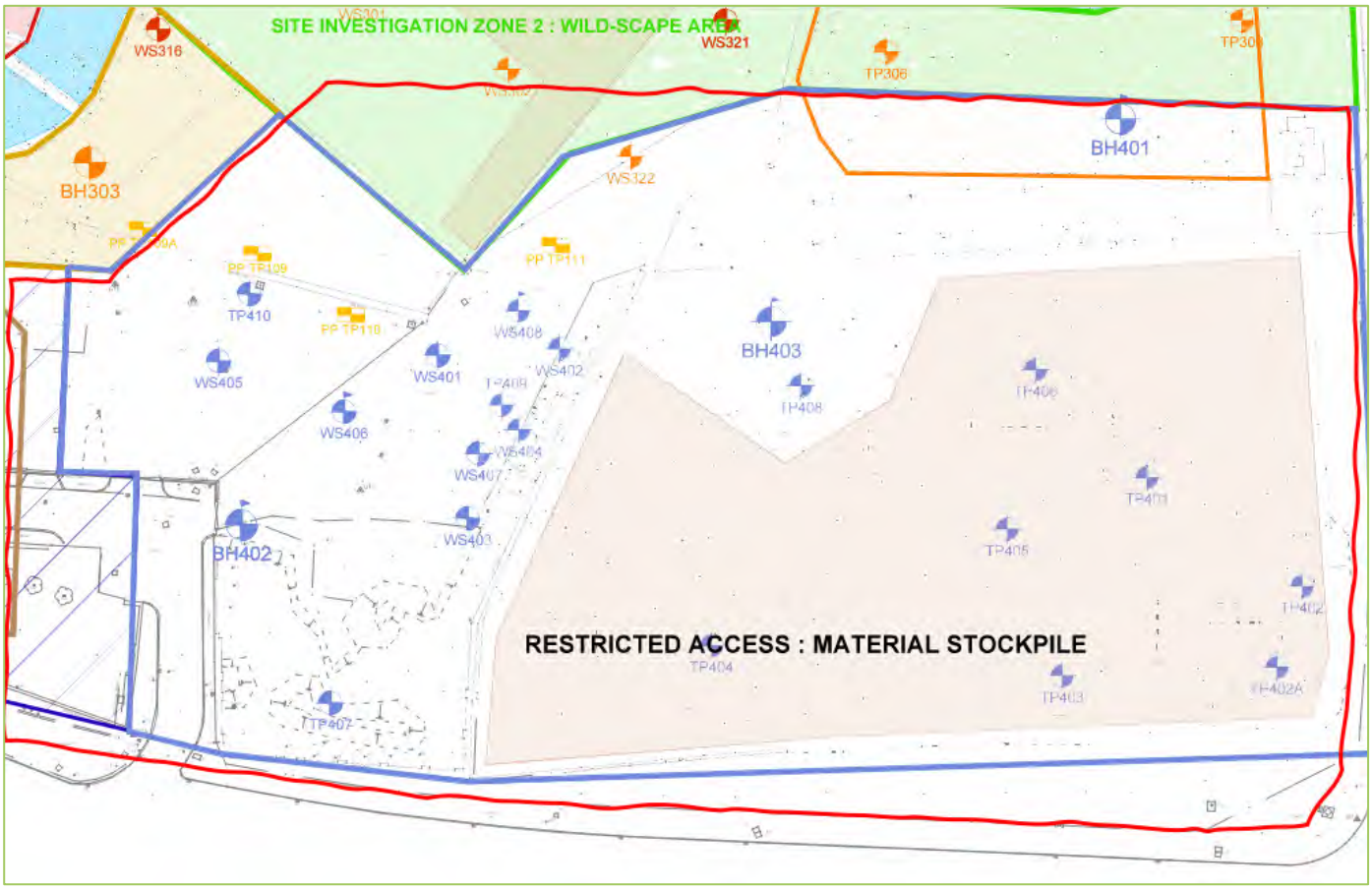
for non-evaporative cooling), 810m southeast (one record for heat pump) and 100m west (two records for general use relating to secondary category (medium loss) and heat pump).

The *River Medlock* is located approximately 10m north of the site at its closest point, meandering through Mayfield Park. The river flows west/southwest, and the regional groundwater flow direction is anticipated to be towards the southwest.

3.5 Previous ROC Investigation

The scope of the ROC investigation[2] within the site included three cable percussion boreholes (BH401 to BH403), eight window sample boreholes (WS401 to WS408) and 11 trial pits (TP401 to TP410 and TP402A). The positions of the ROC exploratory holes are illustrated in Plate 3. Access to approximately half of the site was limited due to the presence of a large material stockpile during the ground investigation and whilst trial pits were excavated in this area, the trial pits were excavated within the material stockpile that is no longer present on site.

Plate 3: ROC 2020 Ground Investigation Exploratory Hole Location Plan for "Zone 5" (Approximate Site Boundary in Red)



3.5.1 Ground Conditions

The ROC site investigation[2] encountered a variable thickness of Made Ground (between 0.70m and 4.80m) beneath thin layers of hardstanding and topsoil. The Made Ground was recorded to be variable in composition and typically described as loose to medium dense, slightly clayey, sandy gravel; sandy, gravelly clay; and clayey, sandy gravelly cobbles. The gravel comprised brick, concrete, sandstone, mudstone and limestone with rare to occasional fragments of slate, timber, glass, ash, asphalt and rebar.

Superficial deposits of Alluvium were recorded in boreholes WS401, WS406, WS407 and WS408 only with the top of the stratum recorded between depths of 0.80mbgl and 3.50m below ground level (mbgl). The deposits were recorded to range between 0.80m and 2.10m in thickness. The alluvial deposits were typically described as mottled orange brown to dark brown, slightly gravelly, clayey, silty sand; silty clay; and clayey sandy gravel. Superficial deposits of the Glacial Till were recorded in boreholes BH403, WS407 and WS408 only, with the top of

the stratum recorded between 1.00mbgl and 1.80mbgl. The deposits were recorded to range between 0.95m and 2.20m in thickness and were typically described as stiff to very stiff, brown, slightly gravelly, sandy clay.

It was noted in the Civic Earth desk study[3] that borehole WS407 recorded Glacial Till above deposits of Alluvium which is unexpected as the Alluvium is a younger deposit than Glacial Till and geological faulting of the superficial deposits is not anticipated. It was noted that the description of Alluvium in borehole WS407 is very similar to the description of the Weathered Chester Sandstone Formation in trial pit TP409, and it was therefore considered that the Sandstone has been incorrectly identified as Alluvium.

The Weathered Chester Sandstone Formation was encountered in exploratory holes BH401 to BH403, WS406, WS407 and TP409, with the upper surface of the stratum encountered between 1.10mbgl and 5.00mbgl. The deposits were proven to a maximum borehole depth of 6.20mbgl and typically described as completely weathered, extremely weak, reddish brown sandstone (recovered as sand) and orange, brown and red, slightly gravelly, clayey sand.

3.5.2 Groundwater Conditions

No groundwater strikes were encountered during the ROC site investigation[2] within the site. Ground gas and groundwater monitoring wells were installed within boreholes BH401 and BH402 within the Made Ground, and in borehole BH403 within the Glacial Till. Groundwater was not encountered during the subsequent monitoring visits.

It was noted in the ROC report[2] that the Chester Sandstone Formation was investigated to a greater extent as part of a separate ROC ground investigation to the west of the site[6] (at the Mayfield Phase 1A site), and these investigations recorded a significant weathered zone (between 7m and 10m in thickness) which overlies the more competent bedrock. The boreholes within the Phase 1A site were extended to approximately 30mbgl and a resting groundwater table was recorded at c.30m to 31mOD. However, due to the 'general absence of groundwater encountered in monitoring wells, and the tendency for water strikes to be recorded above lower permeability stratum', ROC considered it unlikely that groundwater beneath the site is in hydraulic continuity with the River Medlock, except potentially in proximity to the River Medlock.

3.5.3 Summary of Contamination

Visual and olfactory signs of contamination were observed by ROC during their site investigation[2], including a strong chemical odour in borehole WS401, black water with a strong hydrocarbon odour in borehole WS404, and hydrocarbon odours in trial pits TP409 and TP410.

An assessment of soil contamination at the site was carried out by ROC[2] where the soil chemical analysis results were assessed against a 'Public Open Space – Park' end use criteria. The results of the assessment for the exploratory holes within the site indicated elevated concentrations of lead within the Made Ground at borehole WS408. In addition, elevated concentrations of total petroleum hydrocarbons (TPH) (but at concentrations below the assessment criteria) were recorded at exploratory holes BH401, BH402, TP407, WS401, WS403 and WS404 between 200mg/kg and 7,680mg/kg). Elevated concentrations of lead and polycyclic aromatic hydrocarbons (PAHs) were recorded in the stockpiled material (which has now been removed from site) at trial pits TP403 and TP404.

Asbestos was also recorded within the Made Ground in seven locations (WS401, WS404, WS408, TP401, TP402A, TP405, TP407) between 0.4mbgl and 2.0mbgl; the asbestos material was identified as chrysotile and amosite cement, board and loose fibres between <0.001% and 0.465% by weight). It is noted that the material encountered in trial pits TP401, TP402A and TP405 (the large stockpile of material) has since been removed from site.

Risks posed by ground gas across the wider Mayfield Development were not considered applicable for the majority of the site by ROC[2], owing to the then public open space end use. However, it is noted that this ROC assessment is no longer valid for the current proposed development of the site. The limited ground gas monitoring results recorded by ROC within the site indicate a low risk from ground gases; however, additional monitoring would be required to confirm the ground gas regime at the site.

[6] ROC (2020) *Plot O + N, Mayfield. Phase 2 Site Investigation.* Reference ROCP/LD/AS/P2_4134. October 2020.

No groundwater was recorded during the monitoring rounds at the site by ROC. However, sampling of this water table across the wider Mayfield Development by ROC revealed localised elevated concentrations of heavy metals, PAHs and TPH in the same locations where similar hotspots of soil borne contamination were noted[3]. In some cases, the elevated concentrations were considered marginal and considered by ROC to pose a low risk; however, at some locations remedial action was recommended to reduce the risk to local groundwater quality. No measurable variance in surface water quality was noted up or down stream of the site within the Medlock by ROC, which supported ROC's notion the site is not having a significant impact on water quality as it passes the site.

3.5.4 Remediation and Validation Works

Following completion of the ROC ground investigation at the site and across the wider Mayfield Development, two remediation strategies were produced by ROC; the first for Mayfield Park[7] to the north and northwest of the site, and the second for Plots O, N and M[8], the land to the west of the site.

The remediation strategy for Mayfield Park and Plots O, N and M generally included; capping layers in areas of soft landscaping to mitigate the risks to human health; removal of grossly contaminated / impacted soils during excavation of Made Ground to top of natural strata; on-site treatment and re-use of Made Ground soils; excavation of Made Ground at specific borehole locations to mitigate the risks to controlled waters; and installation of barrier pipes for new water supply pipework.

The remediation strategy for Mayfield Park[8] also included a technical note[9] specific to residual contamination associated with Ardwick Tannery, which encroached slightly onto the southwest corner of the Phase 1B site[3]. The ROC technical note[9] summarises that the animal tanning operations were underway since c.1850 and expanded in size during the period leading up to the 1890s, with tan pits in the south and east of the tannery removed and constructed on top of, suggesting the tan pits were moved internally within the new structures. The tannery was subsequently cleared and developed between 1890 and 1908 into Chapelfield Indian Rubber works. The technical note recommended that a watching brief be put in place with specific emergency control measures in the event that tannery related contamination is observed during excavation works, and materials excavated from the tannery area not be re-used until they have been suitably inspected and verified as being free from potential tannery related contamination.

A remediation strategy specific to the site has not been produced; however, the remediation strategy for Mayfield Park[8] makes reference to exploratory holes WS401, WS404 and TP409 as a hotspot of hydrocarbon contamination (referenced as Hydrocarbon Hotspot #2). It was recommended by ROC that the impacted Made Ground and shallow natural soils be removed and replaced to prevent further on-going movement of TPH contamination into the underlying Principal aquifer.

Remediation and validation works were subsequently carried out by E3P across the off-site Mayfield Park and Plots M, N and O[10]. It is understood that enabling works were only undertaken in the far north of the site, which comprised the southern part of the Wetlands area, also referred to as The Wildscape. These works comprised the removal of concrete structures and basements and backfilling with site won material. In addition, during the enabling works an abstraction well located in the far north of the site was identified and fitted with a manhole cover.

Whilst the area in the southeast of the site was used for processing and stockpiling of material, it is understood that no enabling or remediation works were carried out within the site outside of the Wetlands Area. The E3P report[10] states that Hydrocarbon Hotspot #2 was not remediated as the hotspot was located outside of their site boundary.

3.6 Conceptual Site Model

A preliminary qualitative risk assessment was undertaken by Civic Earth[3] which concluded that there is generally

[7] ROC (2020) *Plots O, N & M, Mayfield, Manchester. Phase 3A Remediation Strategy.* Reference 4153-ROC-XX-XX-RP-ES-P3RS2 Revision 2. 18 December 2020.
[8] ROC (2020) *Mayfield Park, Mayfield, Manchester. Phase 3A Remediation Strategy.* Reference 4153-ROC-XX-XX-RP-ES-P3RS1 Revision 2. 17 December 2020.
[9] ROC (2021) *Technical Note 1.1. Residual Tannery Contamination on Mayfield Park, Manchester.* Reference 4153-ROC_XX_XX_RP_ES_TM1.1. 3 February 2021.
[10] E3P (2021) *Mayfield Parks and Plots M, N and O. Validation Report*. Reference 14-575-R1-Rev1. November 2021.

considered to be a low to moderate risk to the identified receptors from potential contaminants associated with the current and former uses of the site and surrounding areas, and potential Made Ground associated with the former development of the site.

In addition, the assessment has identified a number of potential geotechnical constraints associated with the anticipated underlying ground conditions, including the potential for below ground obstructions (for example historical foundations), a variable thickness of Made Ground associated with the historical development of the site including reservoir and risk of UXO to potential intrusive investigation works and/or construction works.

A supplementary intrusive ground investigation was therefore recommended so that the risks from contamination can be assessed and a remediation strategy developed, to inform material management decisions in terms of material re-use / off-site disposal and to obtain parameters for the geotechnical design of the project, such as foundation, floor slab and pavement design.

The Phase 1 Desk Study report[3] should be referred to for full details of the conceptual site model and preliminary risk assessment.

4. Supplementary Phase 2 Site Investigation

4.1 Introduction

A supplementary Phase 2 site investigation was undertaken between 8 and 19 January 2024. A summary of the intrusive works completed at the site is summarised in Table 1.

Table 1: Summary of Exploratory Hole Locations

Location Reference	Type of Exploratory Hole	Ground Level (mOD)	Base Depths (mbgl)	Base Levels (mOD)
BH1001	BH	38.92	25.00	13.92
BH1002	BH	37.16	25.00	12.16
BH1003	BH	39.20	20.00	19.20
BH1004	BH	42.28	25.00	17.28
BH1005	BH	41.16	20.00	21.16
WS1001	WS	37.19	1.00	36.19
WS1002	WS	37.76	2.00	35.76
WS1003	WS	42.19	2.45	39.74
WS1004	WS	38.26	2.50	35.76
WS1005	WS	39.83	2.50	37.33
WS1006	WS	41.96	2.50	39.46
WS1007	WS	37.09	1.00	36.09
WS1008	WS	39.16	1.00	38.16
WS1009	WS	41.65	1.50	40.15
TP1001	TP	42.15	3.00	39.15
TP1002	TP	41.67	2.30	39.37
TP1003	TP	38.10	3.30	34.80
TP1004	TP	37.48	3.20	34.28
TP1005	TP	39.97	3.30	36.67
TP1006	TP	36.51	3.20	33.31
TP1007	TP	38.10	3.30	34.80
TP1008	TP	42.27	3.50	38.77
TP1009	TP	40.00	3.20	36.80
TP1010	TP	41.04	3.00	38.04
TP1011	TP	35.87	3.20	32.67
TP1012	TP	35.93	3.30	32.63
FIP1001	FIP	37.79	1.50	36.29
FIP1002	FIP	38.07	1.05	37.02
FIP1003	FIP	38.41	0.60	37.81

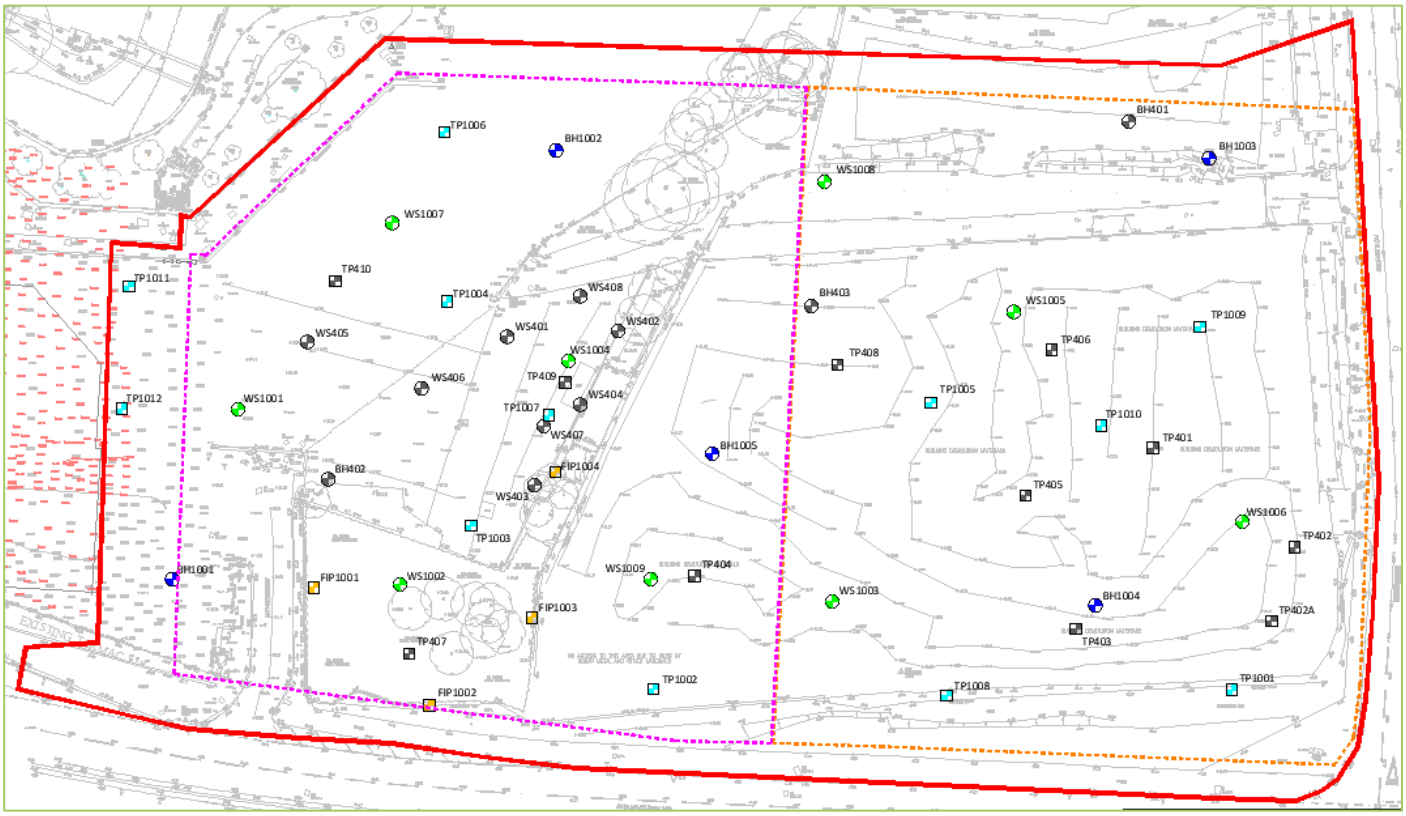
Location Reference	Type of Exploratory Hole	Ground Level (mOD)	Base Depths (mbgl)	Base Levels (mOD)
FIP1004	FIP	38.27	0.80	37.47

BH = cable/rotary borehole; WS = window sample borehole; TP = machine excavated trial pit; FIP = hand excavated foundation inspection trial pit.

Prior to breaking ground, exploratory holes were cleared for buried services by a specialist utility contractor utilisating a cable avoidance tool (CAT) and signal generator.

The investigation was undertaken in general accordance with the requirements of BS 5930:2015+A1:2020[11] and BS 10175:2011+A2:2017[12]. The exploratory hole records are included in Appendix A. An exploratory hole location plan is included in Appendix B; an extract of the exploratory hole location plan is provided in Plate 4, which includes the historical exploratory hole locations undertaken by ROC.

Plate 4. Extract of Exploratory Hole Location Plan



In-situ Standard Penetration Tests (SPTs) were carried out within the cable/rotary boreholes and selected window sample boreholes.

4.2 Ground Gas and Groundwater Monitoring

Three ground gas and groundwater monitoring rounds were undertaken on 30 January, 12 February and 20 February 2024. Groundwater samples were obtained from boreholes BH1001 to BH1005 and WS1004, WS1006 and WS1007 on 30 January 2024 and from boreholes WS1004, WS1006 and WS1007 on 30 February 2024. A summary of the monitoring wells installed is provided in Table 2 and the ground gas and groundwater monitoring and sampling records are included in Appendix C.

[11] British Standards Institution (2015) *Code of practice for ground investigations.* BS 5930:2015+A1:2020.
[12] British Standards Institution (2017) *Investigation of potentially contaminated sites – Code of practice.* BS 10175:2011+A2:2017.

Table 2: Summary of Monitoring Well Response Zones

Location Reference	Target Response Zone	Response Zone Top Depth (mbgl)	Response Zone Base Depth (mbgl)	Response Zone Top Level (mOD)	Response Zone Base Level (mOD)
BH1001	Sandstone Bedrock	4.50	25.00	34.42	13.92
BH1002	Sandstone Bedrock	4.50	25.00	32.66	12.16
BH1003	Sandstone Bedrock	4.50	20.00	34.70	19.20
BH1004	Sandstone Bedrock	5.00	25.00	37.28	17.28
BH1005	Sandstone Bedrock	3.50	20.00	37.66	21.16
WS1002	Made Ground	1.00	2.00	37.76	35.76
WS1004	Made Ground	1.00	2.50	37.26	35.76
WS1005	Made Ground	1.00	1.80	38.83	38.03
WS1006	Made Ground	1.00	2.50	40.96	39.46
WS1007	Made Ground	0.30	1.00	36.79	36.09
WS1009	Made Ground	0.50	1.50	41.05	40.05

4.3 Chemical Laboratory

4.3.1 Soil Testing

Selected soil samples were submitted to i2 Analytical Limited (a UKAS and MCERTS accredited laboratory) for chemical soil testing. The analysis included the following determinants and the results are included in Appendix D.

- 40 Nr. pH
- 40 Nr. soil organic matter (SOM);
- 40 Nr. total sulphate as SO_4;
- 40 Nr. total cyanide;
- 40 Nr. heavy metal suite (antimony, arsenic, barium, beryllium, boron, cadmium, chromium (III and VI), copper, lead, mercury, nickel, selenium, vanadium and zinc);
- 40 Nr. polycyclic aromatic hydrocarbons (PAH);
- 40 Nr. total petroleum hydrocarbons (TPH);
- 40 Nr. total monohydric phenols;
- 40 Nr. BTEX compounds (benzene, toluene, ethylbenzene, xylenes);
- 2 Nr. acid / alkali reserve tests;
- 7 Nr. Waste Acceptance Criteria (WAC) tests;
- 2 Nr. polychlorinated biphenyls (PCB) tests;
- 40 Nr. asbestos screen and identification; and
- 8 Nr. asbestos quantification.

4.3.2 Leachate Testing

Selected soil samples were submitted to i2 Analytical Limited (a UKAS and MCERTS accredited laboratory) for chemical soil leachate testing. The analysis included the following determinants and the results are included in Appendix D. It is noted that partial testing was completed on the sample from trial pit TP1011 due to insufficient sample being available for analysis, following completion of the initial total soils analysis.

- 5 Nr. pH
- 4 Nr. dissolved organic carbon (DOC);
- 5 Nr. total sulphate as SO_4;
- 5 Nr. total cyanide;
- 4 to 5 Nr. heavy metal suite (antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium (III and VI), copper, lead, mercury, nickel, selenium, vanadium and zinc);
- 4 Nr. polycyclic aromatic hydrocarbons (PAH);
- 4 to 5 Nr. total petroleum hydrocarbons (TPH); and
- 4 Nr. total monohydric phenols.

4.3.3 Groundwater Testing

Selected water samples were submitted to i2 Analytical Limited (a UKAS and MCERTS accredited laboratory) for chemical water testing. The analysis included the following determinants and the results are included in Appendix D.

- 8 Nr. pH
- 8 Nr. dissolved organic carbon (DOC);
- 8 Nr. total sulphate as SO_4;
- 8 Nr. ammoniacal nitrogen as N;
- 11 Nr. total cyanide;
- 11 Nr. free cyanide;
- 8 Nr. hardness;
- 8 Nr. heavy metal suite (antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium (III and VI), copper, lead, magnesium, mercury, nickel, selenium, vanadium and zinc);
- 8 Nr. polycyclic aromatic hydrocarbons (PAH);
- 8 Nr. BTEX compounds (benzene, toluene, ethylbenzene, xylenes);
- 8 Nr. total petroleum hydrocarbons (TPH); and
- 8 Nr. total monohydric phenols.

4.4 Geotechnical Laboratory Analysis

Selected soil samples were submitted to Geolabs Limited (a UKAS accredited laboratory) for geotechnical testing in general accordance with BS 1377[13]. The following tests were scheduled and the results are included in Appendix E:

- 12 Nr. Atterberg Limit (4 Point);
- 10 Nr. particle size distribution (PSD) (wet sieve);
- 4 Nr. PSD sedimentation (by pipette);
- 11 Nr. natural water content;
- 1 Nr. single stage undrained triaxial;
- 18 Nr. point load strength of rock;
- 3 Nr. uniaxial compressive strength of rock including 1 Nr. determination of Young's Modulus and Poisson's

[13] British Standard (2018). *Methods of testing for soils for civil engineering purposes*. BS 1377:2018.

Ratio; and

- 16 Nr. Building Research Establishment (BRE) Special Digest (SD)[14] Suite – including 2:1 water soluble sulphate, 2:1 water soluble chloride, water soluble magnesium, total sulphate, total sulphur and pH.

[14] Building Research Establishment (2006). BRE Special Digest Part 1: *Concrete in aggressive ground*

5. Ground and Groundwater Conditions

5.1 Summary of Ground Model

A summary of the ground conditions encountered during supplementary site investigation is provided in Table 3. It is noted that the ground conditions recorded in foundation inspection trial pits FIP1001 to FIP1004 are not included in Table 3 and are reported separately in Section 5.7.

Table 3: Summary of Supplementary Site Investigation Ground Conditions

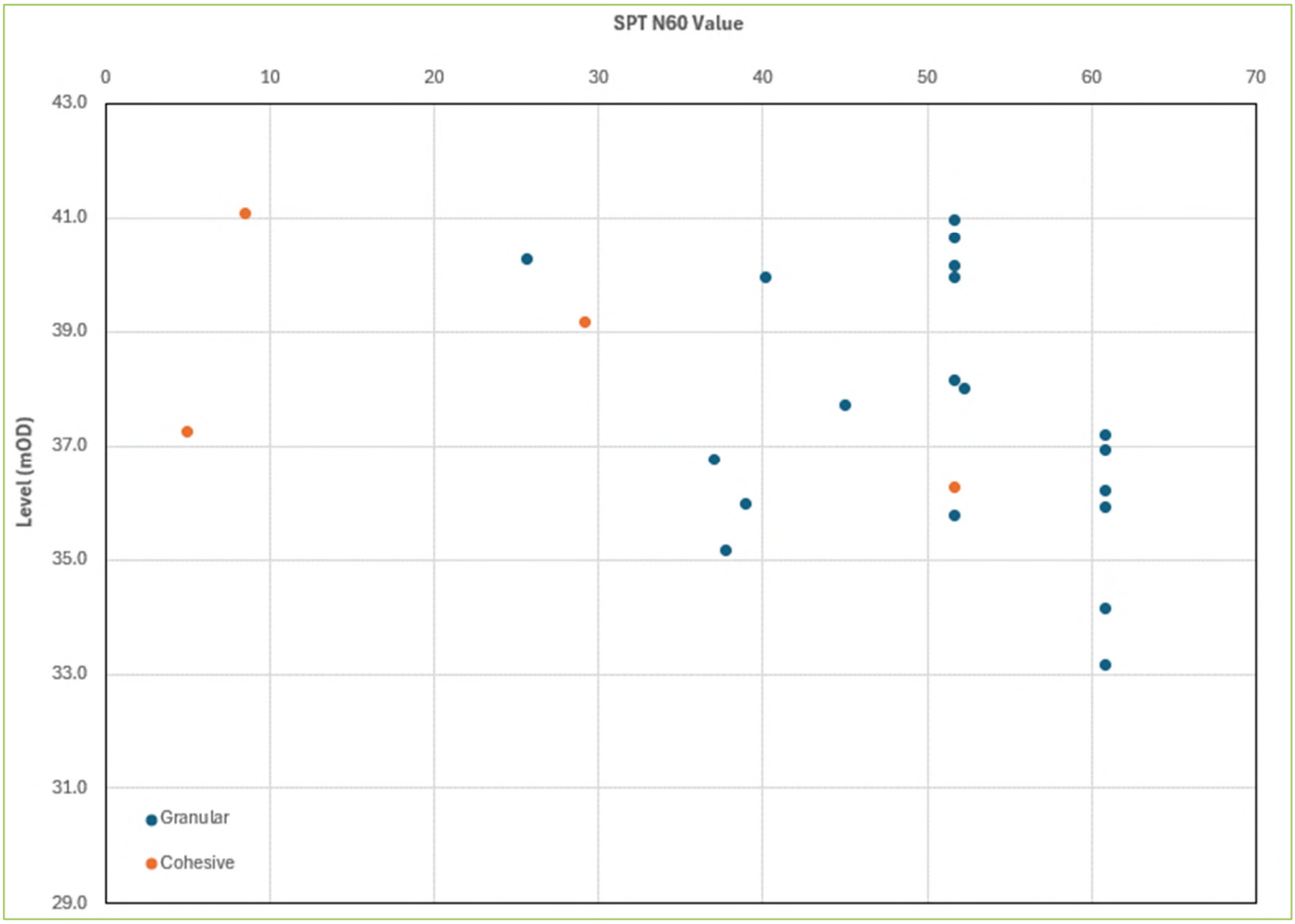
Stratum	Top of Stratum (mbgl) [mOD]	Thickness (m)
Reinforced concrete / concrete / bituminous macadam over soft to stiff dark orange brown black slightly sandy to sandy slightly gravelly to gravelly clay and/or loose to dense dark brown black occasionally red yellow brown clayey gravelly cobbly sand / clayey sandy cobbly gravel. Gravel is angular to subangular fine to coarse of brick, concrete and sandstone. Frequent fragments of glass, wire, plastic, ash, dolomite and tile. Sand is fine to coarse. **[MADE GROUND]**	0.0 [42.28 to 35.87]	0.50 to 4.10
Stiff dark grey orange brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of sandstone and coal. Sand is fine to coarse. *Encountered in BH1004, TP1001, TP1003, TP1007 to TP1010, WS1003 and WS1005.* **[GLACIAL TILL]**	0.50 to 2.70 [41.69 to 36.00]	0.80 to 2.40
Reddish brown SANDSTONE. Recovered as medium dense to very dense fine to coarse sand. *Encountered in BH1001 to BH1005, TP1007 and WS1005.* **[WEATHERED CHESTER SANDSTONE FORMATION]**	2.40 to 4.70 [38.26 to 33.06]	0.10 to 6.65
Very weak to weak, locally extremely weak, medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. *Encountered in BH1001 to BH1005 and TP1005.* **[CHESTER SANDSTONE FORMATION]**	6.50 to 10.55 [37.07 to 28.37]	>18.50

5.2 Made Ground

Made Ground was encountered from below hardstanding or from surface at each exploratory hole location and ranged in thickness between 0.50m and 4.10m in thickness. The stratum comprised predominantly granular horizons with some cohesive horizons, both of variable consistency and density.

A total of 19 SPTs were undertaken within the granular Made Ground horizons where SPT N60 values ranged from 25 to >50 corresponding to 'medium dense to 'very dense' granular deposits[11]. It is noted that the frequent presence of cobbles within the Made Ground potentially influenced the SPT results in some locations, particularly where >50 values were recorded. A total of 3 SPTs were undertaken within the cohesive Made Ground horizons; 2 SPT N60 values were recorded as 5 and 29, correlating to 'firm to stiff' clay[11]. It is noted that the third SPT undertaken at 2.00mbgl within borehole WS1004 recorded a value of >50; however, it is considered likely that the test was influenced by the presence of a cobble within the Made Ground and therefore not representative of the very soft material that the test was carried out in. A summary of the SPT N60 values versus level are provided in Plate 5.

Plate 5. SPT N60 versus Level (mOD) – Made Ground



Sulphate and pH testing was undertaken on samples of the Made Ground retrieved during the ground investigation. The results are summarised in Table 4.

Table 4: Summary of pH and Sulphate Testing – Made Ground

Number of Tests	pH	Water Soluble SO4* (mg/l)	Water Soluble Chloride* (mg/l)	Water Soluble Nitrate as N* (mg/l)
6	7.9 to 12	29.3 to 993	4.3 to 69	<2.0

*2:1 Leachate Equivalent

A summary of the classification testing undertaken on selected samples from the Made Ground is provided in Table 5. The results of the classification testing indicate the material to be clay of low to intermediate plasticity[11] with a negligible to low volume change potential[15].

Table 5: Summary of Classification Testing – Made Ground

Number of Tests	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	% Passing (>450µm)	Modified Plasticity Index (%)
4	13.2 to 20.7	22 to 35	16 to 22	44 to 100	2.6 to 14

A summary of the PSD test undertaken on a selected sample from the Made Ground is provided in Table 6. The results of the testing indicate the material to typically comprise an occasionally cobbly, silty, very gravelly sand.

[15] NHBC (2013) *NHBC Standards. Chapter 4.2 Building near trees.*

Table 6: Summary of PSD Testing – Made Ground

Number of Tests	Cobble Content (%)	Gravel Content (%)	Sand Content (%)	Silt Content (%)	Clay Content (%)
1	6.8	33.5	50.9	8.7	

It is noted that the ROC investigation[2] recorded Made Ground to depths of between 0.70mbgl and 4.80mbgl beneath thin layers of hardstanding and topsoil.

5.3 Glacial Till

The Glacial Till was encountered in exploratory holes BH1004, TP1001, TP1003, TP1007 to TP1010, WS1003 and WS1005. The top of the superficial deposits was recorded between 41.69mOD and 36.00mOD and recorded to range between 0.80m and 2.40m in thickness.

SPT N60 values ranged from 8 to >50 (extrapolated to 60) corresponding to 'firm to very stiff' clay. Correlated c_u values ranged from 36kPa to 270kPa (assuming f_1 = 4.5[16]), correlating to low to very high strength material[11]. A summary of the SPT N60 values and undrained shear strengths versus level are provided Plate 6 and Plate 7 respectively. The result of the triaxial test undertaken on an undisturbed sample of the Glacial Till returned an undrained shear strength of 172kPa, correlating to clay of very high strength[11].

A summary of the classification testing undertaken on selected samples from the Glacial Till is provided in Table 7. The results of the classification testing indicate the material to be clay and silt of low to intermediate plasticity[11] with a negligible to medium volume change potential[15]. It is noted that the sample tested from trial pit TP1007 at 3.0mbgl returned a 'non-plastic' result and has been omitted from the summary table; the material would represent clay of negligible volume change potential.

Table 7: Summary of Classification Testing – Glacial Till

Number of Tests	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	% Passing (>450µm)	Modified Plasticity Index (%)
7	10.7 to 23.5	26 to 46	12 to 27	33 to 100	3.3 to 23

A summary of PSD test undertaken on a selected sample from the Glacial Till is provided in Table 8. The results of the testing indicate the material to typically comprise a gravelly, sandy, clayey silt and gravelly, clayey, silty sand.

Table 8: Summary of PSD Testing – Glacial Till

Number of Tests	Cobble Content (%)	Gravel Content (%)	Sand Content (%)	Silt Content (%)	Clay Content (%)
4	0.0	2.0 to 10.0	20.5 to 48.5	27.8 to 51.4	13.7 to 26.6

Sulphate and pH testing was undertaken on samples of the Glacial Till retrieved during the ground investigation. The results are summarised in Table 9.

Table 9: Summary of pH and Sulphate Testing – Glacial Till

Number of Tests	pH	Water Soluble SO4* (mg/l)	Water Soluble Chloride* (mg/l)	Water Soluble Nitrate as N* (mg/l)
5	5.8 to 8.6	64.3 to 186	1.9 to 11	<2.0

*2:1 Leachate Equivalent

[16] Stroud, M. A. (1974). The Standard Penetration Test in Insensitive Clays and Soft Rocks. Proceedings of the European Symposium on Penetration Testing, Stockholm, June 5-7, 1974 2(2): 367-375

Plate 6. SPT N60 versus Level (mOD) – Glacial Till

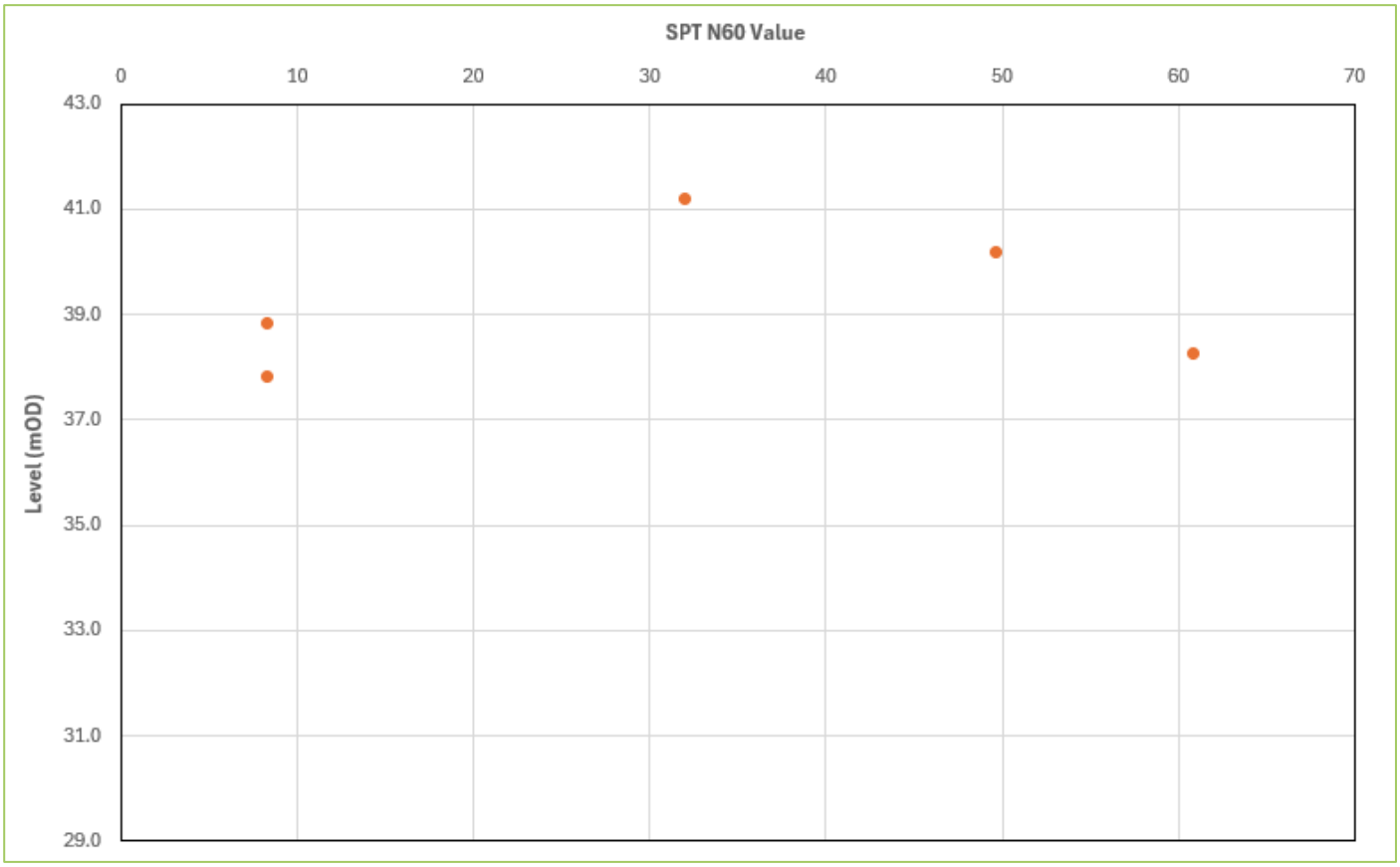
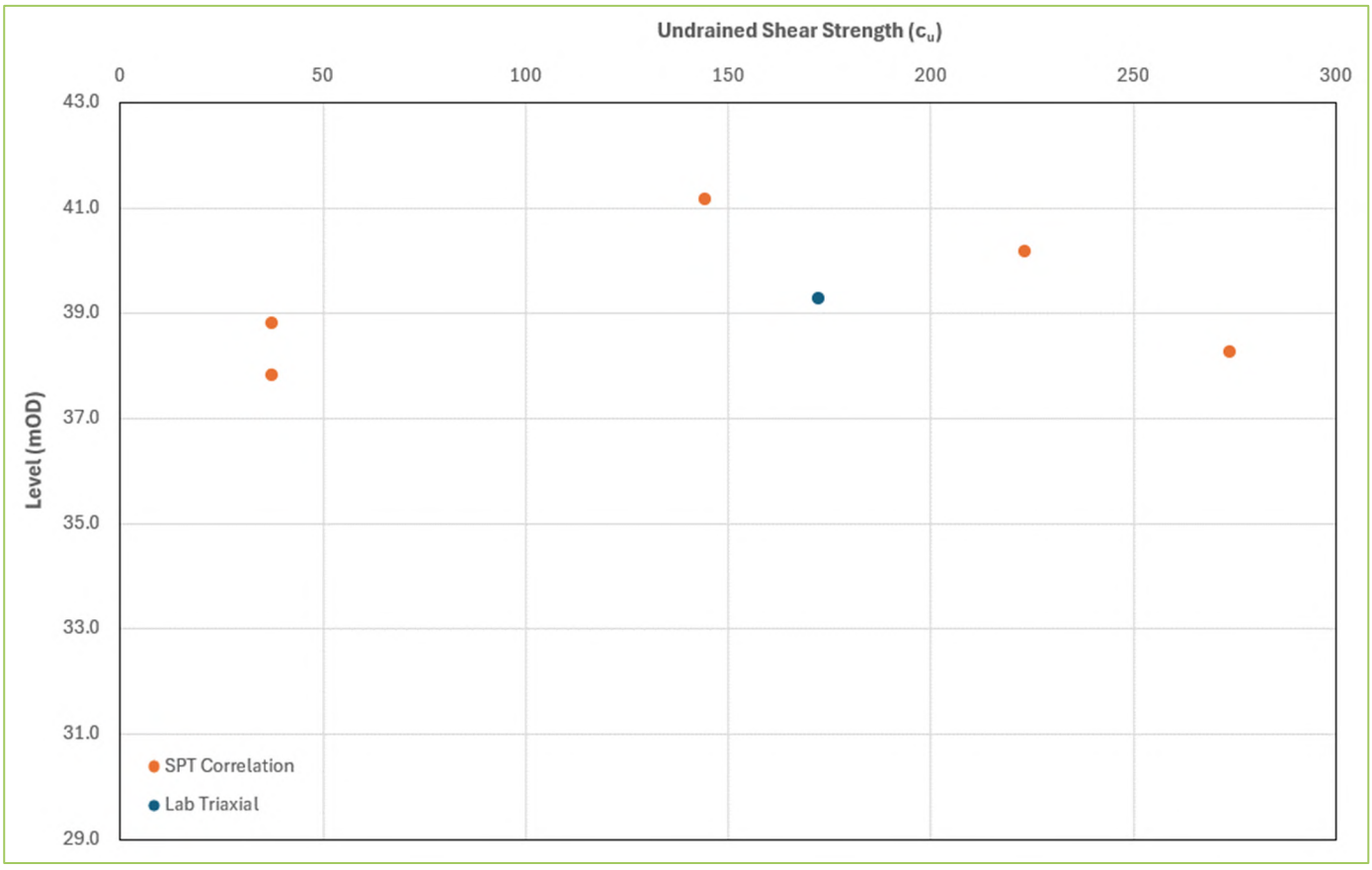


Plate 7. Undrained Shear Strength versus Level (mOD) – Glacial Till



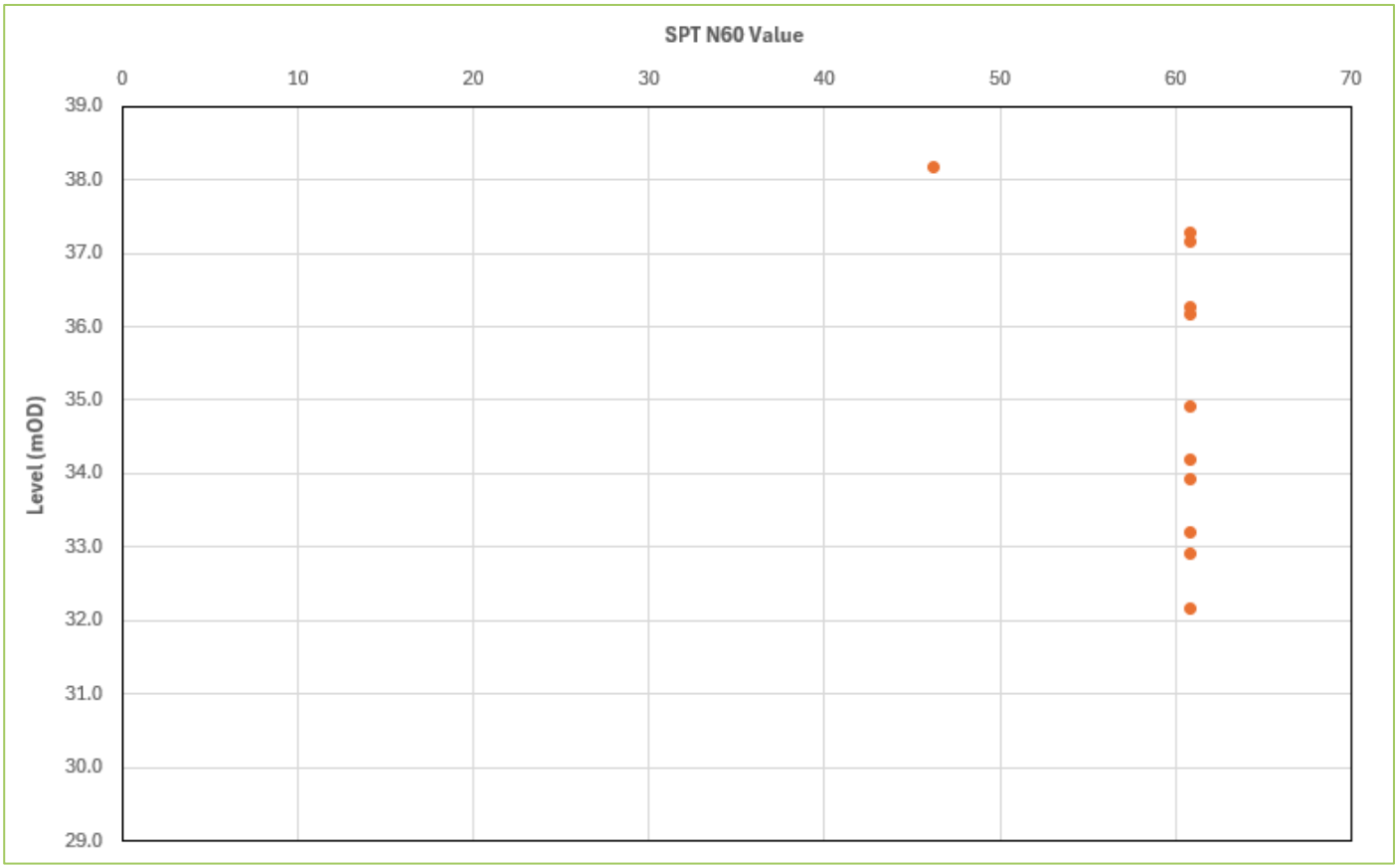
Superficial deposits of the Glacial Till were recorded in boreholes BH403, WS407 and WS408 only during the ROC investigation[2], with the top of the stratum recorded between 1.00mbgl and 1.80mbgl. The deposits were recorded to range between 0.95m and 2.20m in thickness and were typically described as stiff to very stiff, brown, slightly gravelly, sandy clay. Superficial deposits of Alluvium were recorded in boreholes WS401, WS406, WS407 and WS408 only with the top of the stratum recorded between depths of 0.80mbgl and 3.50m below ground level (mbgl). The deposits were recorded to range between 0.80m and 2.10m in thickness. The alluvial deposits were typically described as mottled orange brown to dark brown, slightly gravelly, clayey, silty sand; silty clay; and clayey sandy gravel.

5.4 Chester Sandstone Formation

The Chester Sandstone Formation was recorded in boreholes BH1001 to BH1005, trial pits TP1005 and TP1007, and window sample borehole WS1005. A weathered horizon was encountered (above the competent bedrock) in boreholes BH1001 to BH1005, WS1005 and trial pit TP1007; the weathered horizon was not encountered in trial pit TP1005. The weathered Chester Sandstone Formation, recovered as a dense to very dense sand, was encountered between 38.26mOD and 33.06mOD and ranged between 0.10m and 6.65m in thickness. The more competent bedrock, recovered as a very weak to weak (locally extremely weak) sandstone, was encountered in boreholes BH1001 to BH1005 and trial pit TP1005 between 37.07mOD and 28.37mOD and proven to the maximum borehole penetration depth.

A total of 11 SPTs were carried out within the Weathered Chester Sandstone Formation. SPT N60 values ranged from 46 to >50 (extrapolated to 150) corresponding to dense to very dense granular deposits. A summary of the SPT N60 values versus level are provided Plate 8.

Plate 8. SPT N60 versus Level (mOD) – Weathered Chester Sandstone Formation



A summary of PSD testing undertaken on selected samples from the Weathered Chester Sandstone Formation is provided in Table 10. The results of the testing indicate the material to typically comprise a slightly clayey/silty, slightly gravelly sand.

Table 10: Summary of PSD Testing – Weathered Chester Sandstone Formation

Number of Tests	Cobble Content (%)	Gravel Content (%)	Sand Content (%)	Silt Content (%)	Clay Content (%)
5	0.0	0.6 to 12.6	65.1 to 93.9	5.5 to 22.2	

Sulphate and pH testing was undertaken on samples of the Weathered Chester Sandstone Formation retrieved during the ground investigation. The results are summarised in Table 11.

Table 11: Summary of pH and Sulphate Testing – Weathered Chester Sandstone Formation

Number of Tests	pH	Water Soluble SO4* (mg/l)	Water Soluble Chloride* (mg/l)	Water Soluble Nitrate as N* (mg/l)
5	8.2 to 10.6	31.2 to 177	4.3 to 6.6	<2.0

*2:1 Leachate Equivalent

Point load testing and unconfined compressive strength (UCS) tests were carried out on the core samples retrieved from boreholes BH1001 to BH1005. The results of the three UCS tests recorded UCS values between 0.61MPa and 4.8MPa. The mode of failure was stated as both diagonal shearing and axial splitting. The Young's Modulus and Poisson's Ratio were determined as 0.159GPa and 1.63GPa respectively on the rock sample from borehole BH1004 at 16.59mbgl. Applying the Broch and Franklin conversion of 24 to the point load test results, a corresponding UCS of between 0.24MPa and 2.88MPa with an average of 0.68MPa is estimated.

The recorded and estimated UCS values correlate to an extremely weak to very weak rock[11]. The heavy fracturing / weathered zones interbedded with the more competent sandstone is likely to be influencing the strength of the sandstone.

The Weathered Chester Sandstone Formation was encountered in ROC exploratory holes BH401 to BH403, WS406, WS407 and TP409, with the upper surface of the stratum encountered between 1.10mbgl and 5.00mbgl. The deposits were proven to a maximum borehole depth of 6.20mbgl and typically described as completely weathered, extremely weak, reddish brown sandstone (recovered as sand) and orange, brown and red, slightly gravelly, clayey sand.

5.5 Visual and Olfactory Potential Contamination

Olfactory signs of potential hydrocarbon contamination were noted within trial pit TP1009 within the Made Ground at 1.90mbgl. The presence of foreign materials such as bricks, wire, concrete, plastic, glass and ceramic was noted within the Made Ground.

It is noted that the previous ROC site investigation[2] recorded olfactory signs of potential hydrocarbon contamination in trial pits TP409 and TP410 and seepage of black contaminated water impacting soils at borehole WS404 in the west of the site, considered by ROC to be associated with the historical above ground storage tanks in the area. In addition, a strong chemical odour was recorded by ROC at borehole WS401 in the west of the site, in proximity to borehole WS404 and trial pits TP409.

5.6 Groundwater

Groundwater was encountered during the site investigation as detailed in Table 12.

Table 12: Summary of Groundwater Strikes during Site Investigation

Location	Stratum	Strike Depth (mbgl)	Strike Level (mOD)	Depth after 20 Mins (mbgl)	Level after 20 Mins (mOD)	Rise in Depth after 20 Mins (m)
BH1001	Sandstone	14.70	24.22	9.90	29.02	4.80
BH1002	Sandstone	13.50	23.66	8.10	29.06	5.40
BH1003	Sandstone	12.40	26.80	8.50	30.70	3.90
BH1004	Sandstone	18.00	24.28	12.90	29.38	5.10

Location	Stratum	Strike Depth (mbgl)	Strike Level (mOD)	Depth after 20 Mins (mbgl)	Level after 20 Mins (mOD)	Rise in Depth after 20 Mins (m)
BH1005	Sandstone	16.70	24.46	12.35	28.81	4.35
TP1008	Glacial Till	2.80	39.47	2.67	39.60	0.13
TP1010	Made Ground	2.00	39.04	1.95	39.09	0.05

Three groundwater monitoring rounds were undertaken in in January and February 2024 following completion of the site investigation and the results are summarised in Table 13.

Table 13: Summary of Groundwater Monitoring

Location	Stratum	Date	Groundwater Depth (mbgl)	Groundwater Level (mOD)
BH1001	Sandstone	30/01/24	9.22	29.70
		12/02/24	9.20	29.72
		20/20/24	9.12	29.80
BH1002	Sandstone	30/01/24	7.46	29.70
		12/02/24	7.37	29.79
		20/20/24	7.31	29.85
BH1003	Sandstone	30/01/24	8.59	30.61
		12/02/24	8.61	30.59
		20/20/24	8.46	30.74
BH1004	Sandstone	30/01/24	12.63	29.65
		12/02/24	12.57	29.71
		20/20/24	12.55	29.73
BH1005	Sandstone	30/01/24	11.49	29.67
		12/02/24	11.43	29.73
		20/20/24	11.44	29.72
WS1002	Made Ground	30/01/24	Dry	Dry
		12/02/24	Dry	Dry
		20/20/24	Dry	Dry
WS1004	Made Ground	30/01/24	1.61	36.65
		12/02/24	1.80	36.46
		20/20/24	1.75	36.51
WS1005	Made Ground	30/01/24	Dry	Dry
		12/02/24	Dry	Dry
		20/20/24	Dry	Dry
WS1006	Made Ground	30/01/24	1.95	40.01
		12/02/24	2.08	39.88

Location	Stratum	Date	Groundwater Depth (mbgl)	Groundwater Level (mOD)
		20/20/24	2.06	39.90
WS1007	Made Ground	30/01/24	0.01	37.08
		12/02/24	0.11	36.98
		20/20/24	0.12	36.97
WS1009	Made Ground	30/01/24	Dry	Dry
		12/02/24	Dry	Dry
		20/20/24	Dry	Dry

The groundwater results indicate a groundwater body within the Chester Sandstone Formation between approximately +30.65mOD and +29.70mOD. In addition, perched water was recorded within the Made Ground and there is considered to be the potential for further shallow perched water across the site given the variable nature of the Made Ground material and Glacial Till. These findings are supported by the previous groundwater monitoring investigations across the wider Mayfield Development, where a resting groundwater table was recorded at c.30mOD to 31mOD in the Phase 1A development area to the west of the site.

5.7 Ground Gas

Three rounds of ground gas monitoring have been carried out in January and February 2024. The monitoring rounds were carried out in atmospheric pressures ranging between 998 to 1023mbar in steady and rising pressure systems. A summary of the worst-case ground gas monitoring results is provided in Table 14. The worst-case scenario includes maximum steady flow, maximum steady carbon dioxide and maximum (peak) methane recorded at each borehole over the three monitoring rounds.

Table 14: Summary of Ground Gas Conditions

Location	Stratum	Steady Flow Rate (l/hr)	Maximum Steady CO_2 (% vol. in air)	Maximum CH_4 (% vol. in air)	Maximum PID (ppm)
WS1002	Made Ground	<0.1	0.1	<0.1	0.1
WS1004	Made Ground	<0.1	0.6	<0.1	0.2
WS1005	Made Ground	<0.1	0.1	<0.1	0.1
WS1006	Made Ground	<0.1	0.1	<0.1	0.1
WS1007	Made Ground	<0.1	0.1	<0.1	0.4
WS1009	Made Ground	<0.1	1.0	<0.1	0.1

5.8 Foundation Inspection Trial Pits

A summary of the existing foundation details and depths encountered in trial pits FIP1001 to FIP1004 are summarised in Table 15.

Table 15: Summary of Foundation Inspection Trial Pits

Location	Target Structure	Base of Foundation (mbgl)	Foundation Details
FIP1001	West Internal Retaining Wall	Not encountered	Trial pit extended to 1.50mbgl and base of column not encountered. Trial pit terminated following confirmation from Structural Engineer as information obtained to inform likely grubbing out requirements.
FIP1002	South Boundary Retaining Wall	Not encountered	Advertising board's metal column fixed in front of retaining wall, bolted onto concrete pad. Concrete proven to extend 2.20m away from retaining wall; concrete pad

Location	Target Structure	Base of Foundation (mbgl)	Foundation Details
			found to be 0.90m in thickness. Trial pit terminated following confirmation from structural engineer as unable to extend towards retaining wall safely due to presence of overhead hoarding.
FIP1003	East Internal Retaining Wall	Not encountered	Brick floor encountered at 0.60mbgl. Trial pit terminated following confirmation from structural engineer that sufficient information on ground conditions/extent of tiles floor can be obtained from nearby trial pits.
FIP1004	East Internal Retaining Wall	Not encountered	Tiled floor encountered at 0.70mbgl. Trial pit terminated following confirmation from structural engineer that sufficient information on ground conditions/extent of tiles floor can be obtained from nearby trial pits.

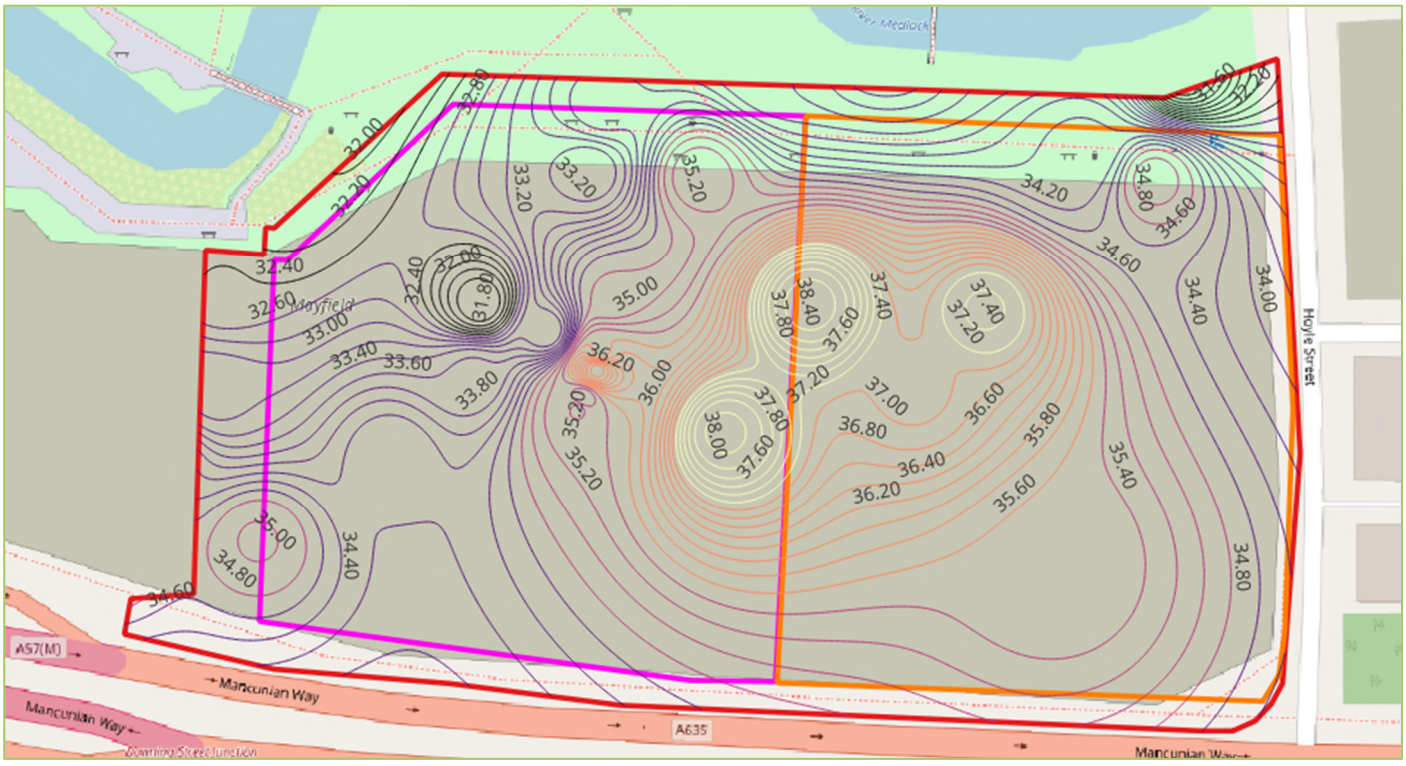
6. Ground Model Summary

The ground model at the site has been generated based on the site investigation previously undertaken within the site by ROC[2] and the supplementary investigation undertaken by Civic Earth in January 2024. The ground conditions across the site were found to comprise a variable thickness of Made Ground (between 0.45m and 5.00m) overlying superficial deposits of Alluvium and Glacial Till. The deposits of Alluvium were recorded during the ROC investigation only in boreholes WS401, WS406, WS407 and WS408. The upper surface of the Alluvium was recorded between 37.20mOD and 24.28mOD and ranged between 0.80m and 2.10m in thickness. Deposits of Glacial Till were recorded during both the ROC and supplementary site investigation between 41.69mOD and 36.00mOD and ranged between 0.80m and 2.40m in thickness. The bedrock of the Chester Sandstone Formation was encountered between 38.51mOD and 28.37mOD.

An indicative contour plot illustrating the level of the top of the sandstone bedrock is provided in Plate 9. The contours have interpreted the upper surface of the sandstone based on the level recorded at the time of investigation at these specific points. Actual levels may vary depending on the actual ground conditions, noting that the top surface of the sandstone is likely to have been influenced by natural and man-made processes, which are likely to have resulted in rapid variation on the level between points. The contours were initially modelled using the exploratory holes where sandstone was encountered. The levels of the contours were then compared against the level of the base of exploratory holes that did not encounter sandstone. Where the base of the exploratory hole was below the level of the contour, the contours were re-modelled assuming that the sandstone was at least 250mm below the base of the exploratory hole. Contours for Plot J suggest that the top of the Chester Sandstone Formation slopes gently downwards from the northwest of the plot towards the southeast and towards the northeast, whilst the contours for Plot K suggest that the top of the bedrock slopes gently downwards from the central east of the plot (at the boundary with Plot J) towards the southwest and northeast. Small 'headlands' are indicated by the contour plots, which could be as a result of ancient natural weather process associated with the nearby River Medlock, or potentially as a result of historical excavation of basements/below ground structures.

Perched water has been encountered in the Made Ground and Glacial Till which is variable in level and appears to be limited in nature, confined by surrounding cohesive deposits. The Principal aquifer was recorded in the Chester Sandstone Formation between approximately +30.65mOD and +29.70mOD.

Plate 9. Indicative Contour Plot of Level (mOD) to Top of Sandstone Bedrock



Illustrative cross sections for the Plot J and Plot K are provided in Plate 10 and Plate 11.

Plate 10. Plot J Illustrative Ground Model Cross Section

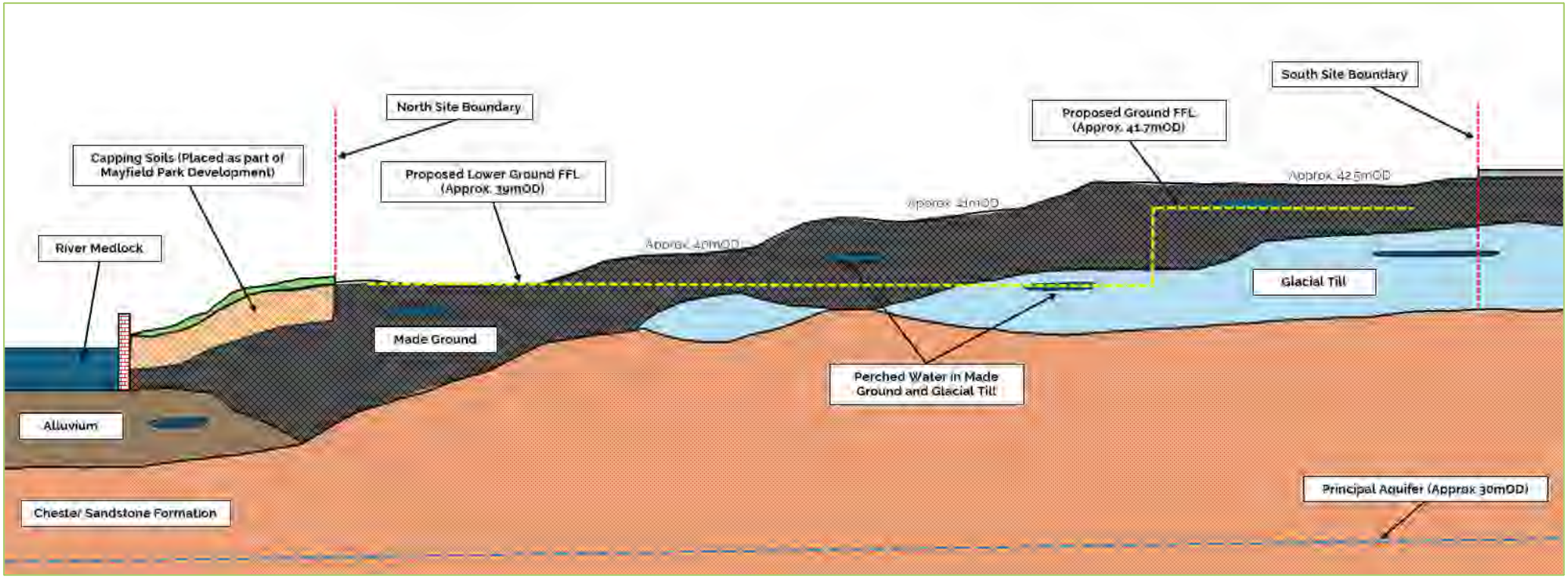
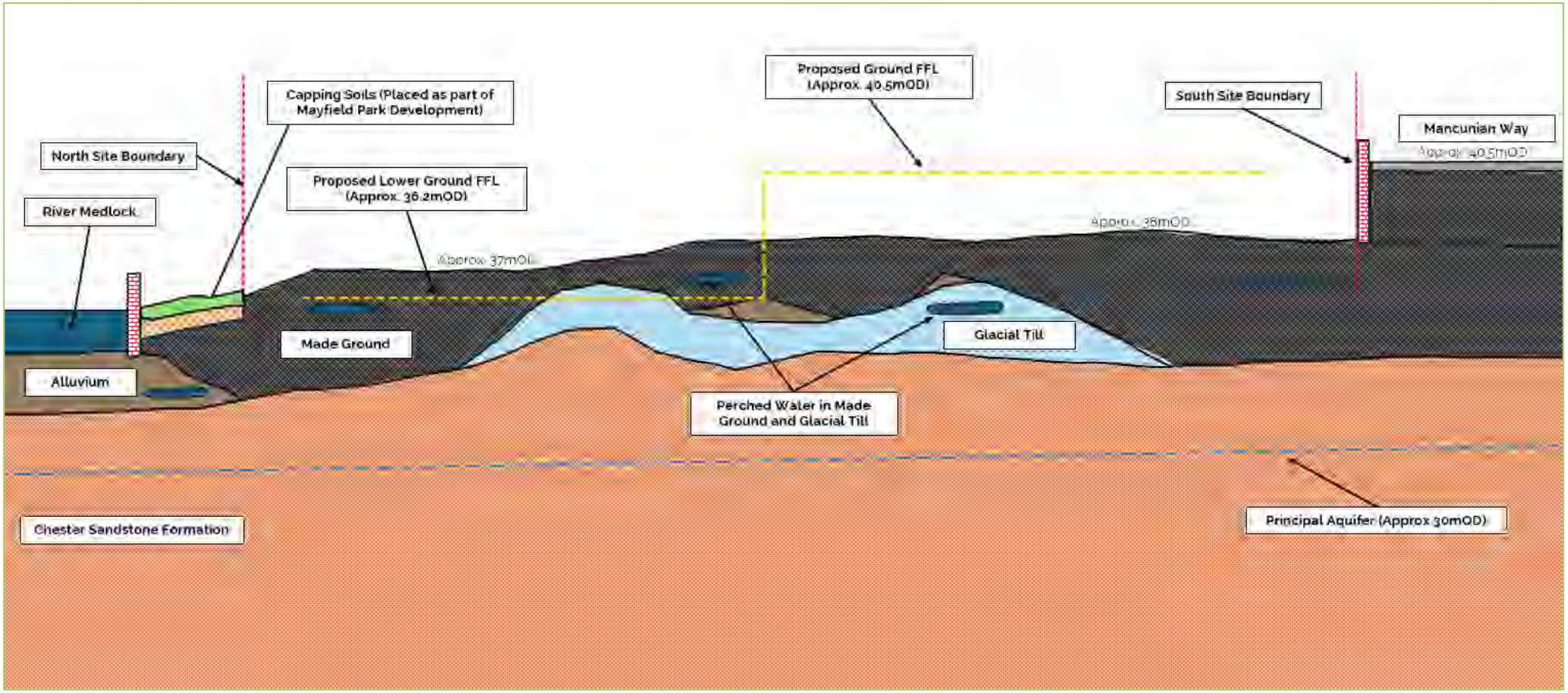


Plate 11. Plot K Illustrative Ground Model Cross Section



7. Contamination Assessment

7.1 Introduction

The risks to the identified potential receptors at the site have been assessed with respect to the identified contamination at the site. The potential receptors have been identified with reference to the Part 2A Contaminated Land Guidance and associated DEFRA guidance[17] and have been considered if there is the potential for them to be adversely affected by exposure to contamination. Civic Earth's approach and rationale to the assessment criteria for this site is provided in Appendix F.

7.2 Risks to Human Health from Soil Contaminants

A total of 40 soil samples were submitted for chemical analysis, 34 samples from the Made Ground and 6 samples from the natural Glacial Till, and the results compared against human health generic assessment criteria (GAC) for a "residential without home grown produce" end use based on the proposed end use of the site.

The assessment results for the Made Ground are summarised in Table A in Appendix F and the natural soils in Table B in Appendix F. It is noted that the Solubility Saturation Limit (SSL) and Vapour Saturation Limit (VSL) criteria indicate the theoretical value at which free phase product is expected to be present. As no evidence of free product was noted during the site investigation, the SSL and VSL values have not been considered within the assessment.

Assessment of the Made Ground results indicate that the contaminant concentrations are generally below their respective assessment thresholds with the exception of arsenic, beryllium, lead and PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b) fluoranthene, chrysene and dibenzo(a,h)anthracene). Statistical assessment indicates that the elevated concentrations of arsenic and beryllium (trial pit TP1007 at 2.00mbgl), and benzo(a)anthracene and chrysene (trial pit TP1010 at 2.00mbgl) are localised and not widespread across the site as removal of these "hotspots" from the dataset reduce the US_{95} concentrations to below the respective GAC. The statistical assessment indicates that the elevated concentrations of lead, benzo(a)pyrene, benzo(b)fluoranthene and dibenzo(a,h)anthracene are representative of the site and the US_{95} concentrations are above the respective GAC.

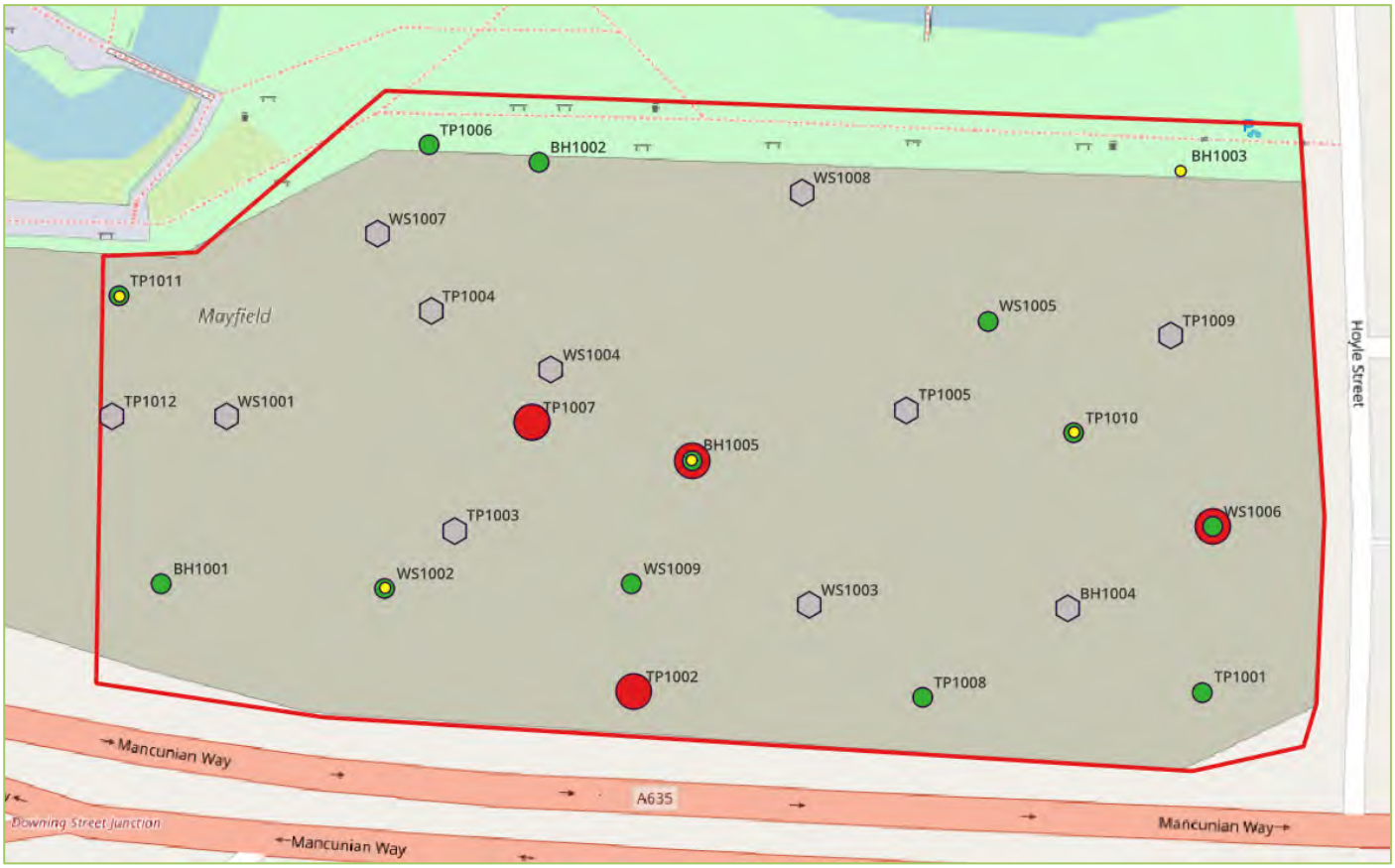
In addition to the total soils analysis, each of the 34 Made Ground samples was screened for the presence of asbestos; asbestos containing material (ACM) was detected in 8 of the soil samples:

- BH1003 at 0.20mbgl – loose fibres of chrysotile at <0.001% by weight;
- BH1003 at 1.00mbgl – chrysotile asbestos cement at 0.954% by weight;
- BH1003 at 4.00mbgl – loose fibres of chrysotile at <0.001% by weight;
- BH1005 at 0.50mbgl – loose fibres of chrysotile at 0.002% by weight;
- BH1005 at 2.00mbgl – loose fibres of chrysotile at 0.002% by weight;
- TP1010 at 2.00mbgl – loose fibres of amosite at <0.001% by weight;
- TP1011 at 1.00mbgl – loose fibres of amosite at <0.001% by weight; and
- WS1002 at 1.50mbgl – loose fibres and sheeting/board debris and loose fibrous debris of chrysotile and amosite at 0.006% by weight.

The Made Ground soil contaminant exceedances are illustrated in Plate 12.

[17] DEFRA (2012) Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance.

Plate 12. Summary of Made Ground Soil Contaminant Exceedances from Supplementary Site Investigation



Notes: Yellow = Asbestos Detected; Green = PAH(s) exceed GAC; Red = Heavy Metal(s) exceed GAC; Grey = No exceedance of GAC but site wide assessment indicates widespread lead and some PAHs concentrations above assessment criteria.

The results of the assessment of the natural soils indicate that the contaminant concentrations recorded are below their respective GAC.

The results of the supplementary site investigation soil assessments are generally similar to those encountered by ROC in September 2020[2] where asbestos was recorded within the in-situ Made Ground in WS401, WS404, WS408, TP401, TP402A, TP405, TP407) between 0.4m and 2.0mbgl, although it is noted that that the material encountered in trial pits TP401, TP402A and TP405 has since been removed from site. The asbestos material was identified as chrysotile and amosite cement, board and loose fibres between <0.001% and 0.465% by weight). An elevated concentration of lead was also identified by ROC at borehole WS408 at 0.40mbgl within the Made Ground (763mg/kg) and elevated concentrations of TPH were recorded (albeit below the GAC used by ROC) at exploratory holes BH401, BH402, TP407, WS401, WS403 and WS404 (between 200mg/kg and 7,680mg/kg).

Based on the soil assessments, there is considered to be a potential risk to future site users and construction workers from the Made Ground soils due to the elevated concentrations of heavy metals and PAHs and the presence of asbestos. Where hardstanding and buildings are proposed, the risk from the underlying soils will be mitigated as the pathway between source and receptor will be broken. A clean capping layer will be required in areas of proposed soft landscaping to mitigate the risks to future site users. It is assumed that the risks to construction workers will be mitigated through the use of appropriate site practices i.e. appropriate personal protective equipment (PPE), dust suppression during earthworks (which would also mitigate the risks to off-site human health receptors), good handwashing practices before eating etc.

7.3 Risks to Human Health from Dissolved Contaminants

A total of eight groundwater samples have been analysed as part of the supplementary site investigation; three samples from the perched water within the Made Ground and five samples from the Principal aquifer within the Chester Sandstone Formation. The groundwater chemical analysis results have been compared to assessment criteria for a residential end use and the results of the assessment are summarised in Table C (Perched Water) and

Table D (Principal Aquifer) in Appendix F. The results of the assessment indicate that the contaminants are below their respective thresholds and therefore the potential risks to future site users from vapours from groundwater to are considered to be low.

7.4 Risks to Human Health and Buildings/Structures from Ground Gas

Gas Screening Values (GSVs) have been calculated in accordance with CIRIA 665[18] using the maximum flow rate and maximum carbon dioxide/methane concentration for each individual well during the three monitoring rounds completed at the site. The results of the assessment are summarised in Table 16.

Table 16: Summary of Ground Gas Risk Assessment

Location	Stratum	Maximum Steady Flow Rate (l/hr)	Maximum Steady CO_2 (% vol. in air)	Maximum CH_4 (% vol. in air)	Maximum GSV	Characteristic Situation
WS1002	Made Ground	<0.1	0.1	<0.1	<0.0001	CS1
WS1004	Made Ground	<0.1	0.6	<0.1	<0.0006	CS1
WS1005	Made Ground	<0.1	0.1	<0.1	<0.0001	CS1
WS1006	Made Ground	<0.1	0.1	<0.1	<0.0001	CS1
WS1007	Made Ground	<0.1	0.1	<0.1	<0.0001	CS1
WS1009	Made Ground	<0.1	1.0	<0.1	<0.001	CS1

For completeness, the monitoring wells installed within the sandstone were monitored for ground gas and the concentrations of methane and carbon dioxide were recorded to be below 1% and 5%, respectively.

Based on the ground gas assessment outlined above and the preliminary ground gas assessment undertaken by ROC following the previous site investigation[2], Characteristic Situation (CS) 1 is considered to be representative of the site, and ground gas protection measures are not considered to be required. It is noted that during the three monitoring rounds, borehole WS1007 was recorded to be saturated i.e. the groundwater level was above the top of the slotted response zone on each occasion. However, the results of the monitoring at this location were within the ranges recorded in the other monitoring wells.

7.5 Risks to Controlled Waters

The potential risks to the nearest significant surface water body (River Medlock approximately 10m north of the site) and the underlying aquifers (Secondary undifferentiated aquifers of the Alluvium and Glacial Till, and Principal aquifer of the Chester Sandstone Formation) have been assessed based on chemical leachate and groundwater analysis, and are discussed in the following sections.

7.5.1 Assessment of Leachate Analysis

A total of five soil samples from the Made Ground were scheduled for leachate analysis and the results of the leachate assessment are summarised in Table E of Appendix F, where the soil leachate concentrations have been compared to the Environmental Quality Standards (EQS) for freshwater. The results of the assessment indicate that the majority of the leachate contaminant concentrations are below their respective assessment thresholds with the exception of the contaminants outlined in Table 17. Concentrations that exceed the Annual Average only are highlighted in orange; concentrations that exceed the maximum allowance concentration (where a maximum allowance concentration has been defined) are highlighted in blue.

Table 17: Summary of Leachate Exceedances

Contaminant	Location	EQS (µg/l) [Annual Average]	EQS (µg/l) [Max. Allowable]	Recorded Concentration (µg/l)
Chromium (III)	BH1002	4.7	32	8.3

[18] CIRIA (2007) *Assessing risks posed by hazardous ground gases to buildings*. CIRIA Report C665, London.

Contaminant	Location	EQS (µg/l) [Annual Average]	EQS (µg/l) [Max. Allowable]	Recorded Concentration (µg/l)
	TP1002			41
Chromium (VI)	WS1006	3.4	*	10
Arsenic	BH1002	50	*	67
Copper	BH1002	1.0	*	3.41
	TP1011			26.87
	WS1004			8.92
Lead	WS1006	1.2	14	1.98
Mercury	BH1002	*	0.07	0.1556
	WS1006			0.1637
Nickel	TP1011	4	34	62
Total Cyanide	BH1002	1	5	3.7
	WS1006			5.5
pH	BH1002	*	6.0 – 9.0	9.2
	TP1011			10.9

*EQS for free cyanide stated.

7.5.2 Assessment of Analysis of Groundwater Samples

A total of three water samples from the perched water within the Made Ground and five water samples from the Principal aquifer within the Chester Sandstone Formation were scheduled for groundwater analysis and the potential risks to the nearest significant surface water body assessed against the EQS for freshwater. The results of the EQS groundwater assessment are summarised in Table F (Perched Water) and Table G (Principal Aquifer) in Appendix F. In addition, the results of the perched water and Principal aquifer analysis have been assessed against the Drinking Water Values (DWVs) given the potential for the aquifer to be used as a drinking water source. The results of the DWV groundwater assessments are summarised in Table H (perched water) and Table I (Principal aquifer) in Appendix F.

It is noted that due to a laboratory error with the free cyanide analysis of the perched water results, the results of the free cyanide analysis are noted to be deviating due to the holding time of the samples. Therefore, a further three water samples from the same borehole positions were obtained and submitted for total and free cyanide analysis to confirm the results of the first set of testing, and the results have been included in Table E.

The results of the perched water assessment indicate elevated concentrations of heavy metals, total cyanide, total phenols, PAHs and ammoniacal nitrogen against the EQS annual average have been recorded in at least one of the water samples. A summary of the exceedances is provided in Table 18. Concentrations that exceed the Annual Average only are highlighted in orange; concentrations that exceed the maximum allowance concentration (where a maximum allowance concentration has been defined) are highlighted in blue.

The results of the Principal aquifer water assessment did not indicate elevated contaminant concentrations. For comparison, the range of concentrations of contaminants recorded in the Principal aquifer have been included in Table 18 for the contaminants that recorded exceedances in the overlying perched water. It is noted that the "Location" stated only relates to the perched water samples.

Table 18: Summary of Perched Water EQS Exceedances and Corresponding Principal Aquifer Concentrations

Contaminant	Location	EQS (µg/l) [Annual Average]	EQS (µg/l) [Max. Allowable]	Perched Water Recorded Concentration (µg/l)	Principal Aquifer Recorded Concentrations (µg/l))
Chromium (III)	WS1004	4.7	32	19	<5.0
	WS1006			24	
	WS1007			230	
Chromium (VI)	WS1004	3.4	*	17	<5.0
	WS1006			18	
	WS1007			180	
Copper	WS1004	1.0	*	4.56	0.08 to 0.33
	WS1007			170	
Lead	WS1007	1.2	14	2.76	<0.2
Mercury	WS1007	*	0.07	0.08	<0.05
	WS1004			0.19	
Nickel	WS1007	4	34	20	0.44 to 1.07
Total Phenols	WS1007	7.7	46	92	<10
Total Cyanide*	WS1007	1	50	44	<10
	WS1006			91	
Total TPH	WS1007	*	10	280	<10
Anthracene	WS1007	0.1	0.1	0.79	<0.01
Benzo(a)pyrene	WS1007	0.00017	0.27	2.03	<0.01
Benzo(b)fluoranthene	WS1007	*	0.017	2.2	<0.01
Benzo(k)fluoranthene	WS1007	*	0.017	0.92	<0.01
Benzo(ghi)perylene	WS1007	*	0.0082	1.24	<0.01
Fluoranthene	WS1007	0.0063	0.12	4.3	<0.01
Ammoniacal Nitrogen as N	WS1007	*	380	3300	18 to 67

*EQS for free cyanide stated.

The results of the perched water DWV assessment indicate that contaminant concentrations of chromium, selenium, total phenols, TPH, PAHs, pH, ammoniacal nitrogen and total sulphate exceed the assessment criteria in the sample obtained from borehole WS1007, and an elevated concentration of total cyanide exceeds the assessment criteria in borehole WS1006 (although it is noted that the concentration of free cyanide is less than the laboratory limit of detection). The results of the Principal aquifer DWV assessment indicate that the contaminant concentrations are below their respective DWVs with the exception of total sulphate which exceed the DWV. A summary of the exceedances and comparison between the perched water and Principal aquifer is provided in Table 19. It is noted that the "Location" stated only relates to the perched water samples with the exception of the elevated sulphate concentration within the Principal aquifer, which is stated in square brackets.

Table 19: Summary of Perched Water DWV Exceedances and Corresponding Principal Aquifer Concentrations

Contaminant	Location	DWV (µg/l)	Perched Water Recorded Concentration (µg/l)	Principal Aquifer Recorded Concentration (µg/l))
Chromium	WS1007	50	230	<5.0
Selenium	WS1007	10	19	2 to 6.2
Total Phenols	WS1007	0.5	92	<10
Total Cyanide	WS1006	50	91	<10
Total TPH	WS1007	10	280	<10
TPH Aromatic EC>16-21	WS1007	90	120	<10
TPH Aromatic EC>21-35	WS1007	90	280	<10
PAH	WS1007	0.1	5.38	<0.04
Benzo(a)pyrene	WS1007	0.01	2.03	<0.1
Total Sulphate	WS1006	250	1690	220 238 331 [BH1003] 348 [BH1005] 563 [BH1004]
pH	WS1004	6.5 to 9.5	12.4	7.0 to 7.3
	WS1007		12.7	
Ammoniacal Nitrogen as N	WS1004	500	650	18 to 67
	WS1007		3300	

7.5.3 Controlled Waters Assessment

The results of the Made Ground leachate assessment indicate that concentrations of heavy metals (arsenic, chromium (III) and (VI), copper, lead, mercury and nickel), total cyanide and pH have the potential to leach at elevated concentrations which may present a risk to the River Medlock. The results of the perched water analysis also reflect elevated concentrations of these contaminants, as well as elevated concentrations of total phenols, total TPH, PAHs and ammoniacal nitrogen in borehole WS1007.

The results of the Principal aquifer EQS assessment indicate that the contaminant concentrations are below their respective assessment thresholds, suggesting that downwards migration of contaminants from the perched water in the Made Ground to the underlying Principal aquifer is limited.

The risks to controlled waters from the Made Ground and perched water are generally considered to be low on the basis of the following:

- Elevated contaminant concentrations recorded in the perched water are not reflected in the deeper Principal aquifer (which is considered to be in continuity to a degree with the River Medlock) which suggests limited existing contaminant migration from the Made Ground / perched water to the Principal aquifer;

- The discontinuous nature of the perched water and presence of cohesive Glacial Till deposits beneath areas of the site will mitigate lateral and vertical contaminant migration;

- The proposed excavation and removal of large volumes of the Made Ground in Plot J (and to some extent in Plot K) to construct the proposed lower ground floor levels will result in the partial removal of the source of contamination from site; and

- The proposed hardstanding and buildings across the majority of the site will limit infiltration and therefore reduce the potential for contaminant migration.

Hotspots of gross hydrocarbon contamination have been identified however which are considered to present a potential risk to controlled waters. These hotspots have been identified as:

1. Borehole WS1007 based on the results of the perched water analysis;
2. Trial pit TP1010 based on the results of the total TPH concentration recorded in soil;
3. Borehole BH1004 based on the results of the total TPH concentration recorded in soil; and
4. "Hotspot #2" previously identified by ROC in the Made Ground and shallow natural soils.

It is recommended that these hotspots are removed and treated for re-use and/or removed from site to reduce the potential for migration of contamination into the underlying Principal aquifer and nearby River Medlock.

The risks to controlled waters from foundation activities i.e. piling are considered to be low assuming appropriate piling techniques are adopted. It is recommended that a Piling Works Risk Assessment is completed to demonstrate that the selected piling methodology will not lead to the creation of new pathways for contaminant migration.

With respect to the potential risk to drinking water supplies within the Principal Aquifer it is noted that there is a potential risk from elevated concentrations of sulphate identified within the Principal aquifer. However, the exceedances were noted to be within an order of magnitude of the DWV and sulphate is considered unlikely to be a driver for remediation. Elevated concentrations of contaminants against the DWV were recorded in the perched water; however, the DWV are considered to be a conservative assessment as the perched water is unlikely to be used as a drinking water supply, and the elevated concentrations are not reflected within the Principal aquifer (with the exception of sulphate, although is it noted that the concentrations within the Principal aquifer are approximately three times lower.

7.6 Risks to Plants and Vegetation

The risk to vegetation and plants from phytotoxic contaminants is summarised in Table I in Appendix F. The results indicate that the concentrations of phytotoxic contaminants within the Made Ground and natural soils generally present a very low risk to proposed plants and vegetation; however, localised elevated concentrations of zinc recorded at boreholes WS1002 and WS1006 within the Made Ground are considered to present a risk to proposed plant and vegetation growth. Importation of suitable soils may be required in areas of soft landscaping which should be installed as part of the proposed capping to mitigate potential risks to human health. In addition, it is likely that the composition of the Made Ground is unlikely to be a suitable growth medium with high proportions of brick and concrete gravel and cobbles observed during the site investigation.

7.7 Risks to Buried Water Supply Pipes

An assessment of the risks to buried water supply pipes is summarised in Table J in Appendix F where the selected soil analysis results have been compared against the UK Water Industry Research (UKWIR) guidance. It is noted that the full suite of UKWIR testing has not been carried out at this stage; however, as outlined in Table J, the initial total soils analysis results indicates that standard polyethylene (PE) pipework would not be suitable for use due to elevated concentrations of TPHs against the assessment criteria. It is therefore anticipated that barrier pipes will be required for new buried water supply pipes.

7.8 Preliminary Waste Characterisation

A preliminary waste characterisation assessment in line with WM3 technical guidance has been carried out on the 40 soil samples submitted for the broader suite of chemical analysis which indicates whether the material is hazardous or non-hazardous. If the material is classified as non-hazardous, there is the option of sending the material to a non-hazardous waste facility or an inert waste facility (subject to the material meeting the inert waste acceptance levels based on Waste Characterisation Acceptance (WAC) analysis). If the material is classified as

hazardous, WAC analysis will be required to demonstrate that the concentrations meet the levels for a hazardous waste facility or stable non-reactive hazardous (SNRH) waste facility without a requirement for prior treatment.

The preliminary waste assessment has been carried out using the HazWaste Online Toolkit and the waste classification reports are included in Appendix G. The results of the assessment indicate that the majority of the material tested would be characterised as non-hazardous material and therefore considered to be acceptable to an inert waste facility (subject to WAC testing) or a non-hazardous waste facility. However, 3 out of the 40 soil samples were characterised as hazardous material:

1. **BH1003 at 1.00mbgl** – hazardous material due to presence of ACM at 0.954% by weight;
2. **BH1004 at 0.20mbgl** – hazardous material due to elevated TPH concentrations (1033mg/kg); and
3. **TP1010 at 2.00mbgl** – hazardous material due to elevated TPH concentrations (1209mg/kg).

In addition to the material sampled from borehole BH1003 at 1.00mbgl, it is noted that ACM was detected in 7 soil samples of Made Ground and this material would not be acceptable for disposal to an inert waste facility, disposal to a non-hazardous waste facility that accepts ACM would be required.

A total of 7 WAC tests were carried out as part of the supplementary site investigation; 2 single stage hazardous WAC tests and 5 single stage full suites:

1. **BH1001 at 1.00mbgl** – material is indicated to be acceptable for disposal at an inert waste facility;
2. **BH1004 at 0.20mbgl** – material is indicated to be acceptable to a hazardous waste facility (due to elevated TPH concentrations) or potentially disposal at a non-hazardous waste facility following treatment to reduce TPH concentrations. Material would not be acceptable to an inert landfill following TPH treatment due to elevated concentrations of total dissolved sulphate (TDS) above the inert waste threshold;
3. **BH1004 at 2.00mbgl** – material is indicated to be acceptable for disposal at an inert waste facility;
4. **TP1004 at 0.50mbgl** – material is indicated to be acceptable for disposal at an inert waste facility;
5. **TP1010 at 2.00mbgl** – material is indicated to be acceptable to a hazardous waste facility (due to elevated TPH concentrations) or potentially disposal at a non-hazardous waste facility following treatment to reduce TPH concentrations. Material would not be acceptable to an inert landfill following TPH treatment due to elevated concentrations of total organic carbon (TOC) above the inert waste threshold.
6. **WS1005 at 0.50mbgl -** material is indicated to be acceptable for disposal at an inert waste facility; and
7. **WS1001 at 1.00mbgl** – material is indicated to be acceptable for disposal at an inert waste facility.

The Contractor should be responsible for the material management and waste classification at the site and the "waste hierarchy" should be used to rank waste management options according to what is best for the environment. Potential for re-use of materials should be considered as part of the cut and fill strategy for the site, and it is recommended that the re-use criteria used for the wider Mayfield Development is adopted for the site which would demonstrate consistency with the wider Mayfield Development; however, it is anticipated that some material will require segregation and off-site disposal. Further information is provided in Section 8.8.

7.9 Revised Qualitative Risk Assessment

A revised risk assessment has been carried out based on the findings of supplementary site investigation and updated conceptual site model, and the potential contaminant linkages that may exist at the site in accordance with the LCRM[19]. An illustrative conceptual site model is presented Plate 13.

[19] Environment Agency (2020). *Land Contamination Risk Management (LCRM)*.

Table 20: Revised Qualitative Risk Assessment

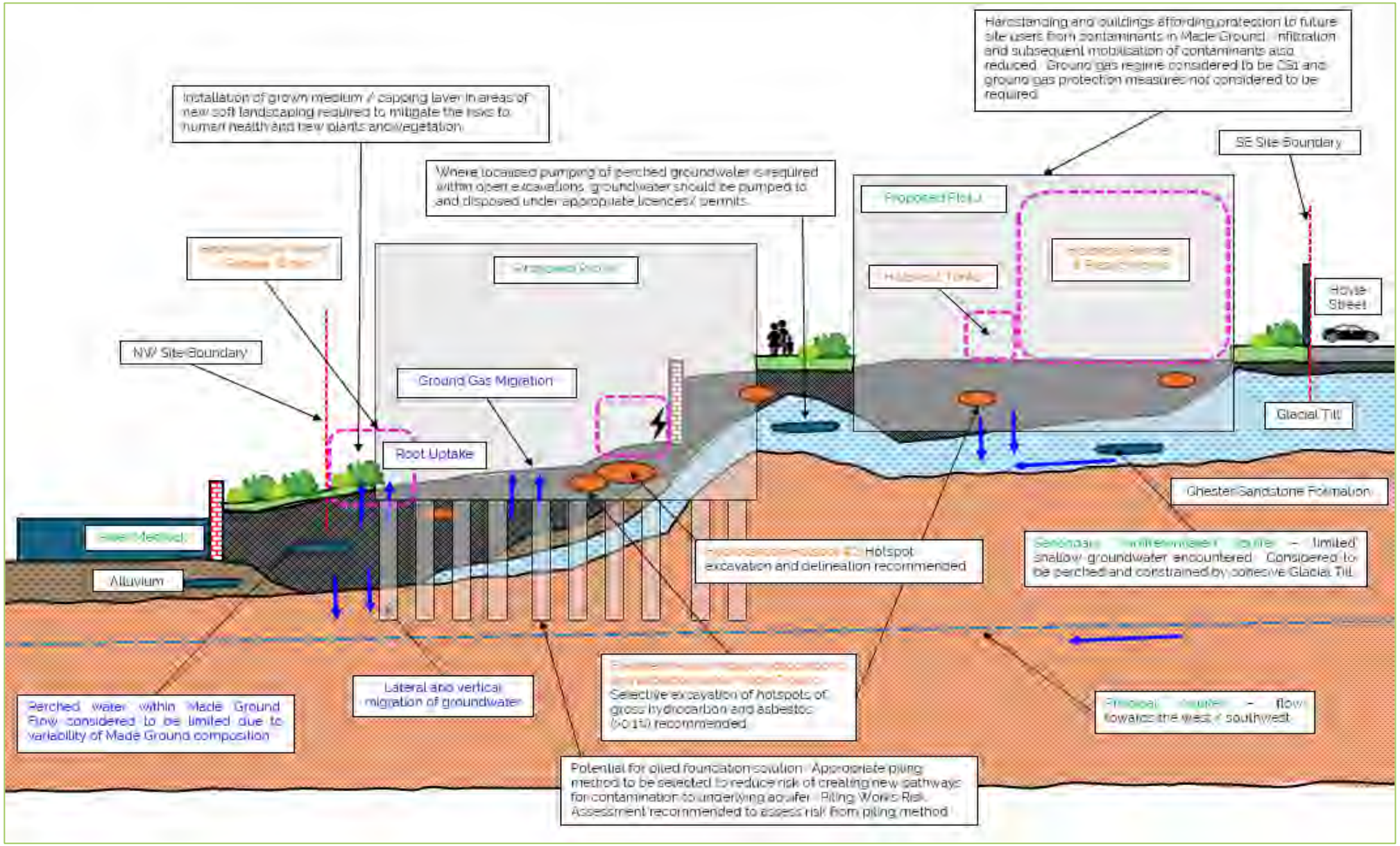
Potential Source/Medium	Potential Exposure Route	Potential Receptor	Severity	Probability	Risk Rating	Comments
Explosive/ asphyxiating gases/vapours from underlying soils (Made Ground) and potential on and off-site sources	Migration of gases and vapours through the surface via permeable soils and drainage & services	Internal building spaces & future occupiers	Medium	Unlikely	Low	Variable thickness of Made Ground encountered on site during site investigations; however, organic rich deposits of Alluvium were not observed. Ground gas monitoring recorded very low ground gas concentrations and negligible flow rates, corresponding to CS1 regime for the site.
Organic/ inorganic contaminants within underlying soils and perched groundwater within the Made Ground	Direct/indirect ingestion of soil, perched water and dust, inhalation of particle vapours and asbestos fibres and dermal contact	Construction workers	Medium	Likely	Moderate	Elevated concentrations of heavy metals, PAHs, TPH and asbestos recorded within the Made Ground during the ROC and supplementary site investigations which are considered to present a potential risk to construction workers. Risk would be mitigated by use of appropriate PPE.
		Future site users	Medium	Low likelihood	Moderate/low	Elevated concentrations of heavy metals, PAHs, TPH and asbestos recorded within the Made Ground during the ROC and supplementary site investigations which are considered to present a potential risk to future site occupiers. Proposed hardstanding and buildings will act as a barrier between receptor and contamination within underlying soils. Placement of capping layers in areas of proposed soft landscaping will be required to mitigate potential risks to future site users.
		Off-site residents	Medium	Low likelihood	Moderate/low	Elevated concentrations of heavy metals, PAHs, TPH and asbestos recorded within the Made Ground during the ROC and supplementary site investigations. Appropriate site practices will require adoption to prevent dust generation during construction e.g., dampening down and covering stockpiles etc.
	Direct contact with underground structures and services	Buildings and structures, buried services	Mild	Likely	Moderate/low	Buried concrete to be designed as appropriate for ground conditions. Barrier pipes considered to be required due to elevated TPH concentrations recorded within the Made Ground.
	Root uptake	Plants and vegetation	Minor	Likely	Low	Hotspots of elevated concentrations of zinc recorded within Made Ground, and it is considered unlikely that the Made Ground at site will provide a suitable growth medium. The use of appropriate topsoil and subsoil in the proposed soil capping layer, required to mitigate

Potential Source/Medium	Potential Exposure Route	Potential Receptor	Severity	Probability	Risk Rating	Comments
						the risks to human health, will provide a growth medium for areas of soft landscaping to mitigate risks to plant growth.
	Lateral and vertical migration	Shallow Secondary A aquifer (*Glacial Till / Alluvium*)	Medium	Unlikely	Low	Elevated soil leachate concentrations of heavy metals, total cyanide and pH recorded in the Made Ground which are reflected in the groundwater analysis of the perched water, as well as localised elevated concentrations of PAHs at borehole WS1007. However, these elevated contaminant concentrations are not reflected in the deeper Principal aquifer, indicating limited mobilisation and leaching of the contaminants within the Made Ground / perched water into the shallow aquifer. In addition, a continuous groundwater table was not observed within the superficial deposits encountered at the site. The cohesive nature of the Glacial Till is considered to limit lateral and vertical migration of potential contaminants. Where proposed, buildings and hardstanding will also limit infiltration and leaching potential.
		Deep Principal aquifer (*Chester Sandstone Formation)*	Medium	Unlikely	Low	Elevated soil leachate concentrations of heavy metals, total cyanide and pH recorded in the Made Ground which are reflected in the groundwater analysis of the perched water, as well as localised elevated concentrations of PAHs at borehole WS1007. However, these elevated contaminant concentrations are not reflected in the deeper Principal aquifer, indicating limited mobilisation and leaching of the contaminants within the Made Ground / perched water into the deeper aquifer. The cohesive nature of the Glacial Till is considered to limit lateral and vertical migration of potential contaminants. Where proposed, buildings and hardstanding will also limit infiltration and leaching potential. Hotspots of hydrocarbon contamination within the shallow soils have been identified at TP1010, BH1004 and "Hotspot #2". It is recommended that these hotspots are removed and treated for re-use and/or removed from site to prevent potential movement of contamination into the Principal aquifer.

Potential Source/Medium	Potential Exposure Route	Potential Receptor	Severity	Probability	Risk Rating	Comments
		Local surface water bodies (*River Medlock*)	Mild	Likely	Moderate/Low	Elevated soil leachate concentrations of heavy metals, total cyanide and pH recorded in the Made Ground which are reflected in the groundwater analysis of the perched water, as well as localised elevated concentrations of PAHs at borehole WS1007. However, these elevated contaminant concentrations are not reflected in the deeper Principal aquifer, indicating limited mobilisation and leaching of the contaminants within the Made Ground / perched water into the shallow aquifer. The cohesive nature of the Glacial Till is considered to limit migration of potential contaminants, where present. Where proposed, buildings and hardstanding will also limit infiltration and leaching potential. Hotspots of hydrocarbon contamination within the shallow soils have been identified at TP1010, BH1004 and "Hotspot #2". It is recommended that these hotspots are removed and treated for re-use and/or removed from site to prevent potential movement of contamination into nearby River Medlock.
Organic / inorganic contaminants within shallow groundwater aquifers (Alluvium / Till)	Direct contact and ingestion of contaminated groundwater	Future site users	Medium	Unlikely	Low	A shallow aquifer within the superficial deposits was not encountered during the site investigations. Should localised shallow groundwater be encountered by construction workers, use of appropriate PPE will mitigate risks to receptors. Future site users and off-site residents are unlikely to come into contact with groundwater due to formal landscaping and buildings/hardstanding across the site.
		Construction workers	Medium	Unlikely	Low	
		Off-site residents	Medium	Unlikely	Low	
	Inhalation of vapours	Future site users	Medium	Unlikely	Low	A shallow aquifer within the superficial deposits was not encountered during the site investigations. It is also noted that very low concentrations below the assessment criteria were recorded within the deeper Principal aquifer groundwater samples.
	Lateral migration	Local surface water bodies (*River Medlock*)	Mild	Unlikely	Very low	A shallow aquifer within the superficial deposits was not encountered during the site investigations, and it is noted that very low contaminant concentrations recorded within Principal aquifer groundwater samples. In addition, the cohesive Glacial Till will limit migration of groundwater.

Potential Source/Medium	Potential Exposure Route	Potential Receptor	Severity	Probability	Risk Rating	Comments
	Vertical migration	Deep Principal aquifer (*Chester Sandstone Formation)*	Medium	Unlikely	Low	A shallow aquifer within the superficial deposits was not encountered during the site investigations. In addition, very low concentrations below the assessment criteria were recorded within the deeper Principal aquifer groundwater samples indicating limited downwards migration of contaminants from the overlying soils and perched water.
	Direct contact with underground services	Buildings and structures	Mild	Unlikely	Very low	A shallow aquifer within the superficial deposits was not encountered during the site investigations. It is also noted that very low concentrations below the assessment criteria were recorded within the deeper. Buried concrete to be designed as appropriate for ground conditions.

Plate 13. Illustrative Conceptual Site Model (Not to Scale)



8. Geoenvironmental Recommendations

8.1 Introduction

Geoenvironmental recommendations for the proposed redevelopment of the site are outlined in the following sections based on the information obtained during the supplementary site investigation and revised qualitative risk assessment. A remediation strategy and verification plan will be produced by Civic Earth under a separate cover to outline the remediation requirements for the site in consideration of the recommendations outlined in the following sections and how they will be verified. Following completion of the remediation works by the Contractor, a verification report should be produced to confirm that the remediation works have been completed in accordance with the remediation strategy.

It is recommended that the reports are submitted to the Local Authority to support the Planning Applications made in relation to the site.

8.2 Watching Brief and Discovery Strategy

It is recommended that a watching brief is carried out by the Contractor during the enabling works, earthworks and construction works. Should areas of unexpected contamination, including asbestos, be encountered or suspected, a qualified geoenvironmental engineer should be informed, and the risk associated with the contamination assessed.

An appropriate remediation strategy should be devised and implemented for the unexpected contamination where necessary, and the regulators should be informed of additional areas of contamination identified. The regulators should be provided with the risk assessment and proposed remediation methodology for agreement before undertaking the remedial works. The methodology should include appropriate verification works to be completed.

8.3 Tannery Watching Brief

As outlined in Section 3.2, a tannery historically encroached onto the west of the site. It is therefore recommended that the regulatory approved tannery watching brief, outlined in the ROC Remediation Strategy for Mayfield Park[2], is implemented during the construction phase. In summary, the tannery watching brief and discovery strategy includes visual inspection of soils for the presence of animal bones, animal hair, animal carcass or flesh, animal hides and significant quantities of deleterious or organic rich materials or sludge. Should any of the above be encountered, operations are to cease, and the excavation backfilled with at least 1m thickness of unimpacted material, and the location and spatial extent recorded. The area is then to be investigated, removed and remediated in accordance with the guidance document "Guidance on assessing risk of Tannery Contamination on building land" with appropriate approvals and sanctions from regulatory authorities[20].

8.4 Borehole Decommissioning

It is recommended that the existing monitoring wells are decommissioned prior to commencement of significant groundworks in accordance with EA good practice guidance[21].

8.5 Ground Gas Protection Measures

Ground gas protection measures are not considered to be required based on the results of the ground gas assessment outlined in Section 7.4.

8.6 Hotspot Removal

As outlined in Section 3.5.3, a hotspot of hydrocarbon (referred to as "Hydrocarbon Hotspot #2") was identified by ROC at exploratory holes WS401, WS404 and TP409. It was recommended by ROC that the impacted Made Ground and shallow natural soils be delineated, removed and treated for re-use and/or removed from site to

[20] PHE (2014) *Guidance on assessing risk of anthrax on building land*. September 2014.
[21] Environment Agency (2012) *Good practice for decommissioning redundant boreholes and wells*.

prevent potential further on-going movement of TPH contamination into the underlying Principal aquifer.

In addition to the ROC hydrocarbon hotspot, it is recommended that the gross TPH contamination identified at borehole BH1004 (at 0.20mbgl) and trial pit TP1010 (at 2.00mbgl), and hazardous concentrations of asbestos at 1.00mbgl, are also delineated and removed and treated for re-use and/or removed from site.

8.7 Capping Layers

Due to the presence of elevated contaminant concentrations and ACM within the Made Ground, capping layers will be required to mitigate the potential risks to human health and plants and vegetation. To comply with BRE 465[22], the capping layers for the areas of soft landscaping will need to comprise a minimum of 450mm of imported soil, with a minimum of 150mm topsoil (including 50mm turf/sod).

The material imported to form the capping layers should be clean imported soil from a known and reputable source and meet the chemical criteria for human health with respect to the residential (without home grown produce consumption) end use of the site. Imported topsoil should also meet the requirements of BS 3882[23] and subsoil the requirements for BS 8601[24]. The material should be free from propagules of aggressive weeds, free from obvious signs of contamination e.g. staining, free phase hydrocarbon, coal, non-odorous such that it could be considered a statutory nuisance and free from unsuitable material/foreign bodies e.g. brick, glass, pipework.

8.8 Material Management

The Contractor should be responsible for the material management and waste classification at the site and the "waste hierarchy" should be used to rank waste management options according to what is best for the environment. Top priority should be given to preventing waste in the first place, for example, during the pre-construction and planning stages of a new development. However, if waste is created, priority should be given to preparing it for re-use, then recycling, then recovery, and last of all disposal.

In order to minimise the volumes of soils being disposed to landfill facilities, it is prudent to consider material management options prior to waste disposal. Screening of uncontaminated natural arisings may permit recycling/re-use of the material on site or for other sites under the WRAP protocol (uncontaminated granular soils only) or the CL:AIRE protocol[25] and would lead to a reduction in disposal requirements.

Providing that a Materials Management Plan (MMP) compliant with the CL:AIRE protocol is produced which details where materials will arise and how they will be used within the limits of that Code of Practice, there is no requirement to seek an environmental permit to re-use materials within the site. However, the process would require sign off by a Qualified Person in advance of works commencing and a final validation report. This process is not applicable to soils that pose harm to human health or the environment.

Potential for re-use of materials should be considered as part of the cut and fill strategy for the site, and it is recommended that the re-use criteria used for the wider Mayfield Development is adopted for the site which would demonstrate consistency with the wider Mayfield Development. However, it is anticipated that some material will require segregation and off-site disposal. It is recommended that one the area to the 'cut' has been defined, the results of the applicable soil testing should be compared against the re-use criteria to identify whether the material is likely to be acceptable for re-use or whether it will require treatment/disposal ,and how this relates to the cut and fill balance.

It is noted that in May/June 2012, HMRC issued Briefs 15/12 and 18/12 clarifying how construction spoil and excess soils will be assessed for landfill tax purposes, and detailed accurate descriptions of waste are required for all wastes to support the landfill tax assessment. Uncontaminated naturally occurring soils will remain inert by default and eligible for the lower rate of landfill tax and similarly, 'reworked soils' and demolition 'stone' comprising only materials listed in the Schedule of the Landfill Tax (Qualifying Material) Order 2011 (SI 2011/1017) would also be eligible for the lower rate of landfill tax. Made Ground containing soil and foreign objects such as timber, plastic,

[22] BRE (2004) *Cover systems for land regeneration - thickness design of cover systems for contaminated land*. BRE 465
[23] British Standards (2015) *Specification for Topsoil and Requirements for Use*. BS3882:2015
[24] British Standards Institute (2013) *Specification for Subsoil and Requirements for Use*.
[25] CL:AIRE (2011) *The Definition of Waste: Development Industry Code of Practice*. Version 2.

rubber, metal, paper, plasterboard, asbestos, etc., regardless of the results of chemical analysis for waste classification purposes, will be eligible for the standard (higher) rate of landfill tax. Therefore, to maximise eligibility for lower rate landfill tax on waste construction spoil/ reworked ground, careful waste segregation and controls are recommended necessary.

All material intended for off-site disposal should be transported and disposed in accordance with the Environmental Protection (Duty of Care) Regulations 1991 and the Landfill (England and Wales) Regulations 2002 (as amended). Waste legislation stipulates that hazardous and non-hazardous waste should be pre-treated prior to disposal and pre-treatment can be undertaken either at the site of origin or may be carried out at a licensed off-site facility and can include selective segregation of soils conducted on site.

8.8.1 Asbestos

Asbestos was detected in 8 out of 34 Made Ground soils samples analysed as part of the supplementary investigation and there is the potential that further asbestos may be present in the Made Ground. Site operatives should be briefed on the potential for asbestos to be encountered during earthworks.

8.9 Mitigation of Risks to Controlled Waters during Construction Works

It is recommended that measures are undertaken to mitigate the potential impact to controlled waters during construction works where contaminants in the underlying soils may be mobilised to a greater extent that naturally occurs. The construction works should be undertaken in line with CIRIA 741[26].

The risks to controlled waters from foundation activities i.e. piling are considered to be low assuming appropriate piling techniques are adopted. It is recommended that a Piling Works Risk Assessment is completed to demonstrate that the selected piling methodology will not lead to the creation of new pathways for contaminant migration.

Excavated soil should be appropriately stored with preventative measures against surface water infiltration/leaching or nuisance odours to protect the environment and human health during temporary storage on site. This could take the form of a lined and covered storage bund using an appropriate material (e.g. polyethylene), positioned away from sensitive locations. Handling and storage protocols for potentially contaminated soils should be documented by the Contractor. Appropriate storage of all hazardous liquids, chemicals and materials where materials are to be stored in accordance with the Control of Substances Hazardous to Health (COSHH) Regulations.

8.10 Buried Water Supply Pipes

Due to the recorded concentrations of contaminants at the site, it is anticipated that barrier pipes will be required for new buried water supply pipes. Completion of a United Utilities Risk Assessment including sampling of soils at depth and location of proposed water supply pipes will be required.

8.11 Health, Safety and Environmental Controls

It is recommended that precautions are taken to minimise exposure of workers and the general public to potentially harmful substances, including asbestos, during earthworks. The risks to contractors should be controlled through the implementation of site safety procedures and the use of suitable personal protective equipment (PPE). Attention should also be paid to restricting possible off-site nuisance such as dust and odour emissions. All site works should be undertaken in accordance with the guidelines prepared by the Health and Safety Executive and all work should also be carried out in accordance with the Contractor's Construction Health and Safety Plan.

Excavations should be planned and inspected regularly by a competent person and no operatives should be permitted to enter un-shored or otherwise protected excavations identified as unstable by a competent person, however shallow they may be. The stockpiled material and excavations should be dampened during all earthworks excavation and earth moving activities and vehicles should be washed before leaving site, with

[26] CIRIA (2015) Environmental Good Practice on Site Guide. 4th Edition. CIRIA C741.

washings contained on site and suitably disposed.

9. Geotechnical Recommendations

9.1 Introduction

Geotechnical recommendations for the proposed redevelopment of the site are outlined in the following sections based on the information obtained during the ROC[2] and supplementary investigations and proposed development scheme. It is understood that the proposed lower ground floor level for Plot J is approximately +39mOD and +36mOD for Plot K.

9.2 Geotechnical Design Parameters

Geotechnical design parameters are outlined in Table 21. The parameters provided are moderately conservative, serviceability limit state and considered appropriate for shallow foundation, retaining walls (gravity/embedded), earthworks (settlement/consolidation) and infrastructure (roads/aprons) design.

Table 21: Geotechnical Design Parameters

Stratum	Bulk Unit Weight γ_b (kN/m³)	Undrained Shear Strength c_u (kPa) [c']	Friction Angle φ (°)	Young's Modulus, Eu (MPa) [E']
Made Ground (Granular)	18	-	30[a]	[10]
Made Ground (Cohesive)	17	20 [0]	22[b]	10[c] [8][d]
Alluvium (Granular)	18	-	34[a]	[20]
Glacial Till (Cohesive)	20	50 [0]	22[b]	25[c] [20][d]
Chester Sandstone Formation	19	-	40[a]	[250]

Notes:

a. *Peck, R.B., Hanson, W.E., and Thornburn, T.H., Foundation Engineering, 2nd Edition, John Wiley, New York, 1967, p.310*
b. *BS 8002:2015 Code of Practice for Earth Retaining Structures, British Standards Institution*
c. *Based on 500Cu – Burland, Standing J.R., and Jardine F.M. (eds) (2001), Building Response to Tunnelling, case Studies from Construction of the Jubilee Line Extension London, Ciria Special Publication 200.*
d. *Based on 0.8EU – Burland, Standing J.R., and Jardine F.M. (eds) (2001), Building Response to Tunnelling, case Studies from Construction of the Jubilee Line Extension London, Ciria Special Publication 200.*

9.3 Foundation Design

Based on the proposed lower ground floor finished floor levels for Plot J, lower ground floor formation levels are likely to be within the Made Ground and Glacial Till across the north of the plot and within the (weathered) Chester Sandstone Formation across the south of the plot. Lower ground floor formation levels within Plot J are likely to be within the Made Ground, Glacial Till, Alluvium and/or (weathered) Chester Sandstone Formation.

Given the variability of the shallow ground conditions, it is recommended that foundations are founded within the Chester Sandstone Formation. It is not recommended that foundations are constructed within the Made Ground or superficial deposits due to the variable bearing capacity and potential for differential settlement of these deposits.

The physical properties of the sandstone bedrock, as recorded on the exploratory hole records from the supplementary investigation, are considered to be more representative of a very dense sand as opposed to competent intact bedrock. At depth, the sandstone was recorded to vary between extremely weak and very weak based on laboratory testing and field descriptions. It is therefore considered that an allowable bearing capacity representative of a very dense sand (500kPa) could be adopted.

If shallow foundations are to be utilised, the formation level within the top of the sandstone bedrock should be inspected by a suitably qualified engineer to confirm competent sandstone at formation level. If a piled foundation

solution is utilised, it is anticipated that piles will be socketed approximately 5m into the sandstone bedrock. Early consultation with an appropriate piling contractor is essential to the design of the piles.

9.4 Floor Slabs and Pavement Design

Based on the proposed formation levels, it is assumed that roads and pavements will be founded onto Made Ground, Alluvium, Glacial Till or Chester Sandstone Formation. It is recommended that pavements and roadways founded on the Made Ground or superficial deposits be designed to a conservative California Bearing Ratio (CBR) value of 2.5%. This could potentially increase following in-situ testing of formation level soils. It is recommended that the formation level should be compacted and soft spots (<2.5% CBR) removed.

All pavements should be designed and compacted and verified in accordance with MCHW Series 600[27]. A specialist testing and construction contractor should be engaged for any lime/cement stabilisation works, and it is anticipated that a stabilisation trial would be undertaken prior to implementation. In areas where land raise is proposed, the build-up of capping/blinding layers beneath pavements/slabs will be dependent on the fill used in the land raise.

Floor slab design will need to take account of the potential variability in ground conditions at the formation level, and suspended slabs will need to be utilised where there is insufficient bearing capacity or potential for an unacceptable level of differential settlement. Where floor slabs are founded onto sandstone, ground bearing slabs may be utilised although the potential for differential settlement where floor slabs span multiple strata will need to be considered.

9.5 Excavation Works

Based on the ground conditions encountered, excavations required during the development should not pose difficulties for conventional excavators or earth moving equipment for the identified strata including some excavation in the upper sandstone horizons based on difficulty of excavation during the supplementary site investigation. Excavations have the potential to become unstable if water is introduced into the excavation. Water control, if required, may be achieved within shallow excavations by adopting a sump pumping system around the perimeter of the excavation as well as appropriate temporary supports such as trench boxes/trench sheets assuming excavations do not extend below the level of the Principal aquifer within the sandstone. This should be confirmed by the contractor and temporary works designer on initial excavation.

Historical structures and foundations will need to be grubbed out and hard material could potentially be processed and reused as engineered fill in line with the recommendations outlined in Section 8.8 and a site-specific earthworks specification. Depending on formation levels, voids will need to be backfilled with engineered fill.

Excavations should be suitably shored or otherwise supported or battered and should be inspected regularly by a competent person. No operatives should enter un-shored or otherwise unprotected excavations identified as unstable by a competent person, however shallow they are, in accordance with the guidelines presented in CIRIA Report 97[28]. Dewatering will likely be required when excavation works are in close proximity to perched groundwater level.

9.6 Buried Concrete Design

Design Sulphate (DS) and Aggressive Chemical Environmental for Concrete (ACEC) classes for the Made Ground, Glacial Till and Chester Sandstone Formation are summarised in Table 22 based on the results of the chemical sulphate and pH testing[29].

[27] Highways England (2016) Manual of Contract Documents for Highway Works, Series 600 (Earthworks), MCHW Series 600.
[28] CIRIA (1992). *Trenching Practice (Second Edition).* Construction Industry Research and Information Association Report 97.
[29] BRE (2005) *Concrete in Aggressive Ground.* BRE Special Digest 1:2005

Table 22: Summary of DS and ACEC Classes

Stratum	WSS DS Class	WSS ACEC Class
Made Ground	DS-2	AC-2
Glacial Till	DS-1	AC-1
Chester Sandstone Formation	DS-1	AC-1

Appendix A
Exploratory Hole Records

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1001**	Location Type:	Cable Percussion to Rotary Coring
Coords:	385119.77E/397475.65N	Level:	38.92mAOD
Status:	FINAL	Scale:	1:50
Final Depth:	25.00		
Sheet 1 of 3		Date Start:	11/01/2024
Date End:	16/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	14.70	20	9.90
6.50	25.00	RC	Beretta T46			

Depth (m)	Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
	0.20	B 2					Medium dense to very dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted. [MADE GROUND]					
	0.20	ES 1										
	0.50	B 4										
	0.50	ES 3										
1.0	1.00	B 6										
	1.00	ES 5										
	1.20 - 1.65	B 8	SPT(S) 1.20m N=37 (4,5/6,9,11,11)									
	1.20 - 1.65	D 7										
2.0	2.00	ES 9	SPT(S) 2.00m 50 (25 for 75mm/50 for 80mm)									
	2.00 - 2.45	B 11										
	2.00 - 2.45	D 10										
3.0	3.00	ES 12	SPT(S) 3.00m 50 (25 for 75mm/50 for 50mm)									
	3.00 - 3.45	B 14										
	3.00 - 3.45	D 13										
					35.02	3.90						
4.0	4.00 - 4.45	B 16	SPT(S) 4.00m 50 (12,13/50 for 150mm)				Reddish brown SANDSTONE. Recovered as very dense fine to coarse sand. [WEATHERED CHESTER SANDSTONE FORMATION]					
	4.00 - 4.45	D 15										
5.0	5.00 - 5.45	B 18	SPT(S) 5.00m 60 (25 for 75mm/60 for 120mm)									
	5.00 - 5.45	D 17										
6.0	6.00 - 6.45	B 20	SPT(S) 6.00m 50 (25 for 75mm/50 for 150mm)									
	6.00 - 6.45	D 19										
					32.42	6.50						
7.0							Reddish brown SANDSTONE. Recovered as fine to coarse sand with rare areas of weak cementation. [WEATHERED CHESTER SANDSTONE FORMATION]	6.50 8.00	100	0	0	
	7.60	C 1										
8.0								8.00 9.50	100	0	0	0 0 120
9.0												
10.0												

Stratum continues onto next page

Notes:

1. Groundwater encountered at 14.7mbgl, rising to 9.9mbgl over 20 minutes.
2. Installation: 0.00-4.50m 50mm plain standpipe with bentonite seal; 4.50-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	4.00	200
25.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)
GW100 1	4.50	25.00

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1001**	Location Type: Cable Percussion to Rotary Coring	
Coords: 385119.77E/397475.65N	Level: 38.92mAOD		
Status:	FINAL	Scale: 1:50	Final Depth: 25.00
Sheet 2 of 3		Date Start: 11/01/2024	Date End: 16/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	14.70	20	9.90
6.50	25.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
									Reddish brown SANDSTONE. Recovered as fine to coarse sand with rare areas of weak cementation. [WEATHERED CHESTER SANDSTONE FORMATION]	9.50 11.00	95	29	15	
		10.63	C			28.37	10.55		Extremely weak locally very weak thinly to medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Rare subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 15 - 20 degrees closely spaced rough undulating and stepped infilled with sand. 2) 45 - 50 degrees medium to widely spaced rough most planar some undulating infilled with sand. [CHESTER SANDSTONE FORMATION]	11.00 12.50	100	82	58	0 150 390
	11.0													
	12.0													
	13.0	13.03	C 5							12.50 14.00	100	85	79	
	14.0					24.62	14.30							
									Weak thinly to medium bedded light reddish brown medium grained SANDSTONE, weakly to moderately cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 10 - 15 degrees closely to medium spaced rough stepped and undulating infilled with sand and some oxidisation staining on fracture surfaces. 2) 45 - 50 degrees widely spaced rough undulating infilled with fine to medium sand. [CHESTER SANDSTONE FORMATION]	14.00 15.50	100	95	81	
	15.0													
	16.0									15.50 17.00	100	86	74	
	17.0													0 180 320
	18.0									17.00 18.50	100	91	51	
	19.0													
		19.78	C 9							18.50 20.00	100	96	41	
	20.0													

Stratum continues onto next page

Notes:

1. Groundwater encountered at 14.7mbgl, rising to 9.9mbgl over 20 minutes.
2. Installation: 0.00-4.50m 50mm plain standpipe with bentonite seal; 4.50-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	4.00	200
25.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1001**	Location Type:	Cable Percussion to Rotary Coring
Coords:	385119.77E/397475.65N	Level:	38.92mAOD
Status:	FINAL	Scale:	1:50
Final Depth:	25.00		
Sheet 3 of 3		Date Start:	11/01/2024
Date End:	16/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	14.70	20	9.90
6.50	25.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
									Weak thinly to medium bedded light reddish brown medium grained SANDSTONE, weakly to moderately cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 10 - 15 degrees closely to medium spaced rough stepped and undulating infilled with sand and some oxidisation staining on fracture surfaces. 2) 45 - 50 degrees widely spaced rough undulating infilled with fine to medium sand. [CHESTER SANDSTONE FORMATION]	20.00 21.50	100	100	79	
	21.0													
	22.0	22.38	C 11							21.50 23.00	90	83	42	
	23.0													
	24.0									23.00 24.50	100	80	61	
	25.0					13.92	25.00			24.50 25.00	100	100	50	
									EOH at 25.00m - Achieved target depth					
	26.0													
	27.0													
	28.0													
	29.0													
	30.0													

Notes:

1. Groundwater encountered at 14.7mbgl, rising to 9.9mbgl over 20 minutes.
2. Installation: 0.00-4.50m 50mm plain standpipe with bentonite seal; 4.50-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio	Serial No.
6.50	200	4.00	200	73%	BBL02
25.00	146			Install Response Zones	
				Ref / From (m) / To (m)	

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1002**	Location Type: Cable Percussion to Rotary Coring	
Coords: 385172.14E/397534.09N	Level: 37.16mAOD		
Status:	FINAL	Scale: 1:50	Final Depth: 25.00
Sheet 1 of 3		Date Start: 11/01/2024	Date End: 17/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	13.50	20	8.10
6.50	25.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
		0.20	B 2						Medium dense to very dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of concrete and brick. Frequent fragments of wire, plastic and glass noted. [MADE GROUND]					
		0.20	ES 1											
		0.50	B 4											
		0.50	ES 3											
	1.0	1.00	ES 5											
		1.20 - 1.65	B 7	SPT(S) 1.20m N=32 (6,7/9,9,8,6)										
		1.20 - 1.65	D 6											
	2.0	2.00	ES 8	SPT(S) 2.00m N=31 (5,6/6,7,8,10)										
		2.00 - 2.45	B 10											
		2.00 - 2.45	D 9											
	3.0	3.00	ES 11	SPT(S) 3.00m 50 (9,11/50 for 190mm)										
		3.00 - 3.45	B 13											
		3.00 - 3.45	D 12											
	4.0	4.00	ES 14	SPT(S) 4.00m 50 (10,11/50 for 180mm)		33.06	4.10							
		4.00	ES 15						Reddish brown SANDSTONE. Recovered as very dense fine to coarse sand. [WEATHERED CHESTER SANDSTONE FORMATION]					
		4.00 - 4.45	B 16											
		4.00 - 4.45	D 15											
	5.0	5.00 - 5.45	B 18	SPT(S) 5.00m 50 (25 for 95mm/50 for 170mm)										
		5.00 - 5.45	D 17											
	6.0	6.00 - 6.45	B 20											
		6.00 - 6.45	D 19											
						30.66	6.50							
	7.0								Reddish brown SANDSTONE. Recovered mostly as fine to coarse sand with rare areas of weak cementation. [WEATHERED CHESTER SANDSTONE FORMATION]					
						29.96	7.20			6.50 8.00	80	37	8	
		7.67	C 14						Extremely weak locally very weak thinly to medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Rare subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 15 - 20 degrees closely spaced rough undulating and stepped infilled with sand. 2) 45 - 50 degrees medium to widely spaced rough most planar some undulating infilled with sand. [CHESTER SANDSTONE FORMATION]					
	8.0													
										8.00 9.50	100	90	34	
	9.0													
	10.0													

Stratum continues onto next page

Notes:

1. Groundwater encountered at 13.5mbgl, rising to 8.1mbgl over 20 minutes.
2. Installation: 0.00-4.50m 50mm plain standpipe with bentonite seal; 4.50-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	4.00	200
25.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)
GW1002	4.50	25.00

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1002**	Location Type: Cable Percussion to Rotary Coring	
Coords: 385172.14E/397534.09N	Level: 37.16mAOD		
Status:	FINAL	Scale: 1:50	Final Depth: 25.00
Sheet 2 of 3		Date Start: 11/01/2024	Date End: 17/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	13.50	20	8.10
6.50	25.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
	11.0	10.23	C 16						Extremely weak locally very weak thinly to medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Rare subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 15 - 20 degrees closely spaced rough undulating and stepped infilled with sand. 2) 45 - 50 degrees medium to widely spaced rough most planar some undulating infilled with sand. [CHESTER SANDSTONE FORMATION]	9.50 11.00	100	63	25	
	12.0									11.00 12.50	80	39	35	0 100 230
	13.0									12.50 14.00	86	23	23	
	14.0					23.16	14.00							
	15.0								Weak thinly to medium bedded light reddish brown medium grained SANDSTONE, weakly to moderately cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 10 - 15 degrees closely to medium spaced rough stepped and undulating infilled with sand and some oxidisation staining on fracture surfaces. 2) 45 - 50 degrees medium spaced rough undulating infilled with fine to medium sand. [CHESTER SANDSTONE FORMATION]	14.00 15.50	89	73	15	
	16.0									15.50 17.00	87	77	41	
	17.0	17.60	C 21							17.00 18.50	100	90	73	0 150 330
	18.0													
	19.0									18.50 20.00	100	51	39	
	20.0													

Stratum continues onto next page

Notes:

1. Groundwater encountered at 13.5mbgl, rising to 8.1mbgl over 20 minutes.
2. Installation: 0.00-4.50m 50mm plain standpipe with bentonite seal; 4.50-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	4.00	200
25.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1002**	Location Type:	Cable Percussion to Rotary Coring
Coords:	385172.14E/397534.09N	Level:	37.16mAOD
Status:	FINAL	Scale:	1:50
Final Depth:	25.00		
Sheet 3 of 3		Date Start:	11/01/2024
Date End:	17/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	13.50	20	8.10
6.50	25.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
	21.0								Weak thinly to medium bedded light reddish brown medium grained SANDSTONE, weakly to moderately cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 10 - 15 degrees closely to medium spaced rough stepped and undulating infilled with sand and some oxidisation staining on fracture surfaces. 2) 45 - 50 degrees medium spaced rough undulating infilled with fine to medium sand. [CHESTER SANDSTONE FORMATION]	20.00 21.50	100	100	72	
	22.0									21.50 23.00	100	95	61	
	23.0	23.50	C 25							23.00 24.50	100	54	54	
	24.0	24.68	C 26							24.50 25.00	100	100	64	
	25.0					12.16	25.00		EOH at 25.00m - Achieved target depth					
	26.0													
	27.0													
	28.0													
	29.0													
	30.0													

Notes:

1. Groundwater encountered at 13.5mbgl, rising to 8.1mbgl over 20 minutes.
2. Installation: 0.00-4.50m 50mm plain standpipe with bentonite seal; 4.50-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	4.00	200
25.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)

Civic Earth
www.civicearth.com

Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1003**	Location Type:	Cable Percussion to Rotary Coring
Coords:	385261.27E/397532.97N	Level:	39.20mAOD
Status:	FINAL	Scale:	1:50
Final Depth:	20.00		
Sheet 1 of 2		Date Start:	12/01/2024
Date End:	18/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	12.40	20	8.50
6.50	20.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
		0.20	B 2						Dense to very dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass and plastic noted. [MADE GROUND]					
		0.20	ES 1											
		0.50	B 4											
		0.50	ES 3											
	1.0	1.00	B 6											
		1.00	ES 5											
		1.20 - 1.65	B 8	SPT(S) 1.20m N=43 (5,6/7,12,12,12)										
		1.20 - 1.65	D 7											
	2.0	2.00	ES 9	SPT(S) 2.00m N=50 (7,8/50 for 285mm)										
		2.00 - 2.45	B 11											
		2.00 - 2.45	D 10											
	3.0	3.00	ES 12	SPT(S) 3.00m N=50 (6,7/50 for 265mm)										
		3.00 - 3.45	B 14											
		3.00 - 3.45	D 13											
	4.0	4.00	ES 15			35.10	4.10							
		4.00 - 4.45	B 17						Orangish brown SANDSTONE. Recovered as very dense fine to coarse sand. [WEATHERED CHESTER SANDSTONE FORMATION]					
		4.00 - 4.45	D 16											
	5.0	5.00 - 5.45	B 19	SPT(S) 5.00m 50 (25 for 95mm/50 for 185mm)										
		5.00 - 5.45	D 18											
	6.0	6.00 - 6.45	B 21	SPT(S) 6.00m 50 (25 for 80mm/50 for 155mm)		32.70	6.50							
		6.00 - 6.45	D 20											
	7.0								Extremely weak locally very weak thinly to medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Rare subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 15 - 20 degrees closely spaced rough undulating and stepped infilled with sand. 2) 45 - 50 degrees medium to widely spaced rough most planar some undulating infilled with sand. [CHESTER SANDSTONE FORMATION]	6.50 8.00	81	30	16	
	8.0									8.00 9.50	100	95	49	
	9.0	9.11	C 28											
	10.0	9.90	C											

Stratum continues onto next page

Notes:

1. Groundwater encountered at 12.4mbgl, rising to 8.5mbgl over 20 minutes.
2. Installation: 0.00-4.50m 50mm plain standpipe with bentonite seal; 4.50-20.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and flush cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	4.00	200
20.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)
GW100 3	4.50	20.00

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1003**	Location Type:	Cable Percussion to Rotary Coring
Coords:	385261.27E/397532.97N	Level:	39.20mAOD
Status:	FINAL	Scale:	1:50
Final Depth:	20.00		
Sheet 2 of 2		Date Start:	12/01/2024
Date End:	18/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	12.40	20	8.50
6.50	20.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm): min avg max
	11.0								Extremely weak locally very weak thinly to medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Rare subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 15 - 20 degrees closely spaced rough undulating and stepped infilled with sand. 2) 45 - 50 degrees medium to widely spaced rough most planar some undulating infilled with sand. [CHESTER SANDSTONE FORMATION]	9.50 11.00	33	27	10	
	12.0									11.00 12.50	95	6	0	0 50 150
	13.0									12.50 14.00	73	11	0	
	14.0									14.00 15.50	100	38	17	
	15.0	15.43	C 32			24.30	14.90		Weak thinly to medium bedded light reddish brown medium grained SANDSTONE, weakly to moderately cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 10 - 15 degrees closely spaced rough stepped and undulating infilled with sand and some oxidisation staining on fracture surfaces. 2) 45 - 50 degrees medium spaced rough undulating infilled with fine to medium sand and some oxidisation staining on fracture surfaces. [CHESTER SANDSTONE FORMATION]	15.50 17.00	100	16	14	
	16.0													
	17.0									17.00 18.50	73	69	48	0 180 310
	18.0													
	19.0									18.50 20.00	80	80	72	
	20.0					19.20	20.00							

EOH at 20.00m - Achieved target depth

Notes:

1. Groundwater encountered at 12.4mbgl, rising to 8.5mbgl over 20 minutes.
2. Installation: 0.00-4.50m 50mm plain standpipe with bentonite seal; 4.50-20.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and flush cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	4.00	200
20.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1004**	Location Type:	Cable Percussion to Rotary Coring
Coords:	385245.73E/397472.13N	Level:	42.28mAOD
Status:	FINAL	Scale:	1:50
Final Depth:	25.00		
Sheet 1 of 3		Date Start:	10/01/2024
Date End:	11/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	18.00	20	12.90
6.50	25.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
		0.20	B 2			42.08	0.20		Reinforced concrete. 8mm rebar noted. [MADE GROUND]					
		0.20	ES 1											
		0.50	B 4						Dark reddish brown sandy cobbly gravel. Gravel is angular to subangular fine to coarse of brick and concrete. Sand is fine to coarse. Cobbles are angular of brick and concrete. [MADE GROUND]					
		0.50	ES 3			41.63	0.65							
		0.70	D 5											
	1.0	1.00	B 7						Soft orangish brown slightly sandy gravelly clay. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. [MADE GROUND]					
		1.00	ES 6											
		1.20 - 1.65	B 9	SPT(S) 1.20m N=7 (1,2/2,2,1,2)										
		1.20 - 1.65	D 8			40.68	1.60							
	2.0	2.00	ES 10	SPT(S) 2.00m N=21 (4,5/5,5,6,5)					Medium dense light orangish brown gravelly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. [MADE GROUND]					
		2.00 - 2.45	B 12											
		2.00 - 2.45	D 11											
		2.70	B 13			39.58	2.70							
	3.0	3.00	ES 14	Ublows=52 Recovery=90%					Stiff dark brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]					
		3.00 - 3.45	UT 15											
		3.00 - 3.45	UT100 15											
		3.70	B 16			38.58	3.70							
	4.0	4.00	ES 17	SPT(S) 4.00m N=50 (10,12/50 for 295mm)					Stiff grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]					
		4.00 - 4.45	B 19											
		4.00 - 4.45	D 18			37.58	4.70							
	5.0	5.00	ES 20	SPT(S) 5.00m 50 (9,10/50 for 210mm)					Reddish brown SANDSTONE. Recovered as very dense fine to coarse sand. [WEATHERED CHESTER SANDSTONE FORMATION]					
		5.00 - 5.45	B 22											
		5.00 - 5.45	D 21											
	6.0	6.00	ES 23	SPT(S) 6.00m N=50 (4,12/50 for 230mm)										
		6.00 - 6.45	B 25											
		6.00 - 6.45	D 24			35.78	6.50							
	7.0								Very weak locally extremely weak medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 45 degrees closely to medium spaced rough undulating infilled with sand and some oxidisation staining on fracture surfaces. [CHESTER SANDSTONE FORMATION]	6.50 8.00	63	63	52	
	8.0									8.00 9.50	100	55	55	0 180 550
	9.0	9.01	C											
	10.0													

Stratum continues onto next page

Notes:

1. Groundwater encountered at 18.0mbgl, rising to 12.9mbgl over 20 minutes.
2. Installation: 0.00-5.00m 50mm plain standpipe with bentonite seal; 5.00-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	5.00	200
25.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)
GW1004	5.00	25.00

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1004**	Location Type: Cable Percussion to Rotary Coring	
		Coords: 385245.73E/397472.13N	Level: 42.28mAOD
Status:	FINAL	Scale: 1:50	Final Depth: 25.00
Sheet 2 of 3		Date Start: 10/01/2024	Date End: 11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	18.00	20	12.90
6.50	25.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm): min avg max
	11.0								Very weak locally extremely weak medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 45 degrees closely to medium spaced rough undulating infilled with sand and some oxidisation staining on fracture surfaces. [CHESTER SANDSTONE FORMATION]	9.50 11.00	97	97	81	
						30.63	11.65							
	12.0	11.88	C 39						Weak medium bedded light reddish brown medium grained SANDSTONE, weakly to moderately cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 45 degrees closely to medium spaced rough undulating infilled with sand and some oxidisation staining on fracture surfaces. [CHESTER SANDSTONE FORMATION]	11.00 12.50	75	29	21	
	13.0									12.50 14.00	83	64	64	
	14.0									14.00 15.50	94	94	61	
	15.0													
	16.0	16.59	C							15.50 17.00	65	65	61	0 220 750
	17.0									17.00 18.50	90	90	63	
	18.0													
	19.0									18.50 20.00	88	58	49	
	20.0													

Stratum continues onto next page

Notes:

1. Groundwater encountered at 18.0mbgl, rising to 12.9mbgl over 20 minutes.
2. Installation: 0.00-5.00m 50mm plain standpipe with bentonite seal; 5.00-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	5.00	200
25.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1004**	Location Type:	Cable Percussion to Rotary Coring
Coords:	385245.73E/397472.13N	Level:	42.28mAOD
Status:	FINAL	Scale:	1:50
Final Depth:	25.00		
Sheet 3 of 3		Date Start:	10/01/2024
Date End:	11/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	6.50	CP	Dando 2000	18.00	20	12.90
6.50	25.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
	21.0								Weak medium bedded light reddish brown medium grained SANDSTONE, weakly to moderately cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 45 degrees closely to medium spaced rough undulating infilled with sand and some oxidisation staining on fracture surfaces. [CHESTER SANDSTONE FORMATION]	20.00 21.50	61	55	49	
	22.0									21.50 23.00	74	70	70	
	23.0									23.00 24.50	71	34	29	
	24.0									24.50 25.00	100	100	95	
	25.0					17.28	25.00		EOH at 25.00m - Achieved target depth					
	26.0													
	27.0													
	28.0													
	29.0													
	30.0													

Notes:

1. Groundwater encountered at 18.0mbgl, rising to 12.9mbgl over 20 minutes.
2. Installation: 0.00-5.00m 50mm plain standpipe with bentonite seal; 5.00-25.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
6.50	200	5.00	200
25.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1005**	Location Type: Cable Percussion to Rotary Coring	
Coords: 385193.47E/397492.76N	Level: 41.16mAOD		
Status:	FINAL	Scale: 1:50	Final Depth: 20.00
Sheet 1 of 2		Date Start: 10/01/2024	Date End: 15/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	5.50	CP	Dando 2000	16.70	20	12.35
5.50	20.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
		0.20	B 2						Dense dark brown sandy cobbly gravel. Gravel is angular to subangular fine to coarse brick, sandstone and concrete. Sand is fine to coarse. Cobbles are angular of brick and concrete. [MADE GROUND]					
		0.20	ES 1											
		0.50	B 4											
		0.50	ES 3											
	1.0	1.00	B 6											
		1.00	ES 5											
		1.20 - 1.65	B 8	SPT(S) 1.20m N=33 (2,3/10,10,6,7)										
		1.20 - 1.65	D 7											
						39.36	1.80							
	2.0	2.00	ES 9	SPT(S) 2.00m N=24 (2,2/3,2,3,16)					Stiff dark brown gravelly sandy clay. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. [MADE GROUND]					
		2.00 - 2.45	B 11											
		2.00 - 2.45	D 10											
						38.26	2.90							
		2.90	B 12											
	3.0	3.00	ES 13	SPT(S) 3.00m N=38 (9 for 75mm/9,8,10,11)					Reddish brown SANDSTONE. Recovered as dense to very dense fine to coarse sand. [WEATHERED CHESTER SANDSTONE FORMATION]					
		3.00 - 3.45	B											
		3.00 - 3.45	B 15											
		3.00 - 3.45	D 14											
	4.0	4.00	ES 16	SPT(S) 4.00m 50 (10,13/50 for 205mm)										
		4.00 - 4.45	B 18											
		4.00 - 4.45	D 17											
	5.0	5.00	ES 19	SPT(S) 5.00m 50 (25 for 85mm/50 for 155mm)										
		5.00 - 5.45	B 21											
		5.00 - 5.45	D 20											
						35.66	5.50							
	6.0								Reddish brown SANDSTONE. Recovered mostly as fine to coarse sand with rare areas of weak cementation. [WEATHERED CHESTER SANDSTONE FORMATION]	5.50 7.00	80	0	0	
	7.0									7.00 8.50	90	21	18	
						33.18	7.98							
	8.0	8.08	C						Extremely weak locally very weak thinly to medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Rare subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 15 - 20 degrees closely spaced rough undulating and stepped infilled with sand. [CHESTER SANDSTONE FORMATION]					
	9.0									8.50 10.00	92	27	17	0 0 160
	10.0													

Stratum continues onto next page

Notes:

1. Groundwater encountered at 16.70mbgl, rising to 12.35mbgl over 20 minutes.
2. Installation: 0.00-3.50m 50mm plain standpipe with bentonite seal; 3.50-20.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
5.50	200	4.50	200
20.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)
GW1005	3.50	20.00

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**BH1005**	Location Type:	Cable Percussion to Rotary Coring
Coords:	385193.47E/397492.76N	Level:	41.16mAOD
Status:	FINAL	Scale:	1:50
Final Depth:	20.00		
Sheet 2 of 2		Date Start:	10/01/2024
Date End:	15/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	5.50	CP	Dando 2000	16.70	20	12.35
5.50	20.00	RC	Beretta T46			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max
						30.36	10.80		Extremely weak locally very weak thinly to medium bedded light reddish brown medium grained SANDSTONE, very weakly to weakly cemented. Rare subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 15 - 20 degrees closely spaced rough undulating and stepped infilled with sand. [CHESTER SANDSTONE FORMATION]	10.00 11.50	90	62	27	
	11.0	10.82	C 52											
	12.0								Weak thinly to medium bedded light reddish brown medium grained SANDSTONE, weakly to moderately cemented. Occasional subrounded siliceous clasts and fragments of mudstone. Occasional thinly bedded fine grained areas, thin <50mm oxidised bedding planes and rare oxidisation spots. Discontinuities: 1) 10 - 15 degrees closely to medium spaced rough stepped and undulating infilled with sand and some oxidisation staining on fracture surfaces. 2) 45 - 50 degrees medium spaced rough undulating infilled with fine to medium sand. [CHESTER SANDSTONE FORMATION]	11.50 13.00	80	57	21	
	13.0									13.00 14.50	80	33	21	
	14.0													
	15.0	14.83 14.90	C 55 C 55							14.50 16.00	86	70	70	0 120 230
	16.0													
	17.0									16.00 17.50	76	39	28	
	18.0									17.50 19.00	100	37	15	
	19.0													
	20.0	19.52	C 58			21.16	20.00			19.00 20.00	100	61	61	

EOH at 20.00m - Achieved target depth

Notes:

1. Groundwater encountered at 16.70mbgl, rising to 12.35mbgl over 20 minutes.
2. Installation: 0.00-3.50m 50mm plain standpipe with bentonite seal; 3.50-20.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
5.50	200	4.50	200
20.00	146		

Hammer Information	
Energy Ratio	Serial No.
73%	BBL02

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1001**	Location Type:	Trial pit/trench
Coords:	385264.41E/397460.57N	Level:	42.15mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.00		
Sheet 1 of 1		Date Start:	10/01/2024
Date End:	10/01/2024		

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.00	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.20 0.20 0.20	B 3 D 2 ES 1			41.90	0.25		Loose to medium dense dark brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. [MADE GROUND]
		0.50 0.50 0.50	B 6 D 5 ES 4			41.55	0.60		Stiff dark brown gravelly slightly sandy clay. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. Frequent fragments of wire and glass bottles noted. [MADE GROUND]
	1.0	1.00 1.00 1.00	B 9 D 8 ES 7						Stiff orangish brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]
	2.0	2.00 2.00 2.00	B 12 D 11 ES 10			39.35	2.80		
	3.0	3.00 3.00 3.00	B 15 D 14 ES 13			39.15	3.00		Stiff grey slightly slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]
									EOH at 3.00m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.80	0.60

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG
Location ID:	**TP1002**	Location Type:	Trial pit/trench
Coords:	385185.44E/397460.68N	Level:	41.67mAOD
Status:	FINAL	Scale:	1:25
		Final Depth:	2.30
Sheet 1 of 1		Date Start:	10/01/2024
		Date End:	10/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	2.30	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.15	B 3			41.57	0.10		Reinforced concrete. 8mm rebar noted.
		0.15	D 2						[MADE GROUND]
		0.15	ES 1			41.47	0.20		Loose blackish brown slightly gravelly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, concrete and brick. Frequent ash noted.
									[MADE GROUND]
		0.50	B 6						Loose to medium dense yellowish brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. Cobbles are angular of brick and concrete. Fragments of wire noted.
		0.50	D 5						[MADE GROUND]
		0.50	ES 4			40.97	0.70		Loose to medium dense reddish brown slightly sandy cobbly gravel. Gravel is angular fine to coarse brick and concrete. Cobbles are angular of brick. Fragments of glass bottles and wire noted.
	1.0	1.00	B 9						[MADE GROUND]
		1.00	D 8						
		1.00	ES 7						
	2.0	2.00	B 12			39.37	2.30		EOH at 2.30m - Terminated due to instability of excavation.
		2.00	D 11						
		2.00	ES 10						
	3.0								
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.70	0.60

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1003**	Location Type:	Trial pit/trench
Coords:	385160.54E/397483.00N	Level:	38.10mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.30	Sheet	1 of 1
Date Start:	11/01/2024	Date End:	11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.30	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
						38.00	0.10		Bituminous macadam.
						37.95	0.15		[MADE GROUND]
		0.20	B 3			37.90	0.20		Medium dense yellowish brown slightly sandy gravel. Gravel is angular fine to coarse of dolomite. Sand is fine to coarse.
		0.20	D 2						[MADE GROUND]
		0.20	ES 1						
						37.65	0.45		Bituminous macadam.
		0.50	B 6						[MADE GROUND]
		0.50	D 5						Loose to medium dense yellowish brown slightly sandy gravel. Gravel is angular fine to coarse of dolomite. Sand is fine to coarse.
		0.50	ES 4						[MADE GROUND]
									Loose to medium dense reddish brown slightly sandy cobbly gravel. Gravel is angular fine to coarse of brick. Sand is fine to coarse. Cobbles are angular of brick.
	1.0	1.00	B 9						[MADE GROUND]
		1.00	D 8						
		1.00	ES 7						
						36.70	1.40		Stiff grey slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal.
									[GLACIAL TILL]
	2.0	2.00	B 12						
		2.00	D 11						
		2.00	ES 10						
	3.0	3.00	B 15						
		3.00	D 14						
		3.00	ES 13						
						34.80	3.30		EOH at 3.30m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.80	0.60

Civic Earth
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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1004**	Location Type:	Trial pit/trench
Coords:	385157.24E/397513.48N	Level:	37.48mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.20	Date Start:	11/01/2024
Date End:	11/01/2024	Sheet	1 of 1

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.20	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.20 0.20 0.20	B 3 D 2 ES 1			37.28	0.20		Loose to medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted. [MADE GROUND]
		0.50 0.50 0.50	B 6 D 5 ES 4						Loose to medium dense yellowish brown slightly sandy gravel. Gravel is angular fine to coarse of dolomite. Sand is fine to coarse. [MADE GROUND]
	1.0	1.00 1.00 1.00	B 9 D 8 ES 7						
	2.0	2.00 2.00 2.00	B 12 D 11 ES 10			35.18	2.30		Concrete. [MADE GROUND]
	3.0					34.28	3.20		EOH at 3.20m - Terminated due to instability of excavation and buried concrete obstruction.
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.90	0.60

Civic Earth
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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1005**	Location Type:	Trial pit/trench
Coords:	385223.31E/397499.75N	Level:	39.97mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.30	Sheet	1 of 1
Date Start:	10/01/2024	Date End:	10/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.30	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.20 0.20 0.20	B 3 D 2 ES 1			39.57	0.40		Medium dense dark brown gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of concrete, brick and sandstone. Cobbles are angular of brick and concrete. Frequent fragments of wire noted. [MADE GROUND]
		0.50 0.50 0.50	B 6 D 5 ES 4						Soft dark brown slightly gravelly slightly sandy clay. Sand is fine to coarse with a low ash content. Gravel is angular to subangular fine to coarse of brick, sandstone and concrete. Frequent fragments of tile and wire noted. [MADE GROUND]
	1.0	1.00 1.00 1.00	B 9 D 8 ES 7			38.47	1.50		
		1.50 1.50 1.50	B 12 D 11 ES 10						Stiff orangish brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]
	2.0	2.00 2.00 2.00	B 15 D 14 ES 13			37.07	2.90		
	3.0	3.00 3.00 3.00	B 18 D 17 ES 16			36.67	3.30		Extremely weak orange brown SANDSTONE. Recovered as medium dense sand. Sand is fine to coarse. [CHESTER SANDSTONE FORMATION]
									EOH at 3.30m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.80	0.60

Civic Earth
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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG
Location ID:	**TP1006**	Location Type:	Trial pit/trench
Coords:	385156.91E/397536.55N	Level:	36.51mAOD
Status:	FINAL	Scale:	1:25
		Final Depth:	3.20
Sheet 1 of 1		Date Start:	11/01/2024
		Date End:	11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.20	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.20 0.20 0.20	B 3 D 2 ES 1			36.31	0.20		Medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted. [MADE GROUND]
		0.50 0.50 0.50	B 6 D 5 ES 4			35.71	0.80		Medium dense yellowish brown slightly sandy gravel. Gravel is angular fine to coarse of dolomite. Sand is fine to coarse. [MADE GROUND]
	1.0	1.00 1.00 1.00	B 9 D 8 ES 7						Loose to medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted. [MADE GROUND]
	2.0	2.00 2.00 2.00	B 12 D 11 ES 10						
	3.0	3.00 3.00 3.00	B 15 D 14 ES 13			33.31	3.20		EOH at 3.20m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.80	0.60

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1007**	Location Type:	Trial pit/trench
Coords:	385171.14E/397497.97N	Level:	38.10mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.30	Sheet	1 of 1
Date Start:	11/01/2024	Date End:	11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.30	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
						38.05	0.05		Bituminous macadam.
		0.20	B 3						[MADE GROUND]
		0.20	D 2			37.85	0.25		Loose to medium dense yellowish brown slightly sandy gravel. Gravel is angular fine to coarse of dolomite. Sand is fine to coarse.
		0.20	ES 1						[MADE GROUND]
									Loose to medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted.
		0.50	B 6			37.55	0.55		[MADE GROUND]
		0.50	D 5						Soft orangish brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. Frequent fragments of wire noted.
		0.50	ES 4						[MADE GROUND]
	1.0	1.00	B 9						
		1.00	D 8						
		1.00	ES 7						
						36.20	1.90		Soft grey silty sandy clay. Sand is fine to coarse. Rare angular fine to coarse gravel of brick and concrete noted.
	2.0	2.00	B 12						[MADE GROUND]
		2.00	D 11			36.00	2.10		Stiff dark brown slightly sandy slightly gravelly silty CLAY. Gravel is angular to subrounded fine to coarse of sandstone and coal. Sand is fine to coarse.
		2.00	ES 10						[GLACIAL TILL]
	3.0	3.00	B 15						
		3.00	D 14			35.00	3.10		Extremely weak orange brown SANDSTONE. Recovered as medium dense sand. Sand is fine to coarse.
		3.00	ES 13			34.80	3.30		[WEATHERED CHESTER SANDSTONE FORMATION]
									EOH at 3.30m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.90	0.60

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1008**	Location Type:	Trial pit/trench
Coords:	385225.45E/397459.78N	Level:	42.27mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.50		
Sheet 1 of 1	Date Start: 10/01/2024	Date End:	10/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.50	TP	JCB 3CX	2.80	20	2.67

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.20	B 3			42.02	0.25		Firm dark brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. Frequent fragments of wire noted. [MADE GROUND]
		0.20	D 2						
		0.20	ES 1						
		0.50	B 6						Loose to medium dense blackish brown slightly gravelly sand. Sand is fine to coarse with a high ash content. Gravel is angular to subangular fine to coarse of concrete. [MADE GROUND]
		0.50	D 5						
		0.50	ES 4						
	1.0	1.00	B 9						
		1.00	D 8						
		1.00	ES 7			40.57	1.70		Stiff orangish brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]
	2.0	2.00	B 12						
		2.00	D 11						
		2.00	ES 10		▽				
						39.47	2.80		Stiff grey slightly slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]
	3.0	3.00	B 15						
		3.00	D 14						
		3.00	ES 13			38.77	3.50		EOH at 3.50m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. Groundwater encountered at 2.80mbgl, rising to 2.67mbgl after 20 minutes.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.70	0.60

Civic Earth
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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1009**	Location Type:	Trial pit/trench
Coords:	385260.01E/397510.01N	Level:	40.00mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.20	Date Start:	11/01/2024
Date End:	11/01/2024	Sheet	1 of 1

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.20	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.20 0.20 0.20	B 3 D 2 ES 1			39.80	0.20		Loose dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted. [MADE GROUND]
						39.65	0.35		Reinforced concrete. 6mm rebar noted. [MADE GROUND]
		0.50 0.50 0.50	B 6 D 5 ES 4			39.40	0.60		Medium dense yellowish brown slightly sandy gravel. Gravel is angular fine to coarse of dolomite. Sand is fine to coarse. [MADE GROUND]
	1.0	1.00 1.00 1.00	B 9 D 8 ES 7			38.80	1.20		Reinforced concrete. 6mm rebar noted. Present across the eastern half of the pit only. [MADE GROUND]
	2.0	2.00 2.00 2.00	B 12 D 11 ES 10			37.60	2.40		Soft orangish brown slightly gravelly slightly sandy clay. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. Frequent fragments of wire noted. Olfactory evidence of hydrocarbons noted at 1.90m in the western edge of the pit. [MADE GROUND]
	3.0	3.00 3.00 3.00	B 15 D 14 ES 13			36.80	3.20		Stiff grey slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]
	4.0								EOH at 3.20m - Terminated due to instability of excavation.
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.
4. Brick wall noted on northern and western edges of trial pit to 2.40mbgl.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.80	0.60

Civic Earth
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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1010**	Location Type:	Trial pit/trench
Coords:	385246.52E/397496.59N	Level:	41.04mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.00	Sheet	1 of 1
Date Start:	10/01/2024	Date End:	10/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.00	TP	JCB 3CX	2.00	20	1.95

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.20 0.20 0.20	B 3 D 2 ES 1						Loose dark brown gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of concrete, brick and sandstone. Cobbles are angular of brick and concrete. [MADE GROUND]
		0.50 0.50 0.50	B 6 D 5 ES 4						
	1.0	1.00 1.00 1.00	B 9 D 8 ES 7						
						39.24	1.80		
		2.00 2.00 2.00	B 12 D 11 ES 10		▽				Loose blackish brown slightly sandy slightly cobbly gravel. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. Cobbles are angular of concrete. Sand is fine to medium. [MADE GROUND]
	2.0					38.94	2.10		
									Stiff orange brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]
	3.0	3.00 3.00 3.00	B 15 D 14 ES 13			38.04	3.00		
									EOH at 3.00m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. Groundwater encountered at 2.00mbgl, rising to 1.95m after 20 minutes,
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.90	0.60

Civic Earth
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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG

Location ID: **TP1011**

Status: FINAL

Sheet 1 of 1

Location Type: Trial pit/trench

Coords: 385113.86E/397515.54N Level: 35.87mAOD

Scale: 1:25 Final Depth: 3.20

Date Start: 11/01/2024 Date End: 11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.20	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
		0.20	B 3						Loose dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass and plastic noted. [MADE GROUND]
		0.20	D 2						
		0.20	ES 1						
		0.50	B 6						
		0.50	D 5						
		0.50	ES 4						
	1.0	1.00	B 9						
		1.00	D 8						
		1.00	ES 7						
	2.0	2.00	B 12						
		2.00	D 11						
		2.00	ES 10						
	3.0	3.00	B 15						
		3.00	D 14						
		3.00	ES 13			32.67	3.20		
									EOH at 3.20m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.70	0.60

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**TP1012**	Location Type:	Trial pit/trench
Coords:	385112.93E/397498.89N	Level:	35.93mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	3.30	Sheet	1 of 1
Date Start:	11/01/2024	Date End:	11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	3.30	TP	JCB 3CX			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
						35.88	0.05		Loose reddish brown sand. Sand is fine to coarse.
						35.83	0.10		[MADE GROUND]
		0.20	B 3						Loose to medium dense greyish brown slightly sandy gravel. Gravel is angular fine to coarse concrete.
		0.20	D 2						[MADE GROUND]
		0.20	ES 1						Loose to medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass and plastic noted.
		0.50	B 7						[MADE GROUND]
		0.50	D 5						
		0.50	D 6						
		0.50	ES 4						
	1.0	1.00	B 10						
		1.00	D 9						
		1.00	ES 8						
	2.0	2.00	B 13						
		2.00	D 12						
		2.00	ES 11						
	3.0	3.00	B 16						
		3.00	D 15						
		3.00	ES 14						
						32.63	3.30		EOH at 3.30m - Terminated due to instability of excavation.
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.70	0.60

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**WS1001**	Location Type: Window Sampler	
		Coords: 385128.73E/397498.81N	Level: 37.19mAOD
Status:	FINAL	Scale: 1:25	Final Depth: 1.00 m
	Sheet 1 of 1	Date Start: 19/01/2024	Date End: 19/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.00	WS	Tracked WS			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
		0.50 0.50	B 2 D 1						Dense reddish brown gravelly slightly clayey cobbly sand. Sand is fine to coarse. Gravel is angular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass, tile, plastic and wire noted. [MADE GROUND]	0.00 1.00	128	100
	1.0	1.00 1.00 1.00	3 D 4 ES 3			36.19	1.00		EOH at 1.00m - Refusal on dense material.			
	2.0											
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Borehole backfilled with arisings on completion.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample.
4. Densities and consistencies above 1.0m based on Engineer's observations.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio	Serial No.
1.00	128			%	

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG
Location ID:	**WS1002**	Location Type:	Window Sampler
Status:	FINAL	Coords:	385150.82E/397474.98N
		Level:	37.76mAOD
Sheet 1 of 1		Scale:	1:25
		Final Depth:	2.00 m
		Date Start:	19/01/2024
		Date End:	19/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	2.00	WS	Tracked WS			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
		0.50 0.50	B 2 D 1						Dense to very dense reddish brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass, tile, plastic and wire noted. [MADE GROUND]			
	1.0	1.00 1.00	B 4 D 3	SPT(S) 1.00m N=37 (6,7/8,9,10,10)								
		1.50 1.50 1.50	5 D 6 ES 5							1.20 2.00	128	80
	2.0	2.00 2.00	B 8 D 7	SPT(S) 2.00m 50 (25 for 5mm/50 for 10mm)		35.76	2.00		EOH at 2.00m - Refusal on very dense material.			
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Installation: 0.00-1.00m plain 50mm plain standpipe with bentonite seal; 1.00-2.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample.
4. Densities and consistencies above 1.2m based on Engineer's observations.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio	Serial No.
2.00	128			62%	DART449

Install Response Zones		
Ref	From (m)	To (m)
GG1002	1.00	2.00

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**WS1003**	Location Type: Window Sampler	
Coords: 385209.78E/397472.62N	Level: 42.19mAOD		
Status:	FINAL	Scale: 1:25	Final Depth: 2.45 m
Sheet 1 of 1		Date Start: 18/01/2024	Date End: 18/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	2.45	WS	Tracked WS			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
		0.20	ES 1						Dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass, tile, plastic and wire noted. [MADE GROUND]			
		0.50	B 4			41.69	0.50					
		0.50	D 3						Stiff orangish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]			
		0.50	ES 2									
	1.0	1.00	D 6	SPT(S) 1.00m N=31 (5,6/6,7,8,10)								
		1.00	ES 5									
		1.50	D 7							1.20 2.00	128	100
	2.0	2.00	D 9	SPT(S) 2.00m N=48 (7,9/9,10,12,17)								
		2.00	ES 8							2.00 2.45	128	100
						39.74	2.45		EOH at 2.45m - Refusal			
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Borehole backfilled with arisings on completion.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.
4. Densities and consistencies above 1.2m based on Engineer's observations.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio	Serial No.
2.45	128			62%	DART449

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**WS1004**	Location Type: Window Sampler	
Coords: 385173.90E/397505.36N	Level: 38.26mAOD		
Status:	FINAL	Scale: 1:25	Final Depth: 2.50 m
Sheet 1 of 1		Date Start: 19/01/2024	Date End: 19/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	2.50	WS	Tracked WS			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
						38.11	0.15		Bituminous macadam. [MADE GROUND]			
						37.96	0.30		Dense yellowish brown slightly sandy gravel. Gravel is angular fine to coarse of dolomite. [MADE GROUND]			
		0.50 0.50	B 2 D 1			37.66	0.60		Dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass, tile, plastic and wire noted. [MADE GROUND]			
		0.80 0.80	3 ES 3						Soft orange brown slightly gravelly sandy clay. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of sandstone, brick and concrete. Frequent fragments of wire and plastic noted. [MADE GROUND]			
	1.0	1.00	D 4	SPT(S) 1.00m N=5 (1,2/1,2,1,1)								
		1.50	D 5							1.20 2.00	128	80
						36.36	1.90					
	2.0	2.00 2.00 2.00	6 D 7 ES 6	SPT(S) 2.00m 50 (25 for 15mm/50 for 20mm)					Soft blackish brown slightly gravelly silty clay. Gravel is angular to subangular fine to coarse of brick, sandstone and concrete. [MADE GROUND]	2.00 2.50	128	100
						35.76	2.50		EOH at 2.50m - Refusal on cobble			
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Installation: 0.00-1.00m plain 50mm plain standpipe with bentonite seal; 1.00-2.50m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample.
4. Densities and consistencies above 1.2m based on Engineer's observations.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio	Serial No.
2.50	128			62%	DART449

Install Response Zones		
Ref	From (m)	To (m)
GG1004	1.00	2.50

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG
Location ID:	**WS1005**	Location Type:	Window Sampler
Coords:	385234.61E/397512.09N	Level:	39.83mAOD
Status:	FINAL	Scale:	1:25
		Final Depth:	2.50 m
Sheet 1 of 1		Date Start:	18/01/2024
		Date End:	18/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	2.50	WS	Tracked WS			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
		0.20	ES 1						Dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass, tile, plastic and wire noted. [MADE GROUND]			
		0.50	B 4									
		0.50	D 3									
		0.50	ES 2									
						38.93	0.90					
	1.0	1.00	B 7	SPT(S) 1.00m N=8 (1,2/2,2,2,2)					Firm orangish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]			
		1.00	D 6									
		1.00	ES 5									
		1.50	D 8							1.20 2.00	128	70
						38.03	1.80					
	2.0	2.00	D 10	SPT(S) 2.00m N=8 (1,2/2,2,2,2)					Firm grey mottled brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of sandstone and coal. [GLACIAL TILL]			
		2.00	ES 9							2.00 2.50	128	95
						37.43	2.40					
		2.50	D 11			37.33	2.50		Reddish brown SANDSTONE. Recovered as fine to coarse sand. [WEATHERED CHESTER SANDSTONE FORMATION]			
									EOH at 2.50m - Achieved target depth			
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Installation: 0.00-1.00m plain 50mm plain standpipe with bentonite seal; 1.00-1.80m slotted standpipe with gravel filter and geowrap.; 1.80-2.50m backfilled with arisings. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.
4. Densities and consistencies above 1.2m based on Engineer's observations.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio	Serial No.
2.50	128			62%	DART449

Install Response Zones		
Ref	From (m)	To (m)
GG1005	1.00	1.80

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**WS1006**	Location Type: Window Sampler	
Coords: 385265.83E/397483.51N	Level: 41.96mAOD		
Status:	FINAL	Scale: 1:25	Final Depth: 2.50 m
Sheet 1 of 1		Date Start: 18/01/2024	Date End: 18/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	2.50	WS	Tracked WS			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
		0.20	ES 1						Very dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass, tile, plastic and wire noted. [MADE GROUND]			
		0.50	B 4									
		0.50	D 3									
		0.50	ES 2									
	1.0	1.00	B 7	SPT(S) 1.00m 50 (25 for 5mm/50 for 5mm)								
		1.00	D 6									
		1.00	ES 5									
		1.50	D 8							1.20 2.00	128	70
	2.0	2.00	B 11	SPT(S) 2.00m 50 (25 for 5mm/50 for 5mm)								
		2.00	D 10									
		2.00	ES 9							2.00 2.50	128	70
						39.46	2.50		EOH at 2.50m - Refusal			
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Installation: 0.00-1.00m plain 50mm plain standpipe with bentonite seal; 1.00-2.50m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.
4. Densities and consistencies above 1.2m based on Engineer's observations.

Hole Diameter		Casing	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)
2.50	128		

Hammer Information	
Energy Ratio	Serial No.
62%	DART449

Install Response Zones		
Ref	From (m)	To (m)
GG1006	1.00	2.50

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG
Location ID:	**WS1007**	Location Type:	Window Sampler
Coords:	385149.73E/397524.22N	Level:	37.09mAOD
Status:	FINAL	Scale:	1:25
		Final Depth:	1.00 m
Sheet 1 of 1		Date Start:	19/01/2024
		Date End:	19/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.00	WS	Tracked WS			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
		0.50 0.50	B 2 D 1						Dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of glass, tile, plastic and wire noted. [MADE GROUND]	0.00 1.00	128	85
		0.70 0.70	D 3 ES 3									
	1.0	1.00	D 4			36.09	1.00		EOH at 1.00m - Refusal			
	2.0											
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Installation: 0.00-0.30m plain 50mm plain standpipe with bentonite seal; 0.30-1.00m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample.
4. Densities and consistencies above 1.2m based on Engineer's observations.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio %	Serial No.
1.00	128				

Install Response Zones		
Ref	From (m)	To (m)
GG1007	0.30	1.00

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: / Checked By:	HG
Location ID:	**WS1008**	Location Type:	Window Sampler
Coords:	385208.72E/397529.86N	Level:	39.16mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	1.00 m	Date Start:	18/01/2024
Date End:	18/01/2024	Sheet	1 of 1

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.00	IP	Hand Tools			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
						39.01	0.15		Concrete. 8mm rebar noted. [MADE GROUND]			
		0.20	ES 1						Very dense reddish brown slightly sandy cobbly gravel. Gravel is angular fine to coarse of concrete and brick. Cobbles are angular of brick. Sand is fine to coarse. Frequent fragments of glass, plastic and wire. [MADE GROUND]			
		0.50	B 4									
		0.50	D 3									
		0.50	ES 2									
	1.0	1.00	B 7	SPT(S) 1.00m 50 (25 for 30mm/50 for 25mm)		38.16	1.00					
		1.00	D 6						EOH at 1.00m - Refusal			
		1.00	ES 5									
	2.0											
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Borehole backfilled with arisings.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.
4. Densities and consistencies above 1.2m based on Engineer's observations.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio	Serial No.
1.00	128			62%	DART449

Install Response Zones		
Ref	From (m)	To (m)

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG
Location ID:	**WS1009**	Location Type:	Window Sampler
Coords:	385185.11E/397475.66N	Level:	41.65mAOD
Status:	FINAL	Scale:	1:25
		Final Depth:	1.50 m
Sheet 1 of 1		Date Start:	18/01/2024
		Date End:	18/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	1.50	WS	Tracked WS			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description	Window Sampling: WS Run	Dia (mm)	Recovery (%)
		0.20	ES 1						Very dense reddish brown slightly sandy cobbly gravel. Gravel is angular fine to coarse of concrete and brick. Cobbles are angular of brick. Sand is fine to coarse. Frequent fragments of glass, plastic and wire noted. [MADE GROUND]			
		0.50	B 4									
		0.50	D 3									
		0.50	ES 2									
	1.0	1.00	B 7	SPT(S) 1.00m 50 (25 for 0mm/50 for 5mm)								
		1.00	D 6									
		1.00	ES 5							1.20 1.50	128	100
		1.50	D 8	SPT(S) 1.50m 50 (25 for 0mm/50 for 0mm)		40.15	1.50		EOH at 1.50m - Refusal			
	2.0											
	3.0											
	4.0											
	5.0											

Notes:

1. No groundwater encountered.
2. Installation: 0.00-0.50m plain 50mm plain standpipe with bentonite seal; 0.50-1.50m slotted standpipe with gravel filter and geowrap. Gas tap, bung and raised cover installed at ground level.
3. ES - Environmental Sample. B - Bulk Sample. D - Disturbed Sample. SPT - Standard Penetration Test.
4. Densities and consistencies above 1.2m based on Engineer's observations.

Hole Diameter		Casing		Hammer Information	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Energy Ratio	Serial No.
1.50	128			62%	DART449

Install Response Zones		
Ref	From (m)	To (m)
GG1009	0.50	1.50

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG
Location ID:	**FIP1001**	Location Type:	Trial pit/trench
Coords:	385139.12E/397474.53N	Level:	37.78mAOD
Status:	FINAL	Scale:	1:25
		Final Depth:	1.50
Sheet 1 of 1		Date Start:	10/01/2024
		Date End:	11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.50	TP	Hand Tools			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
						37.74	0.05		Asphalt.
									[MADE GROUND]
									Light grey brown sand (subbase). Sand is fine to medium.
						37.48	0.30		[MADE GROUND]
		0.50	B 2						Loose to medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete.
		0.50	D 1						[MADE GROUND]
	1.0	1.00	B 4						
		1.00	D 3						
		1.50	B 6			36.28	1.50		
		1.50	D 5						EOH at 1.50m - Terminated at target depth.
	2.0								
	3.0								
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.
4. Base of foundation not encountered.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Unstable	No	2.40	2.30

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By: FM / Checked By: HG	
Location ID:	**FIP1002**	Location Type:	Trial pit/trench
Coords:	385154.83E/397458.52N	Level:	38.07mAOD
Status:	FINAL	Scale:	1:25
Final Depth:	1.05	Sheet	1 of 1
Date Start:	10/01/2024	Date End:	11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.05	TP	Hand Tools			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
						38.02	0.05		Asphalt.
									[MADE GROUND]
									Light grey brown sand (subbase). Sand is fine to medium.
									[MADE GROUND]
		0.50	B 2						
		0.50	D 1			37.52	0.55		
									Loose to medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete.
									[MADE GROUND]
	1.0	1.00	B 4						
		1.00	D 3			37.02	1.05		
									EOH at 1.05m - Terminated at target depth.
	2.0								
	3.0								
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Slight Collapse	No	2.20	1.70

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Project Title:	**Phase 1B, Mayfield, Manchester**	Client:	**LandsecU+I**
Project Number:	**51001/03**	Logged By:	FM
		Checked By:	HG
Location ID:	**FIP1003**	Location Type:	Trial pit/trench
Coords:	385168.89E/397470.43N	Level:	38.41mAOD
Status:	FINAL	Scale:	1:25
		Final Depth:	0.60
Sheet 1 of 1		Date Start:	10/01/2024
		Date End:	11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	0.60	TP	Hand Tools			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
						38.36	0.05		Asphalt.
									[MADE GROUND]
									Medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted.
									[MADE GROUND]
		0.50 0.50	B 2 D 1			37.81	0.60		EOH at 0.60m - Terminated upon encountering brick floor.
	1.0								
	2.0								
	3.0								
	4.0								
	5.0								

Notes:

1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

Stability	Shoring Used	Length (m)	Width (m)
Slight Collapse	No	3.20	1.10

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Project Title: **Phase 1B, Mayfield, Manchester**		Client: **LandsecU+I**
Project Number: **51001/03**	Logged By: FM Checked By: HG	
Location ID: **FIP1004**	Location Type: Trial pit/trench	
	Coords: 385172.08E/397490.28N	Level: 38.27mAOD
Status: FINAL	Scale: 1:25	Final Depth: 0.80
Sheet 1 of 1	Date Start: 10/01/2024	Date End: 11/01/2024

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	0.80	TP	Hand Tools			

Inst/ Backfill	Depth (m)	Samples & Tests: Sample Depth (m)	Type/Ref	Tests/Results	Water Level (m)	Level (mAOD)	Strata Depth (m)	Legend / Cover	Strata Description
						38.22	0.05		Asphalt.
									[MADE GROUND]
		0.50 0.50	B 2 D 1						Medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted.
									[MADE GROUND]
						37.47	0.80		EOH at 0.80m - Terminated upon encountering tiled floor.
	1.0								
	2.0								
	3.0								
	4.0								
	5.0								

Notes:

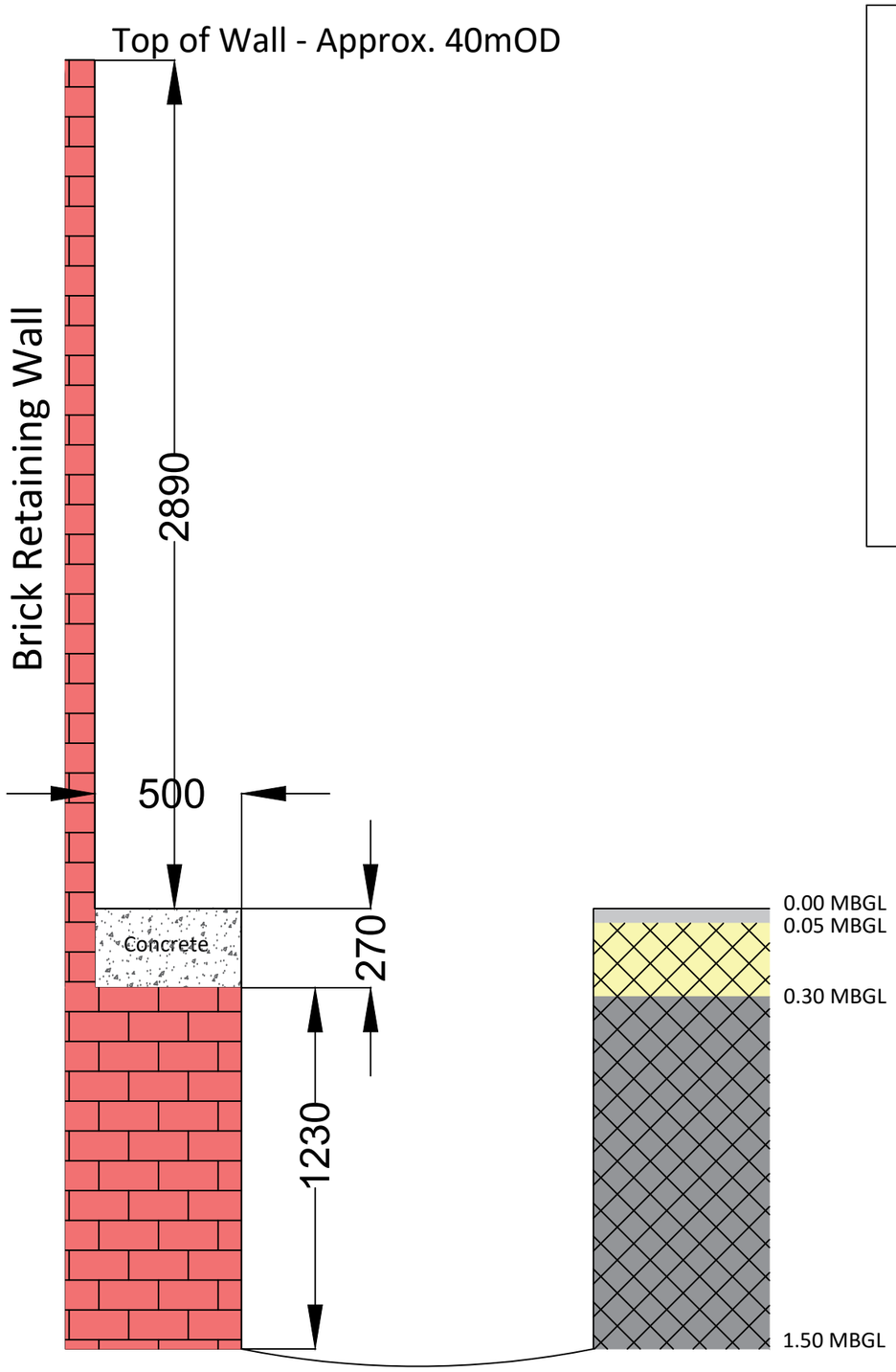
1. No groundwater encountered.
2. Backfilled with arisings on completion.
3. Densities and consistencies based on Engineer's observations.

Soakaway Tests

Test Number	Date	Duration (hh:mm)	Infiltration Rate

Pit Details

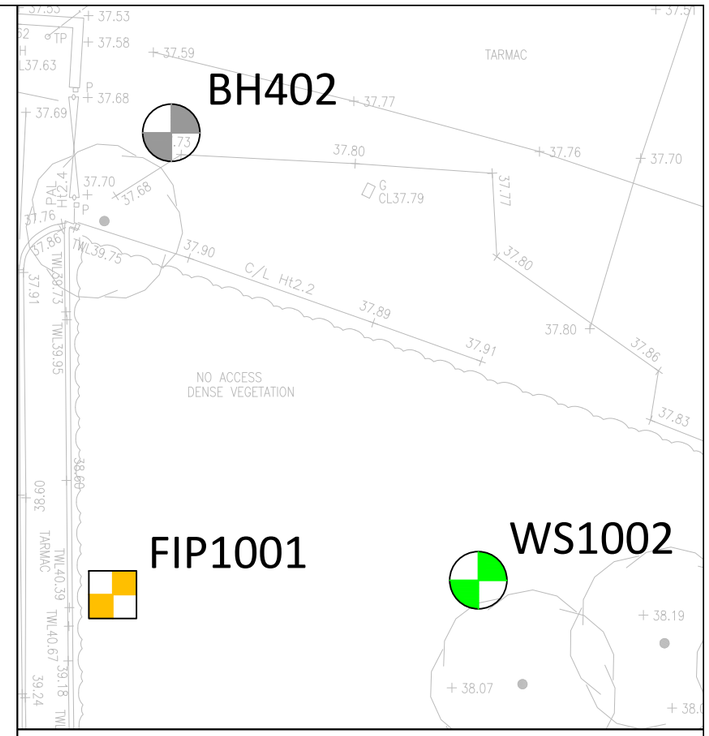
Stability	Shoring Used	Length (m)	Width (m)
Slight Collapse	No	4.70	1.30



0.00 - 0.05 MBGL: Asphalt.

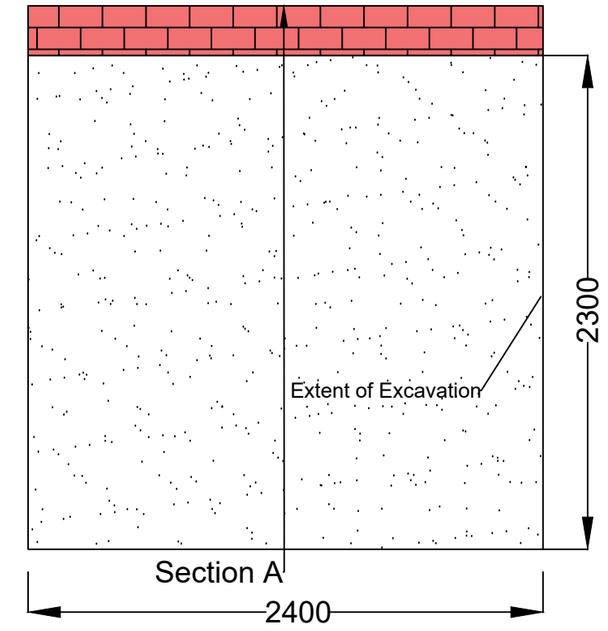
0.05 - 0.30 MBGL: MADE GROUND - Light grey brown sand (subbase). Sand is fine to medium.

0.30 - 1.50 MBGL: MADE GROUND - Loose to medium dense dark brown slightly clayey gravelly cobbly sand Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete.



PLAN OF EXCAVATION

N



DATE	REV	DESCRIPTION	DRAWN	CHKD
11/03/24	P01	First Issue	KP	HG

1. MBGL = metres below ground level
2. mOD = metres above Ordnance Datum
3. Trial pit terminated at 1.50mbgl
4. No groundwater encountered
5. Trial pit backfilled with arisings and left slightly mounded
6. Dimensions of structures / foundations provided in mm unless otherwise stated
7. Refer to Engineer log for soil sampling details
8. Trial pit probed to 3.00mbgl and underside of foundation not encountered

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PROJECT
Mayfield Phase 1B

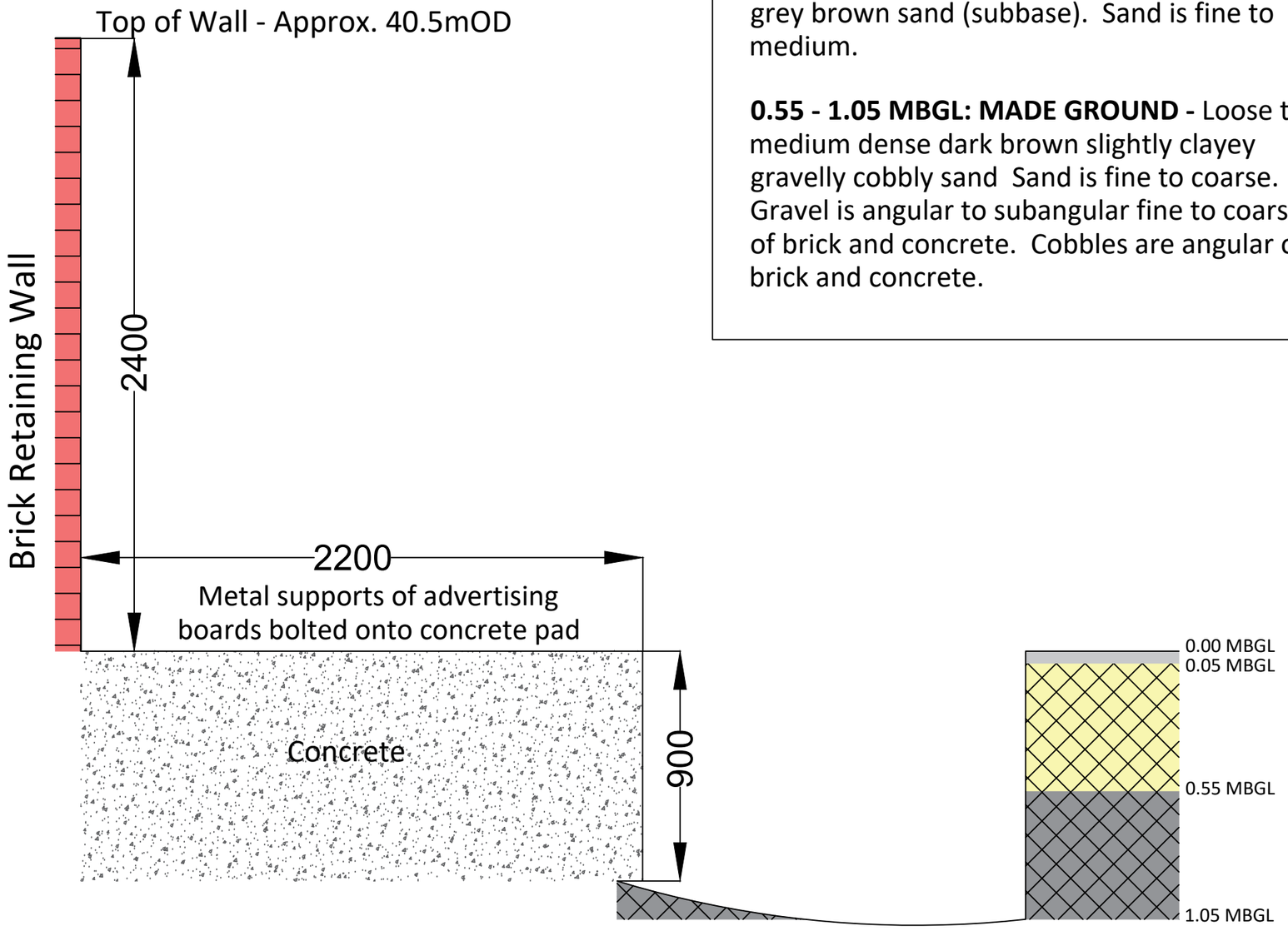
TITLE
Foundation Inspection Pit
FIP1001

DRAWING STATUS: FOR INFORMATION
STATUS CODE: -

CE PROJECT No.	SCALE @ A3	DATE CREATED	DRAWN	CHECKED
51001/03	NTS	11/03/24	KP	HG

DRAWING No.: 51001-CE-02-XX-D-G-0002
REV: P01

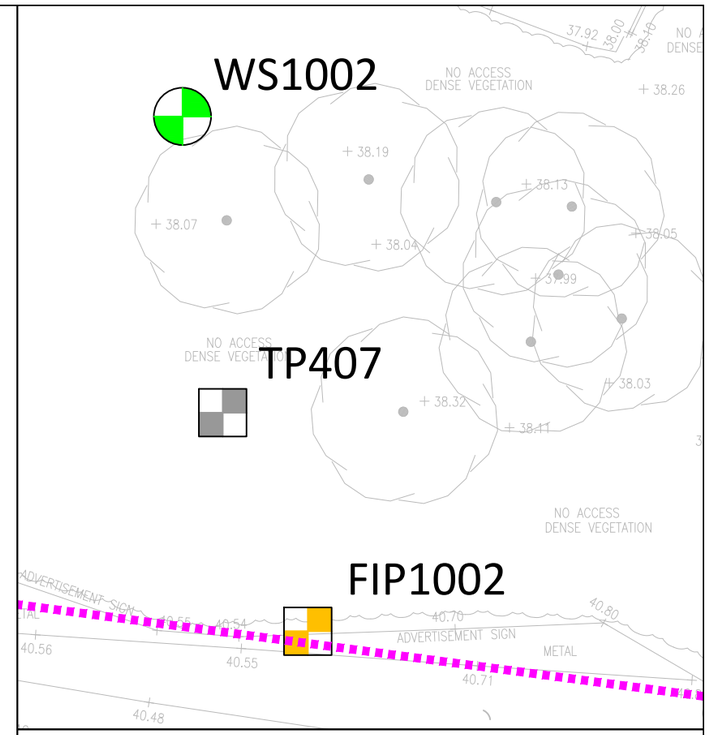
SECTION A

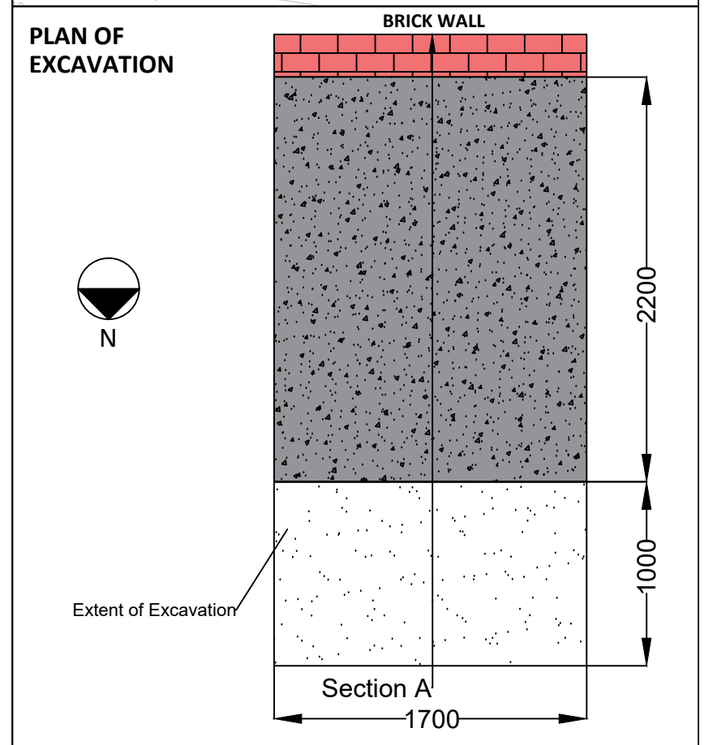


0.00 - 0.05 MBGL: Asphalt.

0.05 - 0.55 MBGL: MADE GROUND - Light grey brown sand (subbase). Sand is fine to medium.

0.55 - 1.05 MBGL: MADE GROUND - Loose to medium dense dark brown slightly clayey gravelly cobbly sand Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete.





1. MBGL = metres below ground level
2. mOD = metres above Ordnance Datum
3. Trial pit terminated at 1.05mbgl
4. No groundwater encountered
5. Trial pit backfilled with arisings and left slightly mounded
6. Dimensions of structures / foundations provided in mm unless otherwise stated
7. Refer to Engineer log for soil sampling details

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DATE	REV	DESCRIPTION	DRAWN	CHKD
11/03/24	P01	First Issue	KP	HG

PROJECT: Mayfield Phase 1B

DRAWING STATUS: FOR INFORMATION

STATUS CODE: -

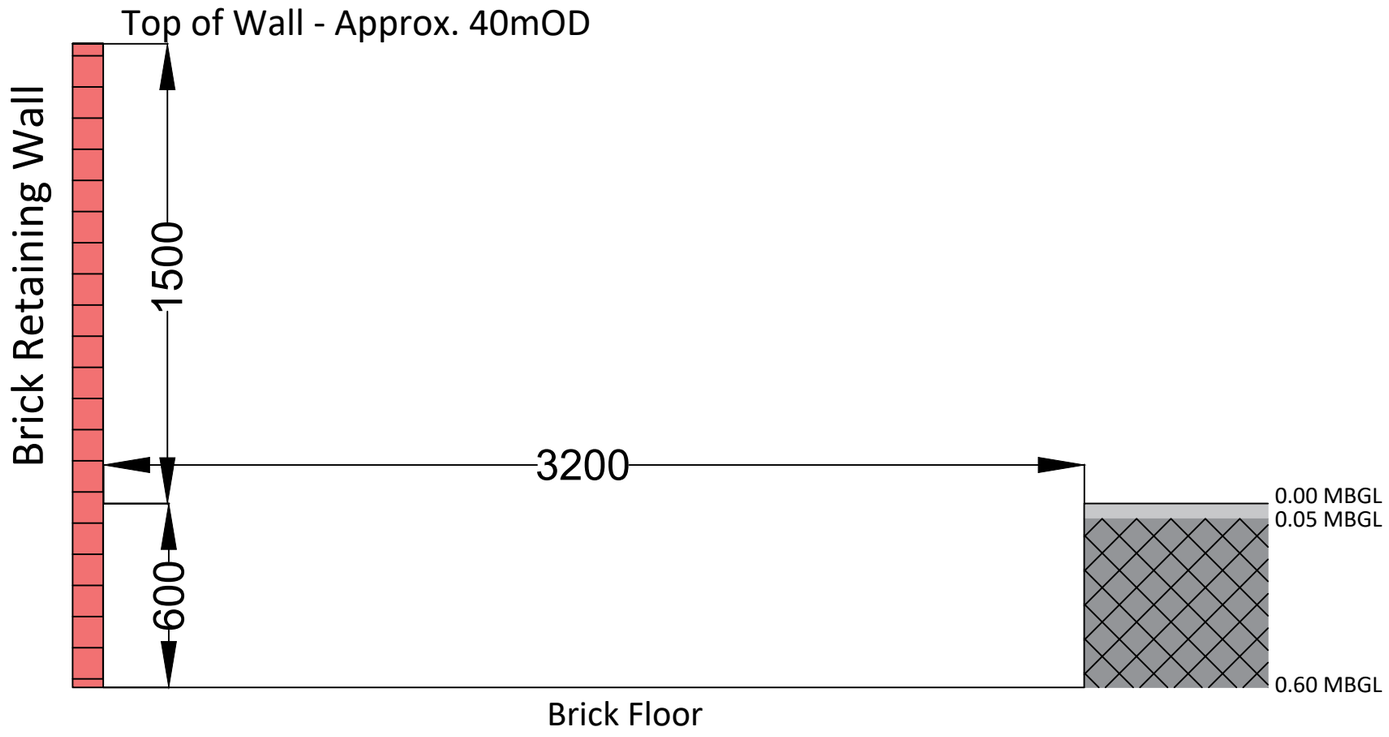
CE PROJECT No.	SCALE @ A3	DATE CREATED	DRAWN	CHECKED
51001/03	NTS	11/03/24	KP	HG

TITLE: Foundation Inspection Pit FIP1002

DRAWING No.: 51001-CE-02-XX-D-G-0003

REV: P01

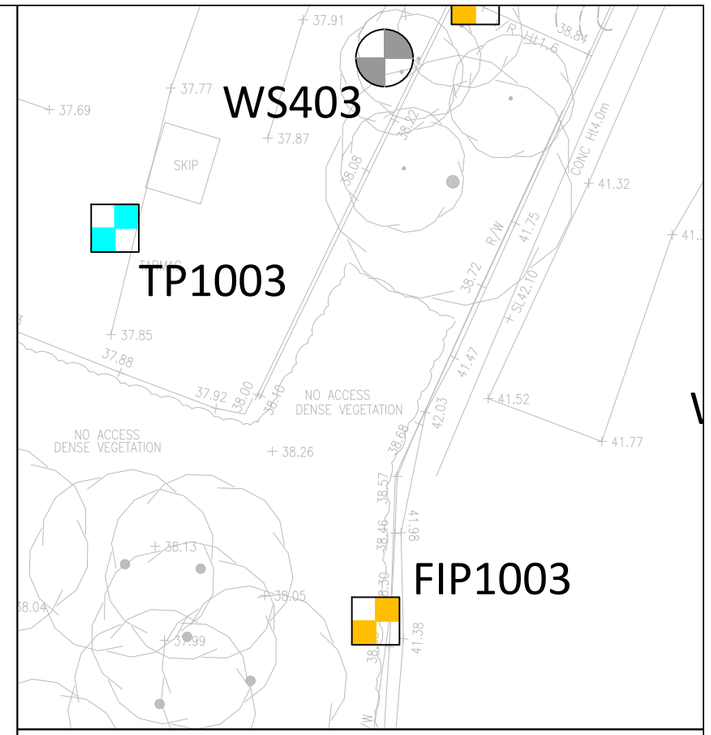
SECTION A



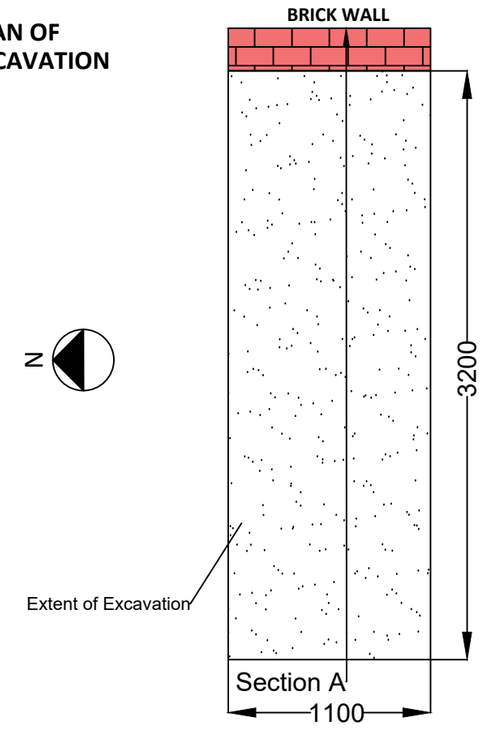
0.00 - 0.05 MBGL: Asphalt.

0.05 - 0.60 MBGL: MADE GROUND - Medium dense dark brown slightly clayey gravelly cobbly sand. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted.

0.60 MBGL - Brick floor.



PLAN OF EXCAVATION



DATE	REV	DESCRIPTION	DRAWN	CHKD
11/03/24	P01	First Issue	KP	HG

1. MBGL = metres below ground level
2. mOD = metres above Ordnance Datum
3. Trial pit terminated at 0.60mbgl on brick floor
4. No groundwater encountered
5. Trial pit backfilled with arisings and left slightly mounded
6. Dimensions of structures / foundations provided in mm unless otherwise stated
7. Refer to Engineer log for soil sampling details

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PROJECT
Mayfield Phase 1B

TITLE
Foundation Inspection Pit
FIP1003

DRAWING STATUS
FOR INFORMATION

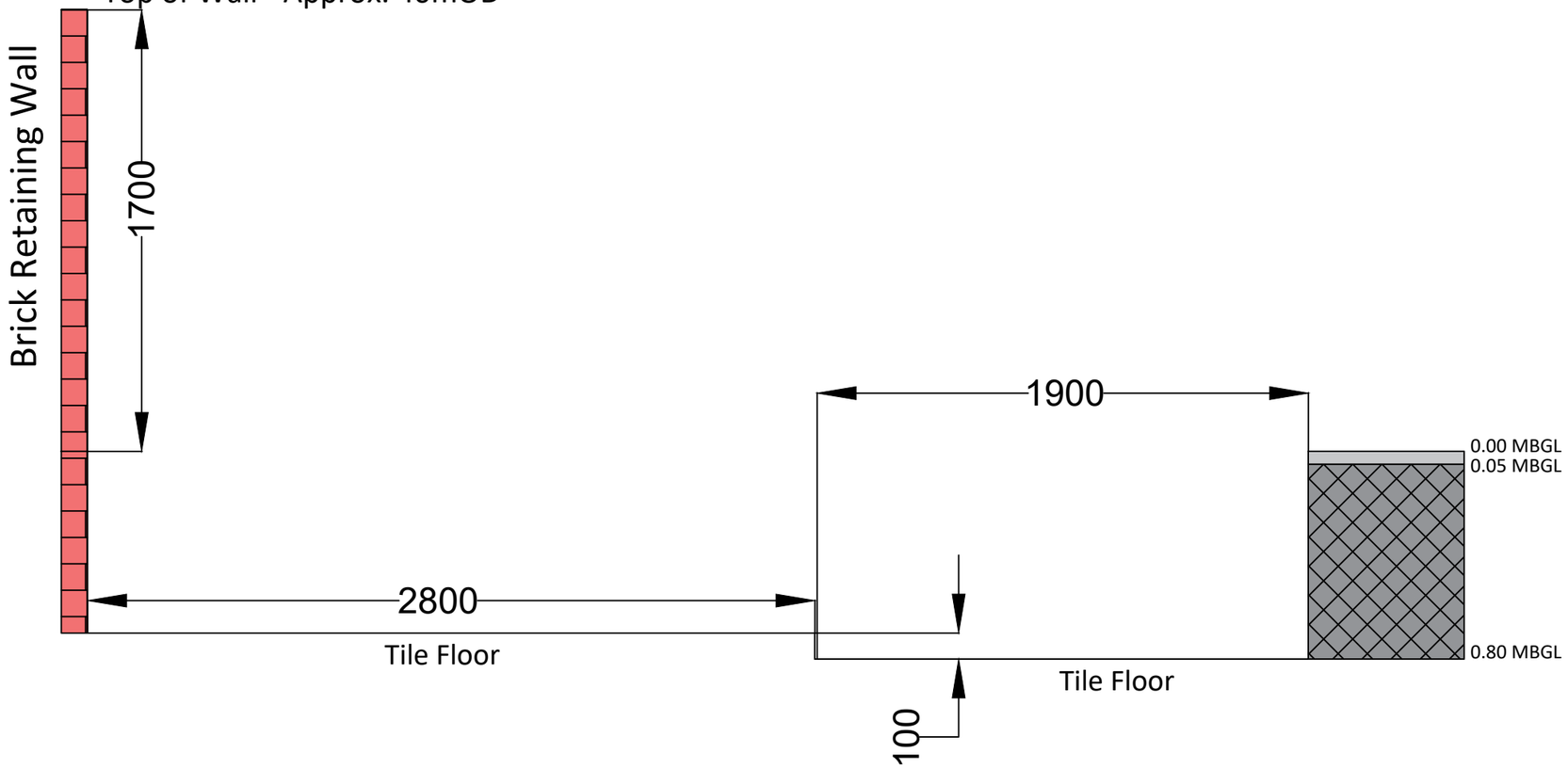
STATUS CODE
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CE PROJECT No.	SCALE @ A3	DATE CREATED	DRAWN	CHECKED
51001/03	NTS	11/03/24	KP	HG

DRAWING No.
51001-CE-02-XX-D-G-0004

REV
P01

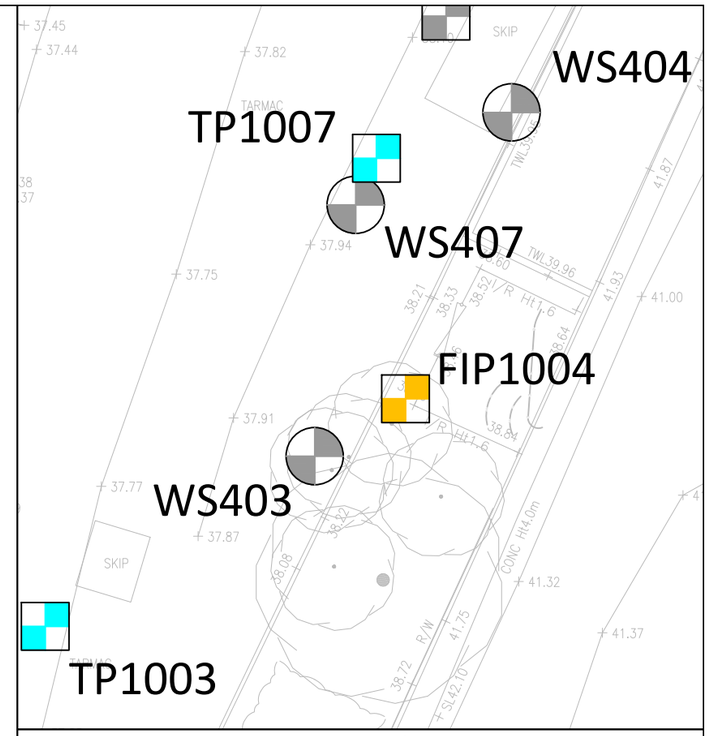
SECTION A

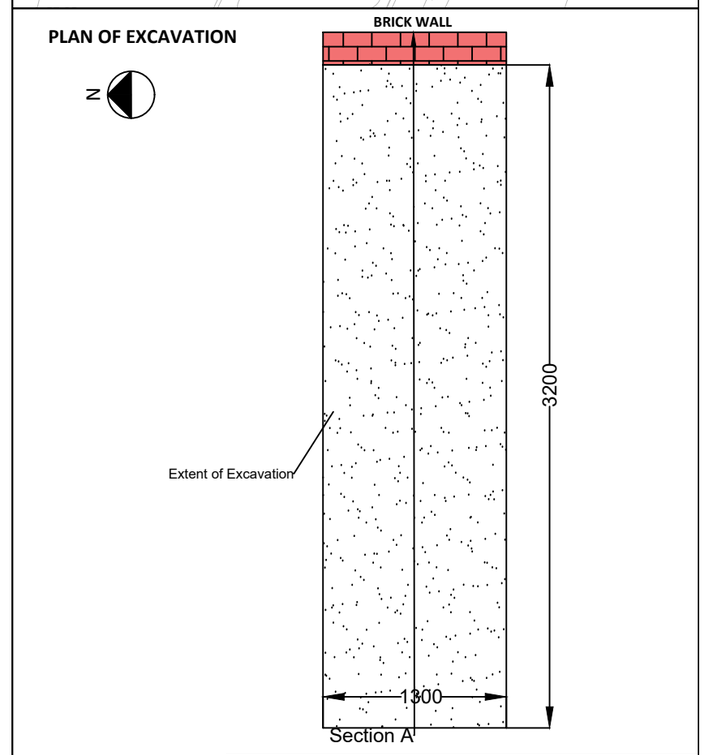


0.00 - 0.05 MBGL: Asphalt.

0.05 - 0.80 MBGL: MADE GROUND - Medium dense dark brown slightly clayey gravelly cobbly sand Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick and concrete. Frequent fragments of wire and plastic noted.

0.80 MBGL - Tile floor.





DATE	REV	DESCRIPTION	DRAWN	CHKD
11/03/24	P01	First Issue	KP	HG

1. MBGL = metres below ground level
2. mOD = metres above Ordnance Datum
3. Trial pit terminated at 0.80mbgl on tile floor
4. No groundwater encountered
5. Trial pit backfilled with arisings and left slightly mounded
6. Dimensions of structures / foundations provided in mm unless otherwise stated
7. Refer to Engineer log for soil sampling details

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PROJECT
Mayfield Phase 1B

TITLE
Foundation Inspection Pit FIP1004

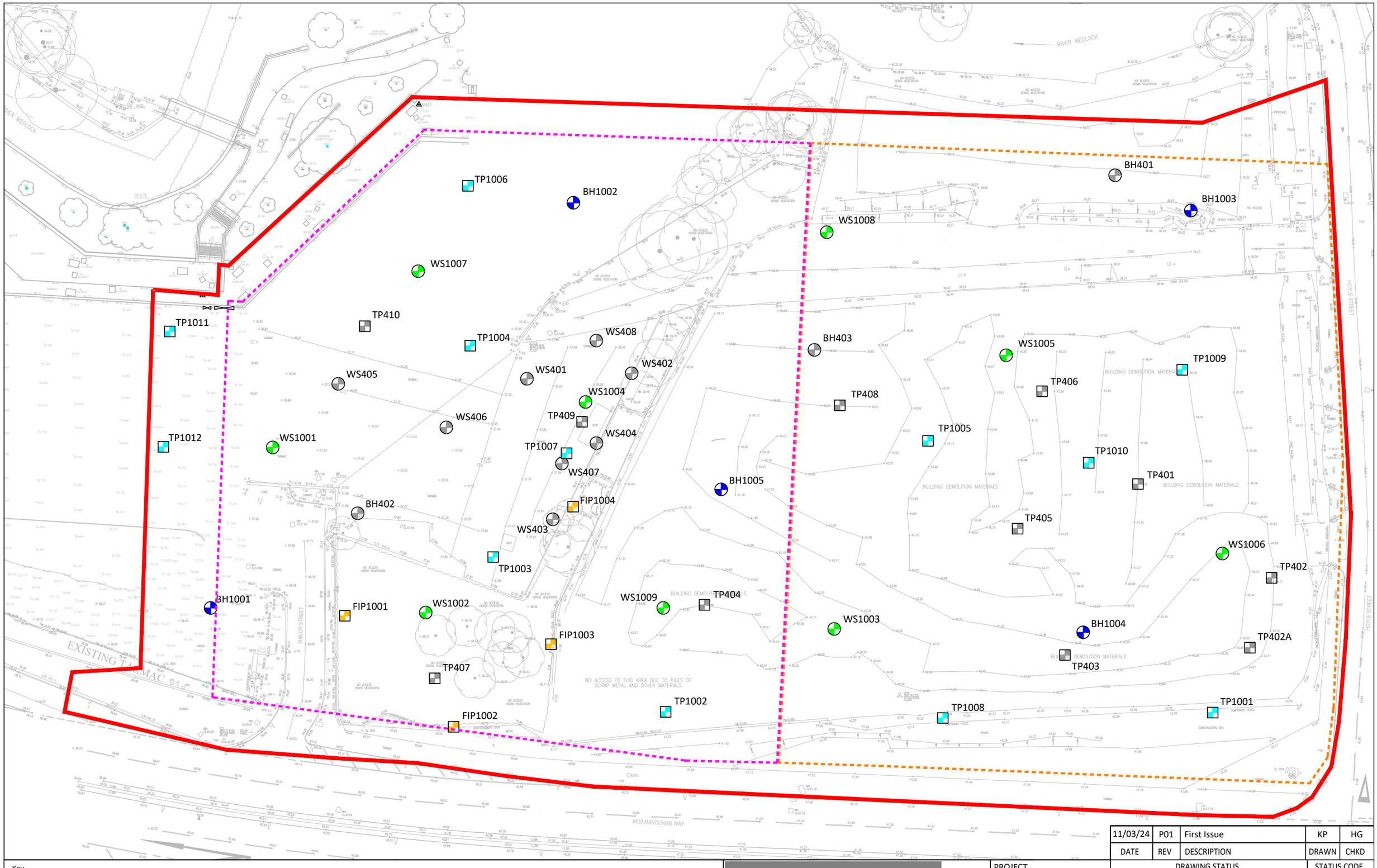
DRAWING STATUS	STATUS CODE
FOR INFORMATION	-

CE PROJECT No.	SCALE @ A3	DATE CREATED	DRAWN	CHECKED
51001/03	NTS	11/03/24	KP	HG

DRAWING No.	REV
51001-CE-02-XX-D-G-0005	P01

Appendix B

Exploratory Hole Location Plan



11/03/24	P01	First Issue	KP	HG
DATE	REV	DESCRIPTION	DRAWN	CHKD

Key

- Indicative Planning Boundary
- Indicative Footprint of Plot J
- Indicative Footprint of Plot K
- Historical ROC Borehole (2019/2020)
- Historical ROC Window Sample (2019)
- Historical ROC Trial Pit (2019)
- Civic Earth Cable/Rotary Borehole (2024)
- Civic Earth Window Sample (2024)
- Civic Earth Trial Pit (2024)
- Civic Earth Foundation Inspection Pit (2024)

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PROJECT
Mayfield Phase 1B

TITLE
Exploratory Hole Location Plan

DRAWING STATUS
FOR INFORMATION

STATUS CODE
-

CE PROJECT No.	SCALE @ A3	DATE CREATED	DRAWN	CHECKED
51001	NTS	11/03/24	KP	HG

DRAWING No.
51001-CE-02-XX-D-G-0001

REV
P01

Appendix C

Ground Gas and Groundwater Monitoring Results

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Civic Earth
Site: Mayfield Park Phase 1B, Manchester
Date: 30/01/2024
Quote No:
Visit No: 1 **of**
Operator: Ian Sidgwick
Project Manager: Jake Townsend

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA		Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (mb)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (mbgl)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady					
BH1001	ND	ND	ND	ND	0.1	0.1	1	ND	1	ND	20.2	20.4	0.2	ND	-0.1	0.0	-0.67	30	9.22	23.45	
BH1002	ND	ND	ND	ND	0.1	0.1	1	1	1	1	14.1	14.1	1.3	ND	0.0	0.0	-0.09	30	7.46	23.83	No odour noted
BH1003	ND	ND	ND	ND	0.2	0.2	1	1	ND	ND	19.7	19.7	0.6	ND	-7.5	-0.2	-21.24	150	8.59	18.40	
BH1004	ND	ND	ND	ND	2.6	2.6	ND	ND	ND	ND	16.5	16.5	0.3	ND	-1.2	-0.2	-3.32	150	12.63	24.17	
BH1005	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	ND	20.8	20.8	0.1	ND	-0.4	-0.1	-1.36	120	11.49	19.11	
WS1002	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	ND	20.6	20.6	0.1	ND	0.0	0.0	0.05	30	Dry	1.81	
WS1004	ND	ND	ND	ND	0.2	0.2	4	2	1	1	18.2	18.2	0.2	ND	0.0	0.0	0.09	30	1.61	2.20	
WS1005	ND	ND	ND	ND	0.1	0.1	12	11	ND	ND	20.5	20.5	0.1	ND	0.0	0.0	0.12	30	Dry	1.80	
WS1006	ND	ND	ND	ND	0.2	0.1	ND	ND	ND	ND	20.8	20.8	0.1	ND	0.0	0.0	0.07	30	1.95	2.62	
WS1007	ND	ND	ND	ND	0.1	0.1	2	2	1	1	20.1	20.2	0.4	ND	0.0	0.0	0.23	30	0.01	0.80	
WS1009	ND	ND	ND	ND	0.6	0.6	ND	ND	ND	ND	20.2	20.2	0.1	ND	0.0	0.0	0.18	30	Dry	1.29	
Max	**ND**	**ND**	**ND**	**ND**	**2.6**	**2.6**	**12**	**11**	**1**	**1**	**20.8**	**20.8**	**1.3**	**ND**	**0.0**	**0.0**	**0**	**150**	**12.63**	**24.17**	
Min	**ND**	**ND**	**ND**	**ND**	**0.1**	**0.1**	**ND**	**ND**	**ND**	**ND**	**14.1**	**14.1**	**0.1**	**ND**	**-7.5**	**-0.2**	**-21.2**	**30**	**DRY**	**0.80**	

ND - Not detected
NR - Not recorded
NA - Non applicable

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:		Dry		Moist	X	Wet		Snow		Frozen
Wind:		Calm	X	Light		Moderate		Strong		
Cloud cover:		None		Slight	X	Cloudy		Overcast		
Precipitation:		None	X	Slight		Moderate		Heavy		
Time monitoring performed:			07:50	Start			11:50	End		
Barometric pressure (mbar):			1022	Start			1023	End		
Pressure trend (Daily):				Falling	X	Steady		Rising		
Source:	Online									
Air Temperature (Deg. C):			8	Before			11	After		

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: G507254
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +/- 26 l/hour
Differential Pressure: +/- 150 mb
Date of last calibration: 01/08/2023
Date of next calibration: 01/02/2024

Ambient air check: **CH_4** 0.0 **CO_2** 0.0 **O_2** 20.6

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Civic Earth
Site: Mayfield Park Phase 1B, Manchester
Date: 12/02/2024
Quote No:
Visit No: 2 **of**
Operator: Ian Sidgwick
Project Manager: Jake Townsend

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA		Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (mb)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (mbgl)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady					
BH1001	ND	ND	ND	ND	0.2	0.2	ND	ND	ND	ND	20.4	20.4	0.1	ND	-0.2	-0.1	-0.92	60	9.20	23.32	
BH1002	ND	ND	ND	ND	0.1	0.1	ND	ND	1	ND	12.6	12.6	0.8	ND	-0.1	-0.1	-0.93	60	7.37	23.80	No odour noted
BH1003	ND	ND	ND	ND	0.5	0.5	1	1	1	1	19.8	19.8	0.1	ND	-0.5	-0.1	-1.78	120	8.61	18.38	
BH1004	ND	ND	ND	ND	2.3	2.3	1	1	ND	ND	16.4	16.4	0.3	ND	-0.1	0.0	-0.86	60	12.57	24.15	
BH1005	0.1	0.1	2.0	2.0	2.2	2.2	ND	ND	ND	ND	16.4	16.4	0.1	ND	-0.2	0.0	-0.95	60	11.43	18.91	
WS1002	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	ND	20.9	20.9	ND	ND	0.0	0.0	-0.28	30	Dry	1.81	
WS1004	ND	ND	ND	ND	0.6	0.6	2	1	ND	ND	17.5	17.5	ND	ND	0.0	0.0	0.05	30	1.80	2.19	
WS1005	ND	ND	ND	ND	0.1	0.1	10	1	ND	ND	20.5	20.5	0.1	ND	0.0	0.0	0.02	30	Dry	1.79	
WS1006	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	ND	20.6	20.8	ND	ND	0.0	0.0	0.02	30	2.08	2.62	
WS1007	ND	ND	ND	ND	0.1	0.1	18	4	1	1	19.8	19.8	0.3	ND	-2.7	-0.2	-6.78	150	0.11	0.80	No gas logging; pulled water after ~40 seconds
WS1009	ND	ND	ND	ND	1.3	1.0	ND	ND	ND	ND	19.3	19.7	ND	ND	0.0	0.0	0.05	30	Dry	1.29	
Max	**0.1**	**0.1**	**2.0**	**2.0**	**2.3**	**2.3**	**18**	**4**	**1**	**1**	**20.9**	**20.9**	**0.8**	**ND**	**0.0**	**0.0**	**0**	**150**	**12.57**	**24.15**	
Min	**ND**	**ND**	**ND**	**ND**	**0.1**	**0.1**	**ND**	**ND**	**ND**	**ND**	**12.6**	**12.6**	**0.1**	**ND**	**-2.7**	**-0.2**	**-6.8**	**30**	**DRY**	**0.80**	

ND - Not detected
NR - Not recorded
NA - Non applicable

METEOROLOGICAL AND SITE INFORMATION: (Select correct box with X or enter data, as applicable)

State of ground:		Dry	X	Moist		Wet		Snow		Frozen
Wind:		Calm	X	Light		Moderate		Strong		
Cloud cover:		None		Slight		Cloudy	X	Overcast		
Precipitation:		None	X	Slight		Moderate		Heavy		
Time monitoring performed:			08:00	Start			10:06	End		
Barometric pressure (mbar):			998	Start			1001	End		
Pressure trend (Daily):				Falling		Steady	X	Rising		
Source:	Online									
Air Temperature (Deg. C):			6	Before			8	After		

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: G507254
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +/- 26 l/hour
Differential Pressure: +/- 150 mb
Date of last calibration: 01/08/2023
Date of next calibration: 01/02/2024

Ambient air check: **CH_4** 0.0 **CO_2** 0.0 **O_2** 20.8

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Civic Earth
Site: Mayfield Park Phase 1B, Manchester
Date: 20/02/2024
Quote No:
Visit No: 3 **of**
Operator: Ian Sidgwick
Project Manager: Jake Townsend

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA		Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (mb)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (mbgl)	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady					
BH1001	ND	ND	ND	ND	3.4	3.4	ND	ND	1	1	11.3	11.3	0.3	ND	0.0	0.0	0.51	30	9.12	23.32	
BH1002	ND	ND	ND	ND	0.1	0.1	ND	ND	1	1	9.7	9.7	1.2	ND	0.0	0.0	0.07	30	7.31	23.79	No odour noted
BH1003	ND	ND	ND	ND	0.5	0.5	2	2	1	1	19.3	19.3	0.4	ND	-0.4	-0.1	-1.21	120	8.46	18.38	
BH1004	ND	ND	ND	ND	2.6	2.6	1	1	1	1	16.1	16.1	0.4	ND	0.0	0.0	0.55	60	12.55	24.04	
BH1005	0.3	0.2	6.0	4.0	1.7	1.7	ND	ND	ND	ND	15.9	15.9	0.1	ND	0.1	0.1	0.83	60	11.44	18.90	
WS1002	ND	ND	ND	ND	0.1	0.1	ND	ND	1	1	20.2	20.3	0.1	ND	0.0	0.0	0.00	30	Dry	1.81	
WS1004	ND	ND	ND	ND	0.6	0.6	1	1	ND	ND	17.1	17.1	0.2	ND	0.0	0.0	-0.26	30	1.75	2.19	
WS1005	ND	ND	ND	ND	0.1	0.0	1	ND	ND	ND	20.2	20.3	0.1	ND	0.0	0.0	0.05	30	Dry	1.79	
WS1006	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	ND	20.4	20.5	ND	ND	0.0	0.0	0.05	30	2.06	2.62	
WS1007	ND	ND	ND	ND	0.1	0.1	8	5	1	1	19.4	19.6	ND	ND	-0.3	0.0	-1.09	60	0.12	0.80	No gas logging; pulled water after ~40 seconds
WS1009	ND	ND	ND	ND	0.3	0.3	ND	ND	ND	ND	20.3	20.3	0.1	ND	0.0	0.0	0.07	30	Dry	1.29	
Max	**0.3**	**0.2**	**6.0**	**4.0**	**3.4**	**3.4**	**8**	**5**	**1**	**1**	**20.4**	**20.5**	**1.2**	**ND**	**0.1**	**0.1**	**1**	**120**	**12.55**	**24.04**	
Min	**ND**	**ND**	**ND**	**ND**	**0.1**	**0.0**	**ND**	**ND**	**ND**	**ND**	**9.7**	**9.7**	**0.1**	**ND**	**-0.4**	**-0.1**	**-1.2**	**30**	**DRY**	**0.80**	

ND - Not detected
NR - Not recorded
NA - Non applicable

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground:		Dry	X	Moist		Wet		Snow		Frozen
Wind:		Calm	X	Light		Moderate		Strong		
Cloud cover:		None	X	Slight		Cloudy		Overcast		
Precipitation:	X	None		Slight		Moderate		Heavy		
Time monitoring performed:			08:00	Start			11:20	End		
Barometric pressure (mbar):			1020	Start			1021	End		
Pressure trend (Daily):				Falling	X	Steady		Rising		
Source:	Online									
Air Temperature (Deg. C):			10	Before			14	After		

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GA5000 - G507254
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +/- 26 l/hour
Differential Pressure: +/- 150 mb
Date of last calibration: 01/08/2023
Date of next calibration: 01/02/2024

Ambient air check: **CH_4** 0.0 **CO_2** 0.0 **O_2** 20.8

Groundwater Monitoring

Sampling Record Sheet

CLIENT	Civic Earth	SITE	Mayfield Park, Manchester Phase 1B
DATE	30/01/2024	TIME	On: 07:50 Off: 11:50
WEATHER	Cloudy, wet ground, 10 degrees, 1022mbar	MONITORING PERSONNEL	Ian Sidgwick

Monitoring Location	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
BH1001	9.22	23.45	23.45	1146.2	12.14	10.38	10	None	High medium-coarse	None	Red-brown	Moderate-high	
BH1002	7.46	23.83	23.83	891.8	12.12	9.06	10	None	High medium-coarse	None	Red-brown	High	
BH1003	8.59	18.4	18.4	987.1	12.40	8.50	10	None	Moderate coarse	None	Red-brown	Moderate	
BH1004	12.63	24.17	24.17	1586.7	12.51	8.47	10	None	High medium-coarse	None	Red-brown	High	
BH1005	11.49	19.11	19.11	1073.0	12.42	7.89	10	None	Low fine-medium	None	Pale brown	Very low	
WS1002	Dry	1.81	1.81	NR	NR	NR	NR	NR	NR	NR	NR	NR	
WS1004	1.61	2.2	2.2	3809.2	11.95	10.92	0	None	Virtually none	None	Colourless	Hazy	Poor recharge
WS1005	Dry	1.8	1.8	NR	NR	NR	NR	NR	NR	NR	NR	NR	
WS1006	1.95	2.62	2.62	2615.0	11.58	8.87	0	Slight organic (peaty and a bit ammoniacal)	High fine-medium	None	Red-brown	Very high	Microbailer required
WS1007	0.01	0.8	0.8	8325.7	12.29	12.76	0	None	High medium-coarse	None	Red-brown	High	Microbailer required
WS1009	Dry	1.29	1.29	NR	NR	NR	NR	NR	NR	NR	NR	NR	

Groundwater Monitoring

Sampling Record Sheet

CLIENT	Civic Earth	SITE	Mayfield Park, Manchester Phase 1B
DATE	20/02/2024	TIME	On: 08:00 Off: 11:20
WEATHER	Cloudy, mild, dry	MONITORING PERSONNEL	Ian Sidgwick

Monitoring Location	DTL m	DTB m	End m	EC mS/cm	Temp C	pH	Purge Volume L	Odour description	Sediment description	Oil/grease visible	Colour description	Turbidity description	Comments
WS1004	1.75	2.19	2.19	1867.2	11.02	12.57	0	None	Moderate-high fine	None	Dark grey	High	Poor recharge
WS1006	2.06	2.62	2.62	2358.6	10.70	7.36	0	None	High fine-medium	None	Red-brown	High	Microbailer required
WS1007	0.12	0.8	0.8	3641.4	10.78	12.00	0	None	High medium-coarse	None	Red-brown	High	Microbailer required

Appendix D
Chemical Analysis Results

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-78198

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	12/01/2024
Your job number:	51001-03	**Samples instructed on/ Analysis started on:**	12/01/2024
Your order number:	PO-0030	**Analysis completed by:**	19/01/2024
Report Issue Number:	1	**Report issued on:**	19/01/2024
Samples Analysed:	6 soil samples		

Signed: A. Czerwińska

Agnieszka Czerwińska
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.

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-78198
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2928051	2928052	2928053	2928054	2928055
Sample Reference				BH1004	BH1004	BH1004	BH1004	BH1005
Sample Number				1	6	10	14	3
Depth (m)				0.20	1.00	2.00	3.00	0.50
Date Sampled				10/01/2024	10/01/2024	10/01/2024	10/01/2024	10/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	55	51	22	< 0.1	18
Moisture Content	%	0.01	NONE	3.4	10	9.4	15	12
Total mass of sample received	kg	0.001	NONE	0.5	0.6	0.5	0.5	0.7
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile- Loose Fibres
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Detected
Asbestos Analyst ID	N/A	N/A	N/A	MMI	MMI	MMI	N/A	MMI
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	12.1	9.2	9.2	8.5	11.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	5000	900	380	350	5400
Organic Matter (automated)	%	0.1	MCERTS	1.1	1.8	0.9	1.8	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	0.06	< 0.05	0.36	2
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.13
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.57	3.8
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.46	2.8
Phenanthrene	mg/kg	0.05	MCERTS	0.27	0.16	0.06	2.6	22
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.65	5.4
Fluoranthene	mg/kg	0.05	MCERTS	0.43	0.18	0.05	1.9	26
Pyrene	mg/kg	0.05	MCERTS	0.39	0.2	0.06	1.6	23
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.22	0.11	< 0.05	0.78	10
Chrysene	mg/kg	0.05	MCERTS	0.23	0.11	< 0.05	0.75	9.9
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.3	0.13	< 0.05	0.67	10
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.11	< 0.05	< 0.05	0.25	4.5
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.22	0.11	< 0.05	0.52	9.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.12	< 0.05	< 0.05	0.24	4.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.07	0.97
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.15	< 0.05	< 0.05	0.3	5
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	1.8
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	2.44	1.06	< 0.85	11.7	141

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Analytical Report Number: 24-78198
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2928051	2928052	2928053	2928054	2928055
Sample Reference				BH1004	BH1004	BH1004	BH1004	BH1005
Sample Number				1	6	10	14	3
Depth (m)				0.20	1.00	2.00	3.00	0.50
Date Sampled				10/01/2024	10/01/2024	10/01/2024	10/01/2024	10/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	4.6	< 1.0	3.2	< 1.0	4.8
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.3	17	17	5.8	25
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120	92	52	100	220
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.69	0.91	0.48	1	0.85
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.8	0.3	0.7	1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	15	18	25	27	26
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	18	25	27	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	36	62	19	25	68
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	280	40	14	380
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	1.3	< 0.3	< 0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	20	18	33	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	19	24	26	26	28
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60	83	50	61	130
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020##	< 0.020##	< 0.020##	< 0.020##	< 0.020##
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	1.3	< 1.0	1.7	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	2.5	4	< 2.0	4.3	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	34	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	850	35	10	16	47
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	890###	44###	12###	28###	50###
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	1.5
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	12
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	62
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	170	< 10	< 10	< 10	140
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	180	< 10	< 10	< 10	220

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

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Analytical Report Number: 24-78198
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2928056
Sample Reference				BH1005
Sample Number				9
Depth (m)				2.00
Date Sampled				10/01/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	51
Moisture Content	%	0.01	NONE	12
Total mass of sample received	kg	0.001	NONE	0.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose Fibres
Asbestos in Soil	Type	N/A	ISO 17025	Detected
Asbestos Analyst ID	N/A	N/A	N/A	MMI

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	1900
Organic Matter (automated)	%	0.1	MCERTS	2.7

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.6
Acenaphthylene	mg/kg	0.05	MCERTS	0.22
Acenaphthene	mg/kg	0.05	MCERTS	7.2
Fluorene	mg/kg	0.05	MCERTS	5.7
Phenanthrene	mg/kg	0.05	MCERTS	32
Anthracene	mg/kg	0.05	MCERTS	8.6
Fluoranthene	mg/kg	0.05	MCERTS	37
Pyrene	mg/kg	0.05	MCERTS	31
Benzo(a)anthracene	mg/kg	0.05	MCERTS	13
Chrysene	mg/kg	0.05	MCERTS	11
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	13
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	4.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	11
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	5.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.3
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	5.3
Coronene	mg/kg	0.05	NONE	2.3

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	188

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Analytical Report Number: 24-78198
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2928056
Sample Reference				BH1005
Sample Number				9
Depth (m)				2.00
Date Sampled				10/01/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2.8
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.7
Barium (aqua regia extractable)	mg/kg	1	MCERTS	130
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.58
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (III)	mg/kg	1	NONE	16
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	36
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	94
Monoaromatics & Oxygenates				
Benzene	µg/kg	5	MCERTS	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020##
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050
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	2.2
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	52
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	60###
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	1.3
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	22
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	110
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	160
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	290

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

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 24-78198
Project / Site name: Mayfield Phase 1B

* 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 *
2928051	BH1004	1	0.2	Brown sand with concrete and stones.
2928052	BH1004	6	1	Brown loam and clay with gravel and stones.
2928053	BH1004	10	2	Brown sandy clay with gravel and stones.
2928054	BH1004	14	3	Brown clay.
2928055	BH1005	3	0.5	Brown loam and clay with concrete and brick.
2928056	BH1005	9	2	Brown loam and clay with stones and brick.

Analytical Report Number : 24-78198
Project / Site name: Mayfield Phase 1B

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	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 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.	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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS

Analytical Report Number : 24-78198
Project / Site name: Mayfield Phase 1B

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
Organic matter (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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised
- Quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-78200

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	12/01/2024
Your job number:	51001-03	**Samples instructed on/ Analysis started on:**	12/01/2024
Your order number:	PO0030	**Analysis completed by:**	21/01/2024
Report Issue Number:	1	**Report issued on:**	22/01/2024
Samples Analysed:	6 soil samples		

Signed:

Joanna Szwagrzak
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.

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Analytical Report Number: 24-78200
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928061	2928062	2928063	2928064	2928065
Sample Reference				TP1001	TP1002	TP1005	TP1005	TP1008
Sample Number				4	1	4	10	7
Depth (m)				0.50	0.15	0.50	1.50	1.00
Date Sampled				10/01/2024	10/01/2024	10/01/2024	10/01/2024	10/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	26	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	14	10	7.9	14
Total mass of sample received	kg	0.001	NONE	0.6	0.6	0.5	0.7	0.5
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	WEM	WEM	WEM	N/A	WEM
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.2	10.3	9	7.9	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	590	1300	410	250	990
Organic Matter (automated)	%	0.1	MCERTS	2.4	2.1	1.7	0.9	3.4
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	0.41	0.13	0.08	0.07	3.8
Acenaphthylene	mg/kg	0.05	MCERTS	0.1	< 0.05	< 0.05	< 0.05	0.89
Acenaphthene	mg/kg	0.05	MCERTS	2.9	< 0.05	0.08	< 0.05	4.7
Fluorene	mg/kg	0.05	MCERTS	1.5	< 0.05	0.07	< 0.05	4.8
Phenanthrene	mg/kg	0.05	MCERTS	17	0.33	0.42	0.09	32
Anthracene	mg/kg	0.05	MCERTS	3.1	0.07	0.1	< 0.05	7.3
Fluoranthene	mg/kg	0.05	MCERTS	21	0.53	0.5	0.11	32
Pyrene	mg/kg	0.05	MCERTS	20	0.55	0.45	0.1	31
Benzo(a)anthracene	mg/kg	0.05	MCERTS	7.9	0.28	0.25	< 0.05	14
Chrysene	mg/kg	0.05	MCERTS	8.3	0.31	0.24	< 0.05	14
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	9	0.35	0.21	< 0.05	15
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	3.2	0.15	0.12	< 0.05	5.6
Benzo(a)pyrene	mg/kg	0.05	MCERTS	7.8	0.27	0.18	< 0.05	13
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	3.7	0.15	0.09	< 0.05	6
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.86	< 0.05	< 0.05	< 0.05	1.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	4.6	0.18	0.11	< 0.05	7.1
Coronene	mg/kg	0.05	NONE	1.6	< 0.05	< 0.05	< 0.05	2.5
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	113	3.3	2.9	< 0.85	196

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Analytical Report Number: 24-78200
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928061	2928062	2928063	2928064	2928065
Sample Reference				TP1001	TP1002	TP1005	TP1005	TP1008
Sample Number				4	1	4	10	7
Depth (m)				0.50	0.15	0.50	1.50	1.00
Date Sampled				10/01/2024	10/01/2024	10/01/2024	10/01/2024	10/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	4	4.2	< 1.0	< 1.0	3.4
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	14	4.5	4.8	25
Barium (aqua regia extractable)	mg/kg	1	MCERTS	350	670	72	110	180
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	1.2	1	0.78	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.4	1.7	1.5	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	23	17	26	16	22
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	17	27	16	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	46	44	25	13	110
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	460	11	6.9	170
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	26	15	25	17	31
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	33	26	19	14	37
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	140	64	33	140
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020##	< 0.020##	< 0.020##	< 0.020##	< 0.020##
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	3.4
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	3	< 2.0	< 2.0	< 2.0	9.2
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	10
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	8.2	< 8.0	< 8.0	< 8.0	34
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	15###	< 10##	< 10##	< 10##	56###
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	4.8
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	13	< 2.0	< 2.0	< 2.0	32
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	52	< 10	< 10	< 10	120
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	50	< 10	< 10	< 10	130
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	110	< 10	< 10	< 10	280

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

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-78200
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928066
Sample Reference				TP1010
Sample Number				10
Depth (m)				2.00
Date Sampled				10/01/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	34
Moisture Content	%	0.01	NONE	13
Total mass of sample received	kg	0.001	NONE	0.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Amosite- Loose Fibres
Asbestos in Soil	Type	N/A	ISO 17025	Detected
Asbestos Analyst ID	N/A	N/A	N/A	WEM

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	1200
Organic Matter (automated)	%	0.1	MCERTS	5.4

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	4.3
Acenaphthylene	mg/kg	0.05	MCERTS	0.76
Acenaphthene	mg/kg	0.05	MCERTS	9.2
Fluorene	mg/kg	0.05	MCERTS	6
Phenanthrene	mg/kg	0.05	MCERTS	45
Anthracene	mg/kg	0.05	MCERTS	13
Fluoranthene	mg/kg	0.05	MCERTS	78
Pyrene	mg/kg	0.05	MCERTS	72
Benzo(a)anthracene	mg/kg	0.05	MCERTS	35
Chrysene	mg/kg	0.05	MCERTS	39
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	45
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	15
Benzo(a)pyrene	mg/kg	0.05	MCERTS	37
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	19
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	4.9
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	22
Coronene	mg/kg	0.05	NONE	8.6

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	455

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Analytical Report Number: 24-78200
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928066
Sample Reference				TP1010
Sample Number				10
Depth (m)				2.00
Date Sampled				10/01/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2.4
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.2
Barium (aqua regia extractable)	mg/kg	1	MCERTS	140
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (III)	mg/kg	1	NONE	19
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	56
Lead (aqua regia extractable)	mg/kg	1	MCERTS	52
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020##
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050
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	6.9
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	12
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	170
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	190###

TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	6.6
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	59
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	300
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	860
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	1200

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

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 24-78200
Project / Site name: Mayfield Phase 1B

* 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 *
2928061	TP1001	4	0.5	Brown loam and clay with gravel.
2928062	TP1002	1	0.15	Brown loam and sand with brick and clinker
2928063	TP1005	4	0.5	Brown loam and clay with gravel.
2928064	TP1005	10	1.5	Brown clay and sand with gravel.
2928065	TP1008	7	1	Brown loam and clay with gravel and vegetation.
2928066	TP1010	10	2	Brown loam and clay with gravel and stones.

Analytical Report Number : 24-78200
Project / Site name: Mayfield Phase 1B

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	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 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.	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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS

Analytical Report Number : 24-78200
Project / Site name: Mayfield Phase 1B

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
Organic matter (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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

- Quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.
- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised

Kirsty Poore
Civic Earth Limited☐
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-78201

Replaces Analytical Report Number: 24-78201, issue no. 1
Additional analysis undertaken.
PCB WHO 12 added to sample 2928070 as per clients request

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	12/01/2024
Your job number:	51001-03	**Samples instructed on/ Analysis started on:**	12/01/2024
Your order number:	PO0030	**Analysis completed by:**	25/01/2024
Report Issue Number:	2	**Report issued on:**	31/01/2024
Samples Analysed:	9 soil samples		

Signed:

Joanna Szwagrzak
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.

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Analytical Report Number: 24-78201
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928067	2928068	2928069	2928070	2928071
Sample Reference				TP1003	TP1004	TP1006	TP1007	TP1007
Sample Number				4	4	7	10	13
Depth (m)				0.50	0.50	1.00	2.00	3.00
Date Sampled				11/01/2024	11/01/2024	11/01/2024	11/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	62	40	35	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.1	6	10	43	13
Total mass of sample received	kg	0.001	NONE	0.5	0.7	0.6	0.7	0.6
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	IZJ	IZJ	IZJ	N/A
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.1	8.8	11.2	7.8	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	1400	1300	2200	2400	110
Organic Matter (automated)	%	0.1	MCERTS	2.5	0.5	2.1	11	0.1
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.6	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.38	0.12	1.1	0.12	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.06	< 0.05	0.16	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.08	0.09	1.1	0.18	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.1	0.07	0.99	0.4	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.77	0.71	7.3	0.56	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.16	0.13	1.6	0.48	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.9	0.96	8.7	1.1	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.93	0.91	8	1	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.4	0.46	3.9	0.6	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.52	0.5	3.8	0.54	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.57	0.56	4.2	0.6	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.23	0.25	1.8	0.17	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.45	0.45	3.6	0.31	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.36	0.26	1.8	0.22	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.51	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.41	0.3	2	0.28	< 0.05
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.97	< 0.05	< 0.05
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	6.32	5.77	51.4	6.57	< 0.85

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Analytical Report Number: 24-78201
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928067	2928068	2928069	2928070	2928071
Sample Reference				TP1003	TP1004	TP1006	TP1007	TP1007
Sample Number				4	4	7	10	13
Depth (m)				0.50	0.50	1.00	2.00	3.00
Date Sampled				11/01/2024	11/01/2024	11/01/2024	11/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	1.8	2	4.9	4.4	2
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	8.1	35	79	5.1
Barium (aqua regia extractable)	mg/kg	1	MCERTS	210	1700	210	140	15
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.51	0.45	0.89	1.9	0.22
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	0.3	1.9	1.7	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	2.9	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	16	9.5	19	47	3.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	9.8	19	47	3.9
Copper (aqua regia extractable)	mg/kg	1	MCERTS	30	26	57	320	5.3
Lead (aqua regia extractable)	mg/kg	1	MCERTS	57	84	180	520	3.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.3	0.6	3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	20	15	50	3.4
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	21	13	21	35	7.7
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	62	160	140	140	10
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.1	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	11	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	11	< 8.0	15	16	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	200	17	120	58	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	210	17	130	87	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	1.1	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	2.5	3.2	9.1	2.5	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	21	< 10	46	16	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	250	39	130	54	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	280	51	180	73	< 10

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Analytical Report Number: 24-78201
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928067	2928068	2928069	2928070	2928071
Sample Reference				TP1003	TP1004	TP1006	TP1007	TP1007
Sample Number				4	4	7	10	13
Depth (m)				0.50	0.50	1.00	2.00	3.00
Date Sampled				11/01/2024	11/01/2024	11/01/2024	11/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	< 0.001	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	< 0.001	-
Total PCBs – WHO12								
Total PCBs	mg/kg	0.012	NONE	-	-	-	< 0.012	-

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

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Analytical Report Number: 24-78201
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928072	2928073	2928074	2928075
Sample Reference				TP1009	TP1009	TP1011	TP1012
Sample Number				10	13	7	4
Depth (m)				2.00	3.00	1.00	0.50
Date Sampled				11/01/2024	11/01/2024	11/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	42	9.8
Moisture Content	%	0.01	NONE	15	14	8.9	14
Total mass of sample received	kg	0.001	NONE	0.7	0.8	0.8	0.7
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Amosite- Loose Fibres	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	N/A	IZJ	IZJ
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	7.5	8.1	10.4	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	240	420	1800	1100
Organic Matter (automated)	%	0.1	MCERTS	0.8	1.2	1.3	1.9
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	0.19	0.15	0.94	0.59
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.15	0.16
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.3	0.45
Fluorene	mg/kg	0.05	MCERTS	0.05	< 0.05	0.88	0.39
Phenanthrene	mg/kg	0.05	MCERTS	0.27	0.21	8.2	3.1
Anthracene	mg/kg	0.05	MCERTS	0.06	0.05	1.6	0.74
Fluoranthene	mg/kg	0.05	MCERTS	0.15	0.15	8.4	5
Pyrene	mg/kg	0.05	MCERTS	0.16	0.15	7.8	4.9
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.06	0.06	3.6	2.5
Chrysene	mg/kg	0.05	MCERTS	0.07	0.08	3.5	2.2
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	3.7	2.9
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	1.6	0.87
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.1	2.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.5	1.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.42	0.23
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.8	1.3
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.72	0.56
Total PAH							
Total WAC-17 PAHs	mg/kg	0.85	NONE	1.01	0.85	49.3	29.1

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Analytical Report Number: 24-78201
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928072	2928073	2928074	2928075
Sample Reference				TP1009	TP1009	TP1011	TP1012
Sample Number				10	13	7	4
Depth (m)				2.00	3.00	1.00	0.50
Date Sampled				11/01/2024	11/01/2024	11/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2.5	2.2	4.5	4
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.7	8.1	31	27
Barium (aqua regia extractable)	mg/kg	1	MCERTS	87	84	210	110
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.78	0.9	0.82	0.94
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	1.2	1	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	24	22	17	17
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	22	17	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9	22	51	59
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	18	150	140
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.5	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	25	16	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	30	24	20	21
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54	59	130	90
Monoaromatics & Oxygenates							
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	3.2	3.5
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	15	15
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	86	140
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	100	160
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	1.2	1	1.1	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	2.8	3.6	6.8	5.1
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	30	23
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	77	71
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	12	15	120	100

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Analytical Report Number: 24-78201
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928072	2928073	2928074	2928075
Sample Reference				TP1009	TP1009	TP1011	TP1012
Sample Number				10	13	7	4
Depth (m)				2.00	3.00	1.00	0.50
Date Sampled				11/01/2024	11/01/2024	11/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
PCBs							
PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-

Total PCBs – WHO12

Total PCBs	mg/kg	0.012	NONE	-	-	-	-

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

Analytical Report Number : 24-78201
Project / Site name: Mayfield Phase 1B

* 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 *
2928067	TP1003	4	0.5	Brown loam and sand with concrete and brick.
2928068	TP1004	4	0.5	Brown clay and sand with gravel and stones.
2928069	TP1006	7	1	Brown loam and sand with stones and brick.
2928070	TP1007	10	2	Brown clay and loam with gravel.
2928071	TP1007	13	3	Brown sandy clay.
2928072	TP1009	10	2	Brown clay.
2928073	TP1009	13	3	Brown clay and sand with gravel.
2928074	TP1011	7	1	Brown loam and clay with gravel and stones.
2928075	TP1012	4	0.5	Brown loam and clay with gravel and stones.

Analytical Report Number : 24-78201
Project / Site name: Mayfield Phase 1B

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	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 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.	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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS
Organic matter (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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

Analytical Report Number : 24-78201
Project / Site name: Mayfield Phase 1B

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

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-78202

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	12/01/2024
Your job number:	51001-03	**Samples instructed on/ Analysis started on:**	12/01/2024
Your order number:	PO0030	**Analysis completed by:**	19/01/2024
Report Issue Number:	1	**Report issued on:**	19/01/2024
Samples Analysed:	4 soil samples		

Signed: A. Czerwińska

Agnieszka Czerwińska
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.

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Analytical Report Number: 24-78202
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928076	2928077	2928078	2928079
Sample Reference				BH1002	BH1002	BH1001	BH1001
Sample Number				1	15	5	12
Depth (m)				0.20	4.00	1.00	3.00
Date Sampled				11/01/2024	11/01/2024	11/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	11	14	16	< 0.1
Moisture Content	%	0.01	NONE	12	9.6	14	12
Total mass of sample received	kg	0.001	NONE	0.8	0.7	0.9	0.8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MJN	MJN	MJN	MJN

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.6	9	10.4	9.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	2100	840	8300	640
Organic Matter (automated)	%	0.1	MCERTS	2.5	0.9	2.1	0.7

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	1.2	0.09	0.1	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.24	< 0.05	0.07	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	2.8	0.23	0.25	< 0.05
Fluorene	mg/kg	0.05	MCERTS	2.3	0.14	0.2	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	16	1.3	2.1	0.16
Anthracene	mg/kg	0.05	MCERTS	3.8	0.27	0.56	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	17	1.7	3.4	0.26
Pyrene	mg/kg	0.05	MCERTS	15	1.6	3.6	0.26
Benzo(a)anthracene	mg/kg	0.05	MCERTS	7.2	0.76	1.7	0.11
Chrysene	mg/kg	0.05	MCERTS	7.1	0.79	1.8	0.13
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	7.9	0.87	2.1	0.17
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	2.6	0.35	0.7	0.07
Benzo(a)pyrene	mg/kg	0.05	MCERTS	6.5	0.77	1.9	0.12
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.9	0.38	1.2	0.08
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.72	< 0.05	0.39	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.5	0.39	1.9	0.09
Coronene	mg/kg	0.05	NONE	1.2	< 0.05	< 0.05	< 0.05

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	97.9	9.73	21.7	1.45

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Analytical Report Number: 24-78202
Project / Site name: Mayfield Phase 1B
Your Order No: PO0030

Lab Sample Number				2928076	2928077	2928078	2928079
Sample Reference				BH1002	BH1002	BH1001	BH1001
Sample Number				1	15	5	12
Depth (m)				0.20	4.00	1.00	3.00
Date Sampled				11/01/2024	11/01/2024	11/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	6.4	6.1	< 1.0	1.6
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	41	17	9.7	2.4
Barium (aqua regia extractable)	mg/kg	1	MCERTS	210	140	290	64
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	0.49	0.74	0.28
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	0.6	3.4	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	21	12	19	6.4
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	12	19	6.5
Copper (aqua regia extractable)	mg/kg	1	MCERTS	65	26	39	7.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	260	64	100	11
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.7	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	7	33	5
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	25	12	26	10
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180	76	96	15
Monoaromatics & Oxygenates							
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020##	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	2.8	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	9.9	< 8.0	9.8	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	63	< 8.0	74	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	76###	< 10	86	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	1.1	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	8	2.7	5.2	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	34	< 10	22	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	76	< 10	78	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	120	16	100	< 10

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

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 24-78202
Project / Site name: Mayfield Phase 1B

* 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 *
2928076	BH1002	1	0.2	Brown loam and clay with gravel and stones.
2928077	BH1002	15	4	Brown sandy clay with gravel and stones.
2928078	BH1001	5	1	Brown clay and sand with gravel and stones.
2928079	BH1001	12	3	Brown sandy clay with gravel.

Analytical Report Number : 24-78202
Project / Site name: Mayfield Phase 1B

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	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 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.	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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS

Analytical Report Number : 24-78202
Project / Site name: Mayfield Phase 1B

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
Organic matter (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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised
- Quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-78340

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	15/01/2024
Your job number:	51001 03	**Samples instructed on/ Analysis started on:**	15/01/2024
Your order number:	PO-0030	**Analysis completed by:**	22/01/2024
Report Issue Number:	1	**Report issued on:**	22/01/2024
Samples Analysed:	3 soil samples		

Signed:

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

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

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

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

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

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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-78340
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2928876	2928877	2928878
Sample Reference				BH1003	BH1003	BH1003
Sample Number				1	5	15
Depth (m)				0.20	1.00	4.00
Date Sampled				12/01/2024	12/01/2024	12/01/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	52	42	35
Moisture Content	%	0.01	NONE	9.6	13	16
Total mass of sample received	kg	0.001	NONE	0.8	0.7	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose Fibres	Chrysotile- Asbestos Cement	Chrysotile- Loose Fibres
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected
Asbestos Analyst ID	N/A	N/A	N/A	MMI	MMI	MMI

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.6	11.1	9.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	1900	3300	1100
Organic Matter (automated)	%	0.1	MCERTS	1.7	1.2	1.1

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.28	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.26	0.12	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.18	0.09	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.4	1.2	0.14
Anthracene	mg/kg	0.05	MCERTS	0.3	0.22	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.6	1.5	0.26
Pyrene	mg/kg	0.05	MCERTS	1.5	1.4	0.27
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.71	0.69	0.15
Chrysene	mg/kg	0.05	MCERTS	0.82	0.68	0.14
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.85	0.71	0.15
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.31	0.28	0.07
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.62	0.6	0.12
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.34	0.29	0.07
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.08	0.07	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.4	0.37	0.08
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	9.59	8.21	1.45

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Analytical Report Number: 24-78340
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2928876	2928877	2928878
Sample Reference				BH1003	BH1003	BH1003
Sample Number				1	5	15
Depth (m)				0.20	1.00	4.00
Date Sampled				12/01/2024	12/01/2024	12/01/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Heavy Metals / Metalloids						
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2.6	3.2	1.9
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.6	6.9	5.3
Barium (aqua regia extractable)	mg/kg	1	MCERTS	550	470	190
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.37	0.61	0.42
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.7	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	1	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	10	15	11
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	10	15	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	17	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	43	41	53
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.9	11	7.7
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	11	19	14
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	74	60	41
Monoaromatics & Oxygenates						
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons						
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8### $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	3	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	12	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	52	8.8	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	83	23	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	150	34	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	11	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	25	16	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	38	23	< 10

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

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Analytical Report Number : 24-78340
Project / Site name: Mayfield Phase 1B

* 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 *
2928876	BH1003	1	0.2	Brown loam and sand with vegetation and stones.
2928877	BH1003	5	1	Brown sand with gravel and brick.
2928878	BH1003	15	4	Brown sand with brick and stones.

Analytical Report Number : 24-78340
Project / Site name: Mayfield Phase 1B

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	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 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.	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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS

Analytical Report Number : 24-78340
Project / Site name: Mayfield Phase 1B

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
Organic matter (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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

- Quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-79122

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	19/01/2024
Your job number:	51001 03	**Samples instructed on/ Analysis started on:**	19/01/2024
Your order number:	PO-0030	**Analysis completed by:**	29/01/2024
Report Issue Number:	1	**Report issued on:**	29/01/2024
Samples Analysed:	7 soil samples		

Signed:

Joanna Szwagrzak
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.

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Analytical Report Number: 24-79122
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2933116	2933117	2933118	2933119	2933120
Sample Reference				WS1008	WS1005	WS1005	WS1006	WS1003
Sample Number				2	2	5	5	1
Depth (m)				0.50	0.50	1.00	1.00	0.20
Date Sampled				18/01/2024	18/01/2024	18/01/2024	18/01/2024	18/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (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	13	17	18	16	8.4
Total mass of sample received	kg	0.001	NONE	0.7	0.8	0.7	0.8	0.7
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	IZJ	N/A	IZJ	IZJ
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	10.1	10.6	8	8.4	10.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	930	4200	580	1500	2100
Organic Matter (automated)	%	0.1	MCERTS	0.4	1.7	1.8	3	1.3
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	0.17	1.1	0.31	2.4~	0.38
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.19	< 0.05	0.13~	0.07
Acenaphthene	mg/kg	0.05	MCERTS	0.05	1.4	< 0.05	1.4~	0.17
Fluorene	mg/kg	0.05	MCERTS	0.05	1.2	0.05	1~	0.14
Phenanthrene	mg/kg	0.05	MCERTS	0.36	9.2	0.24	7.1~	1.2
Anthracene	mg/kg	0.05	MCERTS	0.08	2.1	0.07	1.5~	0.28
Fluoranthene	mg/kg	0.05	MCERTS	0.55	10	0.3	6.5~	1.8
Pyrene	mg/kg	0.05	MCERTS	0.5	9.5	0.28	6.7~	1.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.22	4.1	0.14	2.7~	0.81
Chrysene	mg/kg	0.05	MCERTS	0.23	4.3	0.14	3.1~	0.88
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.24	4.3	0.17	2.5~	0.86
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.11	1.4	< 0.05	1.3~	0.34
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.22	3.7	0.13	2.4~	0.71
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.14	2.1	0.08	1.3~	0.44
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.49	< 0.05	0.35~	0.11
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.15	2.4	0.11	1.7~	0.47
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05~	< 0.05
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	3.07	57.5	2.02	42.1~	10.5

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Analytical Report Number: 24-79122
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2933116	2933117	2933118	2933119	2933120
Sample Reference				WS1008	WS1005	WS1005	WS1006	WS1003
Sample Number				2	2	5	5	1
Depth (m)				0.50	0.50	1.00	1.00	0.20
Date Sampled				18/01/2024	18/01/2024	18/01/2024	18/01/2024	18/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2.1	2.6	3.4	7.2	2.2
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.9	14	16	55	14
Barium (aqua regia extractable)	mg/kg	1	MCERTS	110	160	97	200	120
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.52	0.58	1.6	1.4	0.66
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.3	0.5	0.5	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	9.2	15	20	66	15
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	9.2	15	20	66	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	27	54	90	29
Lead (aqua regia extractable)	mg/kg	1	MCERTS	20	84	99	310	97
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.3	1.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	10	15	26	20	14
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	16	22	30	26	20
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	34	83	72	260	70
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	59	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	62	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.9	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	3.4	< 2.0	9.1	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	22	< 10	18	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	87	< 10	24	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	110	< 10	53	< 10

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

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Analytical Report Number: 24-79122
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2933121	2933122
Sample Reference				WS1003	WS1009
Sample Number				2	2
Depth (m)				0.50	0.50
Date Sampled				18/01/2024	18/01/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.6	11
Total mass of sample received	kg	0.001	NONE	0.8	0.7
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	N/A	EWS

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.1	10.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	1300	970
Organic Matter (automated)	%	0.1	MCERTS	1.7	1.4

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.47~	3.3
Acenaphthylene	mg/kg	0.05	MCERTS	0.09~	0.15
Acenaphthene	mg/kg	0.05	MCERTS	0.21~	9.3
Fluorene	mg/kg	0.05	MCERTS	0.23~	7.1
Phenanthrene	mg/kg	0.05	MCERTS	1.4~	37
Anthracene	mg/kg	0.05	MCERTS	0.31~	10
Fluoranthene	mg/kg	0.05	MCERTS	1.9~	34
Pyrene	mg/kg	0.05	MCERTS	1.9~	28
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.82~	13
Chrysene	mg/kg	0.05	MCERTS	0.93~	12
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.84~	11
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.39~	5.8
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.8~	10
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.45~	5.9
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.1~	1.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.51~	5.9
Coronene	mg/kg	0.05	NONE	< 0.05~	< 0.05

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	11.4~	193

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Analytical Report Number: 24-79122
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2933121	2933122
Sample Reference				WS1003	WS1009
Sample Number				2	2
Depth (m)				0.50	0.50
Date Sampled				18/01/2024	18/01/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Heavy Metals / Metalloids					
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	3.1	3.3
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	100	160
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.71	0.62
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	16	14
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	29
Lead (aqua regia extractable)	mg/kg	1	MCERTS	87	100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	20	22
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	80	100
Monoaromatics & Oxygenates					
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0
Petroleum Hydrocarbons					
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050
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	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	19	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	19	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	2.1
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	21
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	71
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	22	89
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	27	180

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

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Analytical Report Number : 24-79122
Project / Site name: Mayfield Phase 1B

* 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 *
2933116	WS1008	2	0.5	Brown sand with gravel and brick.
2933117	WS1005	2	0.5	Brown sand with gravel.
2933118	WS1005	5	1	Brown clay and sand with gravel.
2933119	WS1006	5	1	Brown sandy loam with gravel and vegetation.
2933120	WS1003	1	0.2	Brown sand with gravel.
2933121	WS1003	2	0.5	Brown loam and clay with gravel and vegetation.
2933122	WS1009	2	0.5	Brown sand with gravel and brick.

Analytical Report Number : 24-79122
Project / Site name: Mayfield Phase 1B

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	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 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.	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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS
Organic matter (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

Analytical Report Number : 24-79122
Project / Site name: Mayfield Phase 1B

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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

~ - Quality control surrogate recovery outside of limits, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-79387

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	22/01/2024
Your job number:	51001 03	**Samples instructed on/ Analysis started on:**	22/01/2024
Your order number:	PO-0030	**Analysis completed by:**	30/01/2024
Report Issue Number:	1	**Report issued on:**	30/01/2024
Samples Analysed:	5 soil samples		

Signed:

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

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

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

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

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

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.

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Analytical Report Number: 24-79387
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2934591	2934592	2934593	2934594	2934595
Sample Reference				WS1004	WS1004	WS1007	WS1002	WS1001
Sample Number				3	6	3	5	3
Depth (m)				0.80	2.00	0.70	1.50	1.00
Date Sampled				19/01/2024	19/01/2024	19/01/2024	19/01/2024	19/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (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	17	25	14	16	13
Total mass of sample received	kg	0.001	NONE	0.8	0.7	0.8	0.8	0.8
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile, Amosite-Loose Fibrous Debris; Amosite-Sheeting/Board Debris	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KSZ	KSZ	KSZ	KSZ	KSZ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.2	7.8	10	9.7	8.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	290	1000	1800	2800	460
Organic Matter (automated)	%	0.1	MCERTS	1.4	3.8	1.7	3.3	0.7

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	0.17	0.41	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.06	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.51	0.62	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.11	0.39	0.28	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.29	3.5	4.9	0.46
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.14	0.79	0.88	0.1
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.44	4.6	5.9	0.76
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.4	4.4	5.2	0.73
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.21	2.2	2.9	0.38
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.2	2.2	3.2	0.4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.21	2.4	3.3	0.45
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.07	0.99	1.4	0.12
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.15	2.2	3	0.33
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.08	0.97	1.5	0.18
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.28	0.4	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.1	1.2	1.8	0.2
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	1.4	< 0.05

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.85	2.4	26.7	36.9	4.11

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Analytical Report Number: 24-79387
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2934591	2934592	2934593	2934594	2934595
Sample Reference				WS1004	WS1004	WS1007	WS1002	WS1001
Sample Number				3	6	3	5	3
Depth (m)				0.80	2.00	0.70	1.50	1.00
Date Sampled				19/01/2024	19/01/2024	19/01/2024	19/01/2024	19/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	2	5.4	4.9	11	3
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8	39	30	14	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120	150	190	710	180
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	1.5	0.85	0.88	0.96
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	0.5	0.7	1.3	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.7	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	26	29	19	20	21
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	29	19	22	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	140	51	42	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	23	220	160	250	57
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	3.2	0.4	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	39	16	18	17
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	29	33	23	37	30
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	60	110	130	430	66
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	3.5	6.5	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	14	58	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	11	65	330	53
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	14	83	390	61
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	3.6	4.5	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	22	61	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	16	54	330	45
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	21	80	390	48

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Analytical Report Number: 24-79387
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2934591	2934592	2934593	2934594	2934595
Sample Reference				WS1004	WS1004	WS1007	WS1002	WS1001
Sample Number				3	6	3	5	3
Depth (m)				0.80	2.00	0.70	1.50	1.00
Date Sampled				19/01/2024	19/01/2024	19/01/2024	19/01/2024	19/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	-	-	-	-
Total PCBs – WHO12								
Total PCBs	mg/kg	0.012	NONE	< 0.012	-	-	-	-

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Project / Site name: Mayfield Phase 1B

* 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 *
2934591	WS1004	3	0.8	Brown clay.
2934592	WS1004	6	2	Brown clay and sand.
2934593	WS1007	3	0.7	Brown clay and sand with gravel.
2934594	WS1002	5	1.5	Brown sand with gravel and brick.
2934595	WS1001	3	1	Brown sand with gravel and brick.

Analytical Report Number : 24-79387
Project / Site name: Mayfield Phase 1B

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	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 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.	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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS

Analytical Report Number : 24-79387
Project / Site name: Mayfield Phase 1B

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
Organic matter (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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-79427

Replaces Analytical Report Number: 24-79427, issue no. 1
Result correction by laboratory.
Asbestos soil analysis corrected to reflect original prepared samples.

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	23/01/2024
Your job number:	51001-03	**Samples instructed on/ Analysis started on:**	23/01/2024
Your order number:	PO-0030	**Analysis completed by:**	19/02/2024
Report Issue Number:	2	**Report issued on:**	19/02/2024
Samples Analysed:	3 leachate samples - 10 soil samples		

Signed: JSzwagrak

Joanna Szwagrzak
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.

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

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Analytical Report Number: 24-79427
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2934830	2934831	2934832	2934833	2934834
Sample Reference				BH1002	BH1003	BH1003	BH1003	BH1004
Sample Number				1	1	5	15	1
Depth (m)				0.20	0.20	1.00	4.00	0.20
Date Sampled				11/01/2024	12/01/2024	12/01/2024	12/01/2024	10/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	11	-	-	-	-
Moisture Content	%	0.01	NONE	12	-	-	-	-
Total mass of sample received	kg	0.001	NONE	0.8	-	-	-	-
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	Chrysotile	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Detected	Detected	Detected	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	0.954	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	0.954	< 0.001	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	EC	MWI	MWI	N/A
General Inorganics								
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Alkali Reserve (soils)	g/100g NaOH	0.0025	NONE	-	-	-	-	0.8072
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	-
Heavy Metals / Metalloids								
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	-	-	-

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Analytical Report Number: 24-79427
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2934835	2934836	2934837	2934838	2934839
Sample Reference				BH1005	BH1005	TP1002	TP1010	TP1011
Sample Number				3	9	1	10	7
Depth (m)				0.50	2.00	0.15	2.00	1.00
Date Sampled				10/01/2024	10/01/2024	10/01/2024	10/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	-	-	26	-	42
Moisture Content	%	0.01	NONE	-	-	14	-	8.9
Total mass of sample received	kg	0.001	NONE	-	-	0.6	-	0.8
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	Chrysotile	-	Amosite	Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	-	Detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.002	0.002	-	< 0.001	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	0.002	0.002	-	< 0.001	< 0.001
Asbestos Analyst ID	N/A	N/A	N/A	EC	EC	N/A	EC	MWI
General Inorganics								
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
Alkali Reserve (soils)	g/100g NaOH	0.0025	NONE	0.3506	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0
Heavy Metals / Metalloids								
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	< 1.8	-	< 1.8

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Analytical Report Number: 24-79427
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

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
2934831	BH1003	0.20	134	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
2934832	BH1003	1.00	126	Asbestos Cement	**Chrysotile**	0.954	**0.954**
2934833	BH1003	4.00	114	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
2934835	BH1005	0.50	114	Loose Fibres	**Chrysotile**	0.002	**0.002**
2934836	BH1005	2.00	101	Loose Fibres	**Chrysotile**	0.002	**0.002**
2934838	TP1010	2.00	129	Loose Fibres	**Amosite**	< 0.001	**< 0.001**
2934839	TP1011	1.00	127	Loose Fibres	**Amosite**	< 0.001	**< 0.001**

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

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

Analytical Report Number: 24-79427
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				2938103	2938104	2938105
Sample Reference				BH1002	TP1002	TP1011
Sample Number				1	1	7
Depth (m)				0.20	0.15	1.00
Date Sampled				11/01/2024	10/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
General Inorganics						
pH (automated)	pH Units	N/A	ISO 17025	9.2	8.5	10.9
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	3.7	1	I/S
Sulphate as SO_4	mg/l	0.1	ISO 17025	42.2	34.2	65.5
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	5.28	7.43	I/S
Total Phenols						
Total Phenols (monohydric)	µg/l	1	ISO 17025	1.6	2.6	I/S
Speciated PAHs						
Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	I/S
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	49	38	< 1.7
Arsenic (dissolved)	µg/l	1	ISO 17025	67	9.3	28
Barium (dissolved)	µg/l	0.05	ISO 17025	26	94	41
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	160	36	28
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	I/S
Chromium (III)	µg/l	5	NONE	8.3	41	I/S
Chromium (dissolved)	µg/l	0.4	ISO 17025	8.3	41	8.4
Copper (dissolved)	µg/l	0.7	ISO 17025	29	12	290
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	7.5	1.2
Mercury - CV-AFS	µg/l	0.007	ISO 17025	0.1556	0.0306	I/S
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.3	1.1	62
Selenium (dissolved)	µg/l	4	ISO 17025	5.7	< 4.0	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	23	< 1.7	42
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.8	12	8.3
Calcium (dissolved)	mg/l	0.012	ISO 17025	100	47	70

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Analytical Report Number: 24-79427
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				2938103	2938104	2938105
Sample Reference				BH1002	TP1002	TP1011
Sample Number				1	1	7
Depth (m)				0.20	0.15	1.00
Date Sampled				11/01/2024	10/01/2024	11/01/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Petroleum Hydrocarbons						
Petroleum Range Organics (C6 - C10) HS_1D_TOTAL	µg/l	10	NONE	< 10	< 10	< 10
Diesel Range Organics (C10 - C25) EH_1D_TOTAL_MS	µg/l	10	NONE	< 10	< 10	I/S
Oil Range Organics (C25 - C40) EH_1D_TOTAL_MS	µg/l	10	NONE	< 10	< 10	I/S

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

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Analytical Report Number : 24-79427
Project / Site name: Mayfield Phase 1B

* 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 *
2934830	BH1002	1	0.2	Brown loam and clay with gravel and stones.
2934837	TP1002	1	0.15	Brown loam and sand with brick and clinker
2934839	TP1011	7	1	Brown loam and clay with gravel and stones.

Analytical Report Number : 24-79427
Project / Site name: Mayfield Phase 1B

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 recieved, 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 dispersion 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in leachate - LOW LEVEL 1 ug/l	Determination of phenols in leachate 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
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	NONE
pH at 20oC in leachate (automated)	Determination of pH in leachate by electrometric measurement.	In house method.	L099B	W	ISO 17025
PRO (Leachates)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-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
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
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
DRO (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE

Analytical Report Number : 24-79427
Project / Site name: Mayfield Phase 1B

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
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPH Oils (Leachate)	Determination of dichloromethane/hexane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
Alkali Reserve of Soils	Alkali Reserve of Soils by calculation	In house method	L046-PL	W	NONE
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""	L039-PL	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
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

Analytical Report Number : 24-79427
Project / Site name: Mayfield Phase 1B

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
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 or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Sample Deviation Report

Analytical Report Number : 24-79427

Project / Site name: Mayfield Phase 1B

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

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH1002	1	S	2934830	c	Total cyanide in soil	L080-PL	c
TP1002	1	S	2934837	c	Total cyanide in soil	L080-PL	c
TP1011	7	S	2934839	c	Total cyanide in soil	L080-PL	c

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-79428

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	23/01/2024
Your job number:	51001-03	**Samples instructed on/ Analysis started on:**	23/01/2024
Your order number:	PO-0030	**Analysis completed by:**	30/01/2024
Report Issue Number:	1	**Report issued on:**	30/01/2024
Samples Analysed:	5 10:1 WAC Samples		

Signed:

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

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

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

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

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

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.

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**24-79428**						
					Client:	**CIVICEARTH**	
Location	**Mayfield Phase 1B**						
Lab Reference (Sample Number)	2934840 / 2934841				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	11/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH1001 5						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	1.0				3%	5%	6%
Loss on Ignition (%) **	2.5				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	190				500	--	--
Total PAH (WAC-17) (mg/kg)	37.2				100	--	--
pH (units)**	10.1				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	150				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0042			0.0420	0.5	2	25
Barium *	0.0230			0.230	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0072			0.073	0.5	10	70
Copper *	0.0082			0.082	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0018			0.0184	0.5	10	30
Nickel *	0.0010			0.010	0.4	10	40
Lead *	0.0048			0.048	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0041			0.042	4	50	200
Chloride *	1.8			18	800	15000	25000
Fluoride*	0.13			1.3	10	150	500
Sulphate *	28			280	1000	20000	50000
TDS*	160			1600	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	5.04			50.4	500	800	1000
Leach Test Information							
Stone Content (%)	16						
Sample Mass (kg)	0.90						
Dry Matter (%)	86						
Moisture (%)	14						

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 discrepencies 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.

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**24-79428**						
					Client:	**CIVICEARTH**	
Location	**Mayfield Phase 1B**						
Lab Reference (Sample Number)	2934842 / 2934843				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	10/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH1004 1						
Depth (m)	0.20						
Solid Waste Analysis							
TOC (%)**	0.8				3%	5%	6%
Loss on Ignition (%) **	3.6				--	--	10%
BTEX (µg/kg)**	-				6000	--	--
Sum of PCBs (mg/kg)**	-				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	-				500	--	--
Total PAH (WAC-17) (mg/kg)	-				100	--	--
pH (units)**	11.7				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	140				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0020			0.0196	0.5	2	25
Barium *	0.271			2.71	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.014			0.14	0.5	10	70
Copper *	0.0080			0.080	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0018			0.0177	0.5	10	30
Nickel *	0.0009			0.0090	0.4	10	40
Lead *	0.0032			0.032	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0047			0.047	4	50	200
Chloride *	0.58			5.8	800	15000	25000
Fluoride*	0.13			1.3	10	150	500
Sulphate *	2.6			26	1000	20000	50000
TDS*	1900			19000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	5.07			50.7	500	800	1000
Leach Test Information							
Stone Content (%)	55						
Sample Mass (kg)	0.50						
Dry Matter (%)	97						
Moisture (%)	3.4						

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 discrepencies 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.

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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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**24-79428**						
					Client:	**CIVICEARTH**	
Location	**Mayfield Phase 1B**						
Lab Reference (Sample Number)	2934844 / 2934845				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	10/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH1004 10						
Depth (m)	2.00						
Solid Waste Analysis							
TOC (%)**	0.3				3%	5%	6%
Loss on Ignition (%) **	0.7				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	8.4				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	10				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0241			0.241	0.5	2	25
Barium *	0.0033			0.0325	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0015			0.015	0.5	10	70
Copper *	0.0059			0.059	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0125			0.125	0.5	10	30
Nickel *	0.0016			0.016	0.4	10	40
Lead *	0.0029			0.029	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0010			0.0099	4	50	200
Chloride *	2.5			25	800	15000	25000
Fluoride*	0.37			3.7	10	150	500
Sulphate *	17			170	1000	20000	50000
TDS*	56			560	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.78			77.8	500	800	1000
Leach Test Information							
Stone Content (%)	22						
Sample Mass (kg)	0.50						
Dry Matter (%)	91						
Moisture (%)	9.4						

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 discrepencies with current legislation

** = MCERTS accredited

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**24-79428**						
					Client:	**CIVICEARTH**	
Location	**Mayfield Phase 1B**						
Lab Reference (Sample Number)	2934846 / 2934847				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	11/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP1004 4						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	1.0				3%	5%	6%
Loss on Ignition (%) **	2.0				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	240				500	--	--
Total PAH (WAC-17) (mg/kg)	4.24				100	--	--
pH (units)**	8.3				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	13				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0255			0.255	0.5	2	25
Barium *	0.0097			0.0966	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0016			0.016	0.5	10	70
Copper *	0.0051			0.051	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30
Nickel *	0.0006			0.0057	0.4	10	40
Lead *	0.0053			0.053	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0027			0.027	4	50	200
Chloride *	1.7			17	800	15000	25000
Fluoride*	0.31			3.1	10	150	500
Sulphate *	8.5			85	1000	20000	50000
TDS*	42			420	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	8.37			83.7	500	800	1000
Leach Test Information							
Stone Content (%)	62						
Sample Mass (kg)	0.50						
Dry Matter (%)	92						
Moisture (%)	8.1						

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

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Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**24-79428**						
					Client:	**CIVICEARTH**	
Location	**Mayfield Phase 1B**						
Lab Reference (Sample Number)	2934848 / 2934849				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	10/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP1010 10						
Depth (m)	2.00						
Solid Waste Analysis							
TOC (%)**	4.0				3%	5%	6%
Loss on Ignition (%) **	7.0				--	--	10%
BTEX (µg/kg)**	-				6000	--	--
Sum of PCBs (mg/kg)**	-				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	-				500	--	--
Total PAH (WAC-17) (mg/kg)	-				100	--	--
pH (units)**	8.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	8.0				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0072			0.0720	0.5	2	25
Barium *	0.0087			0.0875	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0015			0.015	0.5	10	70
Copper *	0.0051			0.051	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0134			0.134	0.5	10	30
Nickel *	< 0.0003			< 0.0030	0.4	10	40
Lead *	0.0036			0.036	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0025			0.025	4	50	200
Chloride *	3.0			30	800	15000	25000
Fluoride*	0.61			6.1	10	150	500
Sulphate *	36			360	1000	20000	50000
TDS*	83			830	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	11.4			114	500	800	1000
Leach Test Information							
Stone Content (%)	34						
Sample Mass (kg)	0.60						
Dry Matter (%)	87						
Moisture (%)	13						

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

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Analytical Report Number : 24-79428
Project / Site name: Mayfield Phase 1B

* 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 *
2934840	BH1001	5	1	Brown clay and sand with gravel and stones.
2934842	BH1004	1	0.2	Brown sand with concrete and stones.
2934844	BH1004	10	2	Brown sandy clay with gravel and stones.
2934846	TP1004	4	0.5	Brown loam and sand with concrete and brick.
2934848	TP1010	10	2	Brown loam and clay with gravel and stones.

Analytical Report Number : 24-79428
Project / Site name: Mayfield Phase 1B

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
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
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 (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/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.	L064-PL	D	MCERTS
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
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
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 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 in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	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
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025

Analytical Report Number : 24-79428
Project / Site name: Mayfield Phase 1B

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
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Monohydric phenols 10:1 WAC	Determination of phenols in leachate 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
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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

Kirsty Poore
Civic Earth Limited☐
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-80689

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	31/01/2024
Your job number:	51001 03	**Samples instructed on/ Analysis started on:**	31/01/2024
Your order number:	PO-0030	**Analysis completed by:**	08/02/2024
Report Issue Number:	1	**Report issued on:**	08/02/2024
Samples Analysed:	2 10:1 WAC Samples		

Signed:

Joanna Wawrzeczko
Senior 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.

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The results included within the report relate only to the sample(s) submitted for testing.

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**24-80689**						
					Client:	**CIVICEARTH**	
Location	**Mayfield Phase 1B**				**Landfill Waste Acceptance Criteria Limits**		
Lab Reference (Sample Number)	2941694 / 2941695						
Sampling Date	18/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS1005 2						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	1.1				3%	5%	6%
Loss on Ignition (%) **	2.6				--	--	10%
BTEX (µg/kg)**	< 5.0 ##				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) $_{EH\_1D\_CU\_AL}$	210				500	--	--
Total PAH (WAC-17) (mg/kg)	61.7				100	--	--
pH (units)**	7.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0.00				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0059			0.0589	0.5	2	25
Barium *	0.0177			0.177	20	100	300
Cadmium *	0.0002			0.0019	0.04	1	5
Chromium *	0.0030			0.030	0.5	10	70
Copper *	0.021			0.21	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0026			0.0257	0.5	10	30
Nickel *	0.0018			0.018	0.4	10	40
Lead *	0.0057			0.057	0.5	10	50
Antimony *	0.0060			0.060	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.013			0.12	4	50	200
Chloride *	2.3			23	800	15000	25000
Fluoride*	0.18			1.8	10	150	500
Sulphate *	35			350	1000	20000	50000
TDS*	110			1100	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.52			75.2	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.80						
Dry Matter (%)	83						
Moisture (%)	17						

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

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

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results

Report No:	**24-80689**						
					Client:	**CIVICEARTH**	
Location	**Mayfield Phase 1B**						
Lab Reference (Sample Number)	2941696 / 2941697				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	19/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS1001 3						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	0.4				3%	5%	6%
Loss on Ignition (%) **	1.6				--	--	10%
BTEX (µg/kg)**	< 5.0 ##				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	43				500	--	--
Total PAH (WAC-17) (mg/kg)	1.65				100	--	--
pH (units)**	7.6				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	3.0				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0122			0.123	0.5	2	25
Barium *	0.0111			0.111	20	100	300
Cadmium *	< 0.0001			0.0010	0.04	1	5
Chromium *	0.0006			0.0056	0.5	10	70
Copper *	0.0049			0.049	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0013			0.0128	0.5	10	30
Nickel *	0.0012			0.012	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	0.0036			0.036	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0022			0.022	4	50	200
Chloride *	0.77			7.7	800	15000	25000
Fluoride*	0.47			4.7	10	150	500
Sulphate *	4.2			42	1000	20000	50000
TDS*	40			400	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.73			77.3	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.80						
Dry Matter (%)	83						
Moisture (%)	17						

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

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Analytical Report Number : 24-80689
Project / Site name: Mayfield Phase 1B

* 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 *
2941694	WS1005	2	0.5	Brown sand with gravel.
2941696	WS1001	3	1	Brown clay.

Analytical Report Number : 24-80689
Project / Site name: Mayfield Phase 1B

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
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
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 (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/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.	L064-PL	D	MCERTS
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
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
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 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 in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	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
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025

Analytical Report Number : 24-80689
Project / Site name: Mayfield Phase 1B

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
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Monohydric phenols 10:1 WAC	Determination of phenols in leachate 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
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised

Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-80690

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	31/01/2024
Your job number:	51001 03	**Samples instructed on/ Analysis started on:**	31/01/2024
Your order number:	PO-0030	**Analysis completed by:**	19/02/2024
Report Issue Number:	1	**Report issued on:**	19/02/2024
Samples Analysed:	2 leachate samples - 1 soil sample		

Signed:

Joanna Szwagrzak
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.

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-80690
Project / Site name: Mayfield Phase 1B
Your Order No: PO-0030

Lab Sample Number				2941698
Sample Reference				WS1002
Sample Number				5
Depth (m)				1.50
Date Sampled				19/01/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.006
Asbestos Quantification Total	%	0.001	ISO 17025	0.006
Asbestos Analyst ID	N/A	N/A	N/A	DBU

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

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Analytical Report Number: **24-80690**
Project / Site name: **Mayfield Phase 1B**
Your Order No: **PO-0030**

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
2941698	WS1002	1.50	148	Loose Fibres & Sheeting/Board Debris & Loose Fibrous Debris	**Chrysotile & Amosite**	0.006	**0.006**

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

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Analytical Report Number: 24-80690
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				2941699	2941700
Sample Reference				WS1006	WS1004
Sample Number				5	6
Depth (m)				1.00	2.00
Date Sampled				18/01/2024	19/01/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
General Inorganics					
pH (automated)	pH Units	N/A	ISO 17025	8	8.1
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	5.5	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1	< 1
Sulphate as SO_4	mg/l	0.1	ISO 17025	37	564
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	17.2	16.2
Total Phenols					
Total Phenols (monohydric)	µg/l	1	ISO 17025	3.4	5.3
Speciated PAHs					
Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01
Total PAH					
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2

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Analytical Report Number: 24-80690
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				2941699	2941700
Sample Reference				WS1006	WS1004
Sample Number				5	6
Depth (m)				1.00	2.00
Date Sampled				18/01/2024	19/01/2024
Time Taken				None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Heavy Metals / Metalloids					
Antimony (dissolved)	µg/l	1.7	ISO 17025	14	10
Arsenic (dissolved)	µg/l	1	ISO 17025	36	5.2
Barium (dissolved)	µg/l	0.05	ISO 17025	43	53
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	73	130
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	10	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	15	0.5
Copper (dissolved)	µg/l	0.7	ISO 17025	23	13
Lead (dissolved)	µg/l	1	ISO 17025	34	< 1.0
Mercury - CV-AFS	µg/l	0.007	ISO 17025	0.1637	< 0.0070
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.3	7.4
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	6.5	< 1.7
Zinc (dissolved)	µg/l	0.4	ISO 17025	26	19
Calcium (dissolved)	mg/l	0.012	ISO 17025	38	230
Petroleum Hydrocarbons					
Petroleum Range Organics (C6 - C10) $_{HS\_1D\_TOTAL}$	µg/l	10	NONE	< 10	< 10
Diesel Range Organics (C10 - C25) $_{EH\_1D\_TOTAL\_MS}$	µg/l	10	NONE	< 10	< 10
Oil Range Organics (C25 - C40) $_{EH\_1D\_TOTAL\_MS}$	µg/l	10	NONE	< 10	< 10

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

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Analytical Report Number : 24-80690
Project / Site name: Mayfield Phase 1B

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
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, 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 dispersion 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
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Monohydric phenols in leachate - LOW LEVEL 1 ug/l	Determination of phenols in leachate 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
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	NONE
pH at 20oC in leachate (automated)	Determination of pH in leachate by electrometric measurement.	In house method.	L099B	W	ISO 17025
PRO (Leachates)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	NONE
Dissolved Organic Carbon in leachate	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
DRO (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
Cr (III) in leachate	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPH Oils (Leachate)	Determination of dichloromethane/hexane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	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""	L039-PL	W	ISO 17025

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Analytical Report Number : 24-80690
Project / Site name: Mayfield Phase 1B

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
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 or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

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Kirsty Poore
Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-80851

Replaces Analytical Report Number: 24-80851, issue no. 2
Client references/information amended.
Sample's id's amended in samples 2942573 - 2942577 as per client's request

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	01/02/2024
Your job number:	51001-03	**Samples instructed on/ Analysis started on:**	01/02/2024
Your order number:	PO-0030	**Analysis completed by:**	20/02/2024
Report Issue Number:	3	**Report issued on:**	26/02/2024
Samples Analysed:	8 water samples		

Izabela Wójcik
Signed:

Izabela Wójcik
Senior 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.

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-80851
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				2942573	2942574	2942575	2942576	2942577
Sample Reference				BH1001	BH1002	BH1003	BH1004	BH1005
Sample Number				SST1	SST2	SST3	SST4	SST5
Depth (m)				15.00	15.00	15.00	15.00	15.00
Date Sampled				30/01/2024	30/01/2024	30/01/2024	30/01/2024	30/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH (L099)	pH Units	N/A	ISO 17025	7.1	7.3	7.1	7	7.1
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Total Cyanide (Low Level 1 µg/l)	µg/l	1	NONE	1.8	8.6	9.8	12	1
Free Cyanide	µg/l	10	ISO 17025	-	-	-	-	-
Free Cyanide (Low Level 1 µg/l)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	mg/l	0.045	ISO 17025	220	238	331	563	348
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	46	23	67	37	18
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	2.69	3.23	4.37	4.95	2.1
Hardness - Total	mgCaCO3/l	1	ISO 17025	527	447	485	966	552
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	170	230	160	340	110
Calcium (dissolved)	mg/l	0.012	ISO 17025	180	160	160	310	140
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Magnesium (dissolved)	mg/l	0.005	ISO 17025	18	13	22	46	47

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-80851
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				2942573	2942574	2942575	2942576	2942577
Sample Reference				BH1001	BH1002	BH1003	BH1004	BH1005
Sample Number				SST1	SST2	SST3	SST4	SST5
Depth (m)				15.00	15.00	15.00	15.00	15.00
Date Sampled				30/01/2024	30/01/2024	30/01/2024	30/01/2024	30/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Antimony (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1	1.5	0.6	< 0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.21	0.58	0.33	0.33	0.22
Barium (dissolved)	µg/l	0.06	ISO 17025	61	120	38	65	36
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	mg/l	0.00002	ISO 17025	0.0001	0.0001	0.0001	0.0001	0.0001
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.7	1.1	1.1	1.1	2.3
Copper (dissolved)	µg/l	0.5	ISO 17025	1.9	2.9	6.3	1.6	1.8
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	2.6	1.9	2.8	2.3	4.2
Selenium (dissolved)	µg/l	0.6	ISO 17025	2	3.4	6.2	2	2.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.4	0.3	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3	2.6	9.3	3.6	16
Monoaromatics & Oxygenates								
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

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

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-80851
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				2942578	2942579	2942580
Sample Reference				WS1004	WS1006	WS1007
Sample Number				MG1	MG2	MG3
Depth (m)				2.50	2.50	1.00
Date Sampled				30/01/2024	30/01/2024	30/01/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
General Inorganics						
pH (L099)	pH Units	N/A	ISO 17025	12.4	7.7	12.7
Total Cyanide	µg/l	10	ISO 17025	< 10	91	44
Total Cyanide (Low Level 1 µg/l)	µg/l	1	NONE	3.4	-	-
Free Cyanide	µg/l	10	ISO 17025	-	< 10	< 10
Free Cyanide (Low Level 1 µg/l)	µg/l	1	NONE	< 1.0	-	-
Sulphate as SO4	mg/l	0.045	ISO 17025	103	1690	149
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	650	48	3300
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	11.3	6.66	19.2
Hardness - Total	mgCaCO3/l	1	ISO 17025	637	1800	958
Total Phenols						
Total Phenols (monohydric)	µg/l	1	ISO 17025	3.7	< 10	92
Speciated PAHs						
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.1
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.81
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.44
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.79
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	4.3
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.97
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.87
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.13
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.2
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.92
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.03
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.02
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.29
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.24
Total PAH						
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	26.1
Heavy Metals / Metalloids						
Boron (dissolved)	µg/l	10	ISO 17025	63	400	< 10
Calcium (dissolved)	mg/l	0.012	ISO 17025	260	630	380
Chromium (hexavalent)	µg/l	5	ISO 17025	17	18	180
Chromium (III)	µg/l	5	NONE	19	24	230
Magnesium (dissolved)	mg/l	0.005	ISO 17025	0.035	55	0.023

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Analytical Report Number: 24-80851
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				2942578	2942579	2942580
Sample Reference				WS1004	WS1006	WS1007
Sample Number				MG1	MG2	MG3
Depth (m)				2.50	2.50	1.00
Date Sampled				30/01/2024	30/01/2024	30/01/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Antimony (dissolved)	µg/l	0.4	ISO 17025	2.5	5.8	0.6
Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.84	2.97	3.4
Barium (dissolved)	µg/l	0.06	ISO 17025	160	76	720
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	mg/l	0.00002	ISO 17025	< 0.00002	0.0002	< 0.00002
Chromium (dissolved)	µg/l	0.2	ISO 17025	36	43	410
Copper (dissolved)	µg/l	0.5	ISO 17025	53	6	170
Lead (dissolved)	µg/l	0.2	ISO 17025	4.5	0.5	53
Mercury (dissolved)	µg/l	0.05	ISO 17025	0.19	< 0.05	0.08
Nickel (dissolved)	µg/l	0.5	ISO 17025	3	4	20
Selenium (dissolved)	µg/l	0.6	ISO 17025	9.1	4.1	19
Vanadium (dissolved)	µg/l	0.2	ISO 17025	13	0.5	1.5
Zinc (dissolved)	µg/l	0.5	ISO 17025	< 0.5	27	3.2
Monoaromatics & Oxygenates						
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
Petroleum Hydrocarbons						
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	15
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	30
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	120
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	120
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10	280

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

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Analytical Report Number : 24-80851
Project / Site name: Mayfield Phase 1B

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 water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	ISO 17025
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method. Accredited matrices SW, GW, PW, FSE, LL.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE

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Analytical Report Number : 24-80851
Project / Site name: Mayfield Phase 1B

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
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Free cyanide (low level) in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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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Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-004617

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	22/02/2024
Your job number:	51001-03	**Samples instructed on/ Analysis started on:**	22/02/2024
Your order number:	PO-0030	**Analysis completed by:**	27/02/2024
Report Issue Number:	1	**Report issued on:**	28/02/2024
Samples Analysed:	3 water samples		

Signed:

Dominika Liana
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

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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.

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

Analytical Report Number: 24-004617
Project / Site name: Mayfield Phase 1B

Your Order No: PO-0030

Lab Sample Number				124181	124182	124183
Sample Reference				WS1004	WS1006	WS1007
Sample Number				MG1	MG2	MG3
Depth (m)				2.50	2.50	1.00
Date Sampled				20/02/2024	20/02/2024	20/02/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
General Inorganics						
Total Cyanide	µg/l	10	ISO 17025	< 10	38	70
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10

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

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 24-004617
Project / Site name: Mayfield Phase 1B

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
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Appendix E

Geotechnical Laboratory Analysis Results

GEOLABS Limited
Bucknalls Lane
Garston
Watford
Hertfordshire
WD25 9XX
Tel: +44(0) 1923 892 190
Fax: +44(0) 1923 892 191
email: admin@geolabs.co.uk
web: www.geolabs.co.uk

Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

21 February 2024
Report No : GEO/39814/01

For the attention of Ms K Poore

Date samples received	18/01/2024
Date written instructions received	02/02/2024
Date testing commenced	03/02/2024
Date of sample disposal	**20/03/2024**

Our ref **GEO / 39814**
Your Ref **51001/03**

Project **MAYFIELD PHASE 1B**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	~	Geotechnical Test Summary
~	11	Water Content
~	12	Liquid & Plastic Limits
2	10	Particle Size Distribution
3	1	Unconsolidated Undrained Triaxial Compression
4	2	Rock Testing
5	1	Unconfined Compressive Strength with Deformability
6	18	Point Load Strength Index

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

S Burke
Senior Technician

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SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression				Chemical Tests			Other tests and comments
Location	Depth (m)	Sample Ref	Type	Description	WC %	LL %	PL %	PI %	<425 µm %	Bulk Mg/m³	Dry Mg/m³	Condition	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 g/L	W/S Mg mg/L	
BH1001	5.00-5.45	18	B	Orangish brown slightly silty SAND.															Particle Size Distribution
BH1002	6.00-6.45	20	B	Orangish brown slightly gravelly silty SAND.															Particle Size Distribution
BH1003	5.00-5.45	19	B	Orangish brown slightly gravelly silty SAND.															Particle Size Distribution
BH1004	1.20-1.65	9	B	Dark brown slightly gravelly clayey silty SAND.	13.8	22	16	6.0	44										
BH1004	3.00-3.45	15	UT	Very stiff dark brown gravelly sandy silty CLAY.	16.1	32	15	17	97	2.32	2.00	Undisturbed	60	344	172				
BH1004	3.70	16	B	Greyish brown slightly gravelly sandy clayey SILT.															Particle Size Distribution
BH1004	4.00-4.45	18	D	Greyish brown gravelly clayey silty SAND. Gravel is fine to medium.	10.7	26	16	10	33										
BH1004	6.00-6.45	25	B	Orangish brown slightly gravelly silty SAND.															Particle Size Distribution
BH1005	3.00-3.45		B	Orangish brown gravelly clayey silty SAND.															Particle Size Distribution
TP1001	0.50	5	D	Dark brown gravelly sandy silty CLAY. Gravel is fine to medium.	13.2	33	19	14	45										

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed) NP=Non Plastic

Checked and Approved by



S Burke - Senior Technician
26/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B
51001/03

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SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression				Chemical Tests			Other tests and comments
Location	Depth (m)	Sample Ref	Type	Description	WC %	LL %	PL %	PI %	<425 µm %	Bulk Mg/m³	Dry Mg/m³	Condition	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 g/L	W/S Mg mg/L	
TP1001	1.00	9	B	Brown gravelly sandy clayey SILT.															Particle Size Distribution
TP1001	2.00	12	B	Black gravelly slightly sandy clayey SILT with rare rootlets and fine to medium brick.	23.5	40	27	13	62										
TP1005	1.50	12	B	Dark brown slightly sandy slightly gravelly silty CLAY.	17.9	29	12	17	99										
TP1005	2.00	15	B	Reddish brown gravelly clayey silty SAND.															Particle Size Distribution
TP1007	1.00	8	D	Dark brown slightly sandy silty CLAY with rare fine to medium gravel.	20.7	35	22	13	88										
TP1007	3.00	15	B	Orangish brown silty SAND.	16.7		NP		100										
TP1009	2.00	11	D	Brownish grey greyish brown mottled slightly sandy silty CLAY.	15.7	33	19	14	100										
TP1010	3.00	15	B	Brown slightly gravelly sandy clayey SILT.															Particle Size Distribution
TP1012	3.00	16	B	Brown silty very gravelly SAND with occasional cobbles.															Particle Size Distribution
WS1003	0.50	3	D	Dark brown slightly sandy gravelly silty CLAY.	11.1	32	19	13	39										

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed) NP=Non Plastic

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S Burke - Senior Technician
26/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B
51001/03

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SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression				Chemical Tests			Other tests and comments
Location	Depth (m)	Sample Ref	Type	Description	WC %	LL %	PL %	PI %	<425 µm %	Bulk Mg/m³	Dry Mg/m³	Condition	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 g/L	W/S Mg mg/L	
WS1003	0.50	4	B	Black slightly sandy gravelly silty CLAY. Gravel is fine to medium and includes brick.	15.2	31	19	12	48										
WS1005	2.00	10	D	Greyish brown brownish grey brown mottled slightly sandy silty CLAY.	23.0	46	23	23	100										

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed) NP=Non Plastic

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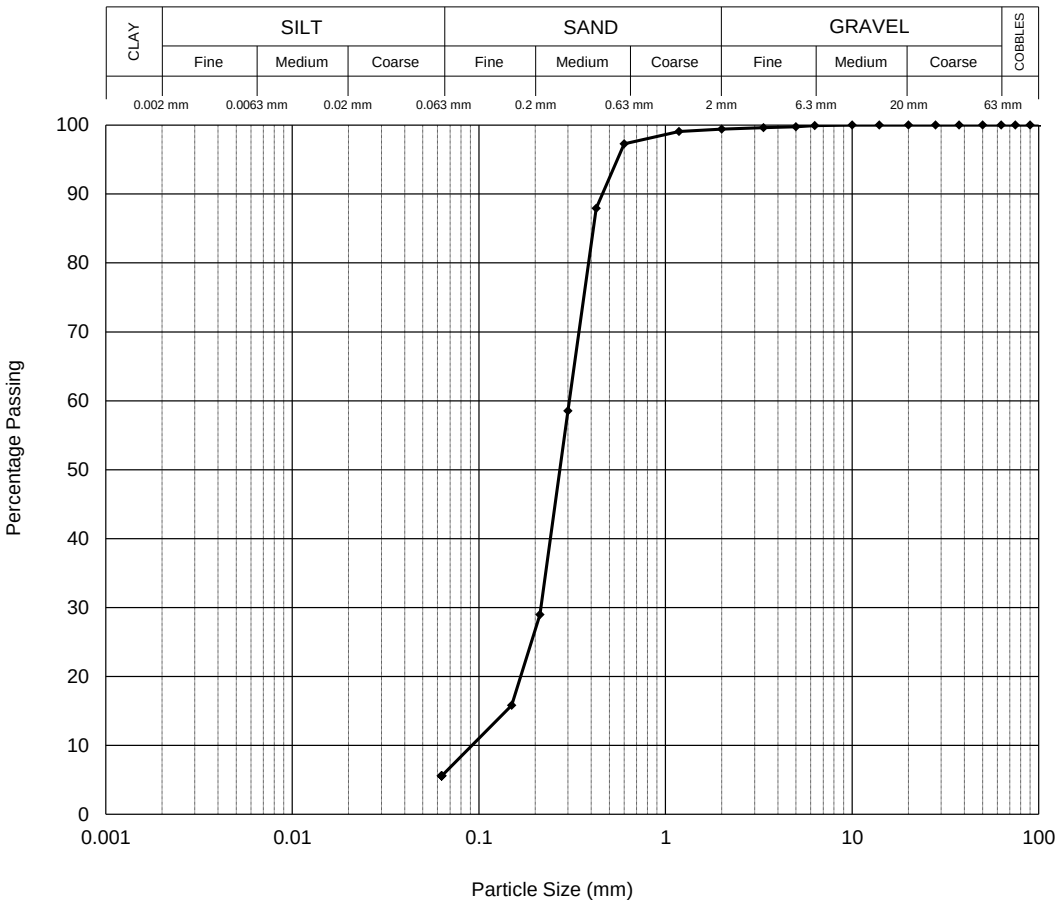
Location	BH1001
Sample Ref	18
Depth (m)	5.00-5.45
Sample Type	B

Description

Orangish brown slightly silty SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	97
425 µm	88
300 µm	59
212 µm	29
150 µm	16
63 µm	6



Particle Proportions	
Cobbles	0.0
Gravel	0.6
Sand	93.9
Silt & Clay	5.5

Tested by MJ
Checked and Approved by

S Burke - Senior Technician
21/02/2024

Project Number:

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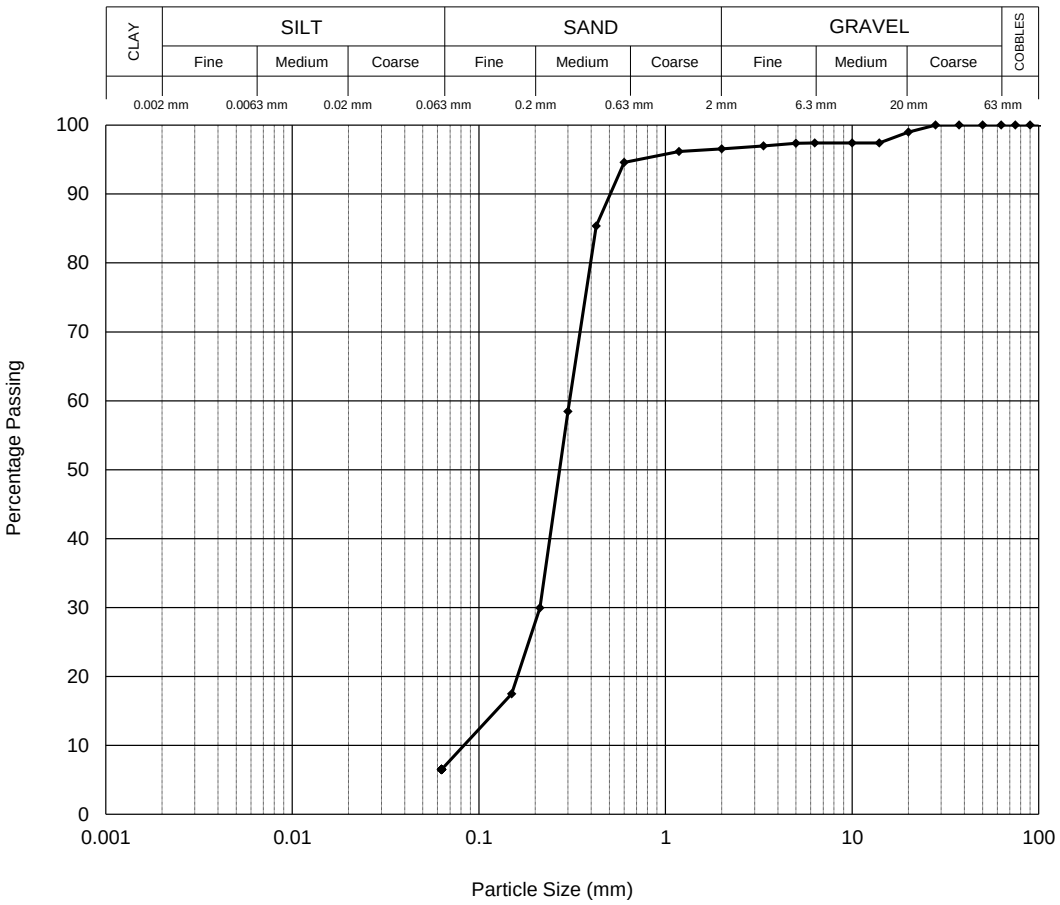
Location	BH1002
Sample Ref	20
Depth (m)	6.00-6.45
Sample Type	B

Description

Orangish brown slightly gravelly silty SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	99
14.0 mm	97
10.0 mm	97
6.30 mm	97
5.00 mm	97
3.35 mm	97
2.00 mm	97
1.18 mm	96
600 µm	95
425 µm	85
300 µm	58
212 µm	30
150 µm	17
63 µm	6



Particle Proportions	
Cobbles	0.0
Gravel	3.5
Sand	90.1
Silt & Clay	6.4

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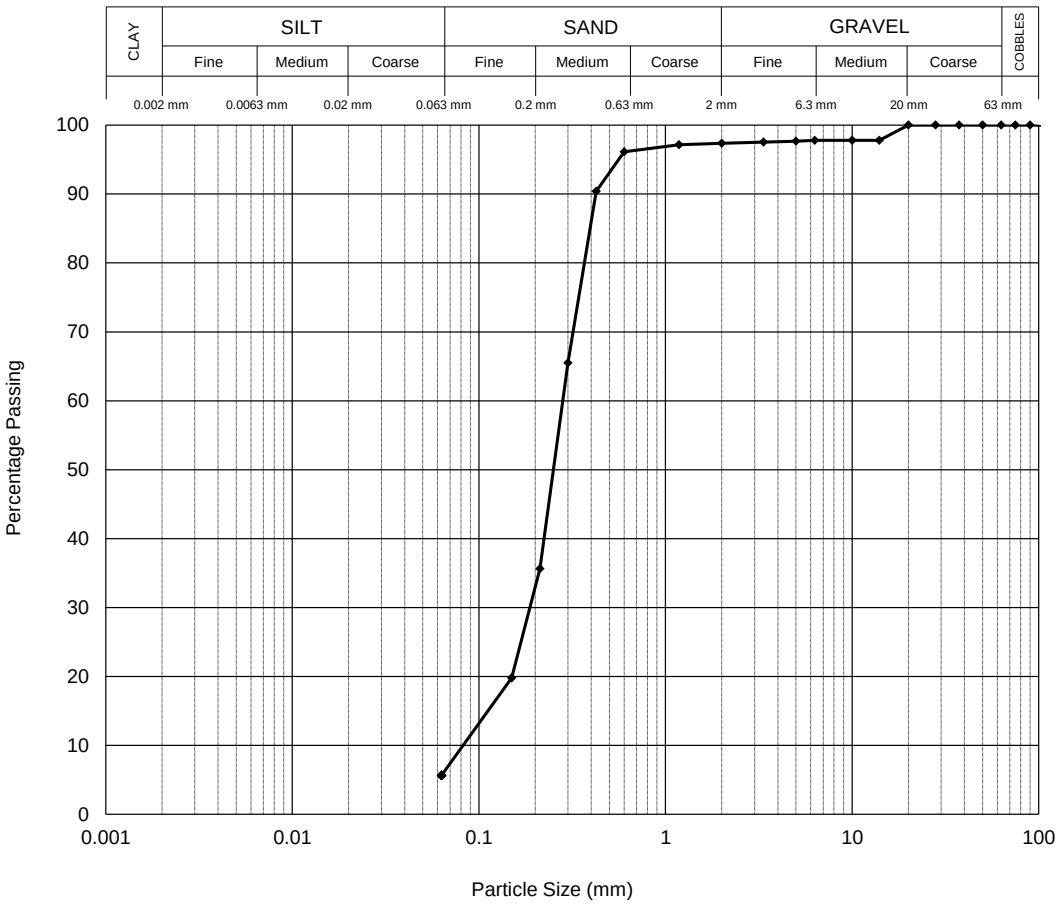
Location	BH1003
Sample Ref	19
Depth (m)	5.00-5.45
Sample Type	B

Description

Orangish brown slightly gravelly silty SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	98
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	97
1.18 mm	97
600 µm	96
425 µm	90
300 µm	65
212 µm	36
150 µm	20
63 µm	6



Particle Proportions	
Cobbles	0.0
Gravel	2.7
Sand	91.7
Silt & Clay	5.6

Tested by MJ
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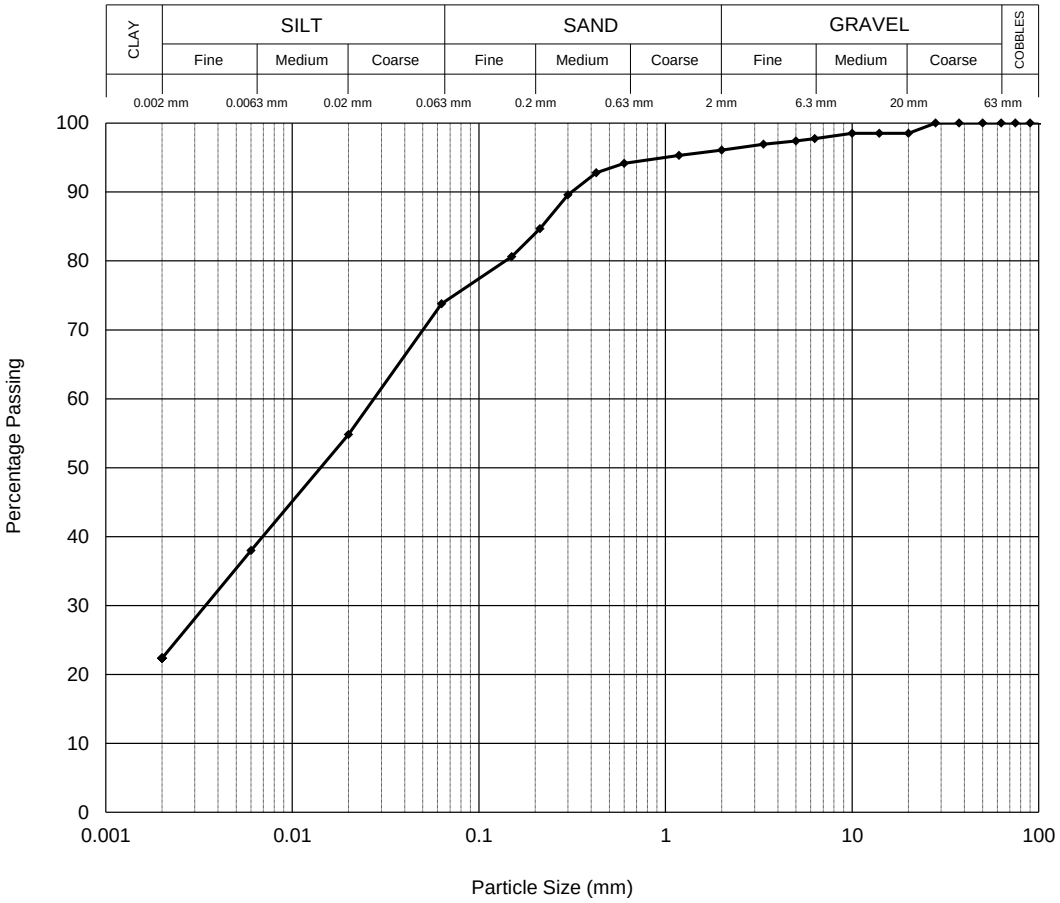
Location	BH1004
Sample Ref	16
Depth (m)	3.70
Sample Type	B

Description

Greyish brown slightly gravelly sandy clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	99
14.0 mm	99
10.0 mm	99
6.30 mm	98
5.00 mm	97
3.35 mm	97
2.00 mm	96
1.18 mm	95
600 µm	94
425 µm	93
300 µm	90
212 µm	85
150 µm	81
63 µm	74



Sedimentation	
No Pre-treatment used	
Temp (°C)	25.0
Size	% Pass
20 µm	55
6 µm	38
2 µm	22

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0.0
Gravel	3.9
Sand	22.3
Silt	51.4
Clay	22.4

Tested by MJ
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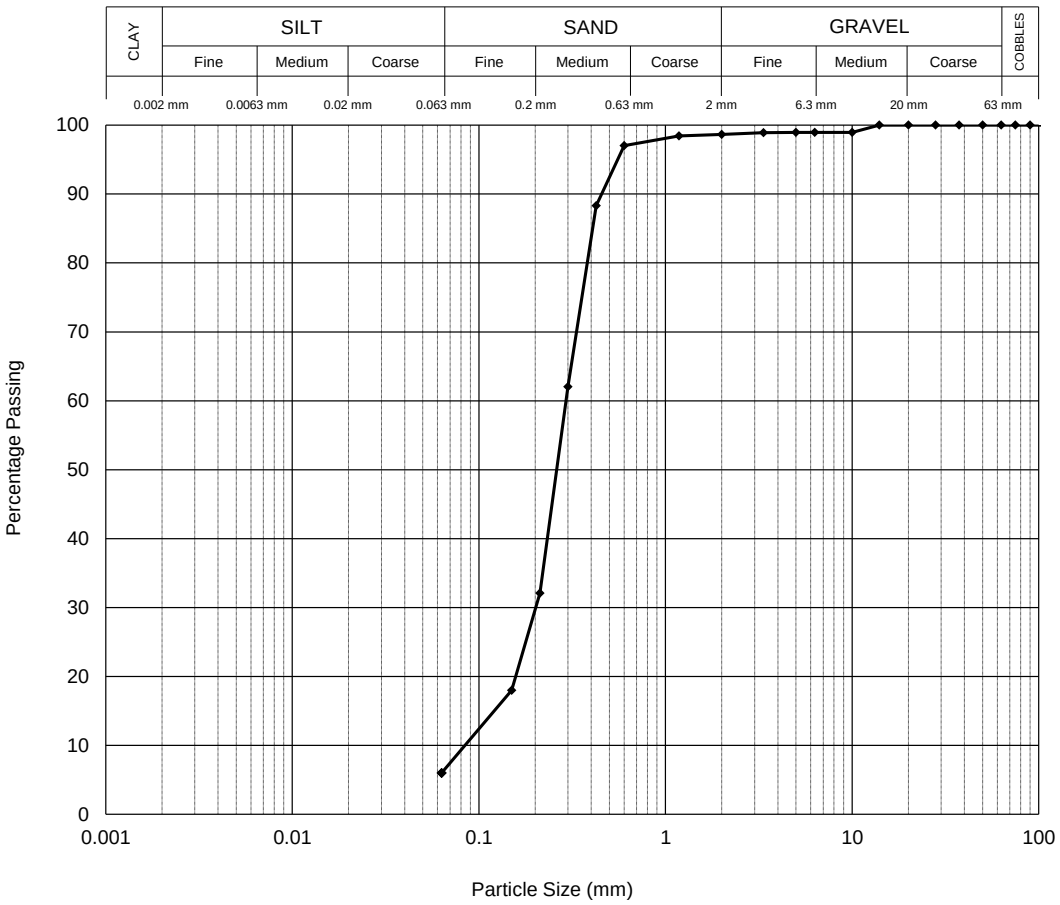
Location	BH1004
Sample Ref	25
Depth (m)	6.00-6.45
Sample Type	B

Description

Orangish brown slightly gravelly silty SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	99
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	97
425 µm	88
300 µm	62
212 µm	32
150 µm	18
63 µm	6



Particle Proportions	
Cobbles	0.0
Gravel	1.3
Sand	92.7
Silt & Clay	6.0

Tested by MJ
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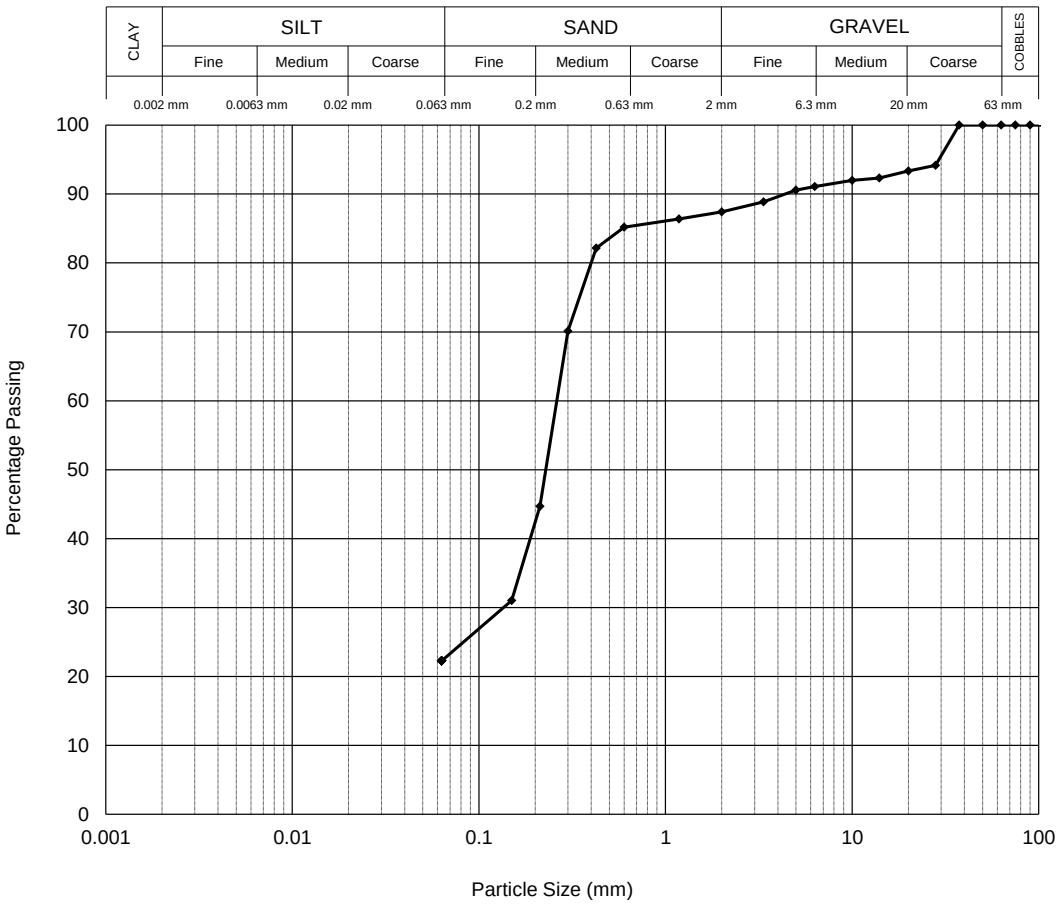
Location	BH1005
Depth (m)	3.00-3.45
Sample Type	B

Description

Orangish brown gravelly clayey silty SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	94
20.0 mm	93
14.0 mm	92
10.0 mm	92
6.30 mm	91
5.00 mm	91
3.35 mm	89
2.00 mm	87
1.18 mm	86
600 µm	85
425 µm	82
300 µm	70
212 µm	45
150 µm	31
63 µm	22



Particle Proportions	
Cobbles	0.0
Gravel	12.6
Sand	65.1
Silt & Clay	22.3

Tested by DD
Checked and Approved by

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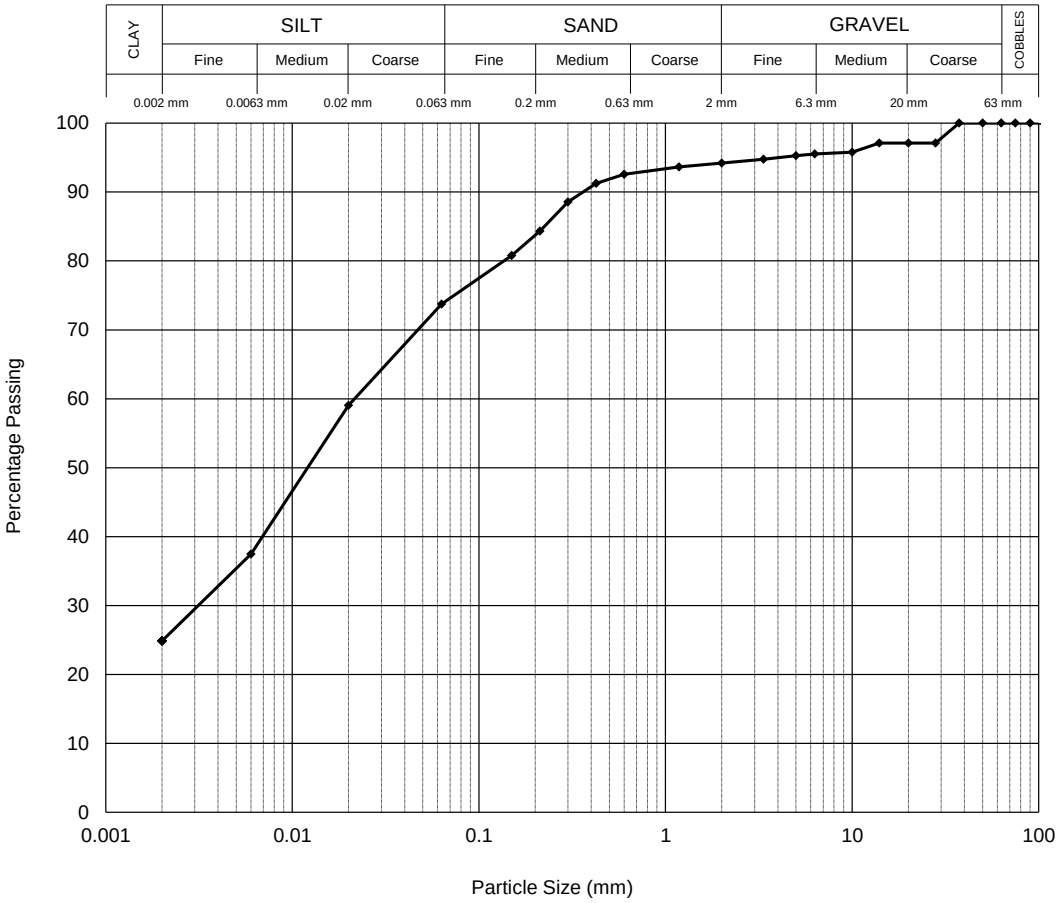
Location	TP1001
Sample Ref	9
Depth (m)	1.00
Sample Type	B

Description

Brown gravelly sandy clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	97
20.0 mm	97
14.0 mm	97
10.0 mm	96
6.30 mm	96
5.00 mm	95
3.35 mm	95
2.00 mm	94
1.18 mm	94
600 µm	93
425 µm	91
300 µm	89
212 µm	84
150 µm	81
63 µm	74



Sedimentation	
No Pre-treatment used	
Temp (°C)	25.0
Size	% Pass
20 µm	59
6 µm	37
2 µm	25

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0.0
Gravel	5.8
Sand	20.5
Silt	48.8
Clay	24.9

Tested by MJ
Checked and Approved by

S Burke

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Project Number:

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Project Name:

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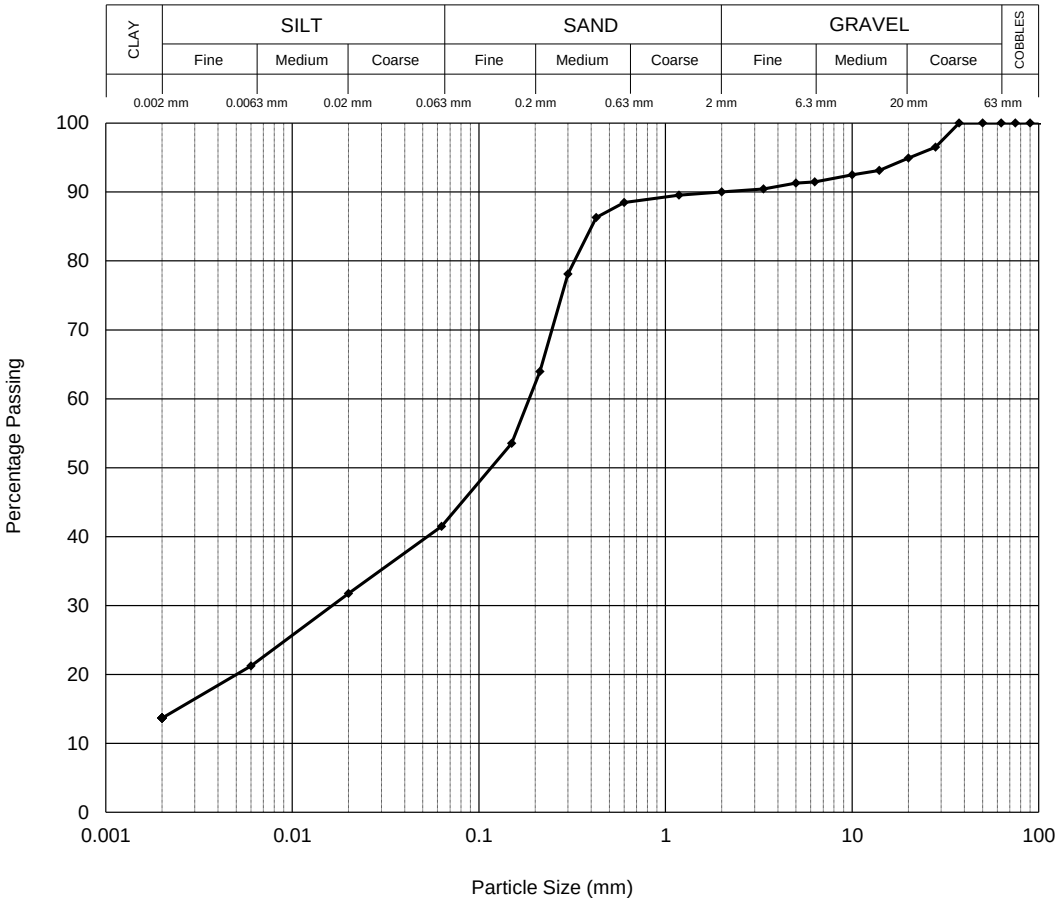
Location	TP1005
Sample Ref	15
Depth (m)	2.00
Sample Type	B

Description

Reddish brown gravelly clayey silty SAND.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	97
20.0 mm	95
14.0 mm	93
10.0 mm	92
6.30 mm	91
5.00 mm	91
3.35 mm	90
2.00 mm	90
1.18 mm	90
600 µm	88
425 µm	86
300 µm	78
212 µm	64
150 µm	54
63 µm	41



Sedimentation	
No Pre-treatment used	
Temp (°C)	25.0
Size	% Pass
20 µm	32
6 µm	21
2 µm	14

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0.0
Gravel	10.0
Sand	48.5
Silt	27.8
Clay	13.7

Tested by MJ
Checked and Approved by

S Burke

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21/02/2024

Project Number:

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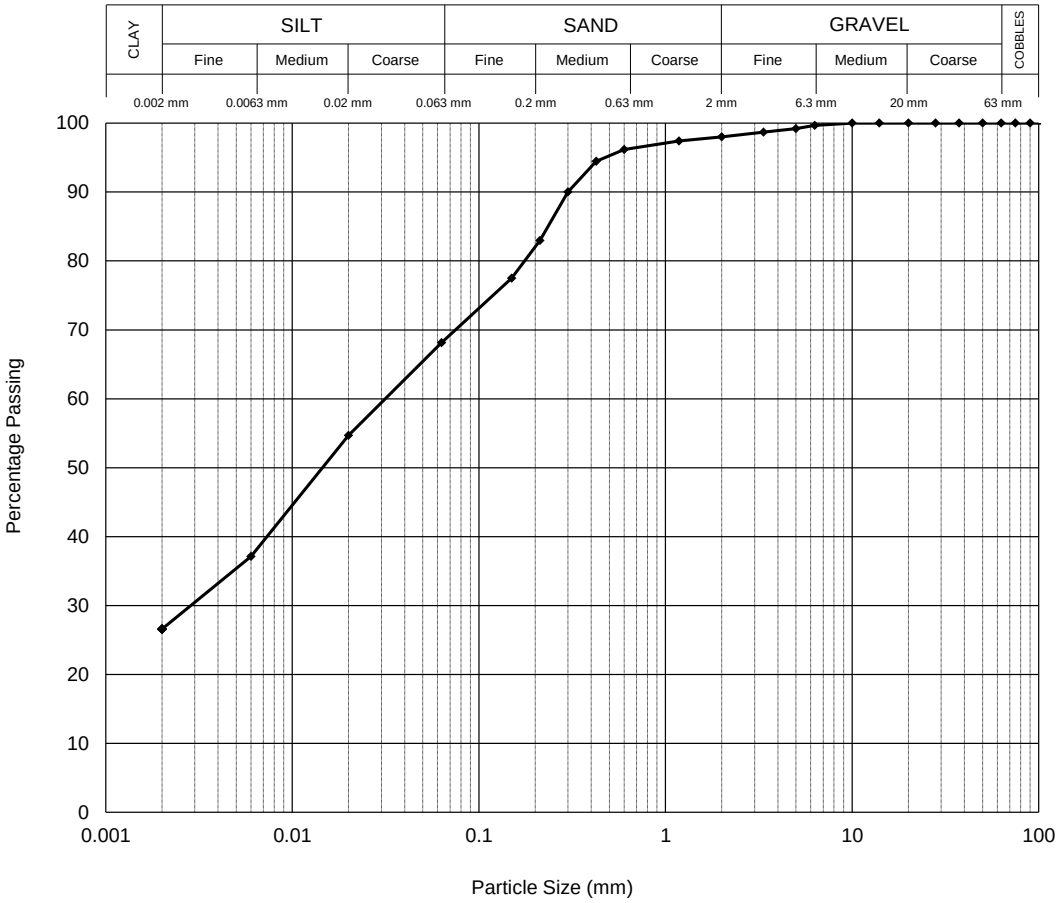
Location	TP1010
Sample Ref	15
Depth (m)	3.00
Sample Type	B

Description

Brown slightly gravelly sandy clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	98
1.18 mm	97
600 µm	96
425 µm	94
300 µm	90
212 µm	83
150 µm	78
63 µm	68



Sedimentation	
No Pre-treatment used	
Temp (°C)	25.0
Size	% Pass
20 µm	55
6 µm	37
2 µm	27

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0.0
Gravel	2.0
Sand	29.9
Silt	41.5
Clay	26.6

Tested by MJ
Checked and Approved by

S Burke - Senior Technician
21/02/2024

Project Number:

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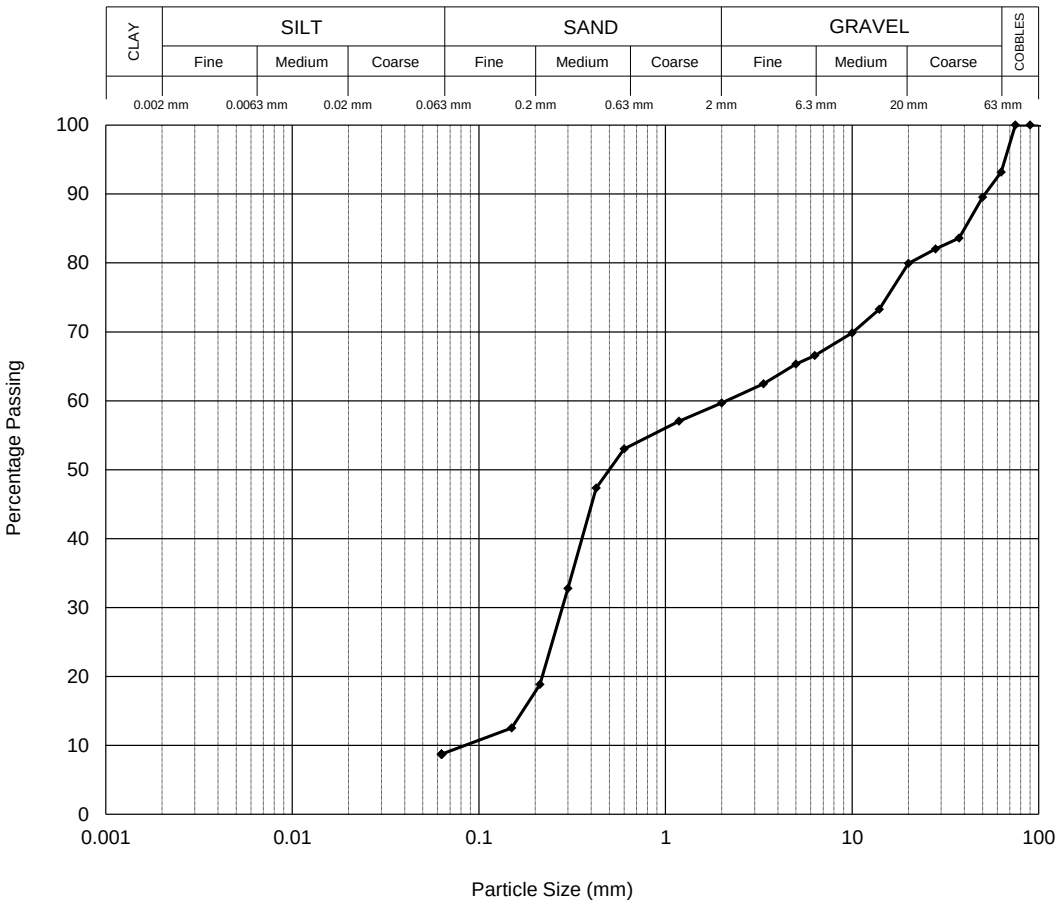
Location	TP1012
Sample Ref	16
Depth (m)	3.00
Sample Type	B

Description

Brown silty very gravelly SAND with occasional cobbles.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	93
50.0 mm	90
37.5 mm	84
28.0 mm	82
20.0 mm	80
14.0 mm	73
10.0 mm	70
6.30 mm	67
5.00 mm	65
3.35 mm	62
2.00 mm	60
1.18 mm	57
600 µm	53
425 µm	47
300 µm	33
212 µm	19
150 µm	13
63 µm	9



Particle Proportions	
Cobbles	6.8
Gravel	33.5
Sand	50.9
Silt & Clay	8.8

Tested by MJ
Checked and Approved by

S Burke - Senior Technician
21/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B
51001/03

GEOLABS ®
UKAS TESTING
1982

BS EN ISO 17892-8 : 2018

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION

Location	BH1004
Sample Ref	15
Depth (m)	3.00-3.45
Sample Type	UT

Description:

Very stiff dark brown gravelly sandy silty CLAY.

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	200.7
Diameter	(mm)	101.5
Water content	(%)	16.1
Bulk density	(Mg/m³)	2.32
Dry density	(Mg/m³)	2.00
Test Details		
Latex membrane thickness	(mm)	0.3
Specimen height prior to shearing	(mm)	200.6
Membrane correction	(kPa)	0.9
Mean rate of shear	(%/min)	2.0
Cell pressure	(kPa)	60
Strain at failure	(%)	15.0
Maximum deviator stress	(kPa)	344
Shear Stress Cu	(kPa)	172

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	80

Tested by PS
Checked and Approved by

S Burke

S Burke - Senior Technician
21/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B
51001/03

GEOLABS
UKAS TESTING 1982

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006 In-house Technical Procedure TP35

DETERMINATION OF POINT LOAD STRENGTH ON ROCK

Sample details				Point Load test											
Borehole Ref.	Sample Ref.	Depth (m)	Description	D. Tested	Test type & Direction		Sample width W (mm)	Platen separation (mm) Start D	Platen separation (mm) End D'	Water Content (%)	Equiv. Diameter D_e (mm)	Failure Load P (kN)	I_s P/De^2 (MPa)	Correction Factor F	Point Load Index $I_{s(50)}$ (MPa)
BH1001	1	7.60-7.74	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	D	P	106.1	106.0	102.3		104.1	0.10	0.01	1.39	0.01
BH1001		10.63-10.80	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	08/02/24	D	L	105.5	105.0	102.1		103.5	0.12	0.01	1.39	0.01
BH1001	5	13.03-13.06	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	A	P	106.0	75.1	71.9		98.5	0.25	0.03	1.36	0.04
BH1001	11	22.38-22.46	Very weak thinly laminated reddish brown fine to medium grained SANDSTONE. Moderately to highly weathered	07/02/24	A	P	106.0	80.3	75.5		100.9	1.19	0.12	1.37	0.16
BH1002	14	7.67-7.75	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	A	P	105.8	80.1	75.6		100.9	0.26	0.03	1.37	0.04
BH1002	16	10.23-10.32	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Moderately to highly weathered	07/02/24	D	L	106.1	105.8	102.7		104.2	0.32	0.03	1.39	0.04
BH1002	21	17.60-17.66	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	A	P	105.8	68.3	63.5		92.5	0.29	0.03	1.32	0.04
BH1002	25	23.50-23.62	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Moderately to highly weathered	07/02/24	A	P	105.5	78.7	74.2		99.8	0.37	0.04	1.37	0.05
BH1003	28	9.11-9.17	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	A	P	106.0	56.3	52.4		84.1	0.13	0.02	1.26	0.03
BH1003		9.90-9.96	Very weak thinly laminated reddish brown fine to medium grained SANDSTONE. Moderately to highly weathered	12/02/24	A	P	104.6	70.8	65.3		93.3	0.40	0.05	1.32	0.07

(*) Sample failed on weakness

Test type and direction: **D** - Diametral **A** - Axial **B** - Block **I** - Irregular lump **P** - Perpendicular to planes of weakness **U** - Random or unknown orientation **L** - Parallel to planes of weakness

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 16/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B

51001/03

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006 In-house Technical Procedure TP35

DETERMINATION OF POINT LOAD STRENGTH ON ROCK

Sample details				Point Load test											
Borehole Ref.	Sample Ref.	Depth (m)	Description	D. Tested	Test type & Direction		Sample width W (mm)	Platen separation (mm) Start D	Platen separation (mm) End D'	Water Content (%)	Equiv. Diameter D_e (mm)	Failure Load P (kN)	I_s P/De^2 (MPa)	Correction Factor F	Point Load Index $I_{s(50)}$ (MPa)
BH1003	32	15.43-15.50	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	A	P	106.1	70.0	65.2		93.9	0.15	0.02	1.33	0.03
BH1004		9.01-9.17	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	08/02/24	A	P	106.0	73.3	68.4		96.1	0.12	0.01	1.34	0.01
BH1004	39	11.88-12.12	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	I	P	106.0	73.1	68.6		96.2	0.17	0.02	1.34	0.03
BH1005		8.08-8.24	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	08/02/24	D	L	106.0	105.8	100.3		103.0	0.08	0.01	1.38	0.01
BH1005	52	10.82-10.87	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	I	L	102.3	60.5	56.1		85.5	0.08	0.01	1.27	0.01
BH1005	55	14.83-15.0	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	12/02/24	D	L	106.3	105.6	102.1		103.8	0.22	0.02	1.39	0.03
BH1005	55	14.90-15.70	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	12/02/24	A	P	106.1	80.1	76.2		101.5	0.43	0.04	1.37	0.05
BH1005	58	19.52-19.74	Extremely weak thinly laminated reddish brown fine to medium grained SANDSTONE. Highly to completely weathered	07/02/24	D	L	105.2	104.8	100.2		102.5	0.13	0.01	1.38	0.01

(*) Sample failed on weakness

Test type and direction: **D** - Diametral **A** - Axial **B** - Block **I** - Irregular lump **P** - Perpendicular to planes of weakness **U** - Random or unknown orientation **L** - Parallel to planes of weakness

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 16/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B

51001/03

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Sample details				Density				Uniaxial Compression Test (LF0879C (1000kN) compression frame used)							
								Mean after prep.							
Borehole Ref.	Sample Ref.	Depth (m)	Description	MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)	UCS (MPa) 3 sig. fig.	Failure Sketch	D. Tested	Remarks
BH1001	9	19.78-20.00	Very weak thinly laminated orangish brown fine grained SANDSTONE. Fresh to slightly weathered	11	60.3	2.12	1.91	106.00	208.00	2.0	39.0	4.42		08/02/24	
BH1002	26	24.68-25.00	Very weak thinly laminated orangish brown fine grained SANDSTONE. Fresh to slightly weathered	14	74.4	2.15	1.89	105.30	279.00	2.6	41.8	4.8		08/02/24	
BH1004		16.59-16.87	Extremely weak thinly laminated orangish brown fine grained SANDSTONE. Fresh to slightly weathered	13	58.1	1.99	1.76	105.50	206.10	2.0	5.3	0.606		09/02/24	

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 16/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B
51001/03

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Borehole Ref.:	BH1001
Sample Ref.:	9
Depth (m):	19.78-20.00

Description:
Very weak thinly laminated orangish brown fine grained SANDSTONE. Fresh to slightly weathered

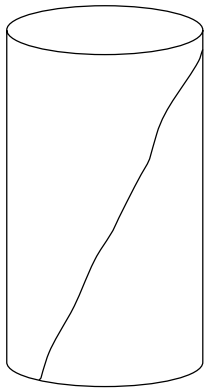
Diameter	106.00 mm
Height	208.00 mm
Bulk Density	2.12 Mg/m³
Dry Density	1.91 Mg/m³
Water Content	11 %

Degree of Saturation: 60.3 % Specific Gravity: 2.9 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 08/02/2024

Angle of foliation/Axis of loading: n/a
Angle of shear plane/Axis of loading: n/a

Sample type	C

Test results

Unconfined Compressive Strength Maximum load (kN): 39.00	4.42 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 16/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B
51001/03

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Borehole Ref.:	BH1002
Sample Ref.:	26
Depth (m):	24.68-25.00

Description:
Very weak thinly laminated orangish brown fine grained SANDSTONE. Fresh to slightly weathered

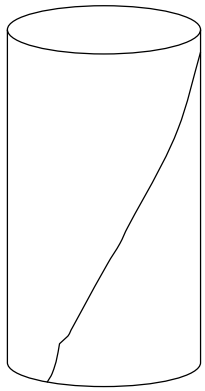
Diameter	105.30 mm
Height	279.00 mm
Bulk Density	2.15 Mg/m³
Dry Density	1.89 Mg/m³
Water Content	14 %

Degree of Saturation: 74.4 % Specific Gravity: 2.9 Mg/m³ (Assumed)

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
Dashed lines for apparent weakness failure.

Date tested: 08/02/2024

Angle of foliation/Axis of loading: n/a
Angle of shear plane/Axis of loading: n/a

Sample type	C

Test results

Unconfined Compressive Strength Maximum load (kN): 41.80	4.8 MPa
Young's Modulus (tangential at 50% failure load)	n/a
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	n/a
Poisson's Ratio (secant at 10% failure load)	n/a

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 16/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B
51001/03

GEOLABS

UKAS TESTING 1982

ISRM Suggested Methods - Rock Characterization Testing and Monitoring 1974 - 2006

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS AND POISSON'S RATIO

Borehole Ref.:	BH1004
Sample Ref.:	-
Depth (m):	16.59-16.87

Description:
Extremely weak thinly laminated orangish brown fine grained SANDSTONE.
Fresh to slightly weathered

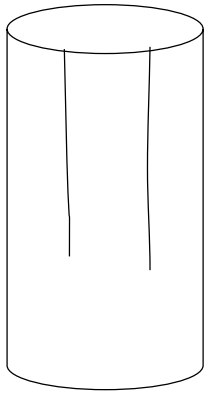
LF0879C (1000kN) compression frame used

Diameter	105.50 mm
Height	206.10 mm
Bulk Density	1.99 Mg/m³
Dry Density	1.76 Mg/m³
Water Content	13 %

Degree of Saturation: 58.1 % Specific Gravity: 2.9 Mg/m³ (Assumed)

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
Dashed lines for apparent weakness failure.

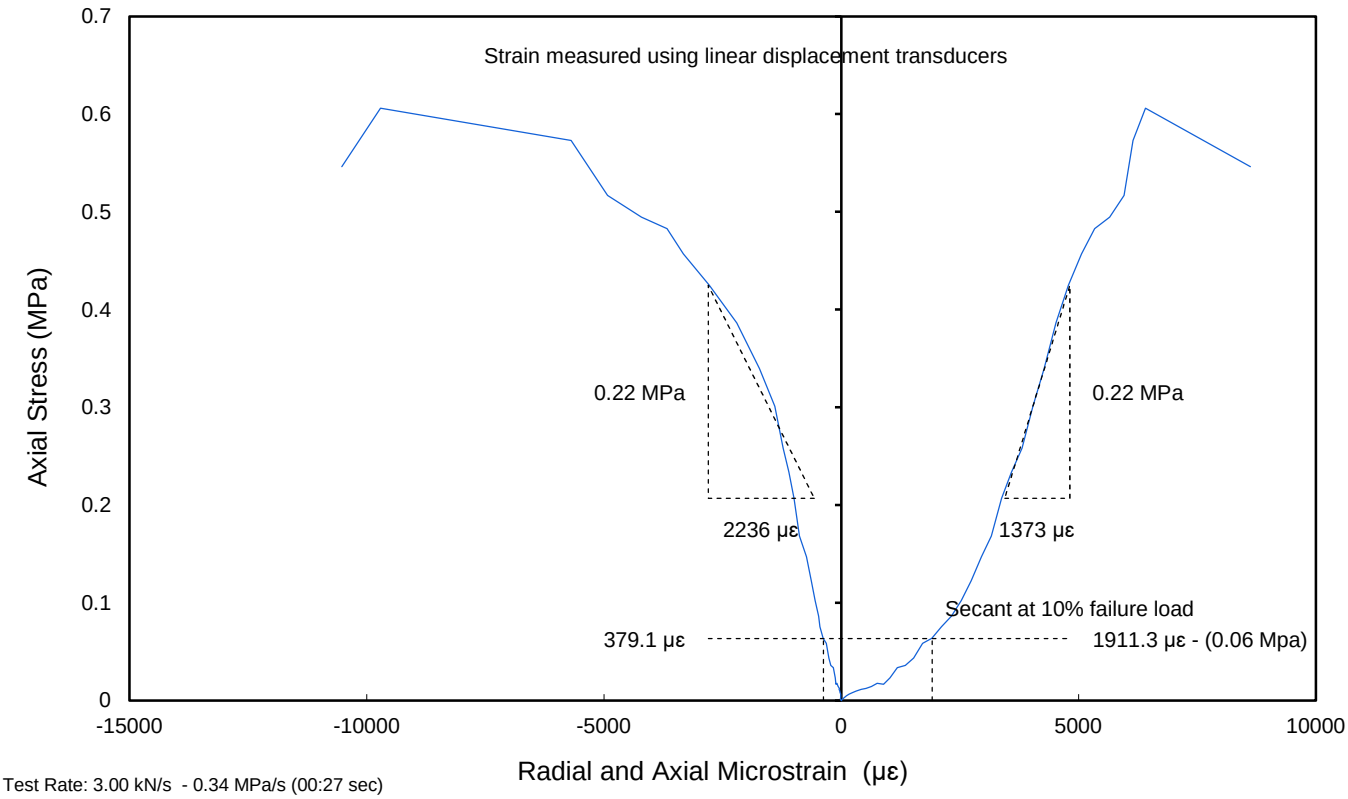
Angle of foliation/Axis of loading: n/a
Angle of shear plane/Axis of loading: n/a

Sample type	C

Date tested: 09/02/2024

Test results

Unconfined Compressive Strength (Maximum load (kN): 5.30)	0.606 MPa
Young's Modulus (tangential at 50% failure load)	0.159 GPa
Poisson's Ratio (tangential at 50% failure load)	1.63
Young's Modulus (secant at 10% failure load)	0.0333 GPa
Poisson's Ratio (secant at 10% failure load)	0.20



Test Rate: 3.00 kN/s - 0.34 MPa/s (00:27 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 16/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B
51001/03

TESTING RESTRICTION

The following tests have been scheduled on the below project. Those listed **CANNOT** be performed for the reason stated. If alternative samples are available for the restricted tests, please supply details.

Sample details					
Borehole Ref.	Sample Ref.	Depth (m)	Description	Tests restricted	Reason for restriction and comments
BH1001	1	6.50-8.00	n/a	Point load	No suitable specimen from top 1/3 of core. But there is a suitable specimen from the bottom 1/3 of the core.
BH1001	2	8.00-9.50	n/a	UCS with YM + PR	Sample is all broken up into untestable pieces/crumbs. No suitable specimen throughout the sample for either UCS and Point load.
BH1002	14	6.50-8.00	n/a	UCS	No suitable specimen throughout the sample for UCS. But there is a suitable specimen for Point load from the bottom 1/3 of the core.
BH1002	25	23.00-24.50	n/a	No Test Restriction but maybe an additional UCS testing, please read comments.	Scheduled for Point load only but there is a suitable specimen for UCS from the bottom 1/3 of core.
BH1003	28	8.00-9.50	n/a	UCS	No suitable specimen throughout the sample for UCS. But there are suitable specimens for Point load from the top and bottom 1/3 of the core.
BH1003	30	11.00-12.50	n/a	Point load	Sample is all broken up into untestable pieces/crumbs. No suitable specimen throughout the sample for either UCS and Point load.
BH1003	32	14.00-15.50	n/a	UCS with YM + PR	No suitable specimen throughout the sample for UCS. But there is a suitable specimen for Point load from the bottom 1/3 of the core.
BH1004	36	6.50-8.00	n/a	UCS	Sample is all broken up into untestable pieces/crumbs. No suitable specimen throughout the sample for either UCS and Point load.
BH1004	43	17.00-18.50	n/a	UCS with YM + PR	No suitable specimen throughout the sample for UCS. But there are suitable specimens for Point load from top, middle, and bottom 1/3 of the core.
BH1005	49	5.50-7.00	n/a	UCS with YM + PR	Sample is all broken up into untestable pieces/crumbs. No suitable specimen throughout the sample for either UCS and Point load.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 06/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B

51001/03

TESTING RESTRICTION

The following tests have been scheduled on the below project. Those listed **CANNOT** be performed for the reason stated. If alternative samples are available for the restricted tests, please supply details.

Sample details					
Borehole Ref.	Sample Ref.	Depth (m)	Description	Tests restricted	Reason for restriction and comments
BH1005	55	14.50-16.00	n/a	UCS	No suitable specimen throughout the sample for UCS. But there are suitable specimens for Point load from top and bottom 1/3 of the core.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 08/02/2024

Project Number:

GEO / 39814

Project Name:

MAYFIELD PHASE 1B

51001/03

GEOLABS

Civic Earth Limited
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

e: kirsty.poore@civicearth.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 24-002208

Project / Site name:	Mayfield Phase 1B	**Samples received on:**	07/02/2024
Your job number:	51001 03	**Samples instructed on/ Analysis started on:**	08/02/2024
Your order number:	PO 0035	**Analysis completed by:**	15/02/2024
Report Issue Number:	1	**Report issued on:**	15/02/2024
Samples Analysed:	16 soil samples		

Signed:

Joanna Szwagrzak
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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 24-002208
Project / Site name: Mayfield Phase 1B
Your Order No: PO 0035

Lab Sample Number				112904	112905	112906	112907	112908
Sample Reference				BH1002	BH1002	BH1003	BH1003	BH1004
Sample Number				4	18	17	21	5
Depth (m)				0.50	5.00-5.45	4.00-4.45	6.00-6.45	1.00
Date Sampled				11/01/2024	11/01/2024	12/01/2024	12/01/2024	10/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	26
Moisture Content	%	0.01	NONE	8.9	17	14	16	16
Total mass of sample received	kg	0.1	NONE	0.2	0.2	0.4	0.4	0.5
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	12	10.1	10.6	9.9	9.7
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	59	86	350	71	350
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	29.3	43	177	35.4	176
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	69	6.5	6.6	5.8	8
Water Soluble Nitrate (2:1) as N	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Heavy Metals / Metalloids								
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	3.1	< 2.5	< 2.5	< 2.5
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	6.1	< 5.0	< 5.0	< 5.0

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

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-002208
Project / Site name: Mayfield Phase 1B
Your Order No: PO 0035

Lab Sample Number				112909	112910	112911	112912	112913
Sample Reference				BH1004	BH1005	BH1005	TP1001	TP1005
Sample Number				19	10	18	14	11
Depth (m)				4.00-4.45	2.00-2.45	4.00-4.45	3.00	1.50
Date Sampled				10/01/2024	10/01/2024	10/01/2024	10/01/2024	10/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (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	15	11	17	12	6.9
Total mass of sample received	kg	0.1	NONE	0.3	0.6	0.4	0.7	0.5
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	7.9	8.9	8.9	8	8.6
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	190	610	62	180	130
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	93.6	306	31.2	91.8	64.3
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	2.9	7.2	4.3	1.9	4.3
Water Soluble Nitrate (2:1) as N	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Heavy Metals / Metalloids								
Magnesium (leachate equivalent)	mg/l	2.5	NONE	8.4	9.8	2.9	9.8	7.8
Magnesium (water soluble)	mg/kg	5	NONE	17	20	5.7	20	16

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

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Analytical Report Number: 24-002208
Project / Site name: Mayfield Phase 1B
Your Order No: PO 0035

Lab Sample Number				112914	112915	112916	112917	112918
Sample Reference				TP1008	TP1010	WS1002	WS1003	WS1004
Sample Number				15	9	2	9	7
Depth (m)				3.00	1.00	0.50	2.00	2.00
Date Sampled				11/01/2024	10/01/2024	19/01/2024	18/01/2024	19/01/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	69	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	10	5.4	15	21
Total mass of sample received	kg	0.1	NONE	0.5	0.3	0.4	0.5	0.6
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	8.2	10.4	9	5.8	7.9
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	160	2000	170	370	770
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	78.9	993	87.4	186	386
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	5.7	19	4.3	11	15
Water Soluble Nitrate (2:1) as N	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Heavy Metals / Metalloids								
Magnesium (leachate equivalent)	mg/l	2.5	NONE	8.5	5.8	3.2	8.6	26
Magnesium (water soluble)	mg/kg	5	NONE	17	12	6.4	17	52

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

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-002208
Project / Site name: Mayfield Phase 1B
Your Order No: PO 0035

Lab Sample Number				112919
Sample Reference				WS1005
Sample Number				11
Depth (m)				2.50
Date Sampled				18/01/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	9.7
Total mass of sample received	kg	0.1	NONE	0.6

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.2
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	200
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	97.7
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	4.9
Water Soluble Nitrate (2:1) as N	mg/kg	2	NONE	< 2.0
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0

Heavy Metals / Metalloids

Magnesium (leachate equivalent)	mg/l	2.5	NONE	5.4
Magnesium (water soluble)	mg/kg	5	NONE	11

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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 24-002208
Project / Site name: Mayfield Phase 1B

* 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 *
112904	BH1002	4	0.5	Brown clay and sand with gravel and vegetation
112905	BH1002	18	5.00-5.45	Brown sand
112906	BH1003	17	4.00-4.45	Brown sand with gravel
112907	BH1003	21	6.00-6.45	Brown sand with gravel
112908	BH1004	5	1	Brown sand with gravel and stones
112909	BH1004	19	4.00-4.45	Brown clay with gravel
112910	BH1005	10	2.00-2.45	Brown clay with gravel
112911	BH1005	18	4.00-4.45	Brown sand
112912	TP1001	14	3	Brown clay and sand with gravel
112913	TP1005	11	1.5	Brown clay and sand with gravel
112914	TP1008	15	3	Brown clay and sand with gravel
112915	TP1010	9	1	Brown loam and sand with rubble and glass
112916	WS1002	2	0.5	Brown gravely sand with stones
112917	WS1003	9	2	Brown clay and sand
112918	WS1004	7	2	Brown clay and sand with gravel
112919	WS1005	11	2.5	Brown clay and sand

Analytical Report Number : 24-002208
Project / Site name: Mayfield Phase 1B

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 (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078B	D	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report

Analytical Report Number : 24-002208
Project / Site name: Mayfield Phase 1B

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

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH1002	18	S	112905	c	Chloride, water soluble, in soil	L082B	c
BH1002	18	S	112905	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
BH1002	18	S	112905	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
BH1002	18	S	112905	c	pH in soil (automated)	L099	c
BH1002	4	S	112904	c	Chloride, water soluble, in soil	L082B	c
BH1002	4	S	112904	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
BH1002	4	S	112904	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
BH1002	4	S	112904	c	pH in soil (automated)	L099	c
BH1004	19	S	112909	c	Chloride, water soluble, in soil	L082B	c
BH1004	19	S	112909	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
BH1004	19	S	112909	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
BH1004	19	S	112909	c	pH in soil (automated)	L099	c
BH1004	5	S	112908	c	Chloride, water soluble, in soil	L082B	c
BH1004	5	S	112908	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
BH1004	5	S	112908	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
BH1004	5	S	112908	c	pH in soil (automated)	L099	c
BH1005	10	S	112910	c	Chloride, water soluble, in soil	L082B	c
BH1005	10	S	112910	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
BH1005	10	S	112910	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
BH1005	10	S	112910	c	pH in soil (automated)	L099	c
BH1005	18	S	112911	c	Chloride, water soluble, in soil	L082B	c
BH1005	18	S	112911	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
BH1005	18	S	112911	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
BH1005	18	S	112911	c	pH in soil (automated)	L099	c
TP1001	14	S	112912	c	Chloride, water soluble, in soil	L082B	c
TP1001	14	S	112912	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
TP1001	14	S	112912	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
TP1001	14	S	112912	c	pH in soil (automated)	L099	c
TP1005	11	S	112913	c	Chloride, water soluble, in soil	L082B	c
TP1005	11	S	112913	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
TP1005	11	S	112913	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
TP1005	11	S	112913	c	pH in soil (automated)	L099	c
TP1008	15	S	112914	c	Chloride, water soluble, in soil	L082B	c
TP1008	15	S	112914	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
TP1008	15	S	112914	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
TP1008	15	S	112914	c	pH in soil (automated)	L099	c
TP1010	9	S	112915	c	Chloride, water soluble, in soil	L082B	c
TP1010	9	S	112915	c	Water Soluble Nitrate (2:1) as N in soil	L078	c
TP1010	9	S	112915	c	Water Soluble Nitrate (2:1) as N in soil	L078B	c
TP1010	9	S	112915	c	pH in soil (automated)	L099	c

Appendix F
Contamination Assessment

Civic Earth Contamination Assessments

Civic Earth's rationale for the adoption of generic assessment criteria (GAC) in order to evaluate the risks posed to potential receptors from identified contamination at the site is outlined in the following sections. The potential receptors have been identified with reference to the Part 2A Contaminated Land Guidance and associated DEFRA guidance[1]. The potential receptors identified include human health, controlled waters, ecology and buildings/ structures if there is the potential for them to be adversely affected by exposure to contamination. The results of the contamination assessments for the site are set out in this appendix.

1.1 Risks to Human Health from Long Term Chronic Risks

The laboratory chemical analysis results have been compared against the Land Quality Management (LQM) / CIEH (Chartered Institute of Environmental Health) Suitable for Use Levels (S4ULs). The S4ULs have been generated based on a sandy loam soil type[2] and the Soil Organic Matter (SOM) content stated in the assessment tables (1%, 2.5% or 6% SOM). S4ULs for metals are presented for 6% SOM using suitably cautious inputs as S4ULs are not sensitive to SOM.

Where recorded contaminant concentrations for arsenic, cadmium, chromium VI, benzene and benzo(a)pyrene exceed the S4ULs, the results have subsequently been compared to the applicable Category 4 Screening Level (C4SL) published by DEFRA[3] to further assess risks. The C4SL for lead has been adopted as a screening level as no S4UL has been derived for lead.

Concentrations of cyanide above the laboratory reporting limit are assessed against a Soil Screening Value (SSV) developed by Atkins. Atkins have based this assessment criteria on acute exposure to a 0-6 year old child.

The Solubility Saturation Limit (SSL) and Vapour Saturation Limit (VSL) criteria are presented in the assessment tables and indicate the theoretical value at which non-aqueous phase liquid (NAPL) is expected to be present. If evidence of free product is observed during the site investigation, the SSL/VSL values are considered as part of the assessment. If no evidence of free product is noted during the site investigation, the SSL/VSL values are not considered within the assessment.

Where appropriate and the dataset is of an appropriate size, assessment of the selected GAC has been carried out against the 95th percentile of the sample mean, designated the US_{95} value, which is considered to represent a reasonable worst case scenario. Where datasets are normally distributed, the one sample t-test has been used to calculate the US_{95} value. In the case of non-parametric datasets, the Chebychev Theorem has been applied.

It is noted that the British Geological Society (BGS) has published background concentration levels for a number of organic and inorganic contaminants. In the event that the selected GAC is found to be exceeded, the risk may still be considered to be low and unlikely to meet the definition of contaminated land under Part 2A and potentially acceptable for use from a development perspective, if contaminant concentrations are below local background levels, assuming no other contributing factors.

A positive identification of asbestos fibres in a soil sample by the laboratory is considered sufficient to warrant additional assessment of risks.

1.2 Risks to Human Health from Dissolved Contaminants

Concentrations of organic contaminants detected above the laboratory reporting limit in shallow groundwater or perched waters have been assessed against groundwater vapour GAC (GACgwvap) developed by the Society of Brownfield Remediation Risk Assessment (SoBRA). The assessment criteria are generic and based on a reasonable worst case scenario assuming a sand soil type, SOM of 1% and groundwater depth of 0.65mbgl.

[1] DEFRA (2012) Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance.
[2] Environment Agency (2009) Updated Technical Background to CLEA Model. Science Report SC050021/SR3.
[3] CL:AIRE (2014) Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. SP1010.

It is noted that the GACs are designed to be protective of dissolved phase contaminants and do not take account of the vapour risk from NAPL. Where there is evidence of mobile or residual NAPL, the vapour risks from NAPL will be considered separately.

1.3 Risks to Human Health from Ground Gases

Recorded flow rates and concentrations of carbon dioxide and methane are converted to Gas Screening Values (GSVs) in accordance with CIRIA C665[4]. Potential risks associated with ground gases are evaluated in accordance with CIRIA C665, BS 8485[5] and NHBC[6].

1.4 Risks to Controlled Waters

The laboratory chemical analysis results from eluted liquids (leachate analysis) and dissolved phase (groundwater analysis) have been compared against Environmental Quality Standards (EQS) and/or Drinking Water Values (DWVs) as an initial screen of water quality.

1.5 Risks to Plants and Vegetation

The risks to future plant growth i.e. phytotoxicity have been assessed for boron, copper, nickel and zinc where soil chemical analysis results have been compared against the limits for phytotoxic effect outlined in BS 3882[7].

1.6 Risks to Buried Water Supply Pipes

An assessment of new buried water supply pipe requirements has been undertaken in general accordance with the UK Water Industry Research (UKWIR) guidance and assessment criteria.

[4] CIRIA (2007) Assessing risks posed by hazardous ground gases to buildings. C665.
[5] British Standard Institution (2015+A1:2019) Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings. BS 8485.
[6] NHBC (2023) Hazardous ground gas – an essential guide for housebuilders. NF94.
[7] British Standard Institution (2015) Specification for Topsoil. BS 3882.

Table A: Human Health Data Assessment - Potential Risks to Human Health from Soils

Land Use Category:		Residential without Home Grown Produce						SOM:	2.5%
Stratum:		Made Ground						No. Samples	34
Determinand	S4UL mg/kg	SSL [VSL] mg/kg	Min recorded (mg/kg)	Max recorded (mg/kg)	No. Samples exceeding GAC	No. Samples exceeding SSL/VSL	Outliers Identified?	US_{95} incl. Outliers (mg/kg)	US_{95} excl. Outliers (mg/kg)
Arsenic	40	-	2.4	79	3	-	Yes	45.9	39.8
Beryllium	1.7	-	0.28	1.9	1	-	Yes	1.5	-
Boron	11,000	-	<0.2	3.4	0	-	Yes	1.77	-
Cadmium	85	-	<0.2	2.9	0	-	Yes	0.8	-
Chromium (III)	910	-	6.4	66	0	-	Yes	35.3	-
Chromium (VI)	6	-	<1.8	<1.8	0	-	No	*	-
Copper	7,100	-	7.8	320	0	-	Yes	120.5	-
Lead	310	-	11	520	4	-	No	408	-
Mercury	56	-	<0.3	3.2	0	-	Yes	1.89	-
Nickel	180	-	5	50	0	-	No	35.1	-
Selenium	430	-	<1	1.3	0	-	Yes	*	-
Vanadium	1,200	-	10	37	0	-	No	35.7	-
Zinc	40,000	-	15	430	0	-	Yes	208	-
Benzene	0.70	-	<0.005	<0.005	0	-	No	*	-
Toluene	1,900	-	<0.005	<0.005	0	-	No	*	-
Ethyl benzene	190	-	<0.005	<0.005	0	-	No	*	-
o-Xylene	210	-	<0.005	<0.005	0	-	No	*	-
m- & p-Xylene	180	-	<0.005	<0.005	0	-	No	*	-
Total Phenols	750	-	<1	3.6	0	-	No	*	-
Total Cyanide	34	-	<1	<1	0	-	No	*	-
Aliphatic EC5-6	78	-	<0.02	<0.02	0	-	No	*	-
Aliphatic EC >6-8	230	-	<0.02	<0.02	0	-	No	*	-
Aliphatic EC >8-10	65	-	<0.05	<0.05	0	-	No	*	-
Aliphatic EC >10-12	330	[118]	<1	3.4	0	0	No	1.89	-
Aliphatic EC >12-16	2,400	[59]	<2	12	0	0	No	9.83	-
Aliphatic EC >16-35	92,000	21	<8	908	0	19	No	40.3	-
Aromatic EC5-7	690	-	<0.01	<0.01	0	-	Yes	245.5	-
Aromatic EC >7-8	1,800	-	<0.01	<0.01	0	-	No	*	-
Aromatic EC >8-10	110	-	<0.05	<0.05	0	-	No	*	-
Aromatic EC >10-12	590	-	<1	6.6	0	-	Yes	*	-
Aromatic EC >12-16	2,300	419	<2	59	0	0	Yes	3.04	-
Aromatic EC >16-21	1,900	-	<10	300	0	-	Yes	25.5	-
Aromatic EC >21-35	1,900	-	<10	860	0	-	Yes	113.5	-
Acenaphthene	4,700	141	<0.05	9.3	0	0	No	278	-
Acenaphthylene	4,600	212	<0.05	0.89	0	0	Yes	7.9	-
Anthracene	35,000	-	<0.05	13	0	-	No	0.42	-
Benzo(a)anthracene	14	-	<0.05	35	2	-	Yes	9.09	-
Benzo(a)pyrene	3.2	-	<0.05	37	9	-	Yes	13.35	10.48
Benzo(b)fluoranthene	4.0	-	<0.05	45	9	-	Yes	11.7	11.8
Benzo(g,h,i)perylene	360	-	<0.05	22	0	-	Yes	13.7	-
Benzo(k)fluoranthene	110	-	<0.05	15	0	-	Yes	6.32	-
Chrysene	31	-	<0.05	39	1	-	Yes	9.36	-
Dibenzo(a,h)anthracene	0.32	-	<0.05	4.9	13	-	Yes	1.43	1.34
Fluoranthene	1,600	-	<0.05	78	0	-	Yes	35.05	-
Fluorene	3,800	76.5	<0.05	7.1	0	0	Yes	5.81	-
Indeno(1,2,3,cd)pyrene	46	-	<0.05	19	0	-	Yes	5.94	-
Naphthalene	5.6	-	<0.05	4.3	0	-	Yes	3.47	-
Phenanthrene	1,500	-	<0.05	45	0	-	Yes	33.75	-
Pyrene	3,800	-	<0.05	72	0	-	Yes	31	-
Asbestos in Soils	Number of Samples with Positive Asbestos ID				8	-	-	-	-

Notes:

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B. S4ULs for metals are presented for 6% SOM using suitably cautious inputs as S4ULs are not sensitive to SOM.

C. C4SL stated for lead.

D. S4UL for phenol relates to C_6H_5OH.

E. ATRISK^{soil} Soil Screening Value (SSV) stated for cyanide based on acute exposure to 0-6 year old child.

F. SSL = Solubility Saturation Limit. VSL = Volatile Saturation Limit.

Table B: Human Health Data Assessment - Potential Risks to Human Health from Soils

Land Use Category:		Residential without Home Grown Produce						SOM:	1.0%
Stratum:		Glacial Till						No. Samples	6
Determinand	S4UL mg/kg	SSL [VSL] mg/kg	Min recorded (mg/kg)	Max recorded (mg/kg)	No. Samples exceeding GAC	No. Samples exceeding SSL/VSL	Outliers Identified?	US_{95} incl. Outliers (mg/kg)	US_{95} excl. Outliers (mg/kg)
Arsenic	40	-	4.8	16	0	-	No	15.75	-
Beryllium	1.7	-	0.22	1.6	0	-	Yes	1.45	-
Boron	11,000	-	0.3	1.5	0	-	No	1.43	-
Cadmium	85	-	<0.2	<0.2	0	-	No	*	-
Chromium (III)	910	-	3.8	27	0	-	No	25.75	-
Chromium (VI)	6	-	<1.8	<1.8	0	-	No	*	-
Copper	7,100	-	5.3	54	0	-	No	49.75	-
Lead	310	-	3.3	99	0	-	No	96	-
Mercury	56	-	<0.3	0.3	0	-	Yes	0.15	-
Nickel	180	-	3.4	33	0	-	No	31.25	-
Selenium	430	-	<1	<1	0	-	No	-	-
Vanadium	1,200	-	7.7	30	0	-	No	29	-
Zinc	40,000	-	10	80	0	-	No	78	-
Benzene	0.38	-	<0.005	<0.005	0	-	No	*	-
Toluene	880	[869]	<0.005	<0.005	0	0	No	*	-
Ethyl benzene	83	-	<0.005	<0.005	0	-	No	*	-
o-Xylene	88	-	<0.005	<0.005	0	-	No	*	-
m- & p-Xylene	79	-	<0.005	<0.005	0	-	No	*	-
Total Phenols	750	-	<1	<1	0	-	No	*	-
Total Cyanide	34	-	<1	<1	0	-	No	*	-
Aliphatic EC5-6	42	-	<0.02	<0.02	0	-	No	*	-
Aliphatic EC >6-8	100	-	<0.02	<0.02	0	-	No	*	-
Aliphatic EC >8-10	27	-	<0.05	<0.05	0	-	No	*	-
Aliphatic EC >10-12	130	[48]	<1	1.7	0	0	Yes	*	-
Aliphatic EC >12-16	1,100	24	<2	4.3	0	0	Yes	*	-
Aliphatic EC >16-35	65,000	8.48	<16	19	0	1	Yes	*	-
Aromatic EC5-7	370	-	<0.01	<0.01	0	-	No	*	-
Aromatic EC >7-8	860	-	<0.01	<0.01	0	-	No	*	-
Aromatic EC >8-10	47	-	<0.05	<0.05	0	-	No	*	-
Aromatic EC >10-12	250	-	<1	1	0	-	Yes	*	-
Aromatic EC >12-16	1,800	-	<2	3.6	0	-	Yes	*	-
Aromatic EC >16-21	1,900	-	<10	<10	0	-	Yes	*	-
Aromatic EC >21-35	1,900	-	<10	22	0	-	Yes	*	-
Acenaphthene	3,000	57	<0.05	0.57	0	0	Yes	*	-
Acenaphthylene	2,900	86.1	<0.05	0.09	0	0	Yes	*	-
Anthracene	31,000	[1.17]	<0.05	0.65	0	0	Yes	*	-
Benzo(a)anthracene	11	-	<0.05	0.82	0	-	Yes	*	-
Benzo(a)pyrene	3.2	-	<0.05	0.8	0	-	Yes	*	-
Benzo(b)fluoranthene	3.9	-	<0.05	0.84	0	-	Yes	*	-
Benzo(g,h,i)perylene	360	-	<0.05	0.51	0	-	Yes	*	-
Benzo(k)fluoranthene	110	-	<0.05	0.39	0	-	Yes	*	-
Chrysene	30	-	<0.05	0.93	0	-	Yes	*	-
Dibenzo(a,h)anthracene	0.31	-	<0.05	0.1	0	-	Yes	*	-
Fluoranthene	1,500	-	<0.05	1.9	0	-	Yes	1.90	-
Fluorene	2,800	30.9	<0.05	0.46	0	0	Yes	*	-
Indeno(1,2,3,cd)pyrene	45	-	<0.05	0.45	0	-	Yes	*	-
Naphthalene	2.3	-	<0.05	0.47	0	-	No	0.44	-
Phenanthrene	1,300	36	<0.05	2.6	0	0	Yes	2.30	-
Pyrene	3,700	-	<0.05	1.9	0	-	Yes	1.83	-

Notes:

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B. S4ULs for metals are presented for 6% SOM using suitably cautious inputs as S4ULs are not sensitive to SOM.

C. C4SL stated for lead.

D. S4UL for phenol relates to C_6H_5OH.

E. ATRISK^{soil} Soil Screening Value (SSV) stated for cyanide based on acute exposure to 0-6 year old child.

F. SSL = Solubility Saturation Limit. VSL = Volatile Saturation Limit.

Table C: Human Health Data Assessment - Potential Groundwater Vapour Risk to Human Health from Groundwater					
Land Use Category:	**Residential**			**No. Samples**	3
Water Body / Stratum:	**Perched Water / Made Ground**				
Determinand	**GAC_{gwvap} (µg/l)**	**Minimum Recorded (µg/l)**	**Maximum Recorded (µg/l)**	**No. Samples exceeding GAC_{gwvap}**	**Outliers Identified?**
Benzene	210	<3	<3	0	No
Toluene	230,000	<3	<3	0	No
Ethylbenzene	10,000	<3	<3	0	No
Total xylene	9,500	<3	<3	0	No
Methyl tertiary butyl ether (MTBE)	83,000	<3	<3	0	No
TPH aromatic EC5 to EC7	210,000	<1	<1	0	No
TPH aromatic >EC7 to EC8	220,000	<1	<1	0	No
TPH aromatic >EC8 to EC10	1,900	<1	<1	0	No
TPH aromatic >EC10 to EC12	6,800	<10	<10	0	No
TPH aromatic >EC12 to EC16	39,000	<10	<10	0	No
TPH aliphatic EC5 to EC6	1,900	<1	<1	0	No
TPH aliphatic >EC6 to EC8	1,500	<1	<1	0	No
TPH aliphatic >EC8 to EC10	57	<1	<1	0	No
TPH aliphatic >EC10 to EC12	37	<10	15	0	Yes
Acenaphthene	170,000	<0.01	0.81	0	Yes
Acenaphthylene	220,000	<0.01	0.10	0	Yes
Fluorene	210,000	<0.01	0.44	0	Yes
Naphthalene	220	<0.01	1.00	0	Yes

Notes:
A. Criteria sourced from SoBRA (2017) *Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater.*
B. GAC for acenaphthene, acenaphythylene and fluorene exceed aqueous solubility. An assessment should be made for the potential presence of free product.
C. GAC for TPH aromatic EC5 to EC7 should be compared to the GAC for benzene to assess for potential genotoxic mutagenic effects.

Table D: Human Health Data Assessment - Potential Groundwater Vapour Risk to Human Health from Groundwater					
Land Use Category:	**Residential**			**No. Samples**	5
Water Body / Stratum:	**Principal Aquifer / Chester Sandstone Formation**				
Determinand	**GAC_{gwvap} (µg/l)**	**Minimum Recorded (µg/l)**	**Maximum Recorded (µg/l)**	**No. Samples exceeding GAC_{gwvap}**	**Outliers Identified?**
Benzene	210	<3	<3	0	No
Toluene	230,000	<3	<3	0	No
Ethylbenzene	10,000	<3	<3	0	No
Total xylene	9,500	<3	<3	0	No
Methyl tertiary butyl ether (MTBE)	83,000	<3	<3	0	No
TPH aromatic EC5 to EC7	210,000	<1	<1	0	No
TPH aromatic >EC7 to EC8	220,000	<1	<1	0	No
TPH aromatic >EC8 to EC10	1,900	<1	<1	0	No
TPH aromatic >EC10 to EC12	6,800	<10	<10	0	No
TPH aromatic >EC12 to EC16	39,000	<10	<10	0	No
TPH aliphatic EC5 to EC6	1,900	<1	<1	0	No
TPH aliphatic >EC6 to EC8	1,500	<1	<1	0	No
TPH aliphatic >EC8 to EC10	57	<1	<1	0	No
TPH aliphatic >EC10 to EC12	37	<10	<10	0	No
Acenaphthene	170,000	<0.01	<0.01	0	No
Acenaphthylene	220,000	<0.01	<0.01	0	No
Fluorene	210,000	<0.01	<0.01	0	No
Naphthalene	220	<0.01	<0.01	0	No

Notes:
A. Criteria sourced from SoBRA (2017) *Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater.*
B. GAC for acenaphthene, acenaphythylene and fluorene exceed aqueous solubility. An assessment should be made for the potential presence of free product.
C. GAC for TPH aromatic EC5 to EC7 should be compared to the GAC for benzene to assess for potential genotoxic mutagenic effects.

Table E: Controlled Waters Data Assessment - Potential Risks to Groundwater (Freshwater) from Soil Leachate							
Stratum	Made Ground					No. Samples	4 to 5
Determinand	EQS (µg/l) [Annual Average]	EQS (µg/l) [Max. Allowable]	Min recorded (µg/l)	Max recorded (µg/l)	Bioavailble Concentration (µg/l)	No. Samples exceeding EQS	Notes
Arsenic	50	*	5.2	67	-	1	A
Beryllium	*	15	<0.2	<0.2	-	0	H
Boron	2,000	*	28	160	-	0	G
Cadmium	0.25	1.5	<0.08	<0.08	-	0	A, C
Chromium (III)	4.7	32	<5	41	-	2	A
Chromium (VI)	3.4	*	<5.0	10	-	1	A
Copper	1.0	*	12	290	0.81 to 26.87	3	A
Lead	1.2	14	<1.0	34	0.06 to 1.98	1	A, B
Mercury	*	0.07	<0.007	0.1637	-	2	A
Nickel	4	34	1.1	62	0.27 to 62	1	A, B
Zinc	12.3	*	6.8	26	2.45 to 3.51	0	A, D
Total Phenols	7.7	46	1.6	5.3	-	0	A
Total Cyanide	1	5	1	5.5	-	2	E
Total TPH	*	10	<10	<10	-	0	I
Anthracene	0.1	0.1	<0.01	<0.01	-	0	A
Benzo(a)pyrene	0.00017	0.27	<0.01	<0.01	-	0	A
Benzo(b)fluoranthene	*	0.017	<0.01	<0.01	-	0	A, F
Benzo(k)fluoranthene	*	0.017	<0.01	<0.01	-	0	A, F
Benzo(ghi)perylene	*	0.0082	<0.01	<0.01	-	0	A, F
Fluoranthene	0.0063	0.12	<0.01	<0.01	-	0	A
Naphthalene	2	130	<0.01	<0.01	-	0	A
pH	*	6.0 to 9.0	8.0	10.9	-	2	G

Notes:

* No assessment criteria defined.

A. EQS outlined within Water Framework Directive 2015

B. Freshwater Annual Average EQS value for bioavailable fraction for lead, copper, nickel and zinc. Bioavailable fraction assessed using UKTAG Metal Bioavailability Tool (MBAT).

C. Cadium EQS based on hardness of 200mg/l or more.

D. Zinc EQS based on 10.9 µg/l plus ambient background concentration for "other freshwater" catchments not specified in list above.

E. EQS for free cyanide stated for total cyanide. Trigger concentration for laboratory to test for free cyanide is 1 µg/l (the EQS for free cyanide). If total cyanide is present, analysis for free cyanide is carried out.

F. The annual average EQS in water refer to the concentration of benzo(a)pyrene, on the toxicity of which they are based. Benzo(a)pyrene can be considered as a marker for the other PAHs.

G. Environment Agency Freshwaters Specific Pollutants and Operational Environmental Quality Standards

H. Dutch Indication Level of Serious Contamination

Table F: Controlled Waters Data Assessment - Potential Risks to Groundwater (Freshwater) from Dissolved Phase Contaminants							
Water Body	Perched Water - Made Ground					No. Samples	3 to 6
Determinand	EQS (µg/l) [Annual Average]	EQS (µg/l) [Max. Allowable]	Min recorded (µg/l)	Max recorded (µg/l)	Bioavailble Concentration (µg/l)	No. Samples exceeding EQS	Notes
Arsenic	50	*	2.84	3.4	-	0	A
Beryllium	*	15	<0.1	<0.1	-	0	J
Boron	2,000	*	<10	400	-	0	H
Cadmium	0.25	1.5	<0.02	0.23	-	0	A
Chromium (III)	4.7	32	19	230	-	3	A
Chromium (VI)	3.4	*	17	180	-	3	A
Copper	1.0	*	6	170	0.21 to 170	2	A
Lead	1.2	14	0.5	53	0.08 to 2.76	1	A, B
Mercury	*	0.07	<0.05	0.19	-	2	A
Nickel	4	34	3	20	0.99 to 20	1	A, B
Zinc	12.3	*	<0.5	27	<0.5 to 8.94	0	A, E
Total Phenols	7.7	46	<10	92	-	1	A
Total Cyanide	1	5	3.4	91	-	2	F
Free Cyanide	1	5	<1	<10	-	0	A, L
Total TPH	*	10	<10	280	-	1	K
Anthracene	0.1	0.1	<0.01	0.79	-	1	A
Benzo(a)pyrene	0.00017	0.27	<0.01	2.03	-	1	A
Benzo(b)fluoranthene	*	0.017	<0.01	2.2	-	1	A, G
Benzo(k)fluoranthene	*	0.017	<0.01	0.92	-	1	A, G
Benzo(ghi)perylene	*	0.0082	<0.01	1.24	-	1	A, G
Fluoranthene	0.0063	0.12	<0.01	4.3	-	1	A
Naphthalene	2	130	<0.01	1	-	0	A
Benzene	10	50	<3	<3	-	0	A
Toluene	74	380	<3	<3	-	0	A
Ammoniacal Nitrogen as N	*	750	48	3300	-	1	I
pH	*	6.0 to 9.0	8	12.7	-	0	H
Hardness (mg $CaCo_3$/l)	*	*	637	1800	-	-	-

Notes:

* No assessment criteria defined.

A. EQS outlined within Water Framework Directive 2015

B. Freshwater Annual Average EQS value for bioavailable fraction for lead, copper, nickel and zinc. Bioavailable fraction assessed using UKTAG Metal Bioavailability Tool (MBAT).

C. PAH is sum concentration of four PAH compounds (benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno(1,2,3-cd)pyrene.

D. Cadium EQS based on hardness of 200mg/l or more.

E. Zinc EQS based on 10.9 µg/l plus ambient background concentration for "other freshwater" catchments not specified in list above.

F. EQS for free cyanide stated for total cyanide. Trigger concentration for laboratory to test for free cyanide is 1 µg/l (the EQS for free cyanide). If total cyanide is present, analysis for free cyanide is carried out.

G. The annual average EQS in water refer to the concentration of benzo(a)pyrene, on the toxicity of which they are based. Benzo(a)pyrene can be considered as a marker for the other PAHs.

H. Environment Agency Freshwaters Specific Pollutants and Operational Environmental Quality Standards

I. Based on a 'moderate' quality river (Water Framework Directive 2015).

J. Dutch Indication Level of Serious Contamination

Table G: Controlled Waters Data Assessment - Potential Risks to Groundwater (Freshwater) from Dissolved Phase Contaminants							
Water Body	Principal Aquifer - Chester Sandstone Formation					No. Samples	5
Determinand	EQS (µg/l) [Annual Average]	EQS (µg/l) [Max. Allowable]	Min recorded (µg/l)	Max recorded (µg/l)	Bioavailble Concentration (µg/l)	No. Samples exceeding EQS	Notes
Arsenic	50	*	<0.4	1.5	-	0	A
Beryllium	*	15	<0.1	<0.1	-	0	J
Boron	2,000	*	110	340	-	0	H
Cadmium	0.25	1.5	0.05	0.09	-	0	A
Chromium (III)	4.7	32	<5.0	<5.0	-	0	A
Chromium (VI)	3.4	*	<5.0	<5.0	-	0	A
Copper	1.0	*	1.6	6.3	0.08 to 0.33	0	A
Lead	1.2	14	<0.2	<0.2	-	0	A, B
Mercury	*	0.07	<0.05	<0.05	-	0	A
Nickel	4	34	1.9	4.2	0.44 to 1.07	0	A, B
Zinc	12.3	*	2.6	16	1.22 to 8.39	0	A, E
Total Phenols	7.7	46	<10	<10	-	0	A
Total Cyanide	1	5	<10	<10	-	0	F
Free Cyanide	1	5	-	-	-	-	A
Total TPH	*	10	<10	<10	-	0	K
Anthracene	0.1	0.1	<0.01	<0.01	-	0	A
Benzo(a)pyrene	0.00017	0.27	<0.01	<0.01	-	0	A
Benzo(b)fluoranthene	*	0.017	<0.01	<0.01	-	0	A, G
Benzo(k)fluoranthene	*	0.017	<0.01	<0.01	-	0	A, G
Benzo(ghi)perylene	*	0.0082	<0.01	<0.01	-	0	A, G
Fluoranthene	0.0063	0.12	<0.01	<0.01	-	0	A
Naphthalene	2	130	<0.01	<0.01	-	0	A
Benzene	10	50	<3	<3	-	0	A
Toluene	74	380	<3	<3	-	0	A
Ammoniacal Nitrogen as N	*	750	18	67	-	0	I
pH	*	6.0 to 9.0	7.0	7.3	-	0	H
Hardness (mg $CaCo_3$/l)	*	*	447	966	-	-	-

Notes:

* No assessment criteria defined.

A. EQS outlined within Water Framework Directive 2015

B. Freshwater Annual Average EQS value for bioavailable fraction for lead, copper, nickel and zinc. Bioavailable fraction assessed using UKTAG Metal Bioavailability Tool (MBAT).

C. PAH is sum concentration of four PAH compounds (benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno(1,2,3-cd)pyrene.

D. Cadium EQS based on hardness of 200mg/l or more.

E. Zinc EQS based on 10.9 µg/l plus ambient background concentration for "other freshwater" catchments not specified in list above.

F. EQS for free cyanide stated for total cyanide. Trigger concentration for laboratory to test for free cyanide is 1 µg/l (the EQS for free cyanide). If total cyanide is present, analysis for free cyanide is carried out.

G. The annual average EQS in water refer to the concentration of benzo(a)pyrene, on the toxicity of which they are based. Benzo(a)pyrene can be considered as a marker for the other PAHs.

H. Environment Agency Freshwaters Specific Pollutants and Operational Environmental Quality Standards

I. Based on a 'moderate' quality river (Water Framework Directive 2015).

J. Dutch Indication Level of Serious Contamination

Table H: Controlled Waters Data Assessment - Potential Risks to Drinking Water from Dissolved Phase Contaminants						
Water Body		Perched Water - Made Ground			No. Samples	3 to 6
Determinand	Drinking Water Value (µg/l)	Min recorded (µg/l)	Max recorded (µg/l)	Bioavailble Concentration (µg/l)	No. Samples exceeding EQS	Notes
Arsenic	10	2.84	3.4	-	0	A
Boron	1,000	<10	400	-	0	A
Cadmium	5	<0.02	0.23	-	0	A
Chromium	50	19	230	-	1	A
Copper	2,000	6	170	0.21 to 170	0	A, B
Lead	10	0.5	53	0.08 to 2.76	0	A, B
Mercury	1	<0.05	0.19	-	0	A
Nickel	20	3	20	0.99 to 20	0	A, B
Selenium	10	4.1	19	-	1	A
Zinc	5,000	<0.5	27	<0.5 to 8.94	0	A, B
Total Phenols	0.5	<10	92	-	1	D
Total Cyanide	50	3.4	91	-	1	A
Total TPH	10	<10	280	-	1	D
TPH Aliphatic EC5-6	15,000	<1	<1	-	0	G
TPH Aliphatic EC>6-8	15,000	<1	<1	-	0	G
TPH Aliphatic EC>8-10	300	<1	<1	-	0	G
TPH Aliphatic EC>10-12	300	<10	<10	-	0	G
TPH Alipihatic EC>12-16	300	<10	<10	-	0	G
TPH Aromatic EC>5-7	10	<1	<1	-	0	G
TPH Aromatic EC>7-8	700	<1	<1	-	0	G
TPH Aromatic EC>8-10	300	<1	<1	-	0	G
TPH Aromatic EC>10-12	90	<10	15	-	0	G
TPH Aromatic EC>12-16	90	<10	30	-	0	G
TPH Aromatic EC>16-21	90	<10	120	-	1	G
TPH Aromatic EC>21-35	90	<10	280	-	1	G
PAH	0.1	<0.04	5.38	-	1	A, C
Benzo(a)pyrene	0.01	<0.01	2.03	-	1	A
Benzene	1	<3	<3	-	0	A
Toluene	700	<3	<3	-	0	E
Ethylbenzene	300	<3	<3	-	0	E
p & m-xylene	500	<3	<3	-	0	E, F
o-xylene	500	<3	<3	-	0	E, F
Ammoniacal Nitrogen as N	500	48	3300	-	2	A
pH	6.5 to 9.5	8	12.7	-	2	A
Total Sulphate (mg SO_4/l)	250	103	1690	-	1	A
Hardness (mg $CaCo_3$/l)	-	637	1800	-	-	-
Notes:						
* No assessment criteria defined.						
A. DWV outlined within the Water Supply (Water Quality) Regulations 2018.						
B. Bioavailable fraction assessed using UKTAG Metal Bioavailability Tool (MBAT).						
C. PAH is sum concentration of four PAH compounds [benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno(1,2,3-cd)py						
D. DWV outlined within the Water Supply (Water Quality) Regulations 1989.						
E. WHO Guidelines for Drinking Water Quality, 4th Edition 2017.						
F. DWV for p-xylene stated; DWV for o-xylene is 500µg/l.						
G. WHO Petroleum Products in Drinking Water, 2008						

Table I: Controlled Waters Data Assessment - Potential Risks to Drinking Water from Dissolved Phase Contaminants						
Water Body		Principal Aquifer - Chester Sandstone Formation			No. Samples	5
Determinand	Drinking Water Value (µg/l)	Min recorded (µg/l)	Max recorded (µg/l)	Bioavailble Concentration (µg/l)	No. Samples exceeding EQS	Notes
Arsenic	10	<0.4	1.5	-	0	A
Boron	1,000	110	340	-	0	A
Cadmium	5	0.05	0.09	-	0	A
Chromium	50	<5.0	<5.0	-	0	A
Copper	2,000	1.6	6.3	0.08 to 0.33	0	A, B
Lead	10	<0.2	<0.2	-	0	A, B
Mercury	1	<0.05	<0.05	-	0	A
Nickel	20	1.9	4.2	0.44 to 1.07	0	A, B
Selenium	10	2	6.2	-	0	A
Zinc	5,000	2.6	16	1.22 to 8.39	0	A, B
Total Phenols	0.5	<10	<10	-	0	D
Total Cyanide	50	<10	<10	-	0	A
Total TPH	10	<10	<10	-	0	D
TPH Aliphatic EC5-6	15,000	<1	<1	-	0	G
TPH Aliphatic EC>6-8	15,000	<1	<1	-	0	G
TPH Aliphatic EC>8-10	300	<1	<1	-	0	G
TPH Aliphatic EC>10-12	300	<10	<10	-	0	G
TPH Alipihatic EC>12-16	300	<10	<10	-	0	G
TPH Aromatic EC>5-7	10	<1	<1	-	0	G
TPH Aromatic EC>7-8	700	<1	<1	-	0	G
TPH Aromatic EC>8-10	300	<1	<1	-	0	G
TPH Aromatic EC>10-12	90	<10	<10	-	0	G
TPH Aromatic EC>12-16	90	<10	<10	-	0	G
TPH Aromatic EC>16-21	90	<10	<10	-	0	G
TPH Aromatic EC>21-35	90	<10	<10	-	0	G
PAH	0.1	<0.04	<0.04	-	0	A, C
Benzo(a)pyrene	0.01	<0.01	<0.01	-	0	A
Benzene	1	<3	<3	-	0	A
Toluene	700	<3	<3	-	0	E
Ethylbenzene	300	<3	<3	-	0	E
p & m-xylene	500	<3	<3	-	0	E, F
o-xylene	500	<3	<3	-	0	E, F
Ammoniacal Nitrogen as N	500	18	67	-	0	A
pH	6.5 to 9.5	7.0	7.3	-	0	A
Total Sulphate (mg SO_4/l)	250	220	563	-	3	A
Hardness (mg $CaCo_3$/l)	-	447	966	-	-	-
Notes:						
* No assessment criteria defined.						
A. DWV outlined within the Water Supply (Water Quality) Regulations 2018.						
B. Bioavailable fraction assessed using UKTAG Metal Bioavailability Tool (MBAT).						
C. PAH is sum concentration of four PAH compounds (benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno(1,2,3-cd)py						
D. DWV outlined within the Water Supply (Water Quality) Regulations 1989.						
E. WHO Guidelines for Drinking Water Quality, 4th Edition 2017.						
F. DWV for p-xylene stated; DWV for o-xylene is 500µg/l.						
G. WHO Petroleum Products in Drinking Water, 2008						

Table J: Soil Data Assessment - Potential Risks to Plants and Vegetation

Stratum:	Made Ground					No. Samples	34
Determinand	Assessment Threshold (mg/kg)	Min recorded (mg/kg)	Max recorded (mg/kg)	No. Samples exceeding GAC	Outliers Identified?	US_{95} incl. Outliers (mg/kg)	US_{95} excl. Outliers (mg/kg)
Boron (water soluble)	5	<0.2	3.4	0	Yes	1.77	-
Copper	135	7.8	320	2	Yes	120.50	-
Nickel	75	5	50	0	No	35.10	-
Zinc	200	15	430	2	Yes	208	149

Stratum:	Glacial Till					No. Samples	6
Determinand	Assessment Threshold (mg/kg)	Min recorded (mg/kg)	Max recorded (mg/kg)	No. Samples exceeding GAC	Outliers Identified?	US_{95} incl. Outliers (mg/kg)	US_{95} excl. Outliers (mg/kg)
Boron (water soluble)	5	0.3	1.5	0	No	1.43	-
Copper	135	5.3	54	0	No	49.75	-
Nickel	75	3.4	33	0	No	31.25	-
Zinc	200	10	80	0	No	78	-

Notes:

A. Copper, Nickel and Zinc thresholds based on BSI (2015) *Specification for Topsoil and Requirements for Use.* BS 3882:2015. Based on pH values 6-7

B. Limit for phytotoxic effect for boron stated. Based on Nable, Banuelos and Paull (1997). *Boron Toxicity.* Plant and Soil, Volume 193, pp. 181-198.

Table A: Soil Data Assessment - Potential Risks to Buried Water Supply Pipes

Materials Tested:	Existing ground materials (Made Ground)								
Test Group	**Testing Required**	**PE Threshold**	**Metal Pipes / Barrier Pipes**	**Laboratory Limit of Detection**	**Units**	**Testing Accredited**	**Max. Concentration at Proposed Pipe Depth**	**Maximum Site Concentration**	**Locations and Depths of Exceedances**
Total VOCs	Where Preliminary Risk Assessment has identified land potentially affected by contamination	0.5	Pass	-	mg/kg	-	-	-	-
Total BTEX & MTBE		0.1	Pass	0.025	mg/kg	MCERTS	<0.025	<0.025	N/A
Total SVOCs (excluding PAHs and those substances marked with *)		2	Pass	-	mg/kg	-	-	-	-
EC5-EC10 aliphatic and aromatic hydrocarbons		2	Pass	0.16	mg/kg	None	<0.16	<0.16	N/A
EC10-EC16 aliphatic and aromatic hydrocarbons		10	Pass	4	mg/kg	MCERTS	49.4	72.5	See Note 2
EC16-EC40 aliphatic and aromatic hydrocarbons		500	Pass	36	mg/kg	MCERTS	311	1342	BH1004 (0.2m), TP1010 (2.0m), WS1002 (1.5m)
Phenols* (from SVOC analysis) (Note 3)		2	Pass	1	mg/kg	MCERTS	<1	<1	N/A
Cresols and chlorinated phenols* (from SVOC analysis)		2	Pass	-	mg/kg	-	-	-	-
Ethers*	Only where identified	0.5	Pass	-	mg/kg	-	-	-	-
Nitrobenzene*		0.5	Pass	-	mg/kg	-	-	-	-
Ketones*		0.5	Pass	-	mg/kg	-	-	-	-
Aldehydes*		0.5	Pass	-	mg/kg	-	-	-	-
Amines		Fail	Pass	-	mg/kg	-	-	-	-
Corrosive	Conductivity, Redox & pH	Pass	See Note 1	N/A	Various	MCERTS	pH 8 to 11.2	pH '7.5 to 12.1	-

Notes:

Test Groups in accordance with Appendix G of UKWIR Guidance.

Water pipes are normally laid at 0.75m to 1.35m below finished ground level.

Presence of liquid phase free product in soil or groundwater to be noted.

Note 1 - for wrapped steel, corrosive if pH is less than 7 and conductivity is greater than 400µS/cm. For wrapped ductile iron, corrosive if pH is less than 5, Eh is not neutral and conductivity is greater than 400µS/cm. For copper, corrosive if pH is less than 5 and Eh is positive.

Appendix G

HazWaste Online Classification Reports

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

ZR78W-WM2KU-BA0I2

Job name

24-78198_HWOL_Results

Description/Comments

i2 Analytical Report 24-78198

Project

51001/03

Site

Mayfield Phase 1B

Classified by

Name:
Kirsty Poore
Date:
21 Feb 2024 12:40 GMT
Telephone:
07983 740199

Company:
Civic Earth Limited
77 Dale Street
Manchester
M12HG

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	05 Oct 2023

Next 3 year Refresher due by Oct 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Land off Baring Street **Post Code** M12 6HW

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Redevelopment of former industrial site into residential-led development.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of soils during site investigation.

Description of the waste

Made Ground comprising predominantly clayey sandy gravel (brick and concrete).

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH1004-1-10012024-0.20	0.20m	Hazardous	HP 7, HP 11	3
2	BH1004-6-10012024-1.00	1.00m	Non Hazardous		7
3	BH1004-10-10012024-2.00	2.00m	Non Hazardous		10
4	BH1004-14-10012024-3.00	3.00m	Non Hazardous		13
5	BH1005-3-10012024-0.50	0.50m	Non Hazardous		16
6	BH1005-9-10012024-2.00	2.00m	Non Hazardous		19

Related documents

#	Name	Description
1	24-78198_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Civic Earth Soil Suite 3 Waste Stream - i2	waste stream template used to create this Job

Report

Created by: Kirsty Poore

Created date: 21 Feb 2024 12:40 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	22
Appendix B: Rationale for selection of metal species	23
Appendix C: Version	24

Classification of sample: BH1004-1-10012024-0.20

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
BH1004-1-10012024-0.20
Sample Depth:
0.20m m
Moisture content:
3.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.103%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.103%)

Determinands

Moisture content: 3.4% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		pH			PH		12.1	pH		12.1	pH	12.1 pH		
2		pH: acid/alkali reserve			ACID_ALK_RES		0.807	gNaOH		0.807	gNaOH	0.807 gNaOH		
3		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		**<LOD**
4		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
5		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4.6	mg/kg	1.197	5.319	mg/kg	0.000532 %	✓	
6		arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		7.3	mg/kg	1.534	10.817	mg/kg	0.00108 %	✓	
7		barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		120	mg/kg	1.623	188.193	mg/kg	0.0188 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
8		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.69	mg/kg	2.775	1.85	mg/kg	0.000185 %	✓	
9		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5	mg/kg	3.22	1.555	mg/kg	0.000156 %	✓	
10		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
11		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
12		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
13		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		36	mg/kg	1.126	39.154	mg/kg	0.00392 %	✓	
14		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	120	mg/kg		115.92	mg/kg	0.0116 %	✓	
15		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
16		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		14	mg/kg	2.637	35.659	mg/kg	0.00357 %	✓	
17		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
18		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		19	mg/kg	1.785	32.765	mg/kg	0.00328 %	✓	
19		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		60	mg/kg	2.085	120.819	mg/kg	0.0121 %	✓	
20		TPH (C6 to C40) petroleum group			TPH		1070	mg/kg		1033.62	mg/kg	0.103 %	✓	
21		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
25		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29		phenanthrene		201-581-5	85-01-8		0.27	mg/kg		0.261	mg/kg	0.0000261 %	✓	
30		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31		fluoranthene		205-912-4	206-44-0		0.43	mg/kg		0.415	mg/kg	0.0000415 %	✓	
32		pyrene		204-927-3	129-00-0		0.39	mg/kg		0.377	mg/kg	0.0000377 %	✓	
33		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.22	mg/kg		0.213	mg/kg	0.0000213 %	✓	
34		chrysene	601-048-00-0	205-923-4	218-01-9		0.23	mg/kg		0.222	mg/kg	0.0000222 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
35		benzo[b]fluoranthene				0.3	mg/kg		0.29	mg/kg	0.000029 %	✓	
		601-034-00-4	205-911-9	205-99-2									
36		benzo[k]fluoranthene				0.11	mg/kg		0.106	mg/kg	0.0000106 %	✓	
		601-036-00-5	205-916-6	207-08-9									
37		benzo[a]pyrene; benzo[def]chrysene				0.22	mg/kg		0.213	mg/kg	0.0000213 %	✓	
		601-032-00-3	200-028-5	50-32-8									
38	●	indeno[123-cd]pyrene				0.12	mg/kg		0.116	mg/kg	0.0000116 %	✓	
			205-893-2	193-39-5									
39		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
40	●	benzo[ghi]perylene				0.15	mg/kg		0.145	mg/kg	0.0000145 %	✓	
			205-883-8	191-24-2									
41	●	coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-881-7	191-07-1									
42		asbestos				<			<		<		**ND**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
43		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
										Total:	0.162 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.103%)

HP 4: Irritant - skin irritation and eye damage "waste which on application can cause skin irritation or damage to the eye"
Force this Hazardous property to non hazardous because There are concrete fragments in the soil which when tested, generated pH results above 11.5. An acid alkali reserve test indicated that the pH is a weak pH (i.e. not well buffered) and the waste therefore may not be irritant or corrosive. The raised pH is caused by the presence of calcium hydroxide exposed during the sample preparation process. Natural carbonation would negate the raised pH after about 24 hours. Apart from the concrete, there are no other substances in the waste that could generate a high pH. Concrete is a mirror non-hazardous entry in the List of Waste: 17 01 01. Conclusion: The waste is strictly a mixed waste and the concrete component, coded 17 01 01 does not make the waste hazardous.

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 12.1 pH)

HP 8: Corrosive "waste which on application can cause skin corrosion"
Force this Hazardous property to non hazardous because There are concrete fragments in the soil which when tested, generated pH results above 11.5. An acid alkali reserve test indicated that the pH is a weak pH (i.e. not well buffered) and the waste therefore may not be irritant or corrosive. The raised pH is caused by the presence of calcium hydroxide exposed during the sample preparation process. Natural carbonation would negate the raised pH after about 24 hours. Apart from the concrete, there are no other substances in the waste that could generate a high pH. Concrete is a mirror non-hazardous entry in the List of Waste: 17 01 01. Conclusion: The waste is strictly a mixed waste and the concrete component, coded 17 01 01 does not make the waste hazardous.

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 12.1 pH)

Classification of sample: BH1004-6-10012024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1004-6-10012024-1.00
Sample Depth:
1.00m m
Moisture content:
10%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.2 pH		9.2 pH	9.2 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<**LOD**
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		17 mg/kg	1.534	23.468 mg/kg	0.00235 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		92 mg/kg	1.623	134.424 mg/kg	0.0134 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.91 mg/kg	2.775	2.273 mg/kg	0.000227 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.8 mg/kg	3.22	2.318 mg/kg	0.000232 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18 mg/kg	1.462	26.308 mg/kg	0.00263 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		62 mg/kg	1.126	62.825 mg/kg	0.00628 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	280 mg/kg		252 mg/kg	0.0252 %	✓	
14	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.3 mg/kg	1.353	1.584 mg/kg	0.000158 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		20	mg/kg	2.637	47.46	mg/kg	0.00475 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1.3	mg/kg	2.554	2.988	mg/kg	0.000299 %	✓	
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		24	mg/kg	1.785	38.56	mg/kg	0.00386 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		83	mg/kg	2.085	155.714	mg/kg	0.0156 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		44	mg/kg		39.6	mg/kg	0.00396 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.06	mg/kg		0.054	mg/kg	0.0000054 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
26		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
27		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
28		phenanthrene		201-581-5	85-01-8		0.16	mg/kg		0.144	mg/kg	0.0000144 %	✓	
29		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
30		fluoranthene		205-912-4	206-44-0		0.18	mg/kg		0.162	mg/kg	0.0000162 %	✓	
31		pyrene		204-927-3	129-00-0		0.2	mg/kg		0.18	mg/kg	0.000018 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.11	mg/kg		0.099	mg/kg	0.0000099 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.11	mg/kg		0.099	mg/kg	0.0000099 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.13	mg/kg		0.117	mg/kg	0.0000117 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.11	mg/kg		0.099	mg/kg	0.0000099 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
39		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6		<			<		<		**ND**

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0799 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00396%)

Classification of sample: BH1004-10-10012024-2.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1004-10-10012024-2.00
Sample Depth:
2.00m m
Moisture content:
9.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.4% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.2 pH		9.2 pH	9.2 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3.2 mg/kg	1.197	3.471 mg/kg	0.000347 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		17 mg/kg	1.534	23.625 mg/kg	0.00236 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		52 mg/kg	1.623	76.485 mg/kg	0.00765 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.48 mg/kg	2.775	1.207 mg/kg	0.000121 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.3 mg/kg	3.22	0.875 mg/kg	0.0000875 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25 mg/kg	1.462	36.539 mg/kg	0.00365 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		19 mg/kg	1.126	19.381 mg/kg	0.00194 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	40 mg/kg		36.24 mg/kg	0.00362 %	✓	
14	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		nickel { nickel sulfate }				18	mg/kg	2.637	42.999	mg/kg	0.0043 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				26	mg/kg	1.785	42.052	mg/kg	0.00421 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				50	mg/kg	2.085	94.429	mg/kg	0.00944 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				12	mg/kg		10.872	mg/kg	0.00109 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
26		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
27		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
28		phenanthrene				0.06	mg/kg		0.0544	mg/kg	0.00000544 %	✓	
			201-581-5	85-01-8									
29		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
30		fluoranthene				0.05	mg/kg		0.0453	mg/kg	0.00000453 %	✓	
			205-912-4	206-44-0									
31		pyrene				0.06	mg/kg		0.0544	mg/kg	0.00000544 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0399 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00109%)

Classification of sample: BH1004-14-10012024-3.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1004-14-10012024-3.00
Sample Depth:
3.00m m
Moisture content:
15%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.5	pH		8.5	pH	8.5 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1	mg/kg	1.197	<1.197	mg/kg	<0.00012 %		<**LOD**
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		5.8	mg/kg	1.534	7.562	mg/kg	0.000756 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		100	mg/kg	1.623	137.995	mg/kg	0.0138 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1	mg/kg	2.775	2.359	mg/kg	0.000236 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.7	mg/kg	3.22	1.916	mg/kg	0.000192 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27	mg/kg	1.462	39.462	mg/kg	0.00395 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25	mg/kg	1.126	23.925	mg/kg	0.00239 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	14	mg/kg		11.9	mg/kg	0.00119 %	✓	
14	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		33	mg/kg	2.637	73.959	mg/kg	0.0074 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		26	mg/kg	1.785	39.453	mg/kg	0.00395 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		61	mg/kg	2.085	108.082	mg/kg	0.0108 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		28	mg/kg		23.8	mg/kg	0.00238 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.36	mg/kg		0.306	mg/kg	0.0000306 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
26		acenaphthene		201-469-6	83-32-9		0.57	mg/kg		0.484	mg/kg	0.0000484 %	✓	
27		fluorene		201-695-5	86-73-7		0.46	mg/kg		0.391	mg/kg	0.0000391 %	✓	
28		phenanthrene		201-581-5	85-01-8		2.6	mg/kg		2.21	mg/kg	0.000221 %	✓	
29		anthracene		204-371-1	120-12-7		0.65	mg/kg		0.553	mg/kg	0.0000553 %	✓	
30		fluoranthene		205-912-4	206-44-0		1.9	mg/kg		1.615	mg/kg	0.000162 %	✓	
31		pyrene		204-927-3	129-00-0		1.6	mg/kg		1.36	mg/kg	0.000136 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.78	mg/kg		0.663	mg/kg	0.0000663 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.75	mg/kg		0.638	mg/kg	0.0000637 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.67	mg/kg		0.57	mg/kg	0.000057 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.25	mg/kg		0.213	mg/kg	0.0000212 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.52	mg/kg		0.442	mg/kg	0.0000442 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.24	mg/kg		0.204	mg/kg	0.0000204 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.07	mg/kg		0.0595	mg/kg	0.00000595 %	✓	
39		benzo[ghi]perylene		205-883-8	191-24-2		0.3	mg/kg		0.255	mg/kg	0.0000255 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
41		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
											Total:	0.0491 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00238%)

Classification of sample: BH1005-3-10012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1005-3-10012024-0.50
Sample Depth:
0.50m m
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		pH			PH		11.7	pH		11.7	pH	11.7 pH		
2		pH: acid/alkali reserve			ACID_ALK_RES		0.351	gNaOH		0.351	gNaOH	0.351 gNaOH		
3		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
5		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4.8	mg/kg	1.197	5.057	mg/kg	0.000506 %	✓	
6		arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		25	mg/kg	1.534	33.745	mg/kg	0.00337 %	✓	
7		barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		220	mg/kg	1.623	314.304	mg/kg	0.0314 %	✓	
8		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.85	mg/kg	2.775	2.076	mg/kg	0.000208 %	✓	
9		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1	mg/kg	3.22	2.833	mg/kg	0.000283 %	✓	
10		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
11		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<**LOD**
12		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26	mg/kg	1.462	38	mg/kg	0.0038 %		
13		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		68	mg/kg	1.126	67.373	mg/kg	0.00674 %	✓	
14		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	380	mg/kg		334.4	mg/kg	0.0334 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3	mg/kg	1.353	0.357	mg/kg	0.0000357 %	✓	
16		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		19	mg/kg	2.637	44.085	mg/kg	0.00441 %	✓	
17		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
18		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		28	mg/kg	1.785	43.987	mg/kg	0.0044 %	✓	
19		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		130	mg/kg	2.085	238.469	mg/kg	0.0238 %	✓	
20		TPH (C6 to C40) petroleum group			TPH		270	mg/kg		237.6	mg/kg	0.0238 %	✓	
21		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
22		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
23		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
24		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
25		naphthalene	601-052-00-2	202-049-5	91-20-3		2	mg/kg		1.76	mg/kg	0.000176 %	✓	
26		acenaphthylene		205-917-1	208-96-8		0.13	mg/kg		0.114	mg/kg	0.0000114 %	✓	
27		acenaphthene		201-469-6	83-32-9		3.8	mg/kg		3.344	mg/kg	0.000334 %	✓	
28		fluorene		201-695-5	86-73-7		2.8	mg/kg		2.464	mg/kg	0.000246 %	✓	
29		phenanthrene		201-581-5	85-01-8		22	mg/kg		19.36	mg/kg	0.00194 %	✓	
30		anthracene		204-371-1	120-12-7		5.4	mg/kg		4.752	mg/kg	0.000475 %	✓	
31		fluoranthene		205-912-4	206-44-0		26	mg/kg		22.88	mg/kg	0.00229 %	✓	
32		pyrene		204-927-3	129-00-0		23	mg/kg		20.24	mg/kg	0.00202 %	✓	
33		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		10	mg/kg		8.8	mg/kg	0.00088 %	✓	
34		chrysene	601-048-00-0	205-923-4	218-01-9		9.9	mg/kg		8.712	mg/kg	0.000871 %	✓	
35		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		10	mg/kg		8.8	mg/kg	0.00088 %	✓	
36		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		4.5	mg/kg		3.96	mg/kg	0.000396 %	✓	
37		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		9.3	mg/kg		8.184	mg/kg	0.000818 %	✓	
38		indeno[123-cd]pyrene		205-893-2	193-39-5		4.2	mg/kg		3.696	mg/kg	0.00037 %	✓	
39		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.97	mg/kg		0.854	mg/kg	0.0000854 %	✓	
40		benzo[ghi]perylene		205-883-8	191-24-2		5	mg/kg		4.4	mg/kg	0.00044 %	✓	
41		coronene		205-881-7	191-07-1		1.8	mg/kg		1.584	mg/kg	0.000158 %	✓	
42		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
								Total:	0.15 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		asbestos in identifiable pieces of suspected ACM				0.002 %		0.002 %	0.002 %		
				ACM_FRAG							
								Total:	0.002 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0238%)

HP 4: Irritant - skin irritation and eye damage "waste which on application can cause skin irritation or damage to the eye"
Force this Hazardous property to non hazardous because There are concrete fragments in the soil which when tested, generated pH results above 11.5. An acid alkali reserve test indicated that the pH is a weak pH (i.e. not well buffered) and the waste therefore may not be irritant or corrosive. The raised pH is caused by the presence of calcium hydroxide exposed during the sample preparation process. Natural carbonation would negate the raised pH after about 24 hours. Apart from the concrete, there are no other substances in the waste that could generate a high pH. Concrete is a mirror non-hazardous entry in the List of Waste: 17 01 01. Conclusion: The waste is strictly a mixed waste and the concrete component, coded 17 01 01 does not make the waste hazardous.

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.7 pH)

HP 8: Corrosive "waste which on application can cause skin corrosion"
Force this Hazardous property to non hazardous because There are concrete fragments in the soil which when tested, generated pH results above 11.5. An acid alkali reserve test indicated that the pH is a weak pH (i.e. not well buffered) and the waste therefore may not be irritant or corrosive. The raised pH is caused by the presence of calcium hydroxide exposed during the sample preparation process. Natural carbonation would negate the raised pH after about 24 hours. Apart from the concrete, there are no other substances in the waste that could generate a high pH. Concrete is a mirror non-hazardous entry in the List of Waste: 17 01 01. Conclusion: The waste is strictly a mixed waste and the concrete component, coded 17 01 01 does not make the waste hazardous.

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.7 pH)

Classification of sample: BH1005-9-10012024-2.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1005-9-10012024-2.00
Sample Depth:
2.00m m
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.4	pH		10.4	pH	10.4 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.8	mg/kg	1.197	2.95	mg/kg	0.000295 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		8.7	mg/kg	1.534	11.743	mg/kg	0.00117 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		130	mg/kg	1.623	185.725	mg/kg	0.0186 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.58	mg/kg	2.775	1.417	mg/kg	0.000142 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.8	mg/kg	3.22	2.267	mg/kg	0.000227 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	23.385	mg/kg	0.00234 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		36	mg/kg	1.126	35.668	mg/kg	0.00357 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	150	mg/kg		132	mg/kg	0.0132 %	✓	
14	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3	mg/kg	1.353	0.357	mg/kg	0.0000357 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		14	mg/kg	2.637	32.484	mg/kg	0.00325 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		19	mg/kg	1.785	29.848	mg/kg	0.00298 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		94	mg/kg	2.085	172.432	mg/kg	0.0172 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		350	mg/kg		308	mg/kg	0.0308 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.6	mg/kg		0.528	mg/kg	0.0000528 %	✓	
25		acenaphthylene		205-917-1	208-96-8		0.22	mg/kg		0.194	mg/kg	0.0000194 %	✓	
26		acenaphthene		201-469-6	83-32-9		7.2	mg/kg		6.336	mg/kg	0.000634 %	✓	
27		fluorene		201-695-5	86-73-7		5.7	mg/kg		5.016	mg/kg	0.000502 %	✓	
28		phenanthrene		201-581-5	85-01-8		32	mg/kg		28.16	mg/kg	0.00282 %	✓	
29		anthracene		204-371-1	120-12-7		8.6	mg/kg		7.568	mg/kg	0.000757 %	✓	
30		fluoranthene		205-912-4	206-44-0		37	mg/kg		32.56	mg/kg	0.00326 %	✓	
31		pyrene		204-927-3	129-00-0		31	mg/kg		27.28	mg/kg	0.00273 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		13	mg/kg		11.44	mg/kg	0.00114 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		11	mg/kg		9.68	mg/kg	0.000968 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		13	mg/kg		11.44	mg/kg	0.00114 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		4.2	mg/kg		3.696	mg/kg	0.00037 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		11	mg/kg		9.68	mg/kg	0.000968 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		5.1	mg/kg		4.488	mg/kg	0.000449 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		1.3	mg/kg		1.144	mg/kg	0.000114 %	✓	
39		benzo[ghi]perylene		205-883-8	191-24-2		5.3	mg/kg		4.664	mg/kg	0.000466 %	✓	
40		coronene		205-881-7	191-07-1		2.3	mg/kg		2.024	mg/kg	0.000202 %	✓	
41		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
											Total:	0.111 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		asbestos in identifiable pieces of suspected ACM		ACM_FRAG		0.002 %		0.002 %	0.002 %		
								Total:	0.002 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0308%)

Appendix A: Classifier defined and non GB MCL determinands

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **pH: acid/alkali reserve** (CAS Number: ACID_ALK_RES)

Description/Comments: Appendix C4; unit: grams of sodium hydroxide (equivalent) per 100g of substance required to adjust the pH to the appropriate value
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

coronene (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

Appendix B: Rationale for selection of metal species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide].

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

arsenic {arsenic pentoxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: arsenates, weed killers, metal adhesives, insecticides, fungicides, wood preservatives, coloured gases, printing and dyeing.

barium {barium diboron tetraoxide}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

chromium in chromium(VI) compounds {chromium(VI) oxide}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: copper refining, electroplating and rechargeable batteries. Worst case compounds in CLP not expected as either very soluble and/or compounds industrial useage not related to site history.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species.

zinc {zinc chloride}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

226P8-2V2TX-1G3QW

Job name

24-78200_HWOL_Results

Description/Comments

i2 Analytical Report 24-78200

Project

51001/03

Site

Mayfield Phase 1B

Classified by

Name:
Kirsty Poore
Date:
21 Feb 2024 12:42 GMT
Telephone:
07983 740199

Company:
Civic Earth Limited
77 Dale Street
Manchester
M12HG

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	05 Oct 2023

Next 3 year Refresher due by Oct 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Land off Baring Street **Post Code** M12 6HW

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Redevelopment of former industrial site into residential-led development.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of soils during site investigation.

Description of the waste

Made Ground comprising predominantly clayey sandy gravel (brick and concrete).

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP1001-4-10012024-0.50	0.50m	Non Hazardous		3
2	TP1002-1-10012024-0.15	0.15m	Non Hazardous		6
3	TP1005-4-10012024-0.50	0.50m	Non Hazardous		9
4	TP1005-10-10012024-1.50	1.50m	Non Hazardous		12
5	TP1008-7-10012024-1.00	1.00m	Non Hazardous		15
6	TP1010-10-10012024-2.00	2.00m	Hazardous	HP 7, HP 11	18

Related documents

#	Name	Description
1	24-78200_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Civic Earth Soil Suite 3 Waste Stream - i2	waste stream template used to create this Job

Report

Created by: Kirsty Poore

Created date: 21 Feb 2024 12:42 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	21
Appendix B: Rationale for selection of metal species	22
Appendix C: Version	23

Classification of sample: TP1001-4-10012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1001-4-10012024-0.50
Sample Depth:
0.50m m
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.2 pH		8.2 pH	8.2 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	4.214 mg/kg	0.000421 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		14 mg/kg	1.534	18.897 mg/kg	0.00189 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		350 mg/kg	1.623	500.03 mg/kg	0.05 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.2 mg/kg	2.775	2.931 mg/kg	0.000293 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	1.983 mg/kg	0.000198 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		46 mg/kg	1.126	45.576 mg/kg	0.00456 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	130 mg/kg		114.4 mg/kg	0.0114 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				0.3	mg/kg	1.353	0.357	mg/kg	0.0000357 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				26	mg/kg	2.637	60.327	mg/kg	0.00603 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				33	mg/kg	1.785	51.842	mg/kg	0.00518 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				130	mg/kg	2.085	238.469	mg/kg	0.0238 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				125	mg/kg		110	mg/kg	0.011 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.41	mg/kg		0.361	mg/kg	0.0000361 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.1	mg/kg		0.088	mg/kg	0.0000088 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				2.9	mg/kg		2.552	mg/kg	0.000255 %	✓	
			201-469-6	83-32-9									
27		fluorene				1.5	mg/kg		1.32	mg/kg	0.000132 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				17	mg/kg		14.96	mg/kg	0.0015 %	✓	
			201-581-5	85-01-8									
29		anthracene				3.1	mg/kg		2.728	mg/kg	0.000273 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				21	mg/kg		18.48	mg/kg	0.00185 %	✓	
			205-912-4	206-44-0									
31		pyrene				20	mg/kg		17.6	mg/kg	0.00176 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				7.9	mg/kg		6.952	mg/kg	0.000695 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				8.3	mg/kg		7.304	mg/kg	0.00073 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				9	mg/kg		7.92	mg/kg	0.000792 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				3.2	mg/kg		2.816	mg/kg	0.000282 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				7.8	mg/kg		6.864	mg/kg	0.000686 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				3.7	mg/kg		3.256	mg/kg	0.000326 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.86	mg/kg		0.757	mg/kg	0.0000757 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				4.6	mg/kg		4.048	mg/kg	0.000405 %	✓	
			205-883-8	191-24-2									
40		coronene				1.6	mg/kg		1.408	mg/kg	0.000141 %	✓	
			205-881-7	191-07-1									
41		asbestos				<			<		<		**ND**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
								Total:	0.129 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.011%)

Classification of sample: TP1002-1-10012024-0.15

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1002-1-10012024-0.15
Sample Depth:
0.15m m
Moisture content:
14%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		pH			PH		10.3	pH		10.3	pH	10.3 pH		
2		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
4		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4.2	mg/kg	1.197	4.324	mg/kg	0.000432 %	✓	
5		arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		14	mg/kg	1.534	18.468	mg/kg	0.00185 %	✓	
6		barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		670	mg/kg	1.623	935.445	mg/kg	0.0935 %	✓	
7		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.2	mg/kg	2.775	2.864	mg/kg	0.000286 %	✓	
8		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.4	mg/kg	3.22	1.108	mg/kg	0.000111 %	✓	
9		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
10		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<**LOD**
11		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17	mg/kg	1.462	24.846	mg/kg	0.00248 %		
12		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		44	mg/kg	1.126	42.604	mg/kg	0.00426 %	✓	
13		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	460	mg/kg		395.6	mg/kg	0.0396 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		15	mg/kg	2.637	34.013	mg/kg	0.0034 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		26	mg/kg	1.785	39.917	mg/kg	0.00399 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		140	mg/kg	2.085	250.976	mg/kg	0.0251 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.13	mg/kg		0.112	mg/kg	0.0000112 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28		phenanthrene		201-581-5	85-01-8		0.33	mg/kg		0.284	mg/kg	0.0000284 %	✓	
29		anthracene		204-371-1	120-12-7		0.07	mg/kg		0.0602	mg/kg	0.00000602 %	✓	
30		fluoranthene		205-912-4	206-44-0		0.53	mg/kg		0.456	mg/kg	0.0000456 %	✓	
31		pyrene		204-927-3	129-00-0		0.55	mg/kg		0.473	mg/kg	0.0000473 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.28	mg/kg		0.241	mg/kg	0.0000241 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.31	mg/kg		0.267	mg/kg	0.0000267 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.35	mg/kg		0.301	mg/kg	0.0000301 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.15	mg/kg		0.129	mg/kg	0.0000129 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.27	mg/kg		0.232	mg/kg	0.0000232 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.15	mg/kg		0.129	mg/kg	0.0000129 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		0.18	mg/kg		0.155	mg/kg	0.0000155 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5		<			<		<		ND

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.178 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP1005-4-10012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1005-4-10012024-0.50
Sample Depth:
0.50m m
Moisture content:
10%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9 pH		9 pH	9pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<**LOD**
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		4.5 mg/kg	1.534	6.212 mg/kg	0.000621 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		72 mg/kg	1.623	105.201 mg/kg	0.0105 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1 mg/kg	2.775	2.498 mg/kg	0.00025 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.7 mg/kg	3.22	4.926 mg/kg	0.000493 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26 mg/kg	1.462	38 mg/kg	0.0038 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25 mg/kg	1.126	25.332 mg/kg	0.00253 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	11 mg/kg		9.9 mg/kg	0.00099 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		25	mg/kg	2.637	59.325	mg/kg	0.00593 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		19	mg/kg	1.785	30.527	mg/kg	0.00305 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		64	mg/kg	2.085	120.068	mg/kg	0.012 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<**LOD**
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.08	mg/kg		0.072	mg/kg	0.0000072 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
26		acenaphthene		201-469-6	83-32-9		0.08	mg/kg		0.072	mg/kg	0.0000072 %	✓	
27		fluorene		201-695-5	86-73-7		0.07	mg/kg		0.063	mg/kg	0.0000063 %	✓	
28		phenanthrene		201-581-5	85-01-8		0.42	mg/kg		0.378	mg/kg	0.0000378 %	✓	
29		anthracene		204-371-1	120-12-7		0.1	mg/kg		0.09	mg/kg	0.000009 %	✓	
30		fluoranthene		205-912-4	206-44-0		0.5	mg/kg		0.45	mg/kg	0.000045 %	✓	
31		pyrene		204-927-3	129-00-0		0.45	mg/kg		0.405	mg/kg	0.0000405 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.25	mg/kg		0.225	mg/kg	0.0000225 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.24	mg/kg		0.216	mg/kg	0.0000216 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.21	mg/kg		0.189	mg/kg	0.0000189 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.12	mg/kg		0.108	mg/kg	0.0000108 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.18	mg/kg		0.162	mg/kg	0.0000162 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.09	mg/kg		0.081	mg/kg	0.0000081 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
39		benzo[ghi]perylene		205-883-8	191-24-2		0.11	mg/kg		0.099	mg/kg	0.0000099 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5		<			<		<		**ND**

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
								Total:	0.0436 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP1005-10-10012024-1.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1005-10-10012024-1.50
Sample Depth:
1.50m m
Moisture content:
7.9%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.9% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.9 pH		7.9 pH	7.9 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		4.8 mg/kg	1.534	6.781 mg/kg	0.000678 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		110 mg/kg	1.623	164.474 mg/kg	0.0164 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.78 mg/kg	2.775	1.994 mg/kg	0.000199 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.5 mg/kg	3.22	4.448 mg/kg	0.000445 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	23.385 mg/kg	0.00234 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		13 mg/kg	1.126	13.48 mg/kg	0.00135 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	6.9 mg/kg		6.355 mg/kg	0.000635 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		17	mg/kg	2.637	41.283	mg/kg	0.00413 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		14	mg/kg	1.785	23.018	mg/kg	0.0023 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		33	mg/kg	2.085	63.355	mg/kg	0.00634 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.07	mg/kg		0.0645	mg/kg	0.00000645 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28		phenanthrene		201-581-5	85-01-8		0.09	mg/kg		0.0829	mg/kg	0.00000829 %	✓	
29		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30		fluoranthene		205-912-4	206-44-0		0.11	mg/kg		0.101	mg/kg	0.0000101 %	✓	
31		pyrene		204-927-3	129-00-0		0.1	mg/kg		0.0921	mg/kg	0.00000921 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
33		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
37		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
								Total:	0.0381 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP1008-7-10012024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1008-7-10012024-1.00
Sample Depth:
1.00m m
Moisture content:
14%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.6 pH		8.6 pH	8.6 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3.4 mg/kg	1.197	3.5 mg/kg	0.00035 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		25 mg/kg	1.534	32.978 mg/kg	0.0033 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		180 mg/kg	1.623	251.314 mg/kg	0.0251 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.5 mg/kg	2.775	3.58 mg/kg	0.000358 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6 mg/kg	3.22	1.661 mg/kg	0.000166 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22 mg/kg	1.462	32.154 mg/kg	0.00322 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		110 mg/kg	1.126	106.509 mg/kg	0.0107 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	170 mg/kg		146.2 mg/kg	0.0146 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				0.3	mg/kg	1.353	0.349	mg/kg	0.0000349 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				31	mg/kg	2.637	70.294	mg/kg	0.00703 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				37	mg/kg	1.785	56.805	mg/kg	0.00568 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				140	mg/kg	2.085	250.976	mg/kg	0.0251 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				336	mg/kg		288.96	mg/kg	0.0289 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				3.8	mg/kg		3.268	mg/kg	0.000327 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.89	mg/kg		0.765	mg/kg	0.0000765 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				4.7	mg/kg		4.042	mg/kg	0.000404 %	✓	
			201-469-6	83-32-9									
27		fluorene				4.8	mg/kg		4.128	mg/kg	0.000413 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				32	mg/kg		27.52	mg/kg	0.00275 %	✓	
			201-581-5	85-01-8									
29		anthracene				7.3	mg/kg		6.278	mg/kg	0.000628 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				32	mg/kg		27.52	mg/kg	0.00275 %	✓	
			205-912-4	206-44-0									
31		pyrene				31	mg/kg		26.66	mg/kg	0.00267 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				14	mg/kg		12.04	mg/kg	0.0012 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				14	mg/kg		12.04	mg/kg	0.0012 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				15	mg/kg		12.9	mg/kg	0.00129 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				5.6	mg/kg		4.816	mg/kg	0.000482 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				13	mg/kg		11.18	mg/kg	0.00112 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				6	mg/kg		5.16	mg/kg	0.000516 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				1.5	mg/kg		1.29	mg/kg	0.000129 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				7.1	mg/kg		6.106	mg/kg	0.000611 %	✓	
			205-883-8	191-24-2									
40		coronene				2.5	mg/kg		2.15	mg/kg	0.000215 %	✓	
			205-881-7	191-07-1									
41		asbestos				<			<		<		**ND**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.142 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0289%)

Classification of sample: TP1010-10-10012024-2.00

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
TP1010-10-10012024-2.00
Sample Depth:
2.00m m
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.121%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.121%)

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.7 pH		8.7 pH	8.7 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.4 mg/kg	1.197	2.5 mg/kg	0.00025 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		9.2 mg/kg	1.534	12.277 mg/kg	0.00123 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		140 mg/kg	1.623	197.739 mg/kg	0.0198 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1 mg/kg	2.775	2.656 mg/kg	0.000266 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
8		boron { diboron trioxide }				1.4	mg/kg	3.22	3.922	mg/kg	0.000392 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
9		cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
		048-002-00-0	215-146-2	1306-19-0									
10		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
		024-017-00-8											
11		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19	mg/kg	1.462	27.77	mg/kg	0.00278 %		
			215-160-9	1308-38-9									
12		copper { dicopper oxide; copper (I) oxide }				56	mg/kg	1.126	54.853	mg/kg	0.00549 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
13		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	52	mg/kg		45.24	mg/kg	0.00452 %	✓	
		082-001-00-6											
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				22	mg/kg	2.637	50.466	mg/kg	0.00505 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				30	mg/kg	1.785	46.593	mg/kg	0.00466 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				130	mg/kg	2.085	235.759	mg/kg	0.0236 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				1390	mg/kg		1209.3	mg/kg	0.121 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				4.3	mg/kg		3.741	mg/kg	0.000374 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.76	mg/kg		0.661	mg/kg	0.0000661 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				9.2	mg/kg		8.004	mg/kg	0.0008 %	✓	
			201-469-6	83-32-9									
27		fluorene				6	mg/kg		5.22	mg/kg	0.000522 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				45	mg/kg		39.15	mg/kg	0.00392 %	✓	
			201-581-5	85-01-8									
29		anthracene				13	mg/kg		11.31	mg/kg	0.00113 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				78	mg/kg		67.86	mg/kg	0.00679 %	✓	
			205-912-4	206-44-0									
31		pyrene				72	mg/kg		62.64	mg/kg	0.00626 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				35	mg/kg		30.45	mg/kg	0.00305 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				39	mg/kg		33.93	mg/kg	0.00339 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				45	mg/kg		39.15	mg/kg	0.00392 %	✓	
		601-034-00-4	205-911-9	205-99-2									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
35		benzo[k]fluoranthene				15	mg/kg		13.05	mg/kg	0.00131 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				37	mg/kg		32.19	mg/kg	0.00322 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37	●	indeno[123-cd]pyrene				19	mg/kg		16.53	mg/kg	0.00165 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				4.9	mg/kg		4.263	mg/kg	0.000426 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39	●	benzo[ghi]perylene				22	mg/kg		19.14	mg/kg	0.00191 %	✓	
			205-883-8	191-24-2									
40	●	coronene				8.6	mg/kg		7.482	mg/kg	0.000748 %	✓	
			205-881-7	191-07-1									
41		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
										Total:	0.229 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.121%)

Appendix A: Classifier defined and non GB MCL determinands

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

monohydric phenols (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

Appendix B: Rationale for selection of metal species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide].

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

arsenic {arsenic pentoxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: arsenates, weed killers, metal adhesives, insecticides, fungicides, wood preservatives, coloured gases, printing and dyeing.

barium {barium diboron tetraoxide}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: copper refining, electroplating and rechargeable batteries. Worst case compounds in CLP not expected as either very soluble and/or compounds industrial useage not related to site history.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species.

zinc {zinc chloride}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

FD9EV-2LWIC-P20KP

Job name

24-78201_HWOL_Results

Description/Comments

i2 Analytical Report 24-78201

Project

51001/03

Site

Mayfield Phase 1B

Classified by

Name:
Kirsty Poore
Date:
21 Feb 2024 12:46 GMT
Telephone:
07983 740199

Company:
Civic Earth Limited
77 Dale Street
Manchester
M12HG

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	05 Oct 2023

Next 3 year Refresher due by Oct 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Land off Baring Street **Post Code** M12 6HW

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Redevelopment of former industrial site into residential-led development.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of soils during site investigation.

Description of the waste

Made Ground comprising predominantly clayey sandy gravel (brick and concrete).

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP1003-4-11012024-0.50	0.50m	Non Hazardous		3
2	TP1004-4-11012024-0.50	0.50m	Non Hazardous		6
3	TP1006-7-11012024-1.00	1.00m	Non Hazardous		9
4	TP1007-10-11012024-2.00	2.00m	Non Hazardous		12
5	TP1007-13-11012024-3.00	3.00m	Non Hazardous		15
6	TP1009-10-11012024-2.00	2.00m	Non Hazardous		18
7	TP1009-13-11012024-3.00	3.00m	Non Hazardous		21
8	TP1011-7-11012024-1.00	1.00m	Non Hazardous		24
9	TP1012-4-11012024-0.50	0.50m	Non Hazardous		27

Related documents

#	Name	Description
1	24-78201_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Civic Earth Soil Suite 3 Waste Stream - i2	waste stream template used to create this Job

Report

Created by: Kirsty Poore

Created date: 21 Feb 2024 12:46 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	30
Appendix B: Rationale for selection of metal species	31
Appendix C: Version	32

Classification of sample: TP1003-4-11012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1003-4-11012024-0.50
Sample Depth:
0.50m m
Moisture content:
8.1%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.1% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.1 pH		10.1 pH	10.1 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1.8 mg/kg	1.197	1.98 mg/kg	0.000198 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		16 mg/kg	1.534	22.554 mg/kg	0.00226 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		210 mg/kg	1.623	313.314 mg/kg	0.0313 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.51 mg/kg	2.775	1.301 mg/kg	0.00013 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.8 mg/kg	3.22	2.367 mg/kg	0.000237 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	23.385 mg/kg	0.00234 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		30 mg/kg	1.126	31.041 mg/kg	0.0031 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	57 mg/kg		52.383 mg/kg	0.00524 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				11	mg/kg	2.637	26.654	mg/kg	0.00267 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				21	mg/kg	1.785	34.452	mg/kg	0.00345 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				62	mg/kg	2.085	118.772	mg/kg	0.0119 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				490	mg/kg		450.31	mg/kg	0.045 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.38	mg/kg		0.349	mg/kg	0.0000349 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.06	mg/kg		0.0551	mg/kg	0.00000551 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				0.08	mg/kg		0.0735	mg/kg	0.00000735 %	✓	
			201-469-6	83-32-9									
27		fluorene				0.1	mg/kg		0.0919	mg/kg	0.00000919 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				0.77	mg/kg		0.708	mg/kg	0.0000708 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.16	mg/kg		0.147	mg/kg	0.0000147 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				0.9	mg/kg		0.827	mg/kg	0.0000827 %	✓	
			205-912-4	206-44-0									
31		pyrene				0.93	mg/kg		0.855	mg/kg	0.0000855 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				0.4	mg/kg		0.368	mg/kg	0.0000368 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				0.52	mg/kg		0.478	mg/kg	0.0000478 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				0.57	mg/kg		0.524	mg/kg	0.0000524 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				0.23	mg/kg		0.211	mg/kg	0.0000211 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				0.45	mg/kg		0.414	mg/kg	0.0000414 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				0.36	mg/kg		0.331	mg/kg	0.0000331 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				0.41	mg/kg		0.377	mg/kg	0.0000377 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
								Total:	0.109 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.045%)

Classification of sample: TP1004-4-11012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1004-4-11012024-0.50
Sample Depth:
0.50m m
Moisture content:
6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.8 pH		8.8 pH	8.8 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.251 mg/kg	0.000225 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		8.1 mg/kg	1.534	11.679 mg/kg	0.00117 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		1700 mg/kg	1.623	2594.309 mg/kg	0.259 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.45 mg/kg	2.775	1.174 mg/kg	0.000117 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.3 mg/kg	3.22	0.908 mg/kg	0.0000908 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.9 mg/kg	1.142	3.114 mg/kg	0.000311 %	✓	
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9.5 mg/kg	1.462	13.885 mg/kg	0.00139 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		26 mg/kg	1.126	27.517 mg/kg	0.00275 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	84 mg/kg		78.96 mg/kg	0.0079 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3	mg/kg	1.353	0.382	mg/kg	0.0000382 %	✓	
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		20	mg/kg	2.637	49.57	mg/kg	0.00496 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		13	mg/kg	1.785	21.815	mg/kg	0.00218 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		160	mg/kg	2.085	313.512	mg/kg	0.0314 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		68	mg/kg		63.92	mg/kg	0.00639 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.12	mg/kg		0.113	mg/kg	0.0000113 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		0.09	mg/kg		0.0846	mg/kg	0.00000846 %	✓	
27		fluorene		201-695-5	86-73-7		0.07	mg/kg		0.0658	mg/kg	0.00000658 %	✓	
28		phenanthrene		201-581-5	85-01-8		0.71	mg/kg		0.667	mg/kg	0.0000667 %	✓	
29		anthracene		204-371-1	120-12-7		0.13	mg/kg		0.122	mg/kg	0.0000122 %	✓	
30		fluoranthene		205-912-4	206-44-0		0.96	mg/kg		0.902	mg/kg	0.0000902 %	✓	
31		pyrene		204-927-3	129-00-0		0.91	mg/kg		0.855	mg/kg	0.0000855 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.46	mg/kg		0.432	mg/kg	0.0000432 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.5	mg/kg		0.47	mg/kg	0.000047 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.56	mg/kg		0.526	mg/kg	0.0000526 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.25	mg/kg		0.235	mg/kg	0.0000235 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.45	mg/kg		0.423	mg/kg	0.0000423 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.26	mg/kg		0.244	mg/kg	0.0000244 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		0.3	mg/kg		0.282	mg/kg	0.0000282 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5		<			<		<		ND

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.32 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00639%)

Classification of sample: TP1006-7-11012024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1006-7-11012024-1.00
Sample Depth:
1.00m m
Moisture content:
10%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		11.2 pH		11.2 pH	11.2 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4.9 mg/kg	1.197	5.279 mg/kg	0.000528 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		35 mg/kg	1.534	48.317 mg/kg	0.00483 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		210 mg/kg	1.623	306.836 mg/kg	0.0307 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.89 mg/kg	2.775	2.223 mg/kg	0.000222 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.9 mg/kg	3.22	5.506 mg/kg	0.000551 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		57 mg/kg	1.126	57.758 mg/kg	0.00578 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	180 mg/kg		162 mg/kg	0.0162 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				0.6	mg/kg	1.353	0.731	mg/kg	0.0000731 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				15	mg/kg	2.637	35.595	mg/kg	0.00356 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				21	mg/kg	1.785	33.74	mg/kg	0.00337 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				140	mg/kg	2.085	262.65	mg/kg	0.0263 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				310	mg/kg		279	mg/kg	0.0279 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				1.1	mg/kg		0.99	mg/kg	0.000099 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.16	mg/kg		0.144	mg/kg	0.0000144 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				1.1	mg/kg		0.99	mg/kg	0.000099 %	✓	
			201-469-6	83-32-9									
27		fluorene				0.99	mg/kg		0.891	mg/kg	0.0000891 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				7.3	mg/kg		6.57	mg/kg	0.000657 %	✓	
			201-581-5	85-01-8									
29		anthracene				1.6	mg/kg		1.44	mg/kg	0.000144 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				8.7	mg/kg		7.83	mg/kg	0.000783 %	✓	
			205-912-4	206-44-0									
31		pyrene				8	mg/kg		7.2	mg/kg	0.00072 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				3.9	mg/kg		3.51	mg/kg	0.000351 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				3.8	mg/kg		3.42	mg/kg	0.000342 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				4.2	mg/kg		3.78	mg/kg	0.000378 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				1.8	mg/kg		1.62	mg/kg	0.000162 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				3.6	mg/kg		3.24	mg/kg	0.000324 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				1.8	mg/kg		1.62	mg/kg	0.000162 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.51	mg/kg		0.459	mg/kg	0.0000459 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				2	mg/kg		1.8	mg/kg	0.00018 %	✓	
			205-883-8	191-24-2									
40		coronene				0.97	mg/kg		0.873	mg/kg	0.0000873 %	✓	
			205-881-7	191-07-1									
41		asbestos				<			<		<		**ND**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
								Total:	0.128 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0279%)

Classification of sample: TP1007-10-11012024-2.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1007-10-11012024-2.00
Sample Depth:
2.00m m
Moisture content:
43%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 43% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.8 pH		7.8 pH	7.8 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		3.6 mg/kg		2.052 mg/kg	0.000205 %	✓	
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4.4 mg/kg	1.197	3.002 mg/kg	0.0003 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		79 mg/kg	1.534	69.07 mg/kg	0.00691 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		140 mg/kg	1.623	129.553 mg/kg	0.013 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.9 mg/kg	2.775	3.006 mg/kg	0.000301 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.7 mg/kg	3.22	3.12 mg/kg	0.000312 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		47 mg/kg	1.462	68.693 mg/kg	0.00687 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		320 mg/kg	1.126	205.362 mg/kg	0.0205 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	520 mg/kg		296.4 mg/kg	0.0296 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		3	mg/kg	1.353	2.314	mg/kg	0.000231 %	✓	
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		50	mg/kg	2.637	75.146	mg/kg	0.00751 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		35	mg/kg	1.785	35.614	mg/kg	0.00356 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		140	mg/kg	2.085	166.345	mg/kg	0.0166 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		160	mg/kg		91.2	mg/kg	0.00912 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.12	mg/kg		0.0684	mg/kg	0.00000684 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		0.18	mg/kg		0.103	mg/kg	0.0000103 %	✓	
27		fluorene		201-695-5	86-73-7		0.4	mg/kg		0.228	mg/kg	0.0000228 %	✓	
28		phenanthrene		201-581-5	85-01-8		0.56	mg/kg		0.319	mg/kg	0.0000319 %	✓	
29		anthracene		204-371-1	120-12-7		0.48	mg/kg		0.274	mg/kg	0.0000274 %	✓	
30		fluoranthene		205-912-4	206-44-0		1.1	mg/kg		0.627	mg/kg	0.0000627 %	✓	
31		pyrene		204-927-3	129-00-0		1	mg/kg		0.57	mg/kg	0.000057 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.6	mg/kg		0.342	mg/kg	0.0000342 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.54	mg/kg		0.308	mg/kg	0.0000308 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.6	mg/kg		0.342	mg/kg	0.0000342 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.17	mg/kg		0.0969	mg/kg	0.00000969 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.31	mg/kg		0.177	mg/kg	0.0000177 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.22	mg/kg		0.125	mg/kg	0.0000125 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		0.28	mg/kg		0.16	mg/kg	0.000016 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5		<			<		<		ND

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene									
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.116 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00912%)

Classification of sample: TP1007-13-11012024-3.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1007-13-11012024-3.00
Sample Depth:
3.00m m
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.9 pH		7.9 pH	7.9 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.083 mg/kg	0.000208 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		5.1 mg/kg	1.534	6.806 mg/kg	0.000681 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		15 mg/kg	1.623	21.186 mg/kg	0.00212 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.22 mg/kg	2.775	0.531 mg/kg	0.0000531 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.3 mg/kg	3.22	0.84 mg/kg	0.000084 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		3.8 mg/kg	1.462	5.554 mg/kg	0.000555 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		5.3 mg/kg	1.126	5.191 mg/kg	0.000519 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	3.3 mg/kg		2.871 mg/kg	0.000287 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		3.4	mg/kg	2.637	7.799	mg/kg	0.00078 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		7.7	mg/kg	1.785	11.959	mg/kg	0.0012 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		10	mg/kg	2.085	18.135	mg/kg	0.00181 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
33		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
37		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
								Total:	0.0114 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP1009-10-11012024-2.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1009-10-11012024-2.00
Sample Depth:
2.00m m
Moisture content:
15%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.5 pH		7.5 pH	7.5 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.5 mg/kg	1.197	2.544 mg/kg	0.000254 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		2.7 mg/kg	1.534	3.52 mg/kg	0.000352 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		87 mg/kg	1.623	120.056 mg/kg	0.012 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.78 mg/kg	2.775	1.84 mg/kg	0.000184 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.8 mg/kg	3.22	2.19 mg/kg	0.000219 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24 mg/kg	1.462	35.077 mg/kg	0.00351 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9 mg/kg	1.126	8.613 mg/kg	0.000861 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	15 mg/kg		12.75 mg/kg	0.00128 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		18	mg/kg	2.637	40.341	mg/kg	0.00403 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		30	mg/kg	1.785	45.522	mg/kg	0.00455 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		54	mg/kg	2.085	95.68	mg/kg	0.00957 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		12	mg/kg		10.2	mg/kg	0.00102 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.19	mg/kg		0.161	mg/kg	0.0000161 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		fluorene		201-695-5	86-73-7		0.05	mg/kg		0.0425	mg/kg	0.00000425 %	✓	
28		phenanthrene		201-581-5	85-01-8		0.27	mg/kg		0.23	mg/kg	0.000023 %	✓	
29		anthracene		204-371-1	120-12-7		0.06	mg/kg		0.051	mg/kg	0.0000051 %	✓	
30		fluoranthene		205-912-4	206-44-0		0.15	mg/kg		0.128	mg/kg	0.0000128 %	✓	
31		pyrene		204-927-3	129-00-0		0.16	mg/kg		0.136	mg/kg	0.0000136 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.06	mg/kg		0.051	mg/kg	0.0000051 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.07	mg/kg		0.0595	mg/kg	0.00000595 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
37		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5		<			<		<		ND

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.039 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00102%)

Classification of sample: TP1009-13-11012024-3.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1009-13-11012024-3.00
Sample Depth:
3.00m m
Moisture content:
14%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.1 pH		8.1 pH	8.1 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.2 mg/kg	1.197	2.265 mg/kg	0.000226 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		8.1 mg/kg	1.534	10.685 mg/kg	0.00107 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		84 mg/kg	1.623	117.28 mg/kg	0.0117 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.9 mg/kg	2.775	2.148 mg/kg	0.000215 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.2 mg/kg	3.22	3.323 mg/kg	0.000332 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22 mg/kg	1.462	32.154 mg/kg	0.00322 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		22 mg/kg	1.126	21.302 mg/kg	0.00213 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	18 mg/kg		15.48 mg/kg	0.00155 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				25	mg/kg	2.637	56.689	mg/kg	0.00567 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				24	mg/kg	1.785	36.846	mg/kg	0.00368 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				59	mg/kg	2.085	105.769	mg/kg	0.0106 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				15	mg/kg		12.9	mg/kg	0.00129 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.15	mg/kg		0.129	mg/kg	0.0000129 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
26		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
27		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
28		phenanthrene				0.21	mg/kg		0.181	mg/kg	0.0000181 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.05	mg/kg		0.043	mg/kg	0.0000043 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				0.15	mg/kg		0.129	mg/kg	0.0000129 %	✓	
			205-912-4	206-44-0									
31		pyrene				0.15	mg/kg		0.129	mg/kg	0.0000129 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				0.06	mg/kg		0.0516	mg/kg	0.00000516 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				0.08	mg/kg		0.0688	mg/kg	0.00000688 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
								Total:	0.0428 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00129%)

Classification of sample: TP1011-7-11012024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1011-7-11012024-1.00
Sample Depth:
1.00m m
Moisture content:
8.9%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.9% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.4 pH		10.4 pH	10.4 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4.5 mg/kg	1.197	4.908 mg/kg	0.000491 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		31 mg/kg	1.534	43.318 mg/kg	0.00433 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		210 mg/kg	1.623	310.587 mg/kg	0.0311 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.82 mg/kg	2.775	2.073 mg/kg	0.000207 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1 mg/kg	3.22	2.933 mg/kg	0.000293 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		51 mg/kg	1.126	52.31 mg/kg	0.00523 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	150 mg/kg		136.65 mg/kg	0.0137 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.5	mg/kg	1.353	0.617	mg/kg	0.0000617 %	✓	
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		16	mg/kg	2.637	38.432	mg/kg	0.00384 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		20	mg/kg	1.785	32.526	mg/kg	0.00325 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		130	mg/kg	2.085	246.87	mg/kg	0.0247 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		220	mg/kg		200.42	mg/kg	0.02 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.94	mg/kg		0.856	mg/kg	0.0000856 %	✓	
25		acenaphthylene		205-917-1	208-96-8		0.15	mg/kg		0.137	mg/kg	0.0000137 %	✓	
26		acenaphthene		201-469-6	83-32-9		1.3	mg/kg		1.184	mg/kg	0.000118 %	✓	
27		fluorene		201-695-5	86-73-7		0.88	mg/kg		0.802	mg/kg	0.0000802 %	✓	
28		phenanthrene		201-581-5	85-01-8		8.2	mg/kg		7.47	mg/kg	0.000747 %	✓	
29		anthracene		204-371-1	120-12-7		1.6	mg/kg		1.458	mg/kg	0.000146 %	✓	
30		fluoranthene		205-912-4	206-44-0		8.4	mg/kg		7.652	mg/kg	0.000765 %	✓	
31		pyrene		204-927-3	129-00-0		7.8	mg/kg		7.106	mg/kg	0.000711 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		3.6	mg/kg		3.28	mg/kg	0.000328 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		3.5	mg/kg		3.188	mg/kg	0.000319 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		3.7	mg/kg		3.371	mg/kg	0.000337 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.6	mg/kg		1.458	mg/kg	0.000146 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		3.1	mg/kg		2.824	mg/kg	0.000282 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		1.5	mg/kg		1.366	mg/kg	0.000137 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.42	mg/kg		0.383	mg/kg	0.0000383 %	✓	
39		benzo[ghi]perylene		205-883-8	191-24-2		1.8	mg/kg		1.64	mg/kg	0.000164 %	✓	
40		coronene		205-881-7	191-07-1		0.72	mg/kg		0.656	mg/kg	0.0000656 %	✓	
41		asbestos in identifiable pieces of suspected ACM			ACM_FRAG		<0.001	%		<0.001	%	<0.001 %		<**LOD**

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.116 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.02%)

Classification of sample: TP1012-4-11012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP1012-4-11012024-0.50
Sample Depth:
0.50m m
Moisture content:
14%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.6 pH		8.6 pH	8.6 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	4.118 mg/kg	0.000412 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		27 mg/kg	1.534	35.617 mg/kg	0.00356 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		110 mg/kg	1.623	153.58 mg/kg	0.0154 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.94 mg/kg	2.775	2.244 mg/kg	0.000224 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6 mg/kg	3.22	1.661 mg/kg	0.000166 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		59 mg/kg	1.126	57.128 mg/kg	0.00571 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	140 mg/kg		120.4 mg/kg	0.012 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				0.4	mg/kg	1.353	0.466	mg/kg	0.0000466 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				17	mg/kg	2.637	38.548	mg/kg	0.00385 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				21	mg/kg	1.785	32.24	mg/kg	0.00322 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				90	mg/kg	2.085	161.342	mg/kg	0.0161 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				260	mg/kg		223.6	mg/kg	0.0224 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.59	mg/kg		0.507	mg/kg	0.0000507 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.16	mg/kg		0.138	mg/kg	0.0000138 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				0.45	mg/kg		0.387	mg/kg	0.0000387 %	✓	
			201-469-6	83-32-9									
27		fluorene				0.39	mg/kg		0.335	mg/kg	0.0000335 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				3.1	mg/kg		2.666	mg/kg	0.000267 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.74	mg/kg		0.636	mg/kg	0.0000636 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				5	mg/kg		4.3	mg/kg	0.00043 %	✓	
			205-912-4	206-44-0									
31		pyrene				4.9	mg/kg		4.214	mg/kg	0.000421 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				2.5	mg/kg		2.15	mg/kg	0.000215 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				2.2	mg/kg		1.892	mg/kg	0.000189 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				2.9	mg/kg		2.494	mg/kg	0.000249 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				0.87	mg/kg		0.748	mg/kg	0.0000748 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				2.3	mg/kg		1.978	mg/kg	0.000198 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				1.1	mg/kg		0.946	mg/kg	0.0000946 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.23	mg/kg		0.198	mg/kg	0.0000198 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				1.3	mg/kg		1.118	mg/kg	0.000112 %	✓	
			205-883-8	191-24-2									
40		coronene				0.56	mg/kg		0.482	mg/kg	0.0000482 %	✓	
			205-881-7	191-07-1									
41		asbestos				<			<		<		**ND**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0891 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0224%)

Appendix A: Classifier defined and non GB MCL determinands

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

- **asbestos in identifiable pieces of suspected ACM** (CAS Number: ACM_FRAG)

Description/Comments: Enter the concentration of asbestos relative to the suspected ACM not the whole waste
Data source: WM3 v1, Chapter 3.1
Data source date: 31 May 2015
Hazard Statements: Carc. 1A; H350 , STOT RE 1; H372

Appendix B: Rationale for selection of metal species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide].

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

arsenic {arsenic pentoxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: arsenates, weed killers, metal adhesives, insecticides, fungicides, wood preservatives, coloured gases, printing and dyeing.

barium {barium diboron tetraoxide}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: copper refining, electroplating and rechargeable batteries. Worst case compounds in CLP not expected as either very soluble and/or compounds industrial useage not related to site history.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species.

zinc {zinc chloride}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

V0GLU-OBZIS-YKIDG

Job name

24-78202_HWOL_Results

Description/Comments

i2 Analytical Report 24-78202

Project

51001/03

Site

Mayfield Phase 1B

Classified by

Name:
Kirsty Poore
Date:
21 Feb 2024 12:48 GMT
Telephone:
07983 740199

Company:
Civic Earth Limited
77 Dale Street
Manchester
M12HG

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	05 Oct 2023

Next 3 year Refresher due by Oct 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Land off Baring Street **Post Code** M12 6HW

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Redevelopment of former industrial site into residential-led development.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of soils during site investigation.

Description of the waste

Made Ground comprising predominantly clayey sandy gravel (brick and concrete).

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH1002-1-11012024-0.20	0.20m	Non Hazardous		3
2	BH1002-15-11012024-4.00	4.00m	Non Hazardous		6
3	BH1001-5-11012024-1.00	1.00m	Non Hazardous		9
4	BH1001-12-11012024-3.00	3.00m	Non Hazardous		12

Related documents

#	Name	Description
1	24-78202_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Civic Earth Soil Suite 3 Waste Stream - i2	waste stream template used to create this Job

Report

Created by: Kirsty Poore

Created date: 21 Feb 2024 12:48 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	15
Appendix B: Rationale for selection of metal species	16
Appendix C: Version	17

Classification of sample: BH1002-1-11012024-0.20

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1002-1-11012024-0.20
Sample Depth:
0.20m m
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.6 pH		9.6 pH	9.6 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		6.4 mg/kg	1.197	6.742 mg/kg	0.000674 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		41 mg/kg	1.534	55.342 mg/kg	0.00553 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		210 mg/kg	1.623	300.018 mg/kg	0.03 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.2 mg/kg	2.775	2.931 mg/kg	0.000293 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.6 mg/kg	3.22	4.534 mg/kg	0.000453 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21 mg/kg	1.462	30.693 mg/kg	0.00307 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		65 mg/kg	1.126	64.401 mg/kg	0.00644 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	260 mg/kg		228.8 mg/kg	0.0229 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				0.7	mg/kg	1.353	0.834	mg/kg	0.0000834 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				18	mg/kg	2.637	41.765	mg/kg	0.00418 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				25	mg/kg	1.785	39.274	mg/kg	0.00393 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				180	mg/kg	2.085	330.188	mg/kg	0.033 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				196	mg/kg		172.48	mg/kg	0.0172 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				1.2	mg/kg		1.056	mg/kg	0.000106 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.24	mg/kg		0.211	mg/kg	0.0000211 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				2.8	mg/kg		2.464	mg/kg	0.000246 %	✓	
			201-469-6	83-32-9									
27		fluorene				2.3	mg/kg		2.024	mg/kg	0.000202 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				16	mg/kg		14.08	mg/kg	0.00141 %	✓	
			201-581-5	85-01-8									
29		anthracene				3.8	mg/kg		3.344	mg/kg	0.000334 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				17	mg/kg		14.96	mg/kg	0.0015 %	✓	
			205-912-4	206-44-0									
31		pyrene				15	mg/kg		13.2	mg/kg	0.00132 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				7.2	mg/kg		6.336	mg/kg	0.000634 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				7.1	mg/kg		6.248	mg/kg	0.000625 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				7.9	mg/kg		6.952	mg/kg	0.000695 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				2.6	mg/kg		2.288	mg/kg	0.000229 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				6.5	mg/kg		5.72	mg/kg	0.000572 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				2.9	mg/kg		2.552	mg/kg	0.000255 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.72	mg/kg		0.634	mg/kg	0.0000634 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				3.5	mg/kg		3.08	mg/kg	0.000308 %	✓	
			205-883-8	191-24-2									
40		coronene				1.2	mg/kg		1.056	mg/kg	0.000106 %	✓	
			205-881-7	191-07-1									
41		asbestos				<			<		<		**ND**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
								Total:	0.137 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0172%)

Classification of sample: BH1002-15-11012024-4.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1002-15-11012024-4.00
Sample Depth:
4.00m m
Moisture content:
9.6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9 pH		9 pH	9pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		6.1 mg/kg	1.197	6.601 mg/kg	0.00066 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		17 mg/kg	1.534	23.573 mg/kg	0.00236 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		140 mg/kg	1.623	205.467 mg/kg	0.0205 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.49 mg/kg	2.775	1.229 mg/kg	0.000123 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6 mg/kg	3.22	1.746 mg/kg	0.000175 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12 mg/kg	1.462	17.539 mg/kg	0.00175 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		26 mg/kg	1.126	26.463 mg/kg	0.00265 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	64 mg/kg		57.856 mg/kg	0.00579 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		7	mg/kg	2.637	16.685	mg/kg	0.00167 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		12	mg/kg	1.785	19.366	mg/kg	0.00194 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		76	mg/kg	2.085	143.215	mg/kg	0.0143 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		16	mg/kg		14.464	mg/kg	0.00145 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.09	mg/kg		0.0814	mg/kg	0.00000814 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		0.23	mg/kg		0.208	mg/kg	0.0000208 %	✓	
27		fluorene		201-695-5	86-73-7		0.14	mg/kg		0.127	mg/kg	0.0000127 %	✓	
28		phenanthrene		201-581-5	85-01-8		1.3	mg/kg		1.175	mg/kg	0.000118 %	✓	
29		anthracene		204-371-1	120-12-7		0.27	mg/kg		0.244	mg/kg	0.0000244 %	✓	
30		fluoranthene		205-912-4	206-44-0		1.7	mg/kg		1.537	mg/kg	0.000154 %	✓	
31		pyrene		204-927-3	129-00-0		1.6	mg/kg		1.446	mg/kg	0.000145 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.76	mg/kg		0.687	mg/kg	0.0000687 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.79	mg/kg		0.714	mg/kg	0.0000714 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.87	mg/kg		0.786	mg/kg	0.0000786 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.35	mg/kg		0.316	mg/kg	0.0000316 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.77	mg/kg		0.696	mg/kg	0.0000696 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.38	mg/kg		0.344	mg/kg	0.0000344 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		0.39	mg/kg		0.353	mg/kg	0.0000353 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5		<			<		<		ND

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0553 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00145%)

Classification of sample: BH1001-5-11012024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1001-5-11012024-1.00
Sample Depth:
1.00m m
Moisture content:
14%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.4 pH		10.4 pH	10.4 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		9.7 mg/kg	1.534	12.796 mg/kg	0.00128 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		290 mg/kg	1.623	404.894 mg/kg	0.0405 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.74 mg/kg	2.775	1.766 mg/kg	0.000177 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		3.4 mg/kg	3.22	9.415 mg/kg	0.000941 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		39 mg/kg	1.126	37.762 mg/kg	0.00378 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	100 mg/kg		86 mg/kg	0.0086 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				33	mg/kg	2.637	74.829	mg/kg	0.00748 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				26	mg/kg	1.785	39.917	mg/kg	0.00399 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				96	mg/kg	2.085	172.098	mg/kg	0.0172 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				186	mg/kg		159.96	mg/kg	0.016 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.1	mg/kg		0.086	mg/kg	0.0000086 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.07	mg/kg		0.0602	mg/kg	0.00000602 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				0.25	mg/kg		0.215	mg/kg	0.0000215 %	✓	
			201-469-6	83-32-9									
27		fluorene				0.2	mg/kg		0.172	mg/kg	0.0000172 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				2.1	mg/kg		1.806	mg/kg	0.000181 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.56	mg/kg		0.482	mg/kg	0.0000482 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				3.4	mg/kg		2.924	mg/kg	0.000292 %	✓	
			205-912-4	206-44-0									
31		pyrene				3.6	mg/kg		3.096	mg/kg	0.00031 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				1.7	mg/kg		1.462	mg/kg	0.000146 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				1.8	mg/kg		1.548	mg/kg	0.000155 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				2.1	mg/kg		1.806	mg/kg	0.000181 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				0.7	mg/kg		0.602	mg/kg	0.0000602 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				1.9	mg/kg		1.634	mg/kg	0.000163 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				1.2	mg/kg		1.032	mg/kg	0.000103 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.39	mg/kg		0.335	mg/kg	0.0000335 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				1.9	mg/kg		1.634	mg/kg	0.000163 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-881-7	191-07-1									
41		asbestos				<			<		<		**ND**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.106 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.016%)

Classification of sample: BH1001-12-11012024-3.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1001-12-11012024-3.00
Sample Depth:
3.00m m
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.6 pH		9.6 pH	9.6 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1.6 mg/kg	1.197	1.686 mg/kg	0.000169 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		2.4 mg/kg	1.534	3.24 mg/kg	0.000324 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		64 mg/kg	1.623	91.434 mg/kg	0.00914 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.28 mg/kg	2.775	0.684 mg/kg	0.0000684 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6 mg/kg	3.22	1.7 mg/kg	0.00017 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6.4 mg/kg	1.462	9.354 mg/kg	0.000935 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7.8 mg/kg	1.126	7.728 mg/kg	0.000773 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	11 mg/kg		9.68 mg/kg	0.000968 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		5	mg/kg	2.637	11.601	mg/kg	0.00116 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		10	mg/kg	1.785	15.71	mg/kg	0.00157 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		15	mg/kg	2.085	27.516	mg/kg	0.00275 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28		phenanthrene		201-581-5	85-01-8		0.16	mg/kg		0.141	mg/kg	0.0000141 %	✓	
29		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30		fluoranthene		205-912-4	206-44-0		0.26	mg/kg		0.229	mg/kg	0.0000229 %	✓	
31		pyrene		204-927-3	129-00-0		0.26	mg/kg		0.229	mg/kg	0.0000229 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.11	mg/kg		0.0968	mg/kg	0.00000968 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.13	mg/kg		0.114	mg/kg	0.0000114 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.17	mg/kg		0.15	mg/kg	0.000015 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.07	mg/kg		0.0616	mg/kg	0.00000616 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.12	mg/kg		0.106	mg/kg	0.0000106 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.08	mg/kg		0.0704	mg/kg	0.00000704 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		0.09	mg/kg		0.0792	mg/kg	0.00000792 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5		<			<		<		ND

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0212 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

monohydric phenols (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

Appendix B: Rationale for selection of metal species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide].

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

arsenic {arsenic pentoxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: arsenates, weed killers, metal adhesives, insecticides, fungicides, wood preservatives, coloured gases, printing and dyeing.

barium {barium diboron tetraoxide}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: copper refining, electroplating and rechargeable batteries. Worst case compounds in CLP not expected as either very soluble and/or compounds industrial useage not related to site history.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species.

zinc {zinc chloride}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

LF5VI-FRQ76-Z2CUF

Job name

24-78340_HWOL_Results

Description/Comments

i2 Analytical Report 24-78340

Project

51001/03

Site

Mayfield Phase 1B

Classified by

Name:
Kirsty Poore
Date:
21 Feb 2024 12:50 GMT
Telephone:
07983 740199

Company:
Civic Earth Limited
77 Dale Street
Manchester
M12HG

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	05 Oct 2023

Next 3 year Refresher due by Oct 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Land off Baring Street **Post Code** M12 6HW

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Redevelopment of former industrial site into residential-led development.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of soils during site investigation.

Description of the waste

Made Ground comprising predominantly clayey sandy gravel (brick and concrete).

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH1003-1-12012024-0.20	0.20m	Non Hazardous		3
2	BH1003-5-12012024-1.00	1.00m	Hazardous	HP 7	6
3	BH1003-15-12012024-4.00	4.00m	Non Hazardous		9

Related documents

#	Name	Description
1	24-78340_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Civic Earth Soil Suite 3 Waste Stream - i2	waste stream template used to create this Job

Report

Created by: Kirsty Poore

Created date: 21 Feb 2024 12:50 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	12
Appendix B: Rationale for selection of metal species	13
Appendix C: Version	14

Classification of sample: BH1003-1-12012024-0.20

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1003-1-12012024-0.20
Sample Depth:
0.20m m
Moisture content:
9.6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.6 pH		10.6 pH	10.6 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.6 mg/kg	1.197	2.814 mg/kg	0.000281 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		8.6 mg/kg	1.534	11.925 mg/kg	0.00119 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		550 mg/kg	1.623	807.19 mg/kg	0.0807 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.37 mg/kg	2.775	0.928 mg/kg	0.0000928 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	2.038 mg/kg	0.000204 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.723 mg/kg	0.0000723 %	✓	
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17 mg/kg	1.126	17.303 mg/kg	0.00173 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	43 mg/kg		38.872 mg/kg	0.00389 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		8.9	mg/kg	2.637	21.214	mg/kg	0.00212 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		11	mg/kg	1.785	17.752	mg/kg	0.00178 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		74	mg/kg	2.085	139.446	mg/kg	0.0139 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		188	mg/kg		169.952	mg/kg	0.017 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.28	mg/kg		0.253	mg/kg	0.0000253 %	✓	
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		0.26	mg/kg		0.235	mg/kg	0.0000235 %	✓	
27		fluorene		201-695-5	86-73-7		0.18	mg/kg		0.163	mg/kg	0.0000163 %	✓	
28		phenanthrene		201-581-5	85-01-8		1.4	mg/kg		1.266	mg/kg	0.000127 %	✓	
29		anthracene		204-371-1	120-12-7		0.3	mg/kg		0.271	mg/kg	0.0000271 %	✓	
30		fluoranthene		205-912-4	206-44-0		1.6	mg/kg		1.446	mg/kg	0.000145 %	✓	
31		pyrene		204-927-3	129-00-0		1.5	mg/kg		1.356	mg/kg	0.000136 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.71	mg/kg		0.642	mg/kg	0.0000642 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.82	mg/kg		0.741	mg/kg	0.0000741 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.85	mg/kg		0.768	mg/kg	0.0000768 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.31	mg/kg		0.28	mg/kg	0.000028 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.62	mg/kg		0.56	mg/kg	0.000056 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.34	mg/kg		0.307	mg/kg	0.0000307 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.08	mg/kg		0.0723	mg/kg	0.00000723 %	✓	
39		benzo[ghi]perylene		205-883-8	191-24-2		0.4	mg/kg		0.362	mg/kg	0.0000362 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos in identifiable pieces of suspected ACM			ACM_FRAG		<0.001	%		<0.001	%	<0.001 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.127 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.017%)

Classification of sample: BH1003-5-12012024-1.00

Hazardous Mixed Waste
Classified as **17 05 04**
and **17 06 05 ***
in the List of Waste

Sample details

Sample name:
BH1003-5-12012024-1.00
Sample Depth:
1.00m m
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Entry: 17 06 05 * (Construction materials containing asbestos) }

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

asbestos in identifiable pieces of suspected ACM: (conc.: 0.954%)

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		11.1 pH		11.1 pH	11.1 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3.2 mg/kg	1.197	3.333 mg/kg	0.000333 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		6.9 mg/kg	1.534	9.208 mg/kg	0.000921 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		470 mg/kg	1.623	663.838 mg/kg	0.0664 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.61 mg/kg	2.775	1.473 mg/kg	0.000147 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	1.961 mg/kg	0.000196 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	0.994 mg/kg	0.0000994 %	✓	
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15 mg/kg	1.462	21.923 mg/kg	0.00219 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17 mg/kg	1.126	16.652 mg/kg	0.00167 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	41 mg/kg		35.67 mg/kg	0.00357 %	✓	
14	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		**<LOD**
15	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		11 mg/kg	2.637	25.233 mg/kg	0.00252 %	✓	
16	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		**<LOD**
17	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		19 mg/kg	1.785	29.509 mg/kg	0.00295 %	✓	
18	zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		60 mg/kg	2.085	108.812 mg/kg	0.0109 %	✓	
19	TPH (C6 to C40) petroleum group			TPH		57 mg/kg		49.59 mg/kg	0.00496 %	✓	
20	benzene	601-020-00-8	200-753-7	71-43-2		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		**<LOD**
21	toluene	601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		**<LOD**
22	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		**<LOD**
23	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		**<LOD**
24	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		**<LOD**
25	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		**<LOD**
26	acenaphthene		201-469-6	83-32-9		0.12 mg/kg		0.104 mg/kg	0.0000104 %	✓	
27	fluorene		201-695-5	86-73-7		0.09 mg/kg		0.0783 mg/kg	0.00000783 %	✓	
28	phenanthrene		201-581-5	85-01-8		1.2 mg/kg		1.044 mg/kg	0.000104 %	✓	
29	anthracene		204-371-1	120-12-7		0.22 mg/kg		0.191 mg/kg	0.0000191 %	✓	
30	fluoranthene		205-912-4	206-44-0		1.5 mg/kg		1.305 mg/kg	0.000131 %	✓	
31	pyrene		204-927-3	129-00-0		1.4 mg/kg		1.218 mg/kg	0.000122 %	✓	
32	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.69 mg/kg		0.6 mg/kg	0.00006 %	✓	
33	chrysene	601-048-00-0	205-923-4	218-01-9		0.68 mg/kg		0.592 mg/kg	0.0000592 %	✓	
34	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.71 mg/kg		0.618 mg/kg	0.0000618 %	✓	
35	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.28 mg/kg		0.244 mg/kg	0.0000244 %	✓	
36	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.6 mg/kg		0.522 mg/kg	0.0000522 %	✓	
37	indeno[123-cd]pyrene		205-893-2	193-39-5		0.29 mg/kg		0.252 mg/kg	0.0000252 %	✓	

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
38		dibenz[a,h]anthracene				0.07 mg/kg		0.0609 mg/kg	0.00000609 %	✓	
		601-041-00-2	200-181-8	53-70-3							
39		benzo[ghi]perylene				0.37 mg/kg		0.322 mg/kg	0.0000322 %	✓	
			205-883-8	191-24-2							
40		coronene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
			205-881-7	191-07-1							
41		xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
								Total:	0.0985 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		asbestos in identifiable pieces of suspected ACM				0.954 %		0.954 %	0.954 %		
				ACM_FRAG							
								Total:	0.954 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00496%)

Classification of sample: BH1003-15-12012024-4.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH1003-15-12012024-4.00
Sample Depth:
4.00m m
Moisture content:
16%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.7 pH		9.7 pH	9.7 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1.9 mg/kg	1.197	1.911 mg/kg	0.000191 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		5.3 mg/kg	1.534	6.829 mg/kg	0.000683 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		190 mg/kg	1.623	259.106 mg/kg	0.0259 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.42 mg/kg	2.775	0.979 mg/kg	0.0000979 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	1.893 mg/kg	0.000189 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12 mg/kg	1.126	11.349 mg/kg	0.00113 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	53 mg/kg		44.52 mg/kg	0.00445 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		7.7	mg/kg	2.637	17.054	mg/kg	0.00171 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		14	mg/kg	1.785	20.994	mg/kg	0.0021 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		41	mg/kg	2.085	71.791	mg/kg	0.00718 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28		phenanthrene		201-581-5	85-01-8		0.14	mg/kg		0.118	mg/kg	0.0000118 %	✓	
29		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30		fluoranthene		205-912-4	206-44-0		0.26	mg/kg		0.218	mg/kg	0.0000218 %	✓	
31		pyrene		204-927-3	129-00-0		0.27	mg/kg		0.227	mg/kg	0.0000227 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.15	mg/kg		0.126	mg/kg	0.0000126 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.14	mg/kg		0.118	mg/kg	0.0000118 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.15	mg/kg		0.126	mg/kg	0.0000126 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.07	mg/kg		0.0588	mg/kg	0.00000588 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.12	mg/kg		0.101	mg/kg	0.0000101 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.07	mg/kg		0.0588	mg/kg	0.00000588 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		0.08	mg/kg		0.0672	mg/kg	0.00000672 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos in identifiable pieces of suspected ACM			ACM_FRAG		<0.001	%		<0.001	%	<0.001 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0494 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Appendix A: Classifier defined and non GB MCL determinands

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

- **asbestos in identifiable pieces of suspected ACM** (CAS Number: ACM_FRAG)

Description/Comments: Enter the concentration of asbestos relative to the suspected ACM not the whole waste
Data source: WM3 v1, Chapter 3.1
Data source date: 31 May 2015
Hazard Statements: Carc. 1A; H350 , STOT RE 1; H372

Appendix B: Rationale for selection of metal species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide].

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

arsenic {arsenic pentoxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: arsenates, weed killers, metal adhesives, insecticides, fungicides, wood preservatives, coloured gases, printing and dyeing.

barium {barium diboron tetraoxide}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: copper refining, electroplating and rechargeable batteries. Worst case compounds in CLP not expected as either very soluble and/or compounds industrial useage not related to site history.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species.

zinc {zinc chloride}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

4X5HR-7M7DA-QXBOM

Job name

24-79122_HWOL_Results

Description/Comments

i2 Analytical Report 24-79122

Project

51001/03

Site

Mayfield Phase 1B

Classified by

Name:
Kirsty Poore
Date:
31 Jan 2024 10:07 GMT
Telephone:
07983 740199

Company:
Civic Earth Limited
77 Dale Street
Manchester
M12HG

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	05 Oct 2023

Next 3 year Refresher due by Oct 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Land off Baring Street **Post Code** M12 6HW

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Redevelopment of former industrial site into residential-led development.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of soils during site investigation.

Description of the waste

Made Ground comprising predominantly clayey sandy gravel (brick and concrete).

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS1008-2-18012024-0.50	0.50m	Non Hazardous		3
2	WS1005-2-18012024-0.50	0.50m	Non Hazardous		6
3	WS1005-5-18012024-1.00	1.00m	Non Hazardous		9
4	WS1006-5-18012024-1.00	1.00m	Non Hazardous		12
5	WS1003-1-18012024-0.20	0.20m	Non Hazardous		15
6	WS1003-2-18012024-0.50	0.50m	Non Hazardous		18
7	WS1009-2-18012024-0.50	0.50m	Non Hazardous		21

Related documents

#	Name	Description
1	24-79122_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Civic Earth Soil Suite 3 Waste Stream - i2	waste stream template used to create this Job

Report

Created by: Kirsty Poore

Created date: 31 Jan 2024 10:07 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	24
Appendix B: Rationale for selection of metal species	25
Appendix C: Version	26

Classification of sample: WS1008-2-18012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1008-2-18012024-0.50
Sample Depth:
0.50m m
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.1 pH		10.1 pH	10.1 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.1 mg/kg	1.197	2.187 mg/kg	0.000219 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		5.9 mg/kg	1.534	7.873 mg/kg	0.000787 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		110 mg/kg	1.623	155.366 mg/kg	0.0155 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.52 mg/kg	2.775	1.256 mg/kg	0.000126 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.9 mg/kg	3.22	2.521 mg/kg	0.000252 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9.2 mg/kg	1.462	13.446 mg/kg	0.00134 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17 mg/kg	1.126	16.652 mg/kg	0.00167 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	20 mg/kg		17.4 mg/kg	0.00174 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				10	mg/kg	2.637	22.939	mg/kg	0.00229 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				16	mg/kg	1.785	24.85	mg/kg	0.00248 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				34	mg/kg	2.085	61.66	mg/kg	0.00617 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.17	mg/kg		0.148	mg/kg	0.0000148 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
26		acenaphthene				0.05	mg/kg		0.0435	mg/kg	0.00000435 %	✓	
			201-469-6	83-32-9									
27		fluorene				0.05	mg/kg		0.0435	mg/kg	0.00000435 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				0.36	mg/kg		0.313	mg/kg	0.0000313 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.08	mg/kg		0.0696	mg/kg	0.00000696 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				0.55	mg/kg		0.479	mg/kg	0.0000479 %	✓	
			205-912-4	206-44-0									
31		pyrene				0.5	mg/kg		0.435	mg/kg	0.0000435 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				0.22	mg/kg		0.191	mg/kg	0.0000191 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				0.23	mg/kg		0.2	mg/kg	0.00002 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				0.24	mg/kg		0.209	mg/kg	0.0000209 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				0.11	mg/kg		0.0957	mg/kg	0.00000957 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				0.22	mg/kg		0.191	mg/kg	0.0000191 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				0.14	mg/kg		0.122	mg/kg	0.0000122 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				0.15	mg/kg		0.13	mg/kg	0.000013 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
								Total:	0.0359 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS1005-2-18012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1005-2-18012024-0.50
Sample Depth:
0.50m m
Moisture content:
17%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.6 pH		10.6 pH	10.6 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.6 mg/kg	1.197	2.583 mg/kg	0.000258 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		14 mg/kg	1.534	17.824 mg/kg	0.00178 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		160 mg/kg	1.623	215.597 mg/kg	0.0216 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.58 mg/kg	2.775	1.336 mg/kg	0.000134 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.3 mg/kg	3.22	3.474 mg/kg	0.000347 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15 mg/kg	1.462	21.923 mg/kg	0.00219 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		27 mg/kg	1.126	25.231 mg/kg	0.00252 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	84 mg/kg		69.72 mg/kg	0.00697 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				15	mg/kg	2.637	32.827	mg/kg	0.00328 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				22	mg/kg	1.785	32.597	mg/kg	0.00326 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				83	mg/kg	2.085	143.603	mg/kg	0.0144 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				172	mg/kg		142.76	mg/kg	0.0143 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				1.1	mg/kg		0.913	mg/kg	0.0000913 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.19	mg/kg		0.158	mg/kg	0.0000158 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				1.4	mg/kg		1.162	mg/kg	0.000116 %	✓	
			201-469-6	83-32-9									
27		fluorene				1.2	mg/kg		0.996	mg/kg	0.0000996 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				9.2	mg/kg		7.636	mg/kg	0.000764 %	✓	
			201-581-5	85-01-8									
29		anthracene				2.1	mg/kg		1.743	mg/kg	0.000174 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				10	mg/kg		8.3	mg/kg	0.00083 %	✓	
			205-912-4	206-44-0									
31		pyrene				9.5	mg/kg		7.885	mg/kg	0.000789 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				4.1	mg/kg		3.403	mg/kg	0.00034 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				4.3	mg/kg		3.569	mg/kg	0.000357 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				4.3	mg/kg		3.569	mg/kg	0.000357 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				1.4	mg/kg		1.162	mg/kg	0.000116 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				3.7	mg/kg		3.071	mg/kg	0.000307 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				2.1	mg/kg		1.743	mg/kg	0.000174 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.49	mg/kg		0.407	mg/kg	0.0000407 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				2.4	mg/kg		1.992	mg/kg	0.000199 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0767 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0143%)

Classification of sample: WS1005-5-18012024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1005-5-18012024-1.00
Sample Depth:
1.00m m
Moisture content:
18%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8	pH		8	pH	8pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3.4	mg/kg	1.197	3.338	mg/kg	0.000334 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		16	mg/kg	1.534	20.124	mg/kg	0.00201 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		97	mg/kg	1.623	129.131	mg/kg	0.0129 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.6	mg/kg	2.775	3.641	mg/kg	0.000364 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5	mg/kg	3.22	1.32	mg/kg	0.000132 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20	mg/kg	1.462	29.231	mg/kg	0.00292 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		54	mg/kg	1.126	49.854	mg/kg	0.00499 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	99	mg/kg		81.18	mg/kg	0.00812 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				0.3	mg/kg	1.353	0.333	mg/kg	0.0000333 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				26	mg/kg	2.637	56.214	mg/kg	0.00562 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				30	mg/kg	1.785	43.916	mg/kg	0.00439 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				72	mg/kg	2.085	123.07	mg/kg	0.0123 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.31	mg/kg		0.254	mg/kg	0.0000254 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
26		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
27		fluorene				0.05	mg/kg		0.041	mg/kg	0.0000041 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				0.24	mg/kg		0.197	mg/kg	0.0000197 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.07	mg/kg		0.0574	mg/kg	0.00000574 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				0.3	mg/kg		0.246	mg/kg	0.0000246 %	✓	
			205-912-4	206-44-0									
31		pyrene				0.28	mg/kg		0.23	mg/kg	0.000023 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				0.14	mg/kg		0.115	mg/kg	0.0000115 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				0.14	mg/kg		0.115	mg/kg	0.0000115 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				0.17	mg/kg		0.139	mg/kg	0.0000139 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				0.13	mg/kg		0.107	mg/kg	0.0000107 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				0.08	mg/kg		0.0656	mg/kg	0.00000656 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				0.11	mg/kg		0.0902	mg/kg	0.00000902 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
								Total:	0.0573 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS1006-5-18012024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1006-5-18012024-1.00
Sample Depth:
1.00m m
Moisture content:
16%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.4 pH		8.4 pH	8.4 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		7.2 mg/kg	1.197	7.24 mg/kg	0.000724 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		55 mg/kg	1.534	70.865 mg/kg	0.00709 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		200 mg/kg	1.623	272.743 mg/kg	0.0273 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.4 mg/kg	2.775	3.264 mg/kg	0.000326 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.352 mg/kg	0.000135 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		66 mg/kg	1.462	96.463 mg/kg	0.00965 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		90 mg/kg	1.126	85.117 mg/kg	0.00851 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	310 mg/kg		260.4 mg/kg	0.026 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				1.3	mg/kg	1.353	1.478	mg/kg	0.000148 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				20	mg/kg	2.637	44.296	mg/kg	0.00443 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				26	mg/kg	1.785	38.988	mg/kg	0.0039 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				260	mg/kg	2.085	455.259	mg/kg	0.0455 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				53	mg/kg		44.52	mg/kg	0.00445 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				2.4	mg/kg		2.016	mg/kg	0.000202 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.13	mg/kg		0.109	mg/kg	0.0000109 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				1.4	mg/kg		1.176	mg/kg	0.000118 %	✓	
			201-469-6	83-32-9									
27		fluorene				1	mg/kg		0.84	mg/kg	0.000084 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				7.1	mg/kg		5.964	mg/kg	0.000596 %	✓	
			201-581-5	85-01-8									
29		anthracene				1.5	mg/kg		1.26	mg/kg	0.000126 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				6.5	mg/kg		5.46	mg/kg	0.000546 %	✓	
			205-912-4	206-44-0									
31		pyrene				6.7	mg/kg		5.628	mg/kg	0.000563 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				2.7	mg/kg		2.268	mg/kg	0.000227 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				3.1	mg/kg		2.604	mg/kg	0.00026 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				2.5	mg/kg		2.1	mg/kg	0.00021 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				1.3	mg/kg		1.092	mg/kg	0.000109 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				2.4	mg/kg		2.016	mg/kg	0.000202 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				1.3	mg/kg		1.092	mg/kg	0.000109 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.35	mg/kg		0.294	mg/kg	0.0000294 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				1.7	mg/kg		1.428	mg/kg	0.000143 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.143 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00445%)

Classification of sample: WS1003-1-18012024-0.20

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1003-1-18012024-0.20
Sample Depth:
0.20m m
Moisture content:
8.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.4% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.3 pH		10.3 pH	10.3 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2.2 mg/kg	1.197	2.412 mg/kg	0.000241 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		14 mg/kg	1.534	19.67 mg/kg	0.00197 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		120 mg/kg	1.623	178.452 mg/kg	0.0178 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.66 mg/kg	2.775	1.678 mg/kg	0.000168 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.8 mg/kg	3.22	2.36 mg/kg	0.000236 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15 mg/kg	1.462	21.923 mg/kg	0.00219 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		29 mg/kg	1.126	29.908 mg/kg	0.00299 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	97 mg/kg		88.852 mg/kg	0.00889 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				14	mg/kg	2.637	33.813	mg/kg	0.00338 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				20	mg/kg	1.785	32.705	mg/kg	0.00327 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				70	mg/kg	2.085	133.66	mg/kg	0.0134 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.38	mg/kg		0.348	mg/kg	0.0000348 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.07	mg/kg		0.0641	mg/kg	0.00000641 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				0.17	mg/kg		0.156	mg/kg	0.0000156 %	✓	
			201-469-6	83-32-9									
27		fluorene				0.14	mg/kg		0.128	mg/kg	0.0000128 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				1.2	mg/kg		1.099	mg/kg	0.00011 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.28	mg/kg		0.256	mg/kg	0.0000256 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				1.8	mg/kg		1.649	mg/kg	0.000165 %	✓	
			205-912-4	206-44-0									
31		pyrene				1.8	mg/kg		1.649	mg/kg	0.000165 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				0.81	mg/kg		0.742	mg/kg	0.0000742 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				0.88	mg/kg		0.806	mg/kg	0.0000806 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				0.86	mg/kg		0.788	mg/kg	0.0000788 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				0.34	mg/kg		0.311	mg/kg	0.0000311 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				0.71	mg/kg		0.65	mg/kg	0.000065 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				0.44	mg/kg		0.403	mg/kg	0.0000403 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.11	mg/kg		0.101	mg/kg	0.0000101 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				0.47	mg/kg		0.431	mg/kg	0.0000431 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
								Total:	0.0585 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS1003-2-18012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1003-2-18012024-0.50
Sample Depth:
0.50m m
Moisture content:
9.6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.1 pH		9.1 pH	9.1 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3.1 mg/kg	1.197	3.355 mg/kg	0.000335 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		15 mg/kg	1.534	20.799 mg/kg	0.00208 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		100 mg/kg	1.623	146.762 mg/kg	0.0147 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.71 mg/kg	2.775	1.781 mg/kg	0.000178 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6 mg/kg	3.22	1.746 mg/kg	0.000175 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	23.385 mg/kg	0.00234 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37 mg/kg	1.126	37.659 mg/kg	0.00377 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	87 mg/kg		78.648 mg/kg	0.00786 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		14	mg/kg	2.637	33.37	mg/kg	0.00334 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		20	mg/kg	1.785	32.276	mg/kg	0.00323 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		80	mg/kg	2.085	150.753	mg/kg	0.0151 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		46	mg/kg		41.584	mg/kg	0.00416 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		0.47	mg/kg		0.425	mg/kg	0.0000425 %	✓	
25		acenaphthylene		205-917-1	208-96-8		0.09	mg/kg		0.0814	mg/kg	0.00000814 %	✓	
26		acenaphthene		201-469-6	83-32-9		0.21	mg/kg		0.19	mg/kg	0.000019 %	✓	
27		fluorene		201-695-5	86-73-7		0.23	mg/kg		0.208	mg/kg	0.0000208 %	✓	
28		phenanthrene		201-581-5	85-01-8		1.4	mg/kg		1.266	mg/kg	0.000127 %	✓	
29		anthracene		204-371-1	120-12-7		0.31	mg/kg		0.28	mg/kg	0.000028 %	✓	
30		fluoranthene		205-912-4	206-44-0		1.9	mg/kg		1.718	mg/kg	0.000172 %	✓	
31		pyrene		204-927-3	129-00-0		1.9	mg/kg		1.718	mg/kg	0.000172 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.82	mg/kg		0.741	mg/kg	0.0000741 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.93	mg/kg		0.841	mg/kg	0.0000841 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.84	mg/kg		0.759	mg/kg	0.0000759 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.39	mg/kg		0.353	mg/kg	0.0000353 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.8	mg/kg		0.723	mg/kg	0.0000723 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.45	mg/kg		0.407	mg/kg	0.0000407 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.1	mg/kg		0.0904	mg/kg	0.00000904 %	✓	
39		benzo[ghi]perylene		205-883-8	191-24-2		0.51	mg/kg		0.461	mg/kg	0.0000461 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
								Total:	0.0593 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00416%)

Classification of sample: WS1009-2-18012024-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1009-2-18012024-0.50
Sample Depth:
0.50m m
Moisture content:
11%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.1 pH		10.1 pH	10.1 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3.3 mg/kg	1.197	3.516 mg/kg	0.000352 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		11 mg/kg	1.534	15.017 mg/kg	0.0015 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		160 mg/kg	1.623	231.182 mg/kg	0.0231 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.62 mg/kg	2.775	1.531 mg/kg	0.000153 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6 mg/kg	3.22	1.719 mg/kg	0.000172 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14 mg/kg	1.462	20.462 mg/kg	0.00205 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		29 mg/kg	1.126	29.059 mg/kg	0.00291 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	100 mg/kg		89 mg/kg	0.0089 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				14	mg/kg	2.637	32.853	mg/kg	0.00329 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				22	mg/kg	1.785	34.954	mg/kg	0.0035 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				100	mg/kg	2.085	185.522	mg/kg	0.0186 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				180	mg/kg		160.2	mg/kg	0.016 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				3.3	mg/kg		2.937	mg/kg	0.000294 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.15	mg/kg		0.134	mg/kg	0.0000134 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				9.3	mg/kg		8.277	mg/kg	0.000828 %	✓	
			201-469-6	83-32-9									
27		fluorene				7.1	mg/kg		6.319	mg/kg	0.000632 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				37	mg/kg		32.93	mg/kg	0.00329 %	✓	
			201-581-5	85-01-8									
29		anthracene				10	mg/kg		8.9	mg/kg	0.00089 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				34	mg/kg		30.26	mg/kg	0.00303 %	✓	
			205-912-4	206-44-0									
31		pyrene				28	mg/kg		24.92	mg/kg	0.00249 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				13	mg/kg		11.57	mg/kg	0.00116 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				12	mg/kg		10.68	mg/kg	0.00107 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				11	mg/kg		9.79	mg/kg	0.000979 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				5.8	mg/kg		5.162	mg/kg	0.000516 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				10	mg/kg		8.9	mg/kg	0.00089 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				5.9	mg/kg		5.251	mg/kg	0.000525 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				1.4	mg/kg		1.246	mg/kg	0.000125 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				5.9	mg/kg		5.251	mg/kg	0.000525 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0988 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.016%)

Appendix A: Classifier defined and non GB MCL determinands

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

Appendix B: Rationale for selection of metal species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide].

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

arsenic {arsenic pentoxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: arsenates, weed killers, metal adhesives, insecticides, fungicides, wood preservatives, coloured gases, printing and dyeing.

barium {barium diboron tetraoxide}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: copper refining, electroplating and rechargeable batteries. Worst case compounds in CLP not expected as either very soluble and/or compounds industrial useage not related to site history.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species.

zinc {zinc chloride}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

SJX3X-IFWYO-SD297

Job name

24-79387_HWOL_Results

Description/Comments

i2 Analytical Report 24-79387

Project

51001/03

Site

Mayfield Phase 1B

Classified by

Name:
Kirsty Poore
Date:
21 Feb 2024 12:53 GMT
Telephone:
07983 740199

Company:
Civic Earth Limited
77 Dale Street
Manchester
M12HG

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	05 Oct 2023

Next 3 year Refresher due by Oct 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Land off Baring Street **Post Code** M12 6HW

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Redevelopment of former industrial site into residential-led development.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of soils during site investigation.

Description of the waste

Made Ground comprising predominantly clayey sandy gravel (brick and concrete).

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS1004-3-19012024-0.80	0.80m	Non Hazardous		3
2	WS1004-6-19012024-2.00	2.00m	Non Hazardous		6
3	WS1007-3-19012024-0.70	0.70m	Non Hazardous		9
4	WS1002-5-19012024-1.50	1.50m	Non Hazardous		12
5	WS1001-3-19012024-1.00	1.00m	Non Hazardous		15

Related documents

#	Name	Description
1	24-79387_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Civic Earth Soil Suite 3 Waste Stream - i2	waste stream template used to create this Job

Report

Created by: Kirsty Poore

Created date: 21 Feb 2024 12:53 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	18
Appendix B: Rationale for selection of metal species	19
Appendix C: Version	20

Classification of sample: WS1004-3-19012024-0.80

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1004-3-19012024-0.80
Sample Depth:
0.80m m
Moisture content:
17%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.2 pH		8.2 pH	8.2 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	1.987 mg/kg	0.000199 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		8 mg/kg	1.534	10.185 mg/kg	0.00102 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		120 mg/kg	1.623	161.698 mg/kg	0.0162 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1 mg/kg	2.775	2.534 mg/kg	0.000253 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.6 mg/kg	3.22	1.603 mg/kg	0.00016 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26 mg/kg	1.462	38 mg/kg	0.0038 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		27 mg/kg	1.126	25.231 mg/kg	0.00252 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	23 mg/kg		19.09 mg/kg	0.00191 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				30	mg/kg	2.637	65.653	mg/kg	0.00657 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				29	mg/kg	1.785	42.969	mg/kg	0.0043 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				60	mg/kg	2.085	103.809	mg/kg	0.0104 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
26		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
27		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
28		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
29		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-371-1	120-12-7									
30		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
31		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
32		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		polychlorobiphenyls; PCB				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3							
43		xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
									Total:		0.0504 %

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS1004-6-19012024-2.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1004-6-19012024-2.00
Sample Depth:
2.00m m
Moisture content:
25%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 25% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.8 pH		7.8 pH	7.8 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		5.4 mg/kg	1.197	4.848 mg/kg	0.000485 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		39 mg/kg	1.534	44.866 mg/kg	0.00449 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		150 mg/kg	1.623	182.641 mg/kg	0.0183 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.5 mg/kg	2.775	3.122 mg/kg	0.000312 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.207 mg/kg	0.000121 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29 mg/kg	1.462	42.385 mg/kg	0.00424 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		140 mg/kg	1.126	118.218 mg/kg	0.0118 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	220 mg/kg		165 mg/kg	0.0165 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		3.2	mg/kg	1.353	3.248	mg/kg	0.000325 %	✓	
15		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		39	mg/kg	2.637	77.123	mg/kg	0.00771 %	✓	
16		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
17		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		33	mg/kg	1.785	44.183	mg/kg	0.00442 %	✓	
18		zinc { zinc chloride }	030-003-00-2	231-592-0	7646-85-7		110	mg/kg	2.085	171.973	mg/kg	0.0172 %	✓	
19		TPH (C6 to C40) petroleum group			TPH		35	mg/kg		26.25	mg/kg	0.00263 %	✓	
20		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
21		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
22		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		fluorene		201-695-5	86-73-7		0.11	mg/kg		0.0825	mg/kg	0.00000825 %	✓	
28		phenanthrene		201-581-5	85-01-8		0.29	mg/kg		0.218	mg/kg	0.0000218 %	✓	
29		anthracene		204-371-1	120-12-7		0.14	mg/kg		0.105	mg/kg	0.0000105 %	✓	
30		fluoranthene		205-912-4	206-44-0		0.44	mg/kg		0.33	mg/kg	0.000033 %	✓	
31		pyrene		204-927-3	129-00-0		0.4	mg/kg		0.3	mg/kg	0.00003 %	✓	
32		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.21	mg/kg		0.158	mg/kg	0.0000158 %	✓	
33		chrysene	601-048-00-0	205-923-4	218-01-9		0.2	mg/kg		0.15	mg/kg	0.000015 %	✓	
34		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.21	mg/kg		0.158	mg/kg	0.0000158 %	✓	
35		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.07	mg/kg		0.0525	mg/kg	0.00000525 %	✓	
36		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.15	mg/kg		0.113	mg/kg	0.0000113 %	✓	
37		indeno[123-cd]pyrene		205-893-2	193-39-5		0.08	mg/kg		0.06	mg/kg	0.000006 %	✓	
38		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
39		benzo[ghi]perylene		205-883-8	191-24-2		0.1	mg/kg		0.075	mg/kg	0.0000075 %	✓	
40		coronene		205-881-7	191-07-1		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
41		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5		<			<		<		ND

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.0897 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00263%)

Classification of sample: WS1007-3-19012024-0.70

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1007-3-19012024-0.70
Sample Depth:
0.70m m
Moisture content:
14%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		10	pH		10	pH	10pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4.9	mg/kg	1.197	5.045	mg/kg	0.000504 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		30	mg/kg	1.534	39.574	mg/kg	0.00396 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		190	mg/kg	1.623	265.275	mg/kg	0.0265 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.85	mg/kg	2.775	2.029	mg/kg	0.000203 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		0.7	mg/kg	3.22	1.938	mg/kg	0.000194 %	✓	
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19	mg/kg	1.462	27.77	mg/kg	0.00278 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		51	mg/kg	1.126	49.381	mg/kg	0.00494 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	160	mg/kg		137.6	mg/kg	0.0138 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				0.4	mg/kg	1.353	0.466	mg/kg	0.0000466 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				16	mg/kg	2.637	36.281	mg/kg	0.00363 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				23	mg/kg	1.785	35.311	mg/kg	0.00353 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				130	mg/kg	2.085	233.049	mg/kg	0.0233 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				163	mg/kg		140.18	mg/kg	0.014 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.17	mg/kg		0.146	mg/kg	0.0000146 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				0.06	mg/kg		0.0516	mg/kg	0.00000516 %	✓	
			205-917-1	208-96-8									
26		acenaphthene				0.51	mg/kg		0.439	mg/kg	0.0000439 %	✓	
			201-469-6	83-32-9									
27		fluorene				0.39	mg/kg		0.335	mg/kg	0.0000335 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				3.5	mg/kg		3.01	mg/kg	0.000301 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.79	mg/kg		0.679	mg/kg	0.0000679 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				4.6	mg/kg		3.956	mg/kg	0.000396 %	✓	
			205-912-4	206-44-0									
31		pyrene				4.4	mg/kg		3.784	mg/kg	0.000378 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				2.2	mg/kg		1.892	mg/kg	0.000189 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				2.2	mg/kg		1.892	mg/kg	0.000189 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				2.4	mg/kg		2.064	mg/kg	0.000206 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				0.99	mg/kg		0.851	mg/kg	0.0000851 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				2.2	mg/kg		1.892	mg/kg	0.000189 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				0.97	mg/kg		0.834	mg/kg	0.0000834 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.28	mg/kg		0.241	mg/kg	0.0000241 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				1.2	mg/kg		1.032	mg/kg	0.000103 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-881-7	191-07-1									
41		asbestos				<			<		<		**ND**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene									
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
								Total:	0.101 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.014%)

Classification of sample: WS1002-5-19012024-1.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1002-5-19012024-1.50
Sample Depth:
1.50m m
Moisture content:
16%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		pH			PH		9.7	pH		9.7	pH	9.7 pH		
2		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
3		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
4		antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		11	mg/kg	1.197	11.061	mg/kg	0.00111 %	✓	
5		arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		14	mg/kg	1.534	18.038	mg/kg	0.0018 %	✓	
6		barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		710	mg/kg	1.623	968.239	mg/kg	0.0968 %	✓	
7		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.88	mg/kg	2.775	2.052	mg/kg	0.000205 %	✓	
8		boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		1.3	mg/kg	3.22	3.516	mg/kg	0.000352 %	✓	
9		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7	mg/kg	1.142	0.672	mg/kg	0.0000672 %	✓	
10		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<**LOD**
11		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20	mg/kg	1.462	29.231	mg/kg	0.00292 %		
12		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		42	mg/kg	1.126	39.721	mg/kg	0.00397 %	✓	
13		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	250	mg/kg		210	mg/kg	0.021 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				18	mg/kg	2.637	39.867	mg/kg	0.00399 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				37	mg/kg	1.785	55.484	mg/kg	0.00555 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				430	mg/kg	2.085	752.929	mg/kg	0.0753 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				780	mg/kg		655.2	mg/kg	0.0655 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				0.41	mg/kg		0.344	mg/kg	0.0000344 %	✓	
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
26		acenaphthene				0.62	mg/kg		0.521	mg/kg	0.0000521 %	✓	
			201-469-6	83-32-9									
27		fluorene				0.28	mg/kg		0.235	mg/kg	0.0000235 %	✓	
			201-695-5	86-73-7									
28		phenanthrene				4.9	mg/kg		4.116	mg/kg	0.000412 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.88	mg/kg		0.739	mg/kg	0.0000739 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				5.9	mg/kg		4.956	mg/kg	0.000496 %	✓	
			205-912-4	206-44-0									
31		pyrene				5.2	mg/kg		4.368	mg/kg	0.000437 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				2.9	mg/kg		2.436	mg/kg	0.000244 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				3.2	mg/kg		2.688	mg/kg	0.000269 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				3.3	mg/kg		2.772	mg/kg	0.000277 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				1.4	mg/kg		1.176	mg/kg	0.000118 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				3	mg/kg		2.52	mg/kg	0.000252 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				1.5	mg/kg		1.26	mg/kg	0.000126 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				0.4	mg/kg		0.336	mg/kg	0.0000336 %	✓	
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				1.8	mg/kg		1.512	mg/kg	0.000151 %	✓	
			205-883-8	191-24-2									
40		coronene				1.4	mg/kg		1.176	mg/kg	0.000118 %	✓	
			205-881-7	191-07-1									
41		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
								Total:	0.283 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		asbestos in identifiable pieces of suspected ACM				0.006 %		0.006 %	0.006 %		
				ACM_FRAG							
								Total:	0.006 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
ACM	Asbestos Containing Materials

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0655%)

Classification of sample: WS1001-3-19012024-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1001-3-19012024-1.00
Sample Depth:
1.00m m
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.8 pH		8.8 pH	8.8 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
3	monohydric phenols			P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
4	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3 mg/kg	1.197	3.124 mg/kg	0.000312 %	✓	
5	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		12 mg/kg	1.534	16.014 mg/kg	0.0016 %	✓	
6	barium { barium diboron tetraoxide }	056-005-00-3	237-222-4	13701-59-2		180 mg/kg	1.623	254.236 mg/kg	0.0254 %	✓	
7	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.96 mg/kg	2.775	2.318 mg/kg	0.000232 %	✓	
8	boron { diboron trioxide }	005-008-00-8	215-125-8	1303-86-2		<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<**LOD**
9	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
10	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<**LOD**
11	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21 mg/kg	1.462	30.693 mg/kg	0.00307 %		
12	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		33 mg/kg	1.126	32.324 mg/kg	0.00323 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	57 mg/kg		49.59 mg/kg	0.00496 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
15		nickel { nickel sulfate }				17	mg/kg	2.637	38.997	mg/kg	0.0039 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
16		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
17		vanadium { divanadium pentaoxide; vanadium pentoxide }				30	mg/kg	1.785	46.593	mg/kg	0.00466 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
18		zinc { zinc chloride }				66	mg/kg	2.085	119.693	mg/kg	0.012 %	✓	
		030-003-00-2	231-592-0	7646-85-7									
19		TPH (C6 to C40) petroleum group				109	mg/kg		94.83	mg/kg	0.00948 %	✓	
				TPH									
20		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
21		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
22		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
23		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
26		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
27		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
28		phenanthrene				0.46	mg/kg		0.4	mg/kg	0.00004 %	✓	
			201-581-5	85-01-8									
29		anthracene				0.1	mg/kg		0.087	mg/kg	0.0000087 %	✓	
			204-371-1	120-12-7									
30		fluoranthene				0.76	mg/kg		0.661	mg/kg	0.0000661 %	✓	
			205-912-4	206-44-0									
31		pyrene				0.73	mg/kg		0.635	mg/kg	0.0000635 %	✓	
			204-927-3	129-00-0									
32		benzo[a]anthracene				0.38	mg/kg		0.331	mg/kg	0.0000331 %	✓	
		601-033-00-9	200-280-6	56-55-3									
33		chrysene				0.4	mg/kg		0.348	mg/kg	0.0000348 %	✓	
		601-048-00-0	205-923-4	218-01-9									
34		benzo[b]fluoranthene				0.45	mg/kg		0.391	mg/kg	0.0000391 %	✓	
		601-034-00-4	205-911-9	205-99-2									
35		benzo[k]fluoranthene				0.12	mg/kg		0.104	mg/kg	0.0000104 %	✓	
		601-036-00-5	205-916-6	207-08-9									
36		benzo[a]pyrene; benzo[def]chrysene				0.33	mg/kg		0.287	mg/kg	0.0000287 %	✓	
		601-032-00-3	200-028-5	50-32-8									
37		indeno[123-cd]pyrene				0.18	mg/kg		0.157	mg/kg	0.0000157 %	✓	
			205-893-2	193-39-5									
38		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
39		benzo[ghi]perylene				0.2	mg/kg		0.174	mg/kg	0.0000174 %	✓	
			205-883-8	191-24-2									
40		coronene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-881-7	191-07-1									
41		asbestos				<			<		<		ND
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
42		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		**<LOD**
								Total:	0.0703 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00948%)

Appendix A: Classifier defined and non GB MCL determinands

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

monohydric phenols (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 <= conc. < 3 % , Eye Irrit. 2; H319 1 <= conc. < 3 % , Aquatic Chronic 2; H411

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

coronene (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

polychlorobiphenyls; PCB (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide].

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings.

arsenic {arsenic pentoxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: arsenates, weed killers, metal adhesives, insecticides, fungicides, wood preservatives, coloured gases, printing and dyeing.

barium {barium diboron tetraoxide}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: copper refining, electroplating and rechargeable batteries. Worst case compounds in CLP not expected as either very soluble and/or compounds industrial useage not related to site history.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight.

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species.

zinc {zinc chloride}

Reasonable case CLP species based on site history, hazard statements/molecular weight. Noted that not enough metal and Cr(VI) present to make the worst case CLP (metal chromate) (noting concentrations not at hazardous levels in any case).

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

Appendix H
Risk Assessment Methodology

Civic Earth

Civic Earth Risk Assessment Methodology

Civic Earth's risk assessment methodology is based on the CIRIA C552 (2001) Contaminated Land Risk Assessment – A Guide to Good Practice[1].

The assessment approach is to quantify the potential risk at Phase 1 Stage via risk estimation and risk evaluation. This defines the overall risk category that can be used to identify likely actions to address the potential risk or undertake further risk evaluation.

The methodology is a qualitative approach and is undertaken for each identified potential contaminant linkage (source-pathway-receptor) identified for the site in accordance with the October 2020 Land Contamination Risk Management Guidance (LCRM)[2].

The methodology requires the classification of the following:

- The magnitude of the consequence (severity) of a risk occurring; and
- The magnitude of the probability (likelihood) of a risk occurring.

The potential consequences of contamination risks occurring at a site are classified in accordance with Table 1 below, which is based on CIRIA guidance[1].

Table 1: Classification of Consequence Ratings

Classification	Definition of Consequence	Examples
Severe	Short-term (acute) risks to human health. Short-term (acute) risk of pollution of sensitive water resource or ecosystem Catastrophic damage to crops/building/property/infrastructure, including off-site soils	High concentration of cyanide on the surface of an informal recreation area Major spillage of contaminants from site into controlled waters Explosion causing building collapse
Medium	Long-term (chronic) risks to human health Long-term (chronic) pollution of sensitive water resource Significant change in an ecosystem/contamination of off-site soils	Concentrations of a contaminant on site exceeding the generic or site specific assessment criteria Leaching of contaminants from a site into a major or minor aquifer Death of species within a designated nature reserve
Mild	Pollution of non-sensitive water resource Significant damage to crops/buildings/property/infrastructure Damage to an ecosystem or sensitive buildings/structures/services	Pollution of a non-classified groundwater Damage to a building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)
Minor	Easily preventable non-permanent effects Harm, although not necessarily significant harm, which may result in financial loss or expenditure resolve Easily repairable effects of damage to	Presence of contamination at concentrations which require the use of personal protective equipment during site work Loss of plants in a landscaping scheme/discolouration of concrete

[1] CIRIA, (2001). Contaminated Land Risk Assessment. A Guide to Good Practice. CIRIA C552.

[2] Environment Agency (2020). *Land Contamination Risk Management (LCRM).*

	building/structures/services	

The potential probability of the risks being realised are classified in accordance with the ratings set out in Table 2, which are based on CIRIA guidance[1]. It should be noted that where a potential contaminant linkage has not been identified the likelihood is considered to be negligible.

Table 2: Classification of Probability Ratings

Classification	Definition of Consequence
High likelihood	There is a contaminant linkage and an event that either appears very likely in the short term and almost inevitable in the long term, or there is evidence at the receptor that an event has occurred
Likely	There is a contaminant linkage and all the elements are present in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term
Low likelihood	There is a contaminant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the short term
Unlikely	There is a contaminant linkage but circumstances are such that it is improbable that an event would occur even in the very long term

In accordance with C552, the risk classification for each potential contaminant linkage are classified in accordance with the matrix of consequence and probability set out in Table 3. The definition for the risk classifications are presented in Table 4.

Table 3: Risk Classification Matrix

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High	High	Moderate	Moderate/Low
	Likely	High	Moderate	Moderate/Low	Low
	Low Likelihood	Moderate	Moderate/Low	Low	Very Low
	Unlikely	Moderate/Low	Low	Very Low	Very Low

Table 4: Risk Classification Definitions

Classification	Definition
Very High	There is a high probability that severe harm could arise to a designated receptor from the identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from the identified hazard. Realisation of the risk is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
Moderate	It is possible that harm could arise to a designated receptor from the identified hazard. However, it is either relatively unlikely that such harm would be severe or if any harm were to occur it is more than likely that the harm would be relatively mild. Urgent investigation (if not already undertaken) is normally required to clarify the potential risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from the identified hazard, but it is considered likely

	that this harm, if realised, would at worse normally be mild.
Very Low	There is a low possibility that harm could arise to a designated receptor from the identified hazard. In the event of such harm being realised it is not likely to be severe.

Civic Earth

Manchester

Carver's Warehouse
77 Dale Street
Manchester M1 2HG

+44 (0)161 228 6757

London

Reeds Wharf
33 Mill Street
London SE1 2AX

+44 (0)20 7253 2977

Leeds

1 Saw Mill Street
Water Lane
Leeds, LS11 5WE

+44 (0)113 2025 130

Glasgow

35 Virginia Street
Glasgow G1 2TN

+44 (0)141 370 1829

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Appendix C

Proposed Site Plan



Key

For Level information refer to drawing 198_MAY-SEW-SW1-1000-DR-L-000002

Planning Application Boundary

Paving Types

P01 Paving Type 01
Description: Proposed Clay Paving Bricks (to match Mayfield Park)
Finish: Diamond chequered pattern
Colour: Staffordshire blue
P01a - Pedestrian and Light vehicle maintenance loading
P01b - Vehicular Loaded
P01c - Permeable jointing (To civil engineer specification)

P02 Paving Type 02
Description: Proposed Clay Paving Bricks
Finish: Smooth pattern
Colour: Staffordshire blue
Allow for vehicular loading
UK sourced.

P03 Paving Type 03
Description: Resin Bound Gravel
Colour: Hazel (to match Mayfield Park)
Permeable and non-permeable subject to ground conditions.
UK sourced.

P04 Paving Type 04
Description: Asphalt road surface
Colour: Buff
Allow for vehicular loading.
UK sourced.

P05 Paving Type 05
Description: In situ reinforced Concrete surface (to match Mayfield Park)
Aggregate: UK sourced
Finish: Mixed tone aggregate with staffordshire pink to match Mayfield Park
Allow for vehicular Loading

P06 Paving Type 06
Description: Steel Grating Walkway (to match Mayfield Park)
Colour: Galvanised finish
Finish: Pressure-locked steel grating
Allowance: Weathered steel upstand (150mm)

P07 Paving Type 07
Description: Temporary asphalt road surface (to match Mayfield Park)
Finish: Asphalt with stone chippings (pink/red)
Allow for vehicular loading

P08 Paving Type 08
Description:Temporary Pavement
Finish: Asphalt
Allow for pedestrian loading

Seating Types

S01 Seating Type 01
Description: Large Timber Bench
Product: Drifter Bench
Material: Treated upcycled hardwood timber with metal fixings (to match Mayfield Park)
Supplier: Streetlife
Dimensions: 620mm x 2000mm
Accessories: 1200mm backrest, armrest and lighting to underside.

S02 Seating Type 02
Description: Large Picnic Bench
Product: Drifter
Material: Treated upcycled hardwood timber with metal fixings (to match Mayfield Park)
Supplier: Streetlife
Dimensions: 3 beam table (940mm) x 3000mm length

S03 Seating Type 03
Description: Table and Chair Set
Product: Orbit by mmcite
(LOB240, LOB260, LOB280)
Material: Powder coated steel

S06 Seating Type 06
Description: Relocated existing bench

Boulders

B01 Boulder Type 01
Description: Proposed Boulders (to match Mayfield Park)
Size: Varies (500mm-2500mm)
Locally sourced
Allowance: Allow for 5-10% of boulders to have flat top (stepping boulders)

Steps

ST01 Step Type 01
Description: Access Steps - In-Situ concrete steps
Finishes: Variety of concrete finishes to differentiate treads from risers to match Mayfield Park
Dimensions: 150mm risers x 280mm treads
Accessories: Allowance for handrails eitherside and for integrated nosing visibility detail to match Mayfield Park.

Street Furniture

F01 Furniture Type 01
Description: Proposed Cycle Stands (to match Mayfield Park)
Product: CorTen Bicycle Racks
Supplier: Streetlife

F02 Furniture Type 02
Description: Existing lighting columns to be retained

F03 Furniture Type 03
Description: EV Charging pedestal
Product: To MEP specification
Allowance: Clearance zone around charger to comply with accessible parking bay standards.

F04 Furniture Type 04
Description: Indicative feeder pillar location
Specification to Mechanical Engineer

F05 Furniture Type 05
Description: Bollards
F05a - Existing Static Bollard
F05b - Existing retractable Bollard
F05c - Proposed Static Bollard (to match F05a)

Walls and Balustrades

W01 Wall Type 01
Description: In-situ concrete wall
Finish: Polished horizontal face and exposed aggregate vertical face
Allowance: 1100mm high powder-coated steel and mesh balustrade to match Mayfield Park

W02 Wall Type 02
Description: In-siut concrete wall
Finish: Polished horizontal face and exposed aggregate vertical face
Height: Min 450mm - 600mm
Inclusion of timber seating and armrests

BA01 Balustrade Type 01
Description: Proposed slatted metal balustrade
Height: 1100mm
Allowance: Balustrade to achieve 50% porosity.

BA02 Balustrade Type 02
Description: Proposed balustrade to match Mayfield Park
Height: 1100mm

BR01 Barrier Type 01
Description: Highway Crash Barrier
To highways engineer specification

WS01 Screen Type 01
Description: Perforated Wind screen
Dimensions: 2m x 2m
To incorporate signage/wayfinding.

Soft Landscape

Planting Type 01
Description: Herbaceous, ornamental grass and shrub planting.
Herbaceous perennials and ornamental grasses
Density: 9 per/sq.m (average)
Pot Size: 9cm-2litre pots
Soil Depth: 450mm

Shrub planting
Density: 3 per/sq.m (average)
Pot Size: 20l Pots (average)
Soil Depth: 650mm

Further details of planting characters to follow.

Planting Type 02
Description: Herbaceous planting with rain garden build-up
Buildup: To include free draining stone and rain garden aggregate to base.
Density: 9 per/sq.m (average)
Pot Size: 9cm-2litre pots
Soil Depth: Min 450mm

Tree Planting
Semi-Mature Tree
Size: Varied
Small: 30-40cm Girth/Multistem
Medium: 40-50cm Girth
Large: 80+cm Girth
Fixing: Underground guyed
Accessories: Rootrain precinct system
Soil depth: 1200 - 1400mm with 200mm drainage layer
Target soil volume per tree: 20m3
- An allowance for a root cell system will be required for all trees planted in hard landscape.

Contours

Area indicates MCC Highway Pavement

Current proposals assume the below utilities and services are to be retained. Tree planting subject to approvals from utility providers.

Structures

L01 Landscape Structure Type 01
Description: Reclaimed Depot Structure
Dimensions: TBC following further site investigation
Foundations and structural build up to engineers detail.

Water Channel
Description: Natural Stone 'River Bed'
Material: Natural stone cobbles and boulders
Build up to engineers detail.
Rigidly bed
UK Sourced

General Notes

No implied licence exists. This drawing should not be used to calculate areas for the purposes of valuation.
Do not scale this drawing for construction purposes. All dimensions to be checked on site by the contractor and such dimensions to be their responsibility.
All work must comply with relevant British Standards and Building Regulations requirements. Drawing errors and omissions to be reported to the architect.

Notes

DRAFT

Key Plan



@ 1:250

For Planning

Project No.	0198_MAY
Project Name	Mayfield Phase 1b
Drawing Title	Landscape General Arrangement
Client	LandsecU+I
Scale @A1	As indicated
Date	24/05/24
Drawn by	TH
Checked by	SEW

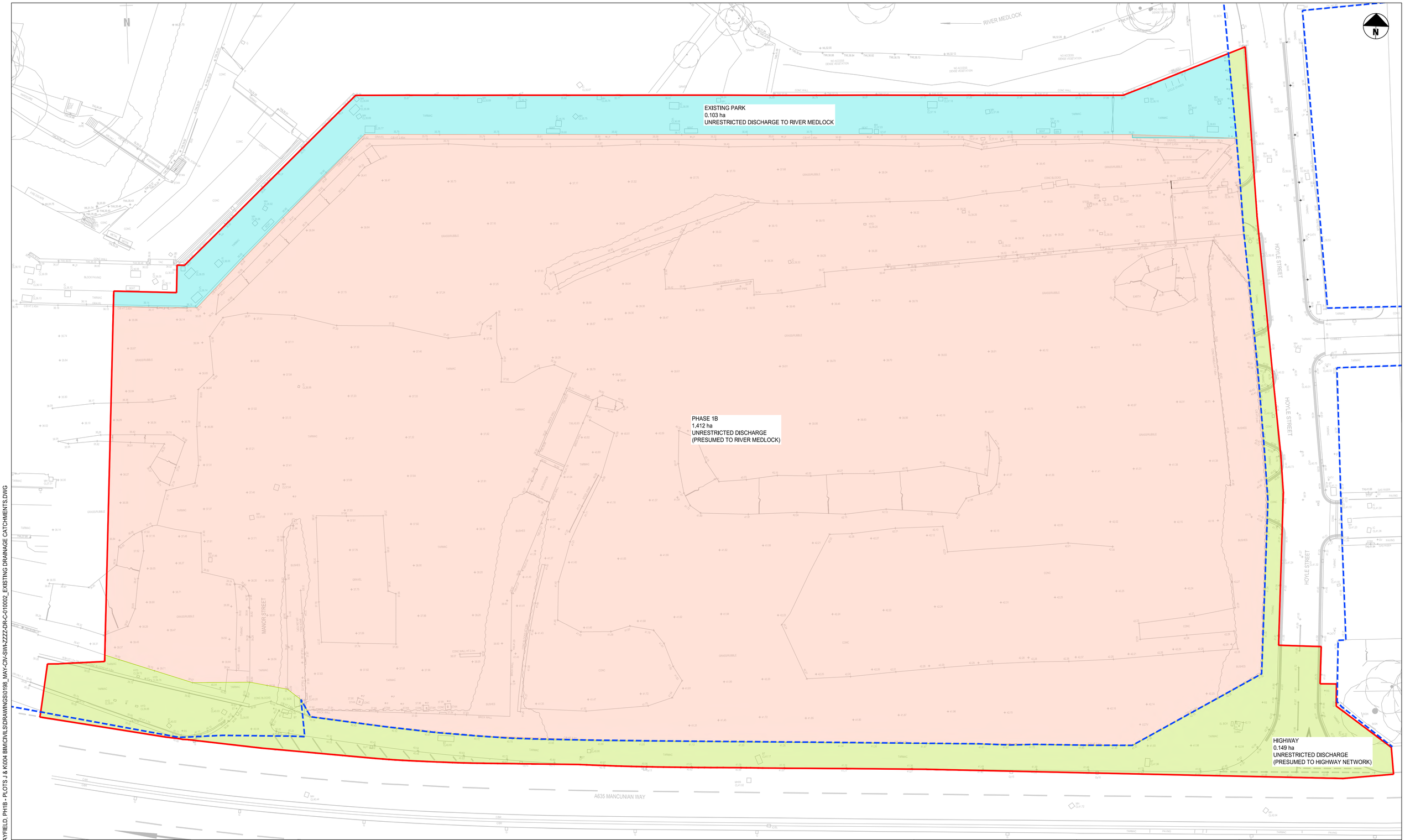
Rev	Date	Reason	Chk
P01	03/12/24	DRAFT Planning	SEW

Drawing Number	Rev
0198_MAY-SEW-SW1-1000-DR-L-000001	P01

Studio Egret West
3 Brewhouse Yard
London, EC1V 4JQ
hello@egretwest.com
+44 (0) 20 7549 1730

Appendix D

Proposed Drainage Drawings



STANDARD NOTES

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2. THIS DRAWING SHOULD NOT BE SCALED.
3. ALL DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE.
4. ALL DISCREPANCIES SHOULD BE REPORTED TO C.A./E.A. PRIOR TO THE COMMENCEMENT OF WORKS.

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KEY

- RED LINE BOUNDARY
- EXISTING HIGHWAY BOUNDARY

DATE	REV	DESCRIPTION	DRAWN	CHKD
19.12.24	P01	INITIAL ISSUE	HCM	CK

PROJECT
MAYFIELD PHASE 1B
MANCHESTER

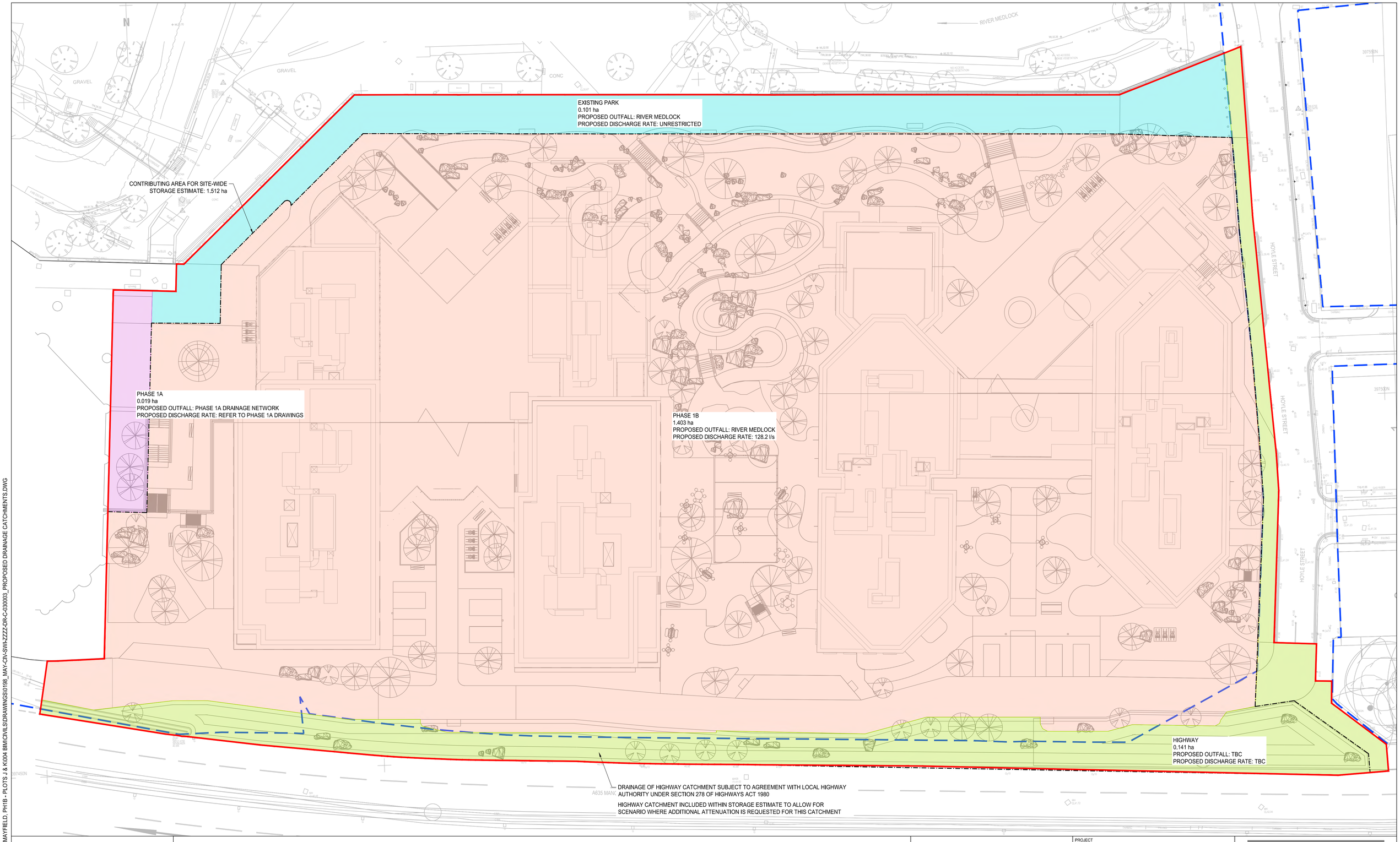
TITLE
EXISTING DRAINAGE CATCHMENTS

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DRAWING STATUS	STATUS CODE
PLANNING	-

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED	DRAWING No.	REV
1076-35	1:250	NOV 24	HCM	CK	0198_MAY-CIV-SWI-ZZZZ-DR-C-010002	P01

FILE LOCATION PATH: P:\PROJECTS HOT\1076-35 MAYFIELD_PH1B - PLOTS J & K\004 BIM\CIVILS\DRAWINGS\0198_MAY-CIV-SWI-ZZZZ-DR-C-010002_EXISTING DRAINAGE CATCHMENTS.DWG



FILE LOCATION PATH: P:\PROJECTS HOT\1076-35 MAYFIELD, PH1B - PLOTS J & K\004 BIM\CIVILS\DRAWINGS\0198_MAY-CIV-SWI-ZZZZ-DR-C-030003_PROPOSED DRAINAGE CATCHMENTS.DWG

STANDARD NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS AND THE SPECIFICATIONS.
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KEY

- RED LINE BOUNDARY
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DATE	REV	DESCRIPTION	DRAWN	CHKD
19.12.24	P01	INITIAL ISSUE	HCM	CK

PROJECT
MAYFIELD PHASE 1B
MANCHESTER

TITLE
PROPOSED DRAINAGE CATCHMENTS

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DRAWING STATUS	STATUS CODE
PLANNING	-

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED	DRAWING No.	REV
1076-35	1:250	OCT 24	HCM	CK	0198_MAY-CIV-SWI-ZZZZ-DR-C-030003	P01

TOTAL AREA DRAINED BY PROPOSED NETWORK:	1.403	ha
PEAK DISCHARGE RATE OF PROPOSED NETWORK:	128.2	l/s
REQUIRED STORAGE:	0.040m³/m²	
STORAGE PROVIDED:		
RAIN GARDENS:	267.5	m³
BLUE ROOFS:	217.2	m³
PERVIOUS PAVEMENT:	60.9	m³
POROUS SUB-BASE:	14.4	m³
DETENTION BASINS	23.6	m³
TREE PITS:	17	m³
FILTER DRAINS:	2.1	m³
TOTAL:	602.7 m³ (0.043 m³/m²)	

DETENTION BASIN
Req. Attenuation: 14.2m³
Top Water Level Area: 146.4m²
Base Area: 93.8m²
Depth: 0.2m
Side Slope: 1:4
Est. Attenuation Provided: 23.6m³

MP 1
Area: 1055.986m2
Drained by Park network

RAIN GARDEN
Req. Attenuation: 5.8m³
Area: 52.1m²
Est. Attenuation Provided: 12.5m³

RAIN GARDENS
Req. Attenuation: 12.2m³
Area: 77.8m²
Est. Attenuation Provided: 18.7m³

PR13
Area: 398.844m2
Cv: 0.36
Req. Attenuation: 5.743m3

PR12
Area: 466.620m2
Cv: 0.47
Req. Attenuation: 8.847m3

EXCEEDANCE FLOW FROM PERVIOUS PAVEMENT INTO RAIN GARDENS

3.4m³

PR11
Area: 181.959m2
Cv: 0.63
Req. Attenuation: 4.607m3

PERVIOUS PAVEMENT
Req. Attenuation: 4.6m³
Area: 26.3 m²
Est. Attenuation Provided: 1.2m³

RAIN GARDEN
Req. Attenuation: 4.3m³
Area: 27.0m²
Est. Attenuation Provided: 6.5m³

PR5
Area: 128.708m2
Cv: 0.84
Req. Attenuation: 4.257m3

PR6
Area: 490.706m2
Cv: 0.63
Req. Attenuation: 12.366m3

1.8m³
VIA RAIN EVENT WATER FEATURE

K-P3
Area: 11.405m2
Cv: 1.00
Req. Attenuation: 1.776m3

CASCADING RAIN GARDENS DISCHARGE OVERFLOW INTO DETENTION BASIN

SHARED SUB-BASE DISCHARGES TO BELOW GROUND

PR9
Area: 683.999m2
Cv: 0.47
Req. Attenuation: 12.832m3

J2-R1
Area: 225.662m2
Cv: 0.85
Req. Attenuation: 7.673m3

7.7m³
VIA DIFFUSER INTO SUB-BASE

J1-R1
Area: 418.460m2
Cv: 0.85
Req. Attenuation: 14.228m3

7.8m³

K2-R1
Area: 417.730m2
Cv: 0.85
Req. Attenuation: 14.203m3

GREEN ROOF 2

14.2m³
VIA SIPHONIC DRAINAGE

GREEN ROOF 4

20.8m³
VIA SIPHONIC DRAINAGE

GREEN ROOF 6

J-P3
Area: 594.308m2
Cv: 0.94
Req. Attenuation: 22.251m3

GREEN ROOF 8

RAIN GARDENS
Req. Attenuation: 12.8m³
Area: 222.4m²
Est. Attenuation Provided: 53.4m³

SUB-BASE/RAIN GARDENS
Req. Attenuation: 37.8m³
Sub-base area: 593.9m²
Rain garden area: 50.1m²
Est. Attenuation Provided: 38.7m³

TREE PIT
Req. Attenuation: 12.4m³
Area: 81.0m²
Est. Attenuation Provided: 17.0m³

BLUE ROOF 1
Req. Attenuation: 120.4m³
Area: 814.1m²
Est. Attenuation Provided: 154.7m³

K1-R1
Area: 613.124m2
Cv: 0.85
Req. Attenuation: 20.846m3

BELOW GROUND DRAINAGE OUTFALLS INTO CASCADING RAIN GARDENS

HW1
Area: 197.855m2
Drained by existing highway network

PR4
Area: 189.516m2
Drained by Phase 1a network

K-P1
Area: 814.529m2
Cv: 0.85
Req. Attenuation: 27.694m3

29.1m³
VIA SIPHONIC DRAINAGE

28.6m³
VIA SIPHONIC DRAINAGE

SHARED SUB-BASE DISCHARGES TO BELOW GROUND

PR8
Area: 466.068m2
Cv: 0.75
Req. Attenuation: 13.963m3

J-P1
Area: 329.959m2
Cv: 0.85
Req. Attenuation: 11.219m3

24.2m³

30.9m³
VIA SIPHONIC DRAINAGE

BLUE ROOF 2
Req. Attenuation: 80.5m³
Area: 329.9m²
Est. Attenuation Provided: 62.5m³

38.4m³
VIA SIPHONIC DRAINAGE

J1-R2
Area: 710.982m2
Cv: 0.85
Req. Attenuation: 24.173m3

2.2m³

PR3
Area: 347.430m2
Cv: 0.89
Req. Attenuation: 12.424m3

PERVIOUS PAVEMENT
Req. Attenuation: 1.6m³
Pavement Area: 40.6m²
Est. Attenuation Provided: 1.8m³

GREEN ROOF 5

J2-R2
Area: 908.985m2
Cv: 0.85
Req. Attenuation: 30.905m3

18.0m³
OVERFLOW INTO PLANTING

GREEN ROOF 7

PERVIOUS PAVEMENT/RAIN GARDENS
Req. Attenuation: 14.0m³
Sub-base Area: 136.5m²
Rain Garden area: 154.1m²
Est. Attenuation Provided: 43.1m³

GREEN ROOF 3

K1-R2
Area: 840.537m2
Cv: 0.85
Req. Attenuation: 28.578m3

PR2
Area: 40.649m2
Cv: 1.00
Req. Attenuation: 1.626m3

SHARED SUB-BASE DISCHARGES TO BELOW GROUND

GREEN ROOF 1

K2-R2
Area: 854.800m2
Cv: 0.85
Req. Attenuation: 29.063m3

SHARED SUB-BASE DISCHARGES TO BELOW GROUND

PERVIOUS PAVEMENT/RAIN GARDENS
Req. Attenuation: 34.2m³
Sub-base Area: 181.2m²
Rain Garden area: 211.8m²
Est. Attenuation Provided: 59.0m³

J-P2
Area: 564.566m2
Cv: 0.72
Req. Attenuation: 16.260m3

EXCEEDANCE FLOW FROM PERVIOUS PAVEMENT INTO PLANTING

PERVIOUS PAVEMENT
Req. Attenuation: 3.4m³
Area: 26.3 m²
Est. Attenuation Provided: 1.2m³

PERVIOUS PAVEMENT/RAIN GARDENS
Req. Attenuation: 23.9m³
Sub-base Area: 159.4m²
Rain Garden Area: 131.8m²
Est. Attenuation Provided: 38.8m³

PR1
Area: 371.939m2
Cv: 0.74
Req. Attenuation: 10.935m3

SUB-BASE/RAIN GARDENS
Req. Attenuation: 16.3m³
Sub-base Area: 160.2m²
Rain Garden Area: 23.2m²
Est. Attenuation Provided: 20.0m³

BLUE ROOF DISCHARGES TO BELOW GROUND

K-PK1
Area: 482.329m2
Cv: 0.84
Req. Attenuation: 16.303m3

PERVIOUS PAVEMENT/RAIN GARDENS
Req. Attenuation: 17.5m³
Sub-base Area: 189.3m²
Rain Garden area: 106.6m²
Est. Attenuation Provided: 34.1m³

PR10
Area: 172.846m2
Cv: 0.59
Req. Attenuation: 3.422m3

VIA SHARED SUB-BASE

VIA SHARED SUB-BASE

PR7
Area: 582.623m2
Cv: 0.75
Req. Attenuation: 17.479m3

FILTER DRAIN 1
Req. Attenuation: 2.0m³
Area: 11.4m²
Est. Attenuation Provided: 2.1m³

ST1
Area: 58.231m2
Cv: 0.85
Req. Attenuation: 1.860m3

SHARED SUB-BASE DISCHARGES TO BELOW GROUND

12.9m³

ST4
Area: 322.977m2
Cv: 1.00
Req. Attenuation: 12.919m3

RAIN GARDEN
Req. Attenuation: 5.9m³
Area: 51.0m²
Est. Attenuation Provided: 12.2m³

ST3
Area: 184.756m2
Cv: 0.80
Req. Attenuation: 5.912m3

10.9m³

ST2
Area: 504.721m2
Cv: 0.87
Req. Attenuation: 17.564m3

ST5
Area: 179.575m2
Cv: 0.74
Req. Attenuation: 5.315m3

5.9m³

ST7
Area: 148.460m2
Cv: 1.00
Req. Attenuation: 5.938m3

ST6
Area: 471.690m2
Cv: 0.87
Req. Attenuation: 16.415m3

RAIN GARDENS
Req. Attenuation: 16.4m³
Area: 70.1m²
Est. Attenuation Provided: 16.8m³

SHALLOW GULLIES CONVEY RUNOFF TO RAIN GARDENS/INTO SUB-BASE

DRAINAGE PROPOSALS ADJACENT ADOPTED HIGHWAY SUBJECT TO CHANGE PENDING AGREEMENT OF HIGHWAY WORKS UNDER SECTION 278 OF HIGHWAYS ACT 1980

RAIN GARDENS
Req. Attenuation: 17.6m³
Area: 86.2m²
Est. Attenuation Provided: 20.7m³

RAIN GARDENS
Req. Attenuation: 11.2m³
Area: 62.2 m²
Est. Attenuation Provided: 14.9m³

SHALLOW GULLIES CONVEY RUNOFF TO RAIN GARDENS/INTO SUB-BASE

HW2
Area: 1185.863m2
Drained by existing highway network

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KEY

- PIPED CONVEYANCE
- OVERLAND CONVEYANCE
- GREEN ROOF
- BLUE-GREEN ROOF
- RAIN GARDEN
- CONVEYANCE RAIN GARDEN (ASSUMED NO STORAGE CONTRIBUTION)
- TREE PIT
- PERVIOUS PAVEMENT
- POROUS SUB-BASE BELOW IMPERV PAVEMENT
- CONVEYANCE PERVIOUS PAVEMEN (ASSUMED NO STORAGE CONTRIBUTION)
- SUB-CATCHMENT

DATE	REV	DESCRIPTION	DRAWN	CHKD
19.12.24	P01	INITIAL ISSUE	HCM	CK

PROJECT
MAYFIELD PHASE 1B
MANCHESTER

TITLE
PROPOSED DRAINAGE STRATEGY
SURFACE WATER

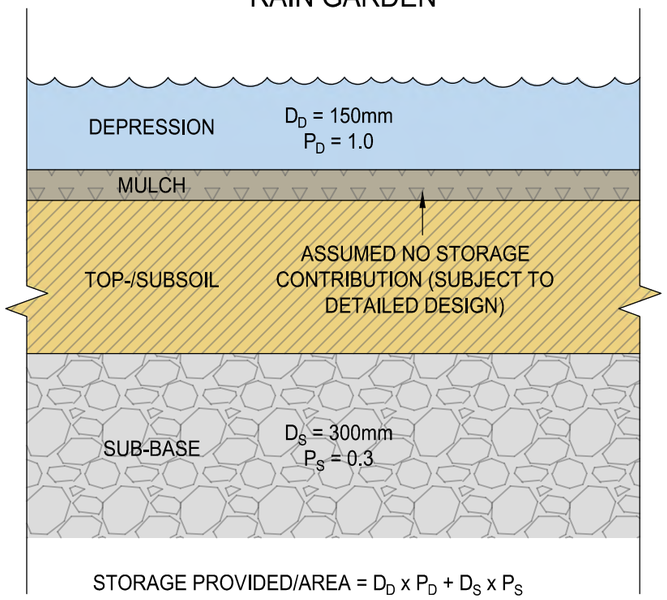
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DRAWING STATUS: PLANNING
STATUS CODE: -

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED	DRAWING No.	REV
1076-35	1:250	OCT 24	HCM	CK	0198_MAY-CIV-SWI-ZZZZ-DR-C-030001	P01

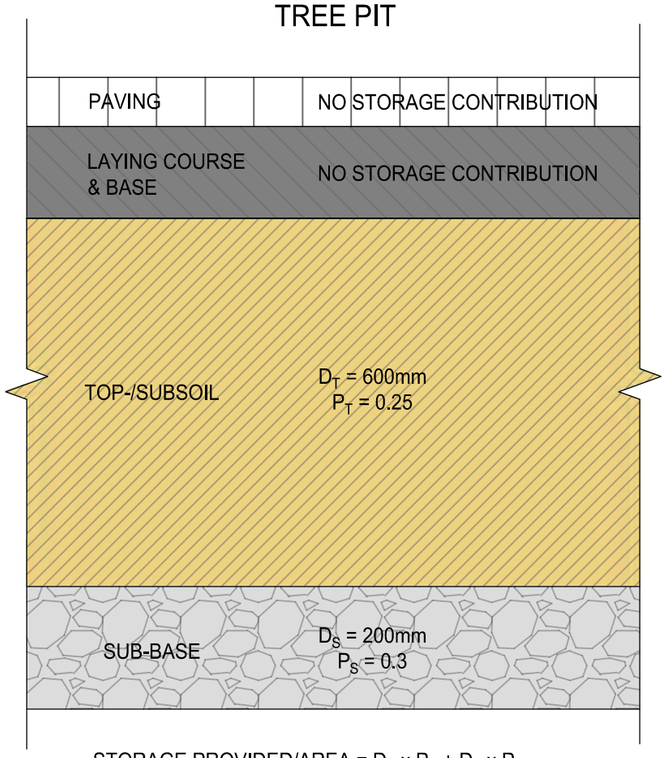
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RAIN GARDEN



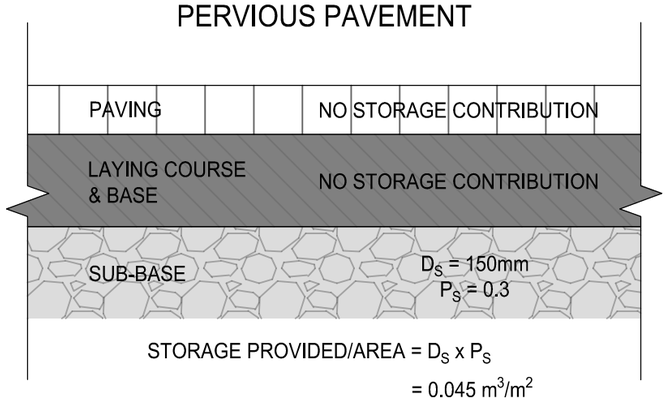
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= 0.24 m^3/m^2

TREE PIT



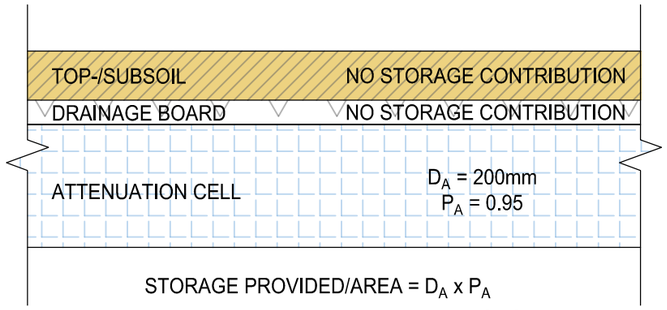
STORAGE PROVIDED/AREA = $D_D \times P_D + D_S \times P_S$
= 0.21 m^3/m^2

PERVIOUS PAVEMENT



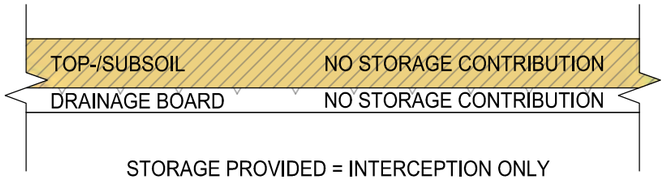
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= 0.045 m^3/m^2

BLUE-GREEN ROOF



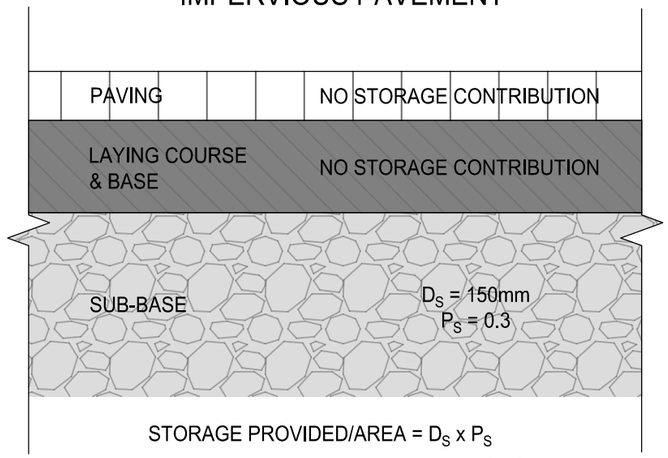
STORAGE PROVIDED/AREA = $D_A \times P_A$
= 0.19 m^3/m^2

GREEN ROOF



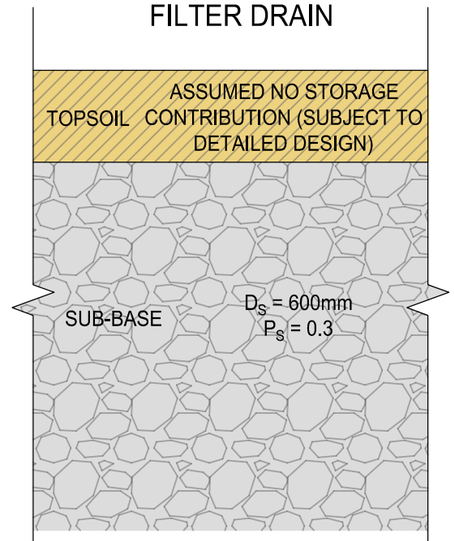
STORAGE PROVIDED = INTERCEPTION ONLY

POROUS SUB-BASE BELOW IMPERVIOUS PAVEMENT



STORAGE PROVIDED/AREA = $D_S \times P_S$
= 0.09 m^3/m^2

FILTER DRAIN



STORAGE PROVIDED/AREA = $D_S \times P_S$
= 0.18 m^3/m^2

DATE	REV	DESCRIPTION	DRAWN	CHKD
19.12.24	P01	INITIAL ISSUE	HCM	CK

PROJECT
MAYFIELD PHASE 1B, MANCHESTER

TITLE
INDICATIVE SUDS STORAGE COMPONENTS

DRAWING STATUS	CE PROJECT No.	STATUS CODE	SCALE @ A3
PLANNING	1076-35	-	1:10

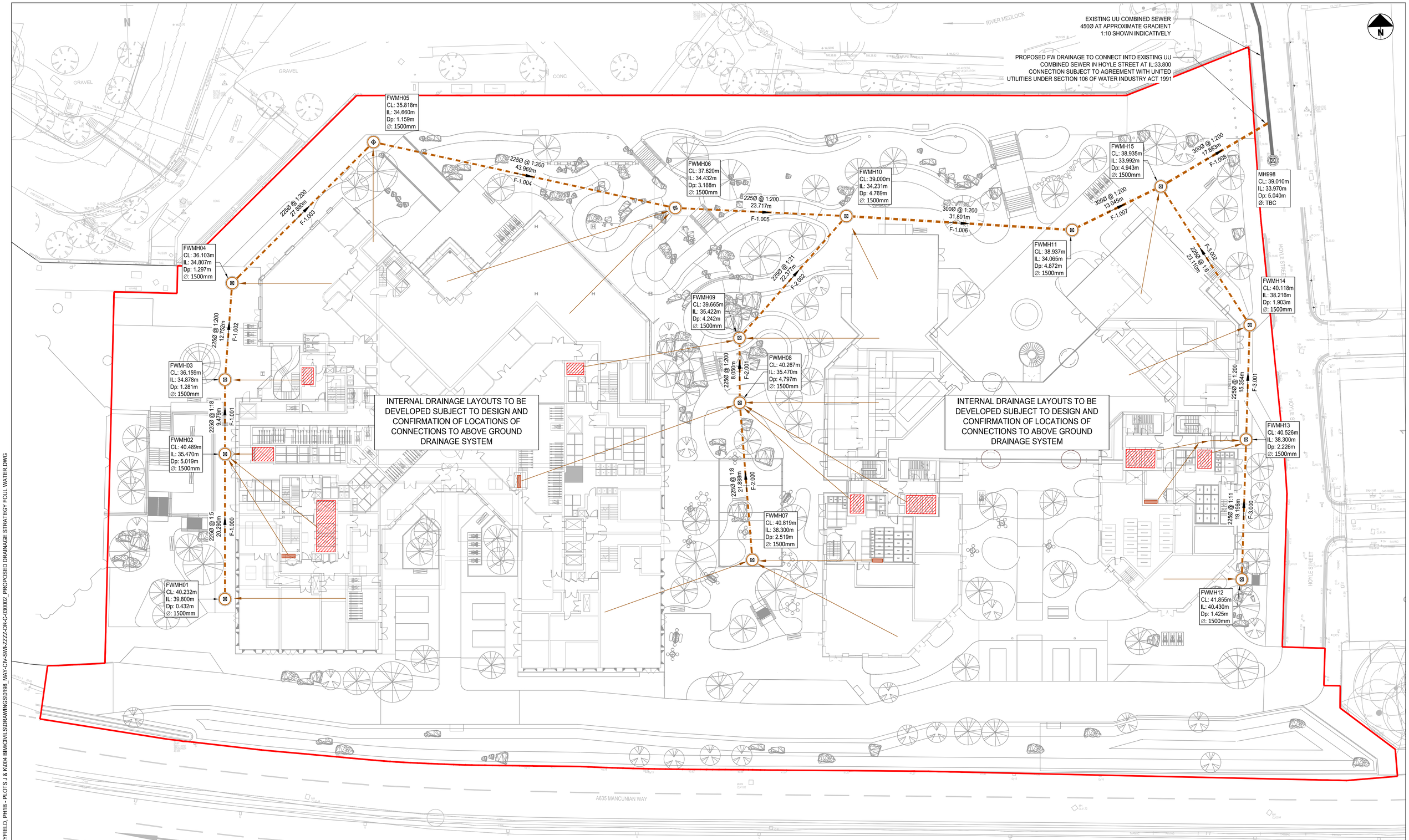
DATE CREATED	DRAWN	CHECKED
DEC 24	HCM	CK

DRAWING No. 0198_MAY-CIV-SWI-XXXX-SK-C-031001 REV P01

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KEY

- RED LINE BOUNDARY
- EXISTING COMBINED WATER MANHOLE
- EXISTING UNITED UTILITIES COMBINED WATER SEWER
- PROPOSED FOUL WATER MANHOLE
- PROPOSED FOUL WATER DRAIN
- INDICATIVE CONNECTION TO ABOVE GROUND DRAINAGE
- INDICATIVE PUBLIC HEALTH RISER
- INDICATIVE LIFT PIT SUMP

NOTES

1. NUMBER OF EXTERNAL CHAMBERS SHOWN INDICATIVELY. DRAINAGE LAYOUT AND SIZE MAY CHANGE DURING LATER DESIGN STAGES

DATE	REV	DESCRIPTION	DRAWN	CHKD
19.12.24	P01	INITIAL ISSUE	HCM	CK

PROJECT
MAYFIELD PHASE 1B
MANCHESTER

TITLE
PROPOSED DRAINAGE STRATEGY
FOUL WATER

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DRAWING STATUS	STATUS CODE
PLANNING	-

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED	DRAWING No.	REV
1076-35	1:250	OCT 24	HCM	CK	0198_MAY-CIV-SWI-ZZZZ-DR-C-030002	P01

Appendix E

Greenfield Runoff Rate and Storage Requirement Calculations

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Harry Morton
Site name:	Mayfield Phase 1b
Site location:	Mayfield, Manchester

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	53.47395° N
Longitude:	2.22438° W
Reference:	2142143454
Date:	Dec 16 2024 14:05

Runoff estimation approach

FEH Statistical

Site characteristics

Total site area (ha): 1.664

Methodology

Q_{MED} estimation method:	Calculate from BFI and SAAR
BFI and SPR method:	Specify BFI manually
HOST class:	N/A
BFI / BFIHOST:	0.333
Q_{MED} (l/s):	
Q_{BAR} / Q_{MED} factor:	1.08

Hydrological characteristics

	Default	Edited
SAAR (mm):	887	889
Hydrological region:	10	10
Growth curve factor 1 year:	0.87	0.87
Growth curve factor 30 years:	1.7	1.7
Growth curve factor 100 years:	2.08	2.08
Growth curve factor 200 years:	2.37	2.37

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q_{BAR} (l/s):		14.23
1 in 1 year (l/s):		12.38
1 in 30 years (l/s):		24.2
1 in 100 year (l/s):		29.61
1 in 200 years (l/s):		33.74

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement , which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

Nodes

Name	Area (ha)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
Brownfield Rate	1.513	100.000	25.778	59.866	2.000
Greenfield Rate	1.513	100.000	55.209	59.416	2.000

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Detailed	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	45	0	0

Node Brownfield Rate Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	98.000	Product Number	CTL-SHE-0438-1282-1000-1282
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.450
Design Flow (l/s)	128.2	Min Node Diameter (mm)	

Node Greenfield Rate Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	98.000	Product Number	CTL-SHE-0171-1420-1000-1420
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	14.2	Min Node Diameter (mm)	1200

Node Brownfield Rate Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	98.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	51

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	600.0	0.0	1.000	600.0	0.0	1.001	0.0	0.0

Node Greenfield Rate Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	98.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	1200.0	0.0	1.000	1200.0	0.0	1.001	0.0	0.0

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Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	Brownfield Rate	76	98.226	0.226	122.4	135.5546	0.0000	OK
480 minute summer	Greenfield Rate	312	98.205	0.205	52.2	246.0906	0.0000	OK

Link Event (Outflow)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
120 minute summer	Brownfield Rate	Hydro-Brake®	52.2	226.6
480 minute summer	Greenfield Rate	Hydro-Brake®	13.7	308.1

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Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	Brownfield Rate	42	98.480	0.480	439.0	288.2042	0.0000	OK
600 minute summer	Greenfield Rate	435	98.454	0.454	85.0	544.6558	0.0000	OK

Link Event (Outflow)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
60 minute summer	Brownfield Rate	Hydro-Brake®	126.5	445.7
120 minute winter	Greenfield Rate	Hydro-Brake®	14.2	265.8

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Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	Brownfield Rate	48	98.997	0.997	820.0	598.3705	0.0000	OK
960 minute summer	Greenfield Rate	780	98.996	0.996	117.7	1195.2810	0.0000	OK

Link Event (Outflow)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
15 minute summer	Brownfield Rate	Hydro-Brake®	128.1	489.3
15 minute summer	Greenfield Rate	Hydro-Brake®	14.2	209.7

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Appendix F
Correspondence

Harry Morton

From: Colin Byrne <Colin.Byrne@BuroHappold.com>
Sent: 03 April 2024 12:36
To: Harry Morton
Cc: Chris Kendrick; John Scandrett
Subject: RE: Mayfield Phase 1b Discharge Rate
Attachments: MAY101-WSD-EXT-BUR-DR-7020-3150 AB.pdf; MAY101-WSD-EXT-BUR-DR-7060-3120 AB.pdf

Hi Harry,

Best not use that catchment plan – some of the linework does not align with latest phasing boundaries etc. For phase 1b we have the following allowances in the model.

- Catchment B3 (plot) discharging to manhole SWMH8 at a restricted discharge rate of 17.52l/s. Assumed area was 0.2Ha (0.19Ha effective).
- Ignore C14 – that was used as a potential temporary extension to Phase 1a. i.e. it would contain some landscaping until Phase 1b plots are built out.
- Catchment B4 (plot) had a restricted flow rate of 63.43 l/s over two outfalls (restricted to 31.72 l/s each). Manholes SWMH4 and SWMH2. Assumed area was 0.72Ha (0.68Ha effective).
- The C15 element in Phase 1b accounts for about 56% of C15. This gives a flow rate of 47.26l/s for these areas in Phase 1b, assumed to be discharging to SWMH4. Assumed area was 0.516Ha (0.38Ha effective).
- C11 and C8 were assumed to discharge into the river via overland flow – so they are not accounted for the in the network design.

The assumed points of connection (SWMH8, 4 and 2) can be moved around, but we would want to check, so please let us know.

Any questions, happy to chat through on the phone.

Regards,

Colin Byrne
Director
BuroHappold | Cities - Infrastructure
M: +44 7753461166

From: Harry Morton <harry.morton@civicengineers.com>
Sent: Monday, March 25, 2024 11:03 AM
To: Colin Byrne <Colin.Byrne@BuroHappold.com>
Cc: Chris Kendrick <chris.kendrick@civicengineers.com>
Subject: Mayfield Phase 1b Discharge Rate

External Email. This email originated from outside Buro Happold.

Hi Colin,

I'm currently working through drainage options for Phase 1b and trying to determine a brownfield rate for the latest phase boundary using pro-rated catchments taken from the park drainage strategy. As per attached sketch, the brownfield rate for 1b should consist of catchments B3 & B4 plus a certain percentage of catchments C11, C14 etc.

Are you able to share a DWG of the catchments drawing or quickly mark-up the catchment extents to assist with this? I've currently converted the PDF version and it's not too clear e.g. catchment C14 appears to coincide with a portion of catchment B3.

Kind regards,

Harry
Harry Morton
Design Engineer

Direct Dial: 0161 509 4800
Office: 0161 228 6757
www.civicengineers.com

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PHASE 4

C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
B1a
B1b
B2
B3
B4
B5

Mayfield Works

PHASE 1B BROWNFIELD RATE = B3 + B4 + X% C11 + X% C14 + X% C15

DATE	REV	DESCRIPTION	DRAWN	CHKD
19.12.24	P01	INITIAL ISSUE	HCM	CK

PROJECT
MAYFIELD PHASE 1B, MANCHESTER

TITLE
PHASE 1 DRAINAGE STRATEGY CATCHMENTS

DRAWING STATUS	CE PROJECT No.	STATUS CODE	SCALE @ A3
PLANNING	1076-35	-	

DATE CREATED	DRAWN	CHECKED
FEB 24	HCM	CK

DRAWING No. 0198_MAY-CIV-SWI-ZZZZ-SK-C-030001 REV P01

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Harry Morton

From: seweradoptions@uuplc.co.uk
Sent: 08 May 2024 16:50
To: Chris Kendrick
Cc: Harry Morton
Subject: RE: 05701866 FW: Pre-Development Enquiry - Mayfield Phase 1B Manchester

Good Afternoon,

Thank you for your WW PDE, please see our response below.

UU REF 05701866 – WW PDE – Hoyle Street, Manchester

We have carried out an assessment of your application which is based on the information provided. This pre-development advice on your drainage strategy will be valid for 12 months. Your drainage strategy will need to be reviewed by other competent authorities as part of the planning process, and we advise that you carry out the necessary site investigations to confirm the viability of your proposals.

If your investigations require access to our public sewer network, we ask that you contact our network engineers with a request for an access certificate via our main contact telephone number 0345 6723 723 or refer to the link below:

https://www.unitedutilities.com/builders-developers/working-near-our-assets/

Foul Water

Foul flow from this site will be allowed to drain into the public combined sewer system at your preferred point of connection at the 620 x710 sewer

Surface Water

All surface water flow from the proposed development should drain in-line with the drainage hierarchy, as outlined in Paragraph 80, (Reference ID: 7-080-20150323), of the National Planning Practice Guidance. We also recommend you prioritise the use of multi-functional sustainable drainage systems for the management of surface water in accordance with national planning policy.
Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable.
This is outlined as follows, in order of priority:

1. **into the ground (infiltration);**
2. **to a surface waterbody;**
3. **to a surface water sewer or highway drain;**
4. **to a combined sewer.**

For guidance, The **North West SuDS Pro-Forma** provides information on the appropriate evidence required at each stage of the hierarchy, to demonstrate how each level has been discounted.
The Lead Local Flood Authority has responsibility for all surface water drainage concerns and their input to your proposal is critical. You should also consider whether it is necessary to discuss your proposal with the Environment Agency, or Internal Drainage Board (if operating in your area).
The Local Planning Authority are the determining authority for any application for planning permission and the

appropriate authority for determining cost viability of a proposed drainage scheme, such assessments are outside of the jurisdiction of United Utilities.

Additional Site:

I note you mention another site within your email, please note this will require a separate WW PDE application

Please do contact me should you wish to discuss any matters

Regards

Anthony

United Utilities
Water for the North West

Anthony Laithwaite
Ww Engineer
Developer Services & Metering
Customer Services

M: 07880 298897
unitedutilities.com

---------- Original Message ----------
From: seweradoptions@uuplc.co.uk [seweradoptions@uuplc.co.uk]
Sent: 08/05/2024 15:11
To: chris.kendrick@civicengineers.com
Cc: harry.morton@civicengineers.com
Subject: RE: 05701866 FW: Pre-Development Enquiry - Mayfield Phase 1B Manchester

PRE DEVELOPMENT APPLICATION AT Mayfield Phase 1B – UU Ref - 05701866

Please accept this email as receipt of your application received on 08.05.2024 for the above development. This has now been logged on our system and the job reference is 05701866 we would ask that you quote this reference in all future correspondence.

I have reviewed your application (and attachments) and can confirm this is suitable to be passed to Anthony Laithwaite for technical assessment. You will receive their response as soon as possible i have requested this to be looked at as a matter of urgency.

Kind regards

Lucie Gaskell
Customer Advisor Advanced
Developer Services & Metering
Customer Services
Direct Tel: 01925 233050
Tel: 0345 072 6067
unitedutilities.com

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---------- Original Message ----------
From: Chris Kendrick [chris.kendrick@civicengineers.com]
Sent: 08/05/2024 14:45
To: seweradoptions@uuplc.co.uk
Cc: harry.morton@civicengineers.com
Subject: FW: Pre-Development Enquiry - Mayfield Phase 1B Manchester

Hi Sewer Adoptions,

Please find attached pre-development enquiry form and supporting information for the proposed development off Hoyle Street in Manchester, postcode M12 6HG. The ground investigation is 28mb so have included that in the link below which hopefully you are able to access.

https://we.tl/t-4cTwXgy9By

We would like to understand the feasibility of discharging foul water into the combined public sewer in Hoyle Street, with node references 2502 to 2503. The reason for our preference to connect to this sewer is due to the depth of sewer being circa 5m deep compared to the parallel sewer (node ref: 2501) being in the order of 8.5m deep. We would also explore the opportunity to make an indirect connection should an existing branch run be available and viable, however for the purposes of this enquiry please assume a direct connection.

The drainage within the development will remain private and maintained by a management company so are not intended to be put forward for adoption by United Utilities.

All surface water within the private development will drain to the River Medlock via an extensive SuDS system including green / blue roofs, raingardens and swales. Some adopted highway areas outside of the site boundary may continue to drain into the public sewer if that is where the gullies are discharging to at present. The aspiration in the future is to redirect flows from stopped up areas of highway into the River Medlock also, but the details of this will be determined in the future and are outside the scope of this particular red line boundary.

One other point to note is that there are also future proposals to develop Mayfield Phase 3 which sits to the East of Hoyle Street (pink scribble below). It is likely that the foul drainage proposal will also include connection to the sewers under Chapelfield Road / Hoyle Street. Would it also be worth UU considering this development under this same PDE, in which case we can also provide whatever supporting information we are able to at this early stage.

[Image is no longer available]

If you have any queries or need anything further please get in touch.

Kind regards,

Chris

Chris Kendrick
Associate Director

Mobile: 07507 783153
www.civicengineers.com

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